

The Impact of Emotional Analysis as a Pitch Matching Technique: Finding the Balance of Psychologically Safe Pitch Correction, and Efficacy

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Aims and Objectives



ADDING A SKILL INSTEAD OF
FOCUSING ON MISTAKES



IMPROVE PSYCHOLOGY OF
PERFORMER WHILE IMPROVING
PITCH

Literature Review on Singing and Non-Singing



Ideas about Singers and Non-Singers

Research by Susan Knight (1999)
Research by Whiteman and Mangels (2016)



Psychological Impact

Shame associated with inability to sing
Lack of self-esteem among non-singers

Further Literature Review

Nummenmaa et al.'s (2013) Research Findings

- Emotions affect musculature movement

Cross-Cultural Bodily Sensations Nummenmaa et al.'s (2013)

- Present in emotions like happiness, anger, and sadness
- Implications for vocal production

Study by Tyng et al. (2017)

- Investigated the role of emotion in learning and memory
- Found that the Amygdala is activated during emotionally significant experiences



Methodology

Mixed Methods Approach



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graph TD; A[Mixed Methods Approach] --> B[Qualitative Element of Psychology]; B --> C[Quantitative Element of Pitch Accuracy]; C --> D[Self Labeling];
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Qualitative Element of Psychology

Quantitative Element of Pitch Accuracy

Self Labeling

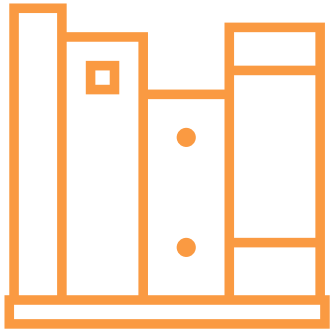
Ethics

Ethics approval was received
through UWTSD



Insider Researcher

- Deeper understanding of content



- Potential Bias

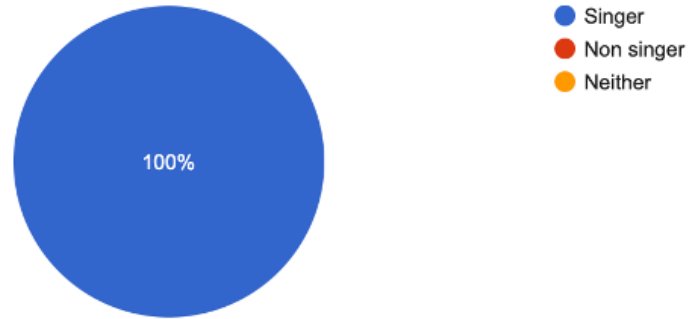


Screening Questionnaire Results

Do you think of yourself as a "singer" or a "non singer"?

 [Copy chart](#)

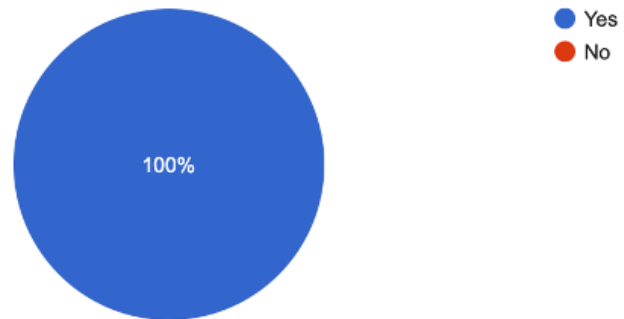
1 response



Have you ever been told you have pitch matching difficulties?

 [Copy chart](#)

1 response

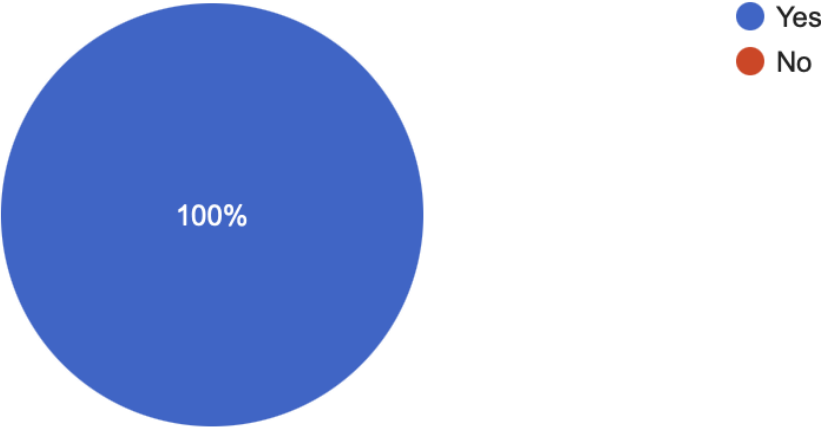


Previous Pitch Accuracy Improvement Methods

Have you or a teacher tried any methods of gaining more pitch accuracy in the past?

 [Copy chart](#)

1 response



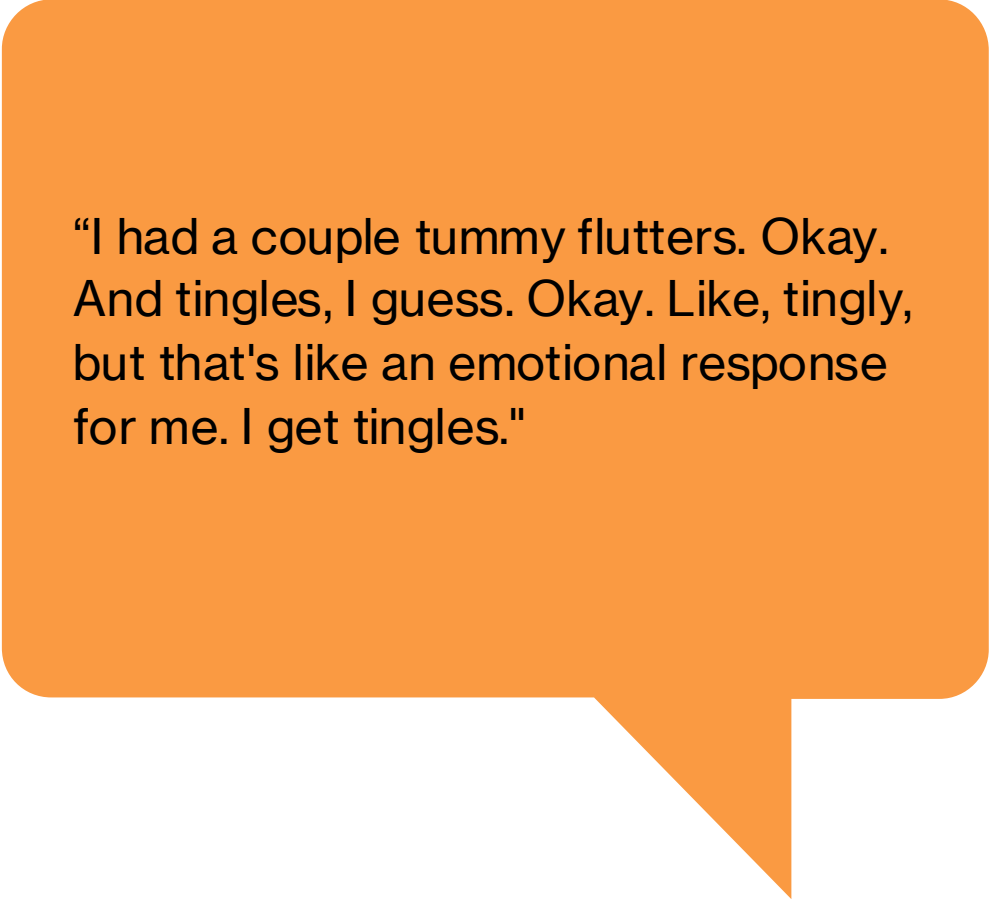
If yes to the question above, what were they? In your opinion were they effective?

1 response

Raising my brows, focusing more, thinking up, attacking the note from above. They are effective sometimes

Insights from Exit Interview

Bodily Sensations Influence

A large orange speech bubble with a tail pointing towards the bottom right, containing a quote.

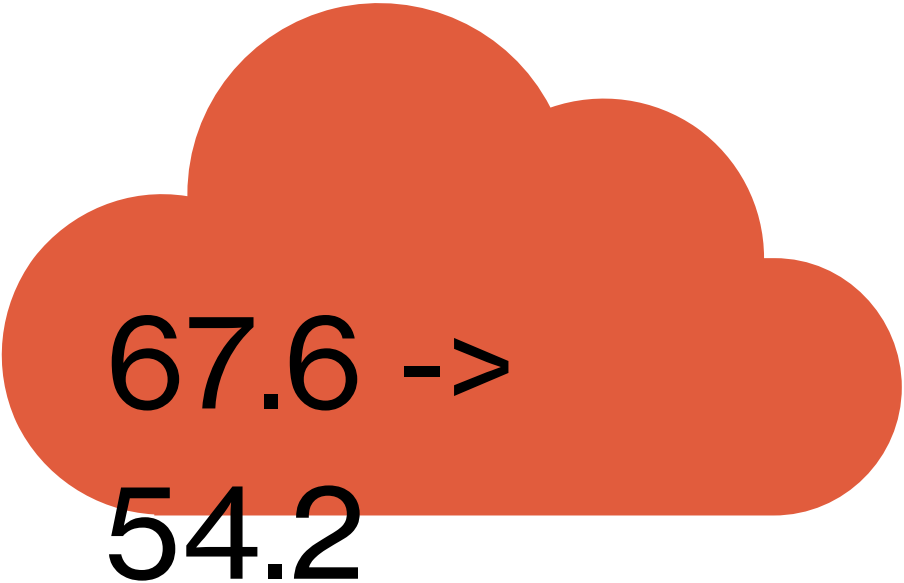
"I had a couple tummy flutters. Okay. And tingles, I guess. Okay. Like, tingly, but that's like an emotional response for me. I get tingles."

Quantitative Data Analysis

Normality Test (Shapiro-Wilk)

			W	p
A	-	B	0.964	0.046

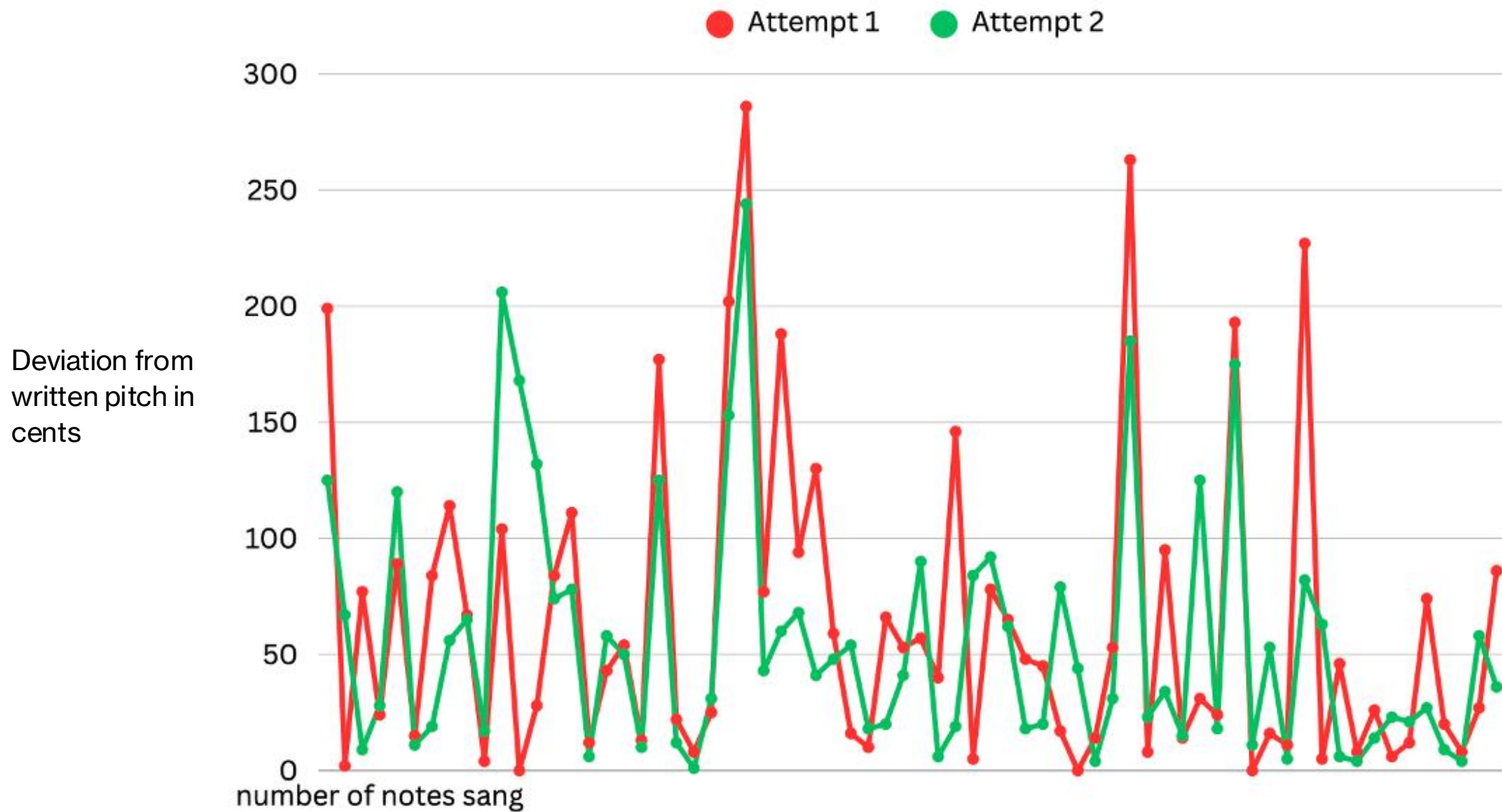
Note. A low p-value suggests a violation of the assumption of normality



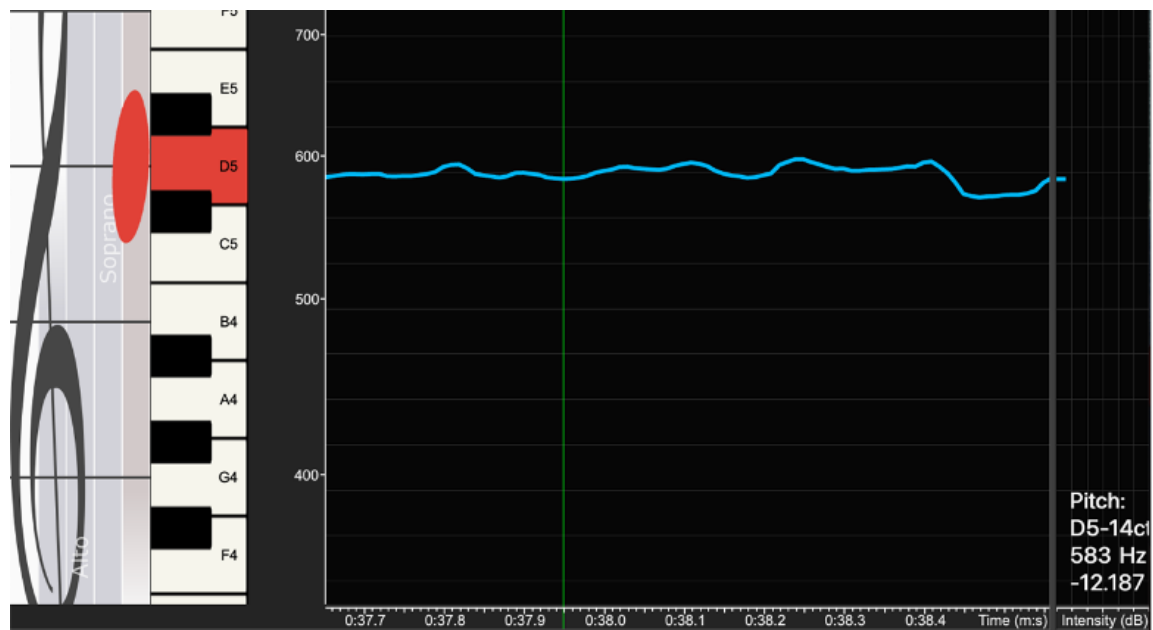
Paired Samples T-Test

		Statistic		df	p	Effect Size	
A	B	Student's t	1.15	67.0	0.256	Cohen's d	0.139
		Wilcoxon W	1425		0.124	Rank biserial correlation	0.215

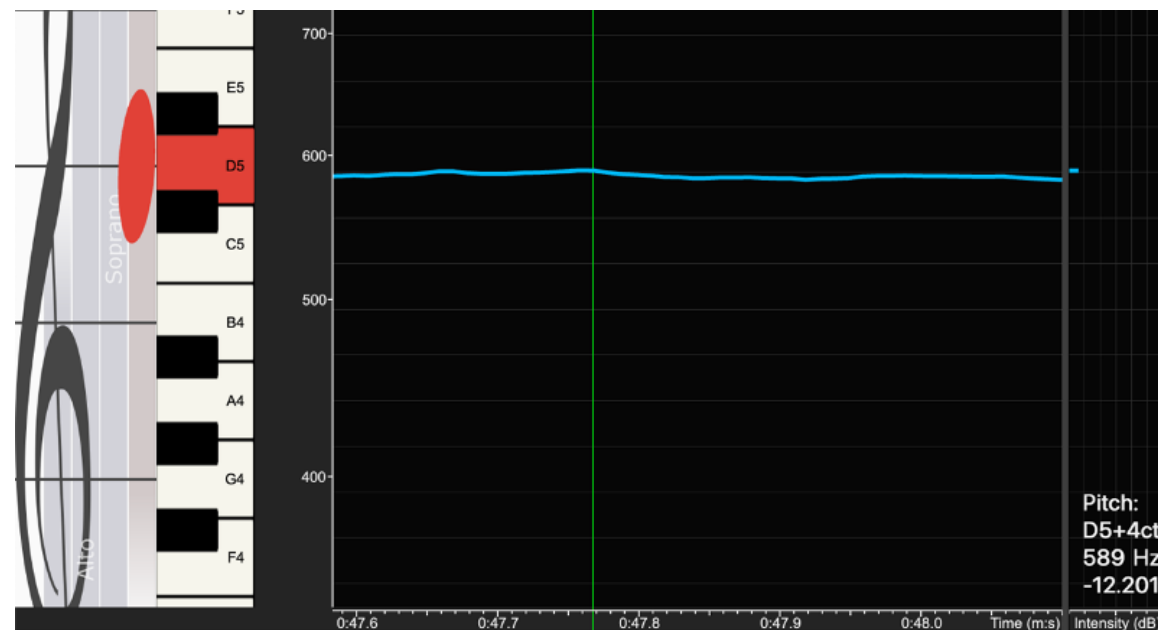
Note. $H_a \mu_{\text{Measure 1}} - \mu_{\text{Measure 2}} \neq 0$



Voce Vista Images of pitch consistency



Attempt 1



Attempt 2

Conclusion

No statistically significant results

Reduction in pitch variance

Increased pitch ability in certain cases

Promising results supporting the hypothesis

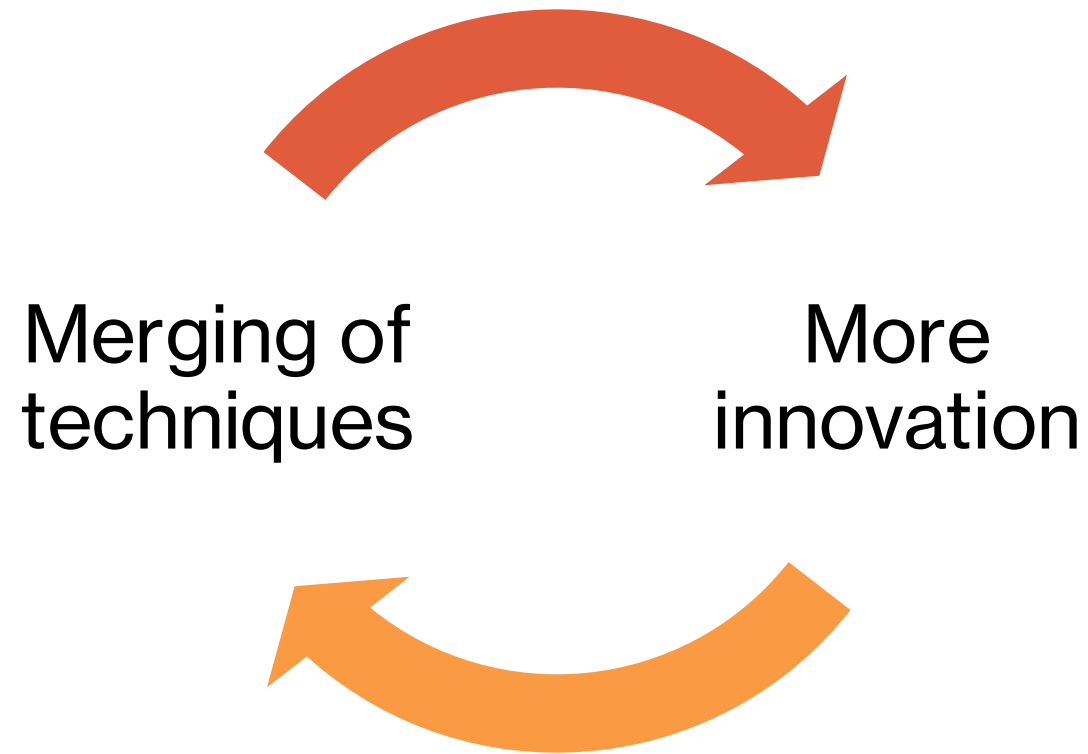
Impact on psychological support

Limitations and Further Research

Single Participant

Narrow Scope

Impact on Professional Development





**Thank you.
Questions?**

References

- Knight, S. (1999b) 'Exploring a cultural myth: What adult non-singers may reveal about the nature of singing', *The Phenomenon of Singing International Symposium II*, 2, pp. 144–154.
- Nummenmaa, L., Glerean, E., Hari, R. and Hietanen, J.K. (2013) 'Bodily maps of emotions', *Proceedings of the National Academy of Sciences of the United States of America*, 110(52), pp. 20914–20919.
- Tyng, C.M., Amin, H.U., Saad, M.N.M. and Malik, A.S. (2017) 'The Influences of Emotion on Learning and Memory', *Frontiers in Psychology*, 8, p. 1454.
- Whiteman RC, Mangels JA. Rumination and Rebound from Failure as a Function of Gender and Time on Task. *Brain Sci.* 2016 Feb 17;6(1):7. doi: 10.3390/brainsci6010007. PMID: 26901231; PMCID: PMC4810177.