Using qi as shorthand to develop an external focus of attention

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Editor's note: Because of the length and complexity of this article was printed in two parts. Part one was printed in the Summer 2003 edition. This is the final part.

In part one of this article (www.ajjf.org/kiaiecho/2003summer) we were discussing whether people learn physical skills faster when they are focusing on how their bodies move or whether they learn faster by focusing on the effects these motions have on the environment and actors around them. We left off with a discussion about relevant research. Shea, Wulf, Whitacre & Park (2002) studied the question of whether learning a complex motor task could occur implicitly, and whether implicit or explicit learning was more effective. We resume the article with their research.

In experiment one, they examined whether implicit learning could be demonstrated for a complex, long-duration motor task in which the participant would have to coordinate his movements with an external stimulus. In this case, participants on a stabilometer were asked to coordinate their movements to a pattern displayed on a screen in front of them. They were not told that the pattern was composed of three segments, and that the middle segment was repeated in each trial. The first and third segments were generated randomly. Participants demonstrated improved skill on the middle section, compared with the two randomly generated sections, even though they had no conscious awareness that the middle section was repeated. In experiment two, participants were told that either the first or third segment would be repeated. In fact, both were repeated and the middle segment was random. Although the initial results from practice trials indicated that the repeated-known segment was learned more rapidly than the repeated-unknown segment, in retention trials, participants performed significantly better on the repeated-unknown segment than on the repeated-known segment.

Wulf, McNevin, & Shea (2001) discuss the attentional issues of an internal versus external focus. They wanted to know if using an external focus required a lesser use of attentional resources than did an internal focus. Participants were divided into two groups. Each group balanced on a stabilometer; however, one group was given an internal focus and the other an external focus. The internal group was told to focus on their feet and keep them horizontal, the external group on marks on the platform, as described in Wulf et al (1998). The reaction time (RT) to each stimulus was noted for each participant as well as their ability to maintain balance on the stabilometer. The external group demonstrated consistently lower reaction time scores in retention tests.

Finally, Wulf, McConnel, Gärtner, & Schwarz (2002) investigated how an internal versus external focus of feedback influences sport skill learning. The first experiment was performed with two groups of novice and two groups of expert volleyball players, demonstrating the volleyball "tennis" serve. Groups were Novice-Internal, Expert-Internal, Novice-External, and Expert-External. Internal groups received internally focused feedback, referring to coordination of body movements and positions. For the external groups, references to specific body movements were avoided, Iinstead, feedback referred to movement effects. For example, the internal groups were told, "Snap your wrist while hitting the ball to produce a forward rotation of the ball," whereas the external groups were told, "Imagine holding a bowl in your hand and cupping the ball with it to produce a forward rotation of the ball." Although the type of feedback did not affect movement quality, the external focus groups did demonstrate significantly greater accuracy on their serves in both practice and retention. In experiment two, the authors investigated whether the results obtained in Wrisberg & Wulf (1997) could be a result of the internal nature of the feedback provided. They theorized that the degradation of performance caused by frequent feedback resulted from that feedback causing the performer to adopt an internal focus. By extension, therefore, externally directed feedback should lack that detrimental effect, and possibly might improve performance by encouraging the participant to maintain an externally directed focus. For experiment two, participants were asked to perform a lofted soccer pass. Participants in this experiment were all experienced soccer players. The feedback statements, as in experiment 1, referred either to the participant's body motions, or to the effects of those motions. Consistent with Wrisberg & Wulf (1997), the internal 33% group demonstrated greater accuracy than the internal 100% group, however neither group was as accurate as the externally directed groups. Although the external 100% feedback group demonstrated slightly greater accuracy than the external 33% group, overall, there was no significant difference between the external 33% and external 100% groups.

Discussion

Wulf et al (2001) and Wulf et al (2002) demonstrate clear advantages in external focus of attention versus an internal focus for learning physical skills. Although some of the internal versus external instructions can appear similar, the external ones described in Wulf et al (2002) appear to create a more vivid mental image of the result. Even with Wulf, Shea, & Whitacre (1998), Shea et al (2000), and Shea et al (2001), which do not directly address the issue of internal versus external foci, a strong case can be made that the experiments, as designed and executed, helped to promote an external focus. In the case of Wulf, Shea, & Whitacre (1998), the use of ski-poles could easily direct the performer's attention away from the movements of his own body and to the poles. Both Wulf & Prinz

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