Predicting future performance of Young Icehockeyplayers in Finland

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Introduction:

The study of expertise in sport, along with the identification and development of future elite performers, is a respected area within the sport sciences. Strangely the field of sport-psychology has been widely excluded from this research. Due to the increasing importance of talent identification and development in modern sports (Wilkinson, 1997) and the fact that the established areas of sports sciences like physiology, motor control and biomechanics reach their limitations in this field, sport-psychology suddenly appears to be the logical next step.

Psychological Predictors of Talent

For many years, scientists have attempted to identify key predictors of talent in various sports (Régnier et al., 1993). This research has embraced various sports science disciplines. Sport-psychology was – as mentioned before – not along these disciplines or at least not in successful manner. As a result there is yet no psychological inventory that helps to select players with more or less potential. Nevertheless it is an accepted and widely researched fact that elite and sub-elite athletes differ when it comes to psychological skills, abilities and attributes they possess or use (Morris, 2000; Williams & Reilly, 2000; Williams & Ward 2007). Successful athletes are more committed, self-confident and less prone to anxiety, both prior to and during competition, able to employ various psychological coping strategies effectively, more highly motivated, and better at maintaining concentration during performance than their less successful colleagues (Durand-Bush & Salmela). The problems with psychological profiling for talent identification are obvious: the reported findings differ between the sports and mostly display state interactional variables, which are subject to change. Furthermore researchers do not really know what exact variables of personality they have to look for, the important piece of the puzzle might be left out or the inventory would grow too big to have an actual chance of being applied. Williams and Reilly (2000) claim that experienced coaches and scouts could be the solution to these problems. Still the importance of sport psychological tests in the process of talent identification has been noticed (Hare, 1999). Some authors actually see the psychological factors – in conjunction with technical factors – as better discriminators between more or less potential talents, than physical, physiological and anthropometrical variables (Nordin et al., 2006, Williams & Reilly, 2000; Williams & Ward, 2007).

Problem

The Finish icehockey-federation in Vierumäki invests a great amount of time and money into scouting of young national players. The "Under-15" represents the youngest national team in Finland. Presumingly a player makes it from this team through to the a-national team, he costs the federation a considerable amount of money. If he does not succeed, he costs not only the money but more important he occupies the space another player would have needed, since the experience of one or more years in the national team is extremely important for the players. Therefore the reliable identification of these future elite players permits federation to focus their expenditure on developing a

smaller number of players, resulting in a far more effective management of their resources. At some point of time the finish experts Kari Savolainen and Jesse Welling realized that their physical, technical and tactical tests did not have a sufficient prognostic validity. Nevertheless the experts were confident with their testing, just there were variables they were not measuring yet. As one of the experts said:" I have seen so much players die in their talent". The lacking variables were – unsurprisingly – psychological variables. Against this background the aim of the present study was to close this gap.

Behavioral Scouting

Sticking to the ideas of Williams and Reilly (2000) and Morris (1995) an item pool was generated by interviewing the experienced coaches and scouts of the International Ice Hockey Centre of Excellence (IIHCE) individually for their ideas on important psychological variables for a future elite player. The items were sorted into six dimensions which are

Method

In Pohjola Camp a preselection of the most talented 14-year-old players of the country are put into different teams, play a tournament and complete numerous physical and motor control tests. The best players are chosen to play an all-star game representing the end of the camp. The players were scouted using the behavioural-scouting tool in every game on the ice and on the bench. The experience of previous years showed that it was best not to scout more than three players per scout. Preferably those three players should represent different lines. Due to the limited number of scouts and coaches not all players could be scouted and some could not be scouted in all games. The off-ice-scouting was left out for the same reason.

Offensive with puck, offensive without puck, defense against the puck-carrier, defense against the non-puck-carrier, behavior on bench and behavior of the ice. Each dimension contained between three and five items. Coaches and Scouts did not describe exactly what psychological factor they expected a talent to have, but what kind of behavior they looked out for. The original name of the project "mental-scouting" was therefore changed to "behavioral-scouting". Finally the scouting tool was presented to all experts and slightly modified to be applied during Pohjola Camp (2008), a week of testing in Vierumäki after which the under 15 national team is formed. As a result the behavioral-scouting form was further modified and applied again a year later. In the case that two individuals had exactly the same rating after all other tests the higher score in the behavioral-scouting tool was relevant. In 2010 the tool was used a third time in order to answer the following questions:

Which factors predict if ice hockey players will succeed in being member of the national team? How strong are these factors? How do these factors interact?

To test our hypothesis if a strong behavioral scouting score corresponds with succeeding being member of the national team we applied a structural equation model.

Results

SEM with three Constructs
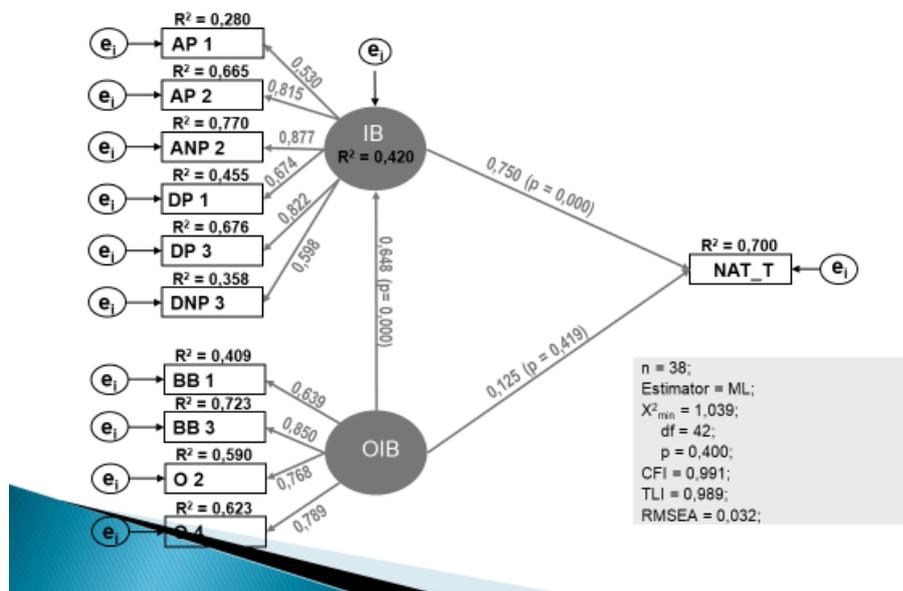
Discussion

It is possible to predict membership of the national team with a valid model. The behavior on bench can be considered a moderator variable within this model. While it has no sufficient effect on membership in the national team, there is a dominant one on behavior on ice, which again has a strong effect on the national team. It must be pointed out that we scoutet a pre-selected population which are on high level of physical performance. Consequently there was a low variance I contrast to the values of the behavioral scouting. That is why the explained variance is extremely high.

Our research during the last five years emerged a considerable prognostic power. Nevertheless further research is needed for both a longitudinal approach and for more diverse teams.