

THE EFFECTS OF ATTENTION ON MUSIC PERFORMANCE

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AIM

The rationale for this study was born from recent findings in sports psychology. Researchers have shown that focusing externally (on the effect of a movement) over internally (on the movement itself) improves athletic performance, but little investigation has been done to see if this applies to musical environments.

Moreover, it is unclear whether skill levels modulates the extent to which the attentional focus affects ability. This study thus aimed to measure the effect of the attentional focus on the quality of performance and investigate if this changes with skill level.

METHOD

Participants with at least a basic keyboard skill level were asked to learn “Little Prelude in D Minor” BWV 935 (see sheet music below) for 7 days.

On the 8th day they performed the piece three times (sequentially): once with no instruction, once with an external focus of attention (where they were instructed: “while you perform, I want you to focus on the sounds you’re creating”), and once with an internal focus (“while you perform, I want you to focus on the movements of your fingers”).

LITTLE PRELUDE

in D Minor, BWV 935

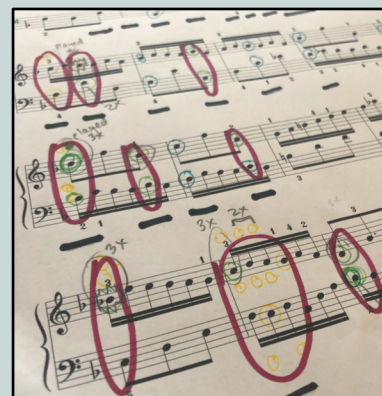
J.S. BACH



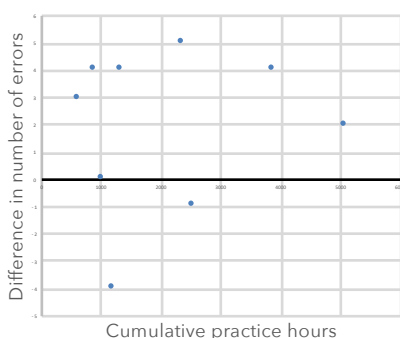
Taken from <http://www.score-on-line.com/>

CODING SYSTEM

The quality of performance was measured by the number of mistakes made. Mistakes were coded as either an “error”, in red, (notes played that interrupted the correct sequence of notes, such as playing the wrong note or repeating the same note two or more times) or a “hesitation”, black, (notes that interrupted the correct timing or rhythm, like pausing before playing a note or playing a note twice). See right for an example of the coding system used.



Graph: skill level and difference in number of errors



RESULTS

When participants adopted an external attentional focus, mean errors and mean hesitations were lower than with an internal focus. Mean errors in the external condition averaged at 8.7 compared to 10.4 in the internal condition. Participants hesitated an average of 8.8 times when focussing externally compared to 10.2 times internally. Despite the difference in means, neither number of errors, $F(1,8)=1.086$, $p=.328$, nor hesitations, $F(1,8)=1.488$, $p=.257$, were significantly lower in the external over internal condition.

A positive but not significant correlation between skill level, measured through cumulative practice hours, and the difference in number of errors was found, $r(9)=0.375$, $p=.320$ (see Graph). There was no correlation between skill level and the difference in number of hesitations, $r(9)=0.059$, $p=.440$.

DISCUSSION

Although in both the case of note and timing errors there were on average fewer mistakes with external over internal attentional foci instructions, this difference did not reach significance and thus does not confirm the hypotheses that an external focus facilitates better musical performance. Similarly, the higher an individual's skill level was, the less the focus of attention affected the number of note errors they made; however, this relationship was not of sufficient strength to conclusively evaluate whether skill level dictates how much the attentional foci changes a player's performance.

In the future, including more participants in the testing would reduce the spread of the data and potentially yield significant results. I would also like to personally thank Lord Laidlaw and the Laidlaw Foundation for this incredible opportunity and for the invaluable support and knowledge I've gained through this experience.



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