ALEXANDER TECHNIQUE AND MUSIC PERFORMANCE: EVIDENCE FOR IMPROVED 'USE'

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ABSTRACT

Music students (comprising string, keyboard and wind players, and voice) were randomly assigned to training in the Alexander Technique (group AT, n=10) or alpha-theta neurofeedback (group NF, n=8). Music performances were video-recorded before and after training, and rated blind by experts for quality of musical performance and quality of AT use on a number of subscales. Following training, group NF showed a significant improvement in perceived quality of music performance; group AT showed a significant improvement relative to group NF on seven subscales of AT use. The greatest of the latter effects were shown by singers. This study provides evidence of improved use as a result of training in AT and is the first study to demonstrate objectively that such changes can be detected by experts on the basis of video-recorded performance.

1. BACKGROUND

The Alexander technique (AT) is a system of kinaesthetic reeducation, widely used by musicians to enhance performance and prevent misuse and injury (Watson & Valentine, 1987). Whilst belief in the technique remains strong and practitioners are fulsome in its praise, testifying to its benefits in their personal statements, rigorous objective data have been hard to come by. While some positive results have been reported, other data have been more equivocal. With very few notable exceptions, it is still the case that most of the studies conducted have been anecdotal, lacking in adequate experimental controls, on small samples, or simply case studies. The majority have examined anatomical and physiological measures whilst behavioural and experiential indices have been largely neglected. In addition, to date there is little evidence for the validity of judgments of use made by AT practitioners on the basis of video-recorded performance.

2. AIMS

The aim of this study was to investigate the effects of training in the Alexander technique on music students. The comparison group underwent training in neurofeedback. The results for perceived quality of music performance were reported briefly at ICMPC7. Here we focus on the results for use as defined by practitioners of the Alexander technique.

3. METHOD

3.1. Design

As part of the Zoning-in Project at the Royal College of Music, London, music students were randomly assigned to various training groups (three different forms of neurofeedback and AT). In this paper, we compare those assigned to AT training (group AT; n=10) with those assigned to alpha-theta neurofeedback training (group NF; n=8).

3.2. Participants

The sample comprised four instrumental subgroups: strings (violin, viola, 'cello, guitar, harp), keyboard (piano), wind (oboe, clarinet), and voice.

3.3. Procedure

Students in group AT received 12 x 30-minute sessions of one-to-one training on a weekly basis. Those in group NF received 10 x 15-minute sessions over a period of 6 to 8 weeks. Music performances were video-recorded prior to and subsequent to training. Self-rated state anxiety (Spielberger et al., 1983) was also measured prior to performance before and after training. The video-recorded performances were randomly ordered and assessed by expert judges, external to the College and blind to students' group membership, for quality of music performance and AT use. The judgments of AT use were made by an experienced musician and AT practitioner, with extensive experience of teaching AT to musicians. She devised her own rating scales which were as follows: head-neck-back relationship, use of upper limb/back, use of hips/balance, direction of knees, face and eyes, breathing, fingers, thought direction, use of inhibition, overall impression/poise. Ratings were made on a 7-point scale from 1–very poor to 7–excellent. Subsequent to the study, the AT teacher rated students who had had AT lessons on 7-point scales on: commitment to having lessons, responsiveness to AT, improvement in AT use, final quality of AT use; and recorded the number of sessions completed. The students completed feedback sheets on the quality of teaching (for which there was a 50% response rate).

4. RESULTS

4.1. Musical Performance

Of the four training groups only group NF (assigned to alpha/theta neurofeedback training) showed improvement following training on musical performance (specifically on overall quality, musical understanding, stylistic accuracy and interpretative imagination). See Gruzelier et al. (2002) for further details and discussion.

4.2. Self-rated Anxiety

All groups showed a significant reduction in self-rated anxiety prior to performance following training.

4.3. AT Use

Although there were no significant main effects of group (AT versus NF) or training (before versus after training) on AT use, there were significant interactions between group and training on 7 out of 10 measures of AT use: head-neck-back relationship [$F(1,11) = 3.41$, $p = .045$], upper limb/back [$F(1,11) = 3.60$, $p = .043$]; face and eyes [$F(1,7) = 4.34$, $p = .038$]; fingers [$F(1,11) = 17.72$, $p < .001$]; thought direction [$F(1,11) = 4.95$, $p = .024$]; inhibition [$F(1,11) = 5.66$, $p = .018$] and overall impression/poise [$F(1,11) = 4.14$, $p = .038$; all one-tailed values]. In all cases group AT showed an improvement relative to group NF, who declined. The results for overall impression/poise are plotted in Figure 1.
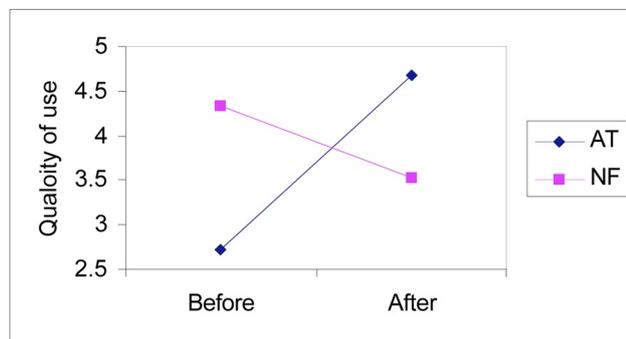

Figure 1: Ratings of AT use (on a 7-point scale) before and after training for groups AT and NF.

Change scores, i.e. score after training minus score before training, were all significantly correlated, with the exceptions of those amongst head-neck-back relationship, face and eyes, and breathing, which suggests that these are relatively independent of each other. There were also some interesting interactions with instrument: between training and instrument for fingers [$F(3,11) = 4.87$, $p = .022$] and between group, training and instrument: for hips/balance [$F(2,11) = 5.01$, $p = .028$], fingers [$F(2,11) = 7.36$, $p = .009$] and thought direction [$F(2,11) = 5.95$, $p = .018$; all two-tailed values]. In all cases the greatest changes were shown by singers.

4.4. AT Teacher Ratings

Details of the final ratings by the AT teacher are shown below.

Scale	Mean	Standard deviation
Final quality of AT use	5.20	1.23
Improvement in AT use	5.80	1.03
Responsiveness to AT	6.10	0.99
Commitment to AT	5.80	1.48
Number of sessions attended	12.30	1.70

Table 1: Means and standard deviations of final ratings by AT teacher (all on a 7-point scale with the exception of the last).

These five final measures were all significantly or highly significantly intercorrelated. However, none of them correlated with differences between AT scores before and after training on any of the AT scales.

4.5. Student Feedback

Student feedback indicated a high degree of satisfaction and perceived benefit from the training. Typical quotes included: 'I'd love it if the lessons were longer – half an hour goes very quickly'; 'I really enjoyed and found useful, the practical sessions—when I played piano or oboe and [the teacher] worked specifically with my needs'; 'I found everything really interesting and incredibly helpful'; 'I found the work we did with my instrument during lessons particularly valuable, and would perhaps have liked more time on this. However, I do realise the importance of understanding the technique in a wider context than solely "as an oboist"'; 'slowly making the Alexander technique a part of my life is a really fulfilling experience. I think it will always be part of my life from now on'.

5. CONCLUSIONS

Although training in AT (unlike alpha/theta neurofeedback training) did not result in noticeable improvements in perceived quality of music performance, ratings of AT use showed significant improvements on 7 of the 10 rating scales employed. This is the first demonstration of the validity of judgments of AT use based on video-recorded performance and suggests training in AT can enhance use and that this can be demonstrated objectively. With increased refinement of measuring techniques, it will be possible to measure the subtle effects of AT training. AT training (in common with the three forms of neurofeedback training) also led to a significant reduction in self-rated anxiety.

Issues for further research include refinement of techniques, examination of the length of AT training required to produce measurable effects, and individual differences in receptivity to the technique.

6. ACKNOWLEDGEMENTS

7. REFERENCES

1. Gruzelier, J. H., Egner, T., Valentine, E. R. & Williamon, A. (2002) Comparing learned EEG self-regulation and the Alexander Technique as a means of enhancing musical performance. In C. Stevens, D. Burnham, G. McPherson, E. Schubert & J. Renwick (Eds), *Proceedings of the 7th International Conference on Music Perception and Cognition*, pp. 89–92. Adelaide: Causal Productions.

2. Spielberger, C. D., Gorsuch R. L., Lushene R. *et al.* (1983) *Manual for the State-Trait Anxiety Inventory.* Palo Alto, CA: Consulting Psychologists Press.

3. Watson, P. & Valentine, E. (1987) The practice of complementary medicine and anxiety levels in a population of musicians. *Journal of the International Society for the Study of Tension in Performance*, 1, no. 4, 25–30.