The impact of perception-action coupling on the development of decision-making skills

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Introduction

Video-based simulations with varying degrees of instruction and feedback have been used to enhance perceptual skill in sport (Williams & Ward, 2003). The dominant cognitive view in expertise research focuses on the knowledge bases that underlie skilled perception. New theories on action planning emphasize a common representational medium in which perceptual contents and action plans are coded (e.g. Hommel, Müsseler, Aschersleben & Prinz, 2001). The impact of action-related processes on the development of decision-making skills has been studied in perceptual training program. Varied degrees of perception-action coupling were used to develop tactical decision making skill in junior soccer players. The aim of this study was to find out whether or not it makes a difference if the players have to respond by button press (perception group) or by kicking a ball (perception-action coupling group) during the training.

Method

N=41 male junior soccer players participated in the experiment (mean age 16.43, SD = 1.01). Video simulations that recreate the attacker’s customary view of a typical “three-against two-player” situations where projected onto a white screen (3.23 m x 2.43 m) in front of the subjects. The video-based test and training programs required the participant to make tactically correct decisions as fast as possible. The participants were split into three groups. During the training sessions (3 x 70 video clips) the subjects of the perception-action coupling group (PAC) had to kick a ball to one of three boxes (see figure 1). The subject of the perception group (PG) had press one of three buttons. The control group did not receive any training between pre-, post- and retention-test. The test was based on 51 video clips in which the participants had to kick a ball to one of three boxes.

Discussion

The results show that the perception-action coupling group did not show a more significant improvement in performance in tactical decision making skills than the perception group (see also Williams, Ward, Smeeton & Allen, 2004). It appears that tactical decision making skills can be improved through perceptual training programs regardless of whether the learner has to respond physically to the action (kicking) or merely gives a perceptual judgment via pressing a button.

References

