Judgements in sport can be classified as a form of knowledge-based decision making reliant upon evaluative and inferential processes derived in part from sensory information (Koehler & Harvey, 2004). When judging a movement or action in a stable and predictable environment, it seems likely that search mechanisms will take advantage of previous knowledge (Oliva et al., 2004). It is assumed that coaches, and judges, who in the case of gymnastics will also be trained coaches, will have similar knowledge regarding performance evaluation, particularly when judging using pre-determined criteria. This knowledge may serve as a source of top-down guidance (Wolfe, 1994), directing vision to the desired locations. Eye movement recordings are used in the sports science literature to study the visual information acquired from a movement pattern. Despite studies investigating eye movements in coaching and judging gymnastics (Moreno et al., 2002; Bard et al., 1980) a comparison of visual search patterns has yet to be explored. It is hypothesised that coaches and coach/judges will produce similar eye movement patterns and scores when viewing 10 vaults.

Coaches (n=7) and coach/judges (n=5) viewed ten hand-spring vaults whilst wearing an ASL 501 eye-tracker. Participants were required to watch each vault and assign a score out of 10. Frame-by-frame analysis (50Hz) of the cross-hair visual data film was conducted using Gamebreaker software. This allowed gaze location by frame for each participant by vault to be recorded. Recorded visual search data included fixation analysis. A fixation was defined as when the eye remained stationary for a period equal to or greater than 120ms.

Mann Whitney U test showed no significant differences between the mean; number of fixations, fixation duration, number of areas fixated on, and score between the coaches and judges.

These results provide evidence, to suggest that coaches and coach/judges produce similar search patterns when judging performance using pre-determined criteria. This has implications for perceptual training and the development of training aids where despite coaches and judges performing separate roles, eye patterns can be trained in order to produce a more effective scan pattern for error detection.


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