

28th ECSS Anniversary Congress, Paris/France, 4-7 July 2023

Learning Basketball Tactics by Imagination: Investigating the effects of Time of Testing and Expertise Level

Mguidich, H.1, Zoudji, B.1, Khacharem, A.1,2

1 LARSH - Laboratoire de Recherche Sociétés & Humanités, Université Polytechnique Hauts-de-France, Valenciennes, France. 2 UFR SESS-STAPS, Paris-East Créteil University, Créteil, France

Introduction

To better communicate tactical instructions in basketball training sessions, coaches verbally present tactical instructions to the players so that they know their role and position on the field. However, due to the complexity and interplay of the game elements, verbal instructions are not always an effective method. Therefore, asking players to imagine while listening to the tactical instructions could be a possible solution to avoid this problem and optimize tactical learning (Khacharem et al., 2020). Thus, the aim of the present study was to examine the effect of imagination on the learning of basketball tactics and to determine whether this effect remains stable over time and in players with different levels of expertise.

Methods

Eighty participants (40 basketball experts and 40 novices) participated in this study and were recruited based on their previous experience with basketball. The learning material consisted of audio recordings on the development of an offensive tactical system. The test consisted of two phases: immediate and delayed. Participants were assigned to one of two conditions, in which they were instructed to either listen and learn the material ("N-I": "No imagination") or listen and imagine the learning material ("I": "Imagination"). Immediately afterward, they rated their mental effort and drew the game system they had learned on a sheet of paper. After one week, they were instructed to draw the same learned material.

Results

In the immediate phase, novices showed lower recall scores and higher investment of cognitive load in the "I" condition compared to the "N-I" condition. However, experts showed higher recall score and lower cognitive load in the "I" condition compared to the "N-I" condition. In the delayed phase, novices and experts benefited more from the "I" condition by achieving higher recall score compared to the "N-I" condition.

Discussion

The findings revealed that for novices in the immediate phase, imagining while listening is not an effective teaching method. Based on cognitive load theory, asking learners who lack of prior knowledge to imagine could overload their working memory and this might result in several mistakes in initial learning. However, in the delayed phase, imagining and investing more cognitive load led to more traces of learning material over time which is explained by the desirable difficulties. For experts, the integration of information in long term memory is easier to them and this is due to their prior knowledge, therefore imagining resulted in retaining more traces of the game elements in the short and long term. Results suggest that coaches need to consider players level of expertise when using imagination.

References

Khacharem, A., Trabelsi, K., Engel, F. A., Sperlich, B., & Kalyuga, S. (2020). The effects of temporal contiguity and expertise on acquisition of tactical movements. *Frontiers in Psychology*, 11, 413.

Topic: Psychology

Presentation: Poster

European Database of Sport Science (EDSS)

Supported by SporTools GmbH



33843