

Development of world-class ski performance: similarities and differences in pathways to expertise for freeskiers and cross-country skiers.

Martine Aalberg¹, Truls Valland Roaas¹, Morten Andreas Aune¹ & Tore Kristian Aune¹

¹Department of Sport Science, Sport and Human Movement Science Research Groups (SaHMS), Nord University, Levanger, Norway.

The background of this study is that expertise in sports is the outcome of a rigorous process that arises from interactions among various sport-specific constraints over time. Cross-country skiing and freeskiing are sports with considerable differences in demands for physical, technical, and motor capabilities and environment constraints for training and competition. Research on pathways to skiing expertise is scarce, and there is no consensus, recipe or conclusive evidence that only one path leads to expertise.

The purpose of the present study was to investigate similarities and differences in pathways to expertise for freeskiers and cross-country skiers. Specifically, the study intended to explore the entrance to sport, training hours, organization and content of training. 18 world-class skiers participated in the study: eight freeskiers (age range 19-37) and ten cross-country skiers (age range 22-32 years). A digital questionnaire was designed to obtain retrospective data describing their pathways to expertise.

The main results of this study showed similarities in athletes' entrance into the sports context, age of starting specialization and the total amount of training time towards expertise. Differences were observed in athletes' training history regarding the organization of training. Whereas cross-country skiers spend 98% of their training specific to their main sport, freeskiers seem more self-organized and more involved in additional activities besides their main sport.

The conclusion of this study is that freeskiers and cross-country skiers share several similarities regarding factors towards expertise. However, the two groups differed in key factors like training content and organization.

Both groups accentuate specificity in training content and harvest from perceived transferable content in different activities, i.e., freeskiers from action sports and cross-country skiers from endurance activities. Future expertise studies could benefit from longitudinal research designs underpinned by a solid connection to its key stakeholders considering the micro-structure of practice content, environmental constraints and individual differences.

