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Scouting technical skills in ice hockey

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Abstract

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The main objective was to create an effective scouting tool to evaluate technical skills of an ice hockey player. The purpose was to provide an useful product for the Northern Hockey Experience Ltd. to be utilized in their services.

A major factor with this project was to clarify the technical skills of ice hockey. In addition, other matters were to determine a skill, scouting in ice hoskey and feedback, without forgetting the evaluation of human performance.

The product includes scouting tool for technical skills in ice hockey and feedback graph for players. For these tools, it is created a proper manual to help the player evaluator to understand the functions of actions.

The project started in February 2012 and was finished in April 2012. It is made for Northern Hockey Experience Ltd. to develop their services in sport business.

Keywords
Ice hockey, skills, technical skills, evaluation, scouting, feedback

Table of contents

1 Introduction

1.1 The project

When a player is skilful both individually and as a team member, he is more capable to play, enjoys more of his hobby, succeeds more often with his performances, succeeds more often as an individual and is more capable to win more often as a team member. (Finnish Ice Hockey Association)

Number of people wonder why Teemu Selänne is still so fast on the skates and how he is able to play in the National Hockey League (NHL) at the age of 41. One reason to this is that he has been recent years in a very good physical condition but also, because of his huge skill level. Night after night he can play large amount of minutes and score goals. His efficient skating style, good shooting skills and the large amount of variations as a puckcarrier make him as good as he still is.

This project was made to implement an evaluation system for the ice hockey players which includes a scouting tool and a feedback form. The scouting tool concentrates on the hockey specific skills and the key elements of each one of them. The feedback form is based on the values of the scouting tool and can be given to a player to show his current capability in different skill areas. These days the game of hockey is so fast that the player should be able to make decisions in a short period of time and in small spaces.

With proper feedback the players can put more focus on the skill development which allows them to become a better player.. In later stages the player is able to make self-evaluation based on the feedback form, which will increase the motivation to develop his skills. The scouting tool can also be modified by changing its contents.

This project was made only for the players but in the future it will be modified also for the goalkeepers. The aim is to help players, regardless of age or level they are playing at.

To make competent observations, the scout has to know what factors are behind the technical skills of ice hockey. The first thing is to understand what is skill, what are the developmental stages of skill and what are the main elements of skills. Another important thing is to understand what is the game of ice hockey. By responding to these two issues the scout is able to define the specific skills which are needed in the game.

By pointing out the key elements of skills, the observer will be able to evaluate them. Efficient and truthful evaluation is based on the scout's appropriate knowledge.

1.2 Northern Hockey Experience Ltd.

The project is made for the Northern Hockey Experience Ltd. which is a private company in the field of sport business. Company will implement the data of this project to its services and operations.

Northern Hockey Experience Ltd. was founded in April, 2011. The company offers player agent services including help for contract negotiations, career planning, player scouting and monitoring the rights of the clients. Furthermore, the company organizes sporting events and provides consulting help for the player development.

This project will increase the company's extensive services. It can be used to provide feedback for current clients but also to evaluate new prospects.

2 Skill

Skills are divided in two developmental stages; to basic skills and to sport specific skills (Savolainen 2009.). Skill is formed in interaction of genetic factors together with nervous system, muscles and psychological factors. All the factors can be influenced with guiding and learning, excluding genetic factors (Finnish Ice Hockey Association 2008.).

Sport specific skills are used for the purpose in changing situations. It enables the athlete to change his technique, and also learn new skills. By developing basic skills, the sport specific skills can also be developed but developing a sport specific skill doesn't necessarily develop basic skills. (Kalaja 2012.)

Skilful person can produce movements in changing circumstances without purposeful thinking of the technical elements of the performance. Movements made with a proper rhythm can be defined as a skill. Making many movements with a proper timing can be defined as a skilful performance. (Savolainen 2009.)

2.1 Development stages of a motoric skill

According to Mattila and Saarinen (2000.) the perfect skill learning occurs through certain stages. Learning of motoric skills is regulated by hierarchical characteristics of the skill. Complicated skills are difficult to learn if the person doesn't control the earlier stages of skill learning (Hiltunen & Huhtinen 2004.).

Learning has also its obstacles. It is important to know that learning the most difficult skills and movements requires time and certain motoric capability. In some movements the low physical attributes and previous training level might cause difficulties. Lack of strength or flexibility may affect to the performance. (Hiltunen & Huhtinen 2004.)

Hiltunen and Huhtinen (2004.) divide development stages into three stages: to gross motor stage, fine motor stage and autonomous stage. This is the most common way to divide the stages.

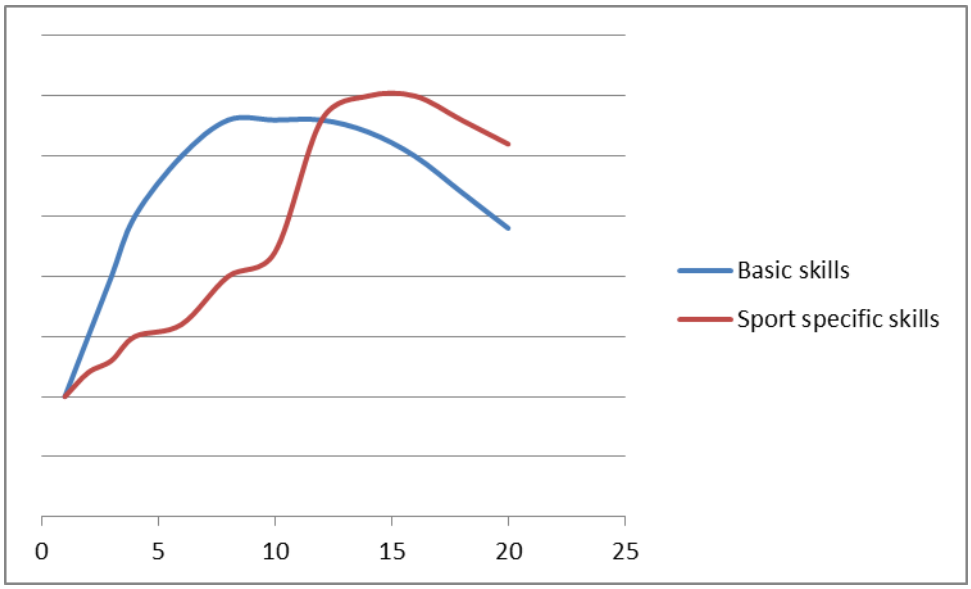

Figure 1. Modified from Mero (1990.) Developmental stages of skill.

Figure 1 describes the developmental stages of skill. Blue and red arrow describe when it is optimal to develop basic skills and sport specific skills. Numbers under the graphic describes age. The picture describes the optimal stages to learn skills. From the picture we can see when to develop basic skills. Around the age of twelve the development of basic skills stabilizes but we are still able to improve sport specific skills.

In gross motor stage an athlete perceives the performance cognitively. Because there is no previous vision of the performance in the brains the skill is forming, meaning that the performance is still taking shape. In this stage it is very important to give as proper example performance as possible, so the athlete can make a right kind of vision of it to his memory. Errors in technique are occasional and the extrinsic feedback should primarily consider on trying and on the effort the athlete is putting in. (Hiltunen & Huhtinen 2004.)

In fine motor stage the athlete can make a clearer vision of the performance. At this stage the type of given feedback is very important. Feedback should be corrective and reinforce the athlete in a positive way. (Hiltunen & Huhtinen 2004.)

During the autonomous stage the athlete can automatize the skills and the proper movements. At this stage the athlete can produce a chain of movements without putting too much effort to thinking the technical details of the skill. (Hiltunen & Huhtinen 2004.)

2.2 Elements of the skill

The elements of the skills are fundamentals for all sporting movements. They allow the athlete to develop sport specific skills. All the elements have to be taken into consideration, because many of them are required when performing a certain chain of movements. (Hiltunen & Huhtinen 2004.)

Orientation is an ability to define body position regarding to time and space together with an ability to combine and modify movements appropriately. It is very important when learning the early phases of new movements. (Hiltunen & Huhtinen 2004.) Example situation in ice hockey: Opposite defender has just tripped the player with the puck but he is still able to make an accurate shot towards the goal (Heiniola 2011.).

Separation is ability to separate the contractions and relaxations of muscles. (Hiltunen & Huhtinen 2004.) Example situation in ice hockey: Forward in front of the opposite goal has tensed legs and mid-body but is still able to keep his hands relaxed for accurate and quick stickhandling (Heiniola 2011.).

Reacting is an ability to react quickly and appropriately to visual-, hearing- or touching stimulus. (Hiltunen & Huhtinen 2004.) Example situation in ice hockey: The puck

bounces back from the goalkeeper and player is immediately ready to shoot it back to the roof of the net (Heiniola 2011.).

Rhythm is an ability to regulate muscular actions regarding to time. Good sense of rhythm helps to make movements correctly and appropriately. (Hiltunen & Huhtinen 2004.)
Example situation in ice hockey: Fluent and accurate wrist shot straight from the skating (Heiniola 2011.).

Balance is an ability to obtain or maintain balance in certain positions or movements (Hiltunen & Huhtinen 2004.). Example situation in ice hockey: The player is able to keep himself playable despite the pushing and hanging of other players (Heiniola 2011.).

Combining is an ability to combine movements to fluent ensembles. This is needed especially in sports where the movements consist of many simultaneous movements (Hiltunen & Huhtinen 2004.). Example situation in ice hockey: The player can make a combination of deking and shooting or combination of skating+deking+shooting (Heiniola 2011.).

Adaptation is an ability to adapt into changing circumstances and observe own and others' movements in environment (Hiltunen & Huhtinen 2004.). Example situation in ice hockey: The player is able to produce an accurate shot in narrow space or he can produce the accurate shot despite poor balance (Heiniola 2011.).

Controlling is an ability to control the movement to exact location and standardize it. (Finnish Ice Hockey Association 2008.) Example situation in ice hockey: Player is able to produce an accurate shot to the top corner of the goal (Heiniola 2011.).

Differentiation is an ability to make differences of the movements between the similar movements. Example situation in ice hockey: The player is able to separate the old and new technique, for example, in skating. (Heiniola 2011.)

Agility is an ability to make quick changes to the directions of body movements. Example situation in ice hockey: The player can change direction quickly in 1 on 1-situations. (Heiniola 2011.)

Anticipation is an ability to utilize the dimension of movement resources. Example situation in ice hockey: The player can score a goal from the rebound. (Heiniola 2011.)

3 Ice hockey as a game

The game of ice hockey consist two major ambitions; to score and to prevent other team from scoring. It has three kinds of situations that determine the course of the game, which are: 1.Loose puck situation when nobody has the control of the puck 2.Offensive situation when our team has the puck and 3.Defensive situation when other team has the puck. (Wahlsten & Molloy 1998, 52-53)

Playing is continuous observation of the environment, cogitation and decision making which is shown as players' performances on the field. Players have to have the ability to understand the game, read the game and make decisions. (Finnish Ice Hockey Association 2008.)

In ice hockey there are four roles that determine the players' objectives inside the game. Rapidly changing game situations force players to react and to change their playing roles from one to another (Wahlsten & Molloy 1998, 52). The game situation roles are: 1.The player who carries the puck 2.The player who supports the puck carrier 3.The player who defends the puck carrier and 4.The player who defends the supporter of the puck carrier (Finnish Ice Hockey Association 2008.).

Playing objectives changes during the game depending on if the team is with the puck or without the puck. Objectives when playing an offensive game are: 1.Scoring 2.Winning a space 3.Making a space 4.Readiness to play defensive game. Objectives in defensive game are: 1.Prevent the opponent from scoring 2.Trying to win the puck for own team 3.Preventing the opponent from winning the space 4.Readiness to play offensive game. (Rautakorpi 2010.)

Figure 2. Modified from the Teaching progression pyramid. (International Ice Hockey Federation 2007.)

Figure 2. represents the main elements of ice hockey. As we can see from the picture, the technical skills are in base of whole process together with physical, cognitive and mental elements. The player has to be able to manage with these factors before he is ready to learn optimally further elements of the game.

4 Hockey specific skills and techniques

In ice hockey the techniques are divided into skating, puckhandling, passing and receiving, and shooting. These elements occur in the game regardless of age or rules that restrict the game. Using proper techniques appropriately in changing game situations are defined as hockey specific skills. (International Ice Hockey Centre of Excellence 2012a.)

4.1 Skating

Skating is the most important skill in ice hockey. Basic elements of good skater are versatility, power, speed and endurance (International Ice Hockey Centre of Excellence 2012c.). Regardless of these physical elements you need to have proper technique to produce efficient skating. The game is all about the speed and the players must have a certain pace, otherwise he is unable to play at the higher levels (Twist 2007, 151). Because of the importance of skating, the scouting tool includes more detailed factors than other hockey skills.

According to Twist (2007, 152) by improving the skating technique you can improve your speed, however, many players have good skating technique at slow speeds and are not able to handle their technique at higher speeds. With proper skating technique the player can last longer and doesn't feel fatigue during the shift he is playing (Kärki 28.3.2012).

To recognize a good skater, the key factors of the skill should be realized. Scouts have to have knowledge how to produce correct movements and to recognize the missing parts of them. According to International Ice Hockey Centre of Excellence (2012c.) the key factors of skating are body position, kick, return of the leg and stride. By ob-

serving these elements we can find out if the player is technically good skater or not, and what are the main areas that need development.

Component	Importance to speed
Proper skating technique	Makes skating most efficient. Facilitates powerful strides. Best use of edges for more production. Better placed return skate to begin next stride. Better use of momentum.
Physical strength	Allows the player to fight through hooks and checks and continue striding. Strong legs are able to support the body in a deep knee position so that the player can execute a longer stride and apply force over a greater distance with each stride. Strong legs allow the player to stay deep with bent knees during high-speed cornering. Without this strength, the player would fall, have to slow down, or have to take a wider turn.
Power	Allows the player to push off each stride and power through a long stride. The player is able to fight through opponents. Selective hypertrophy of fast-twist muscles fibers has several effects. Fast-twitch fibers have rapid contraction velocity and high peak force, which suits on-ice explosiveness, and high stores of creatine and glycogen for a high capacity of anaerobic energy production to fuel speed training.
Quickness	Improves stride frequency and foot speed.
Agility	Allows the player to change direction suddenly to evade an opponent and continue skating.
Deceleration	Allows the skater to load the legs aggressively to corner at high speeds and harness the elastic properties of muscles to accelerate in forward skating.
Flexibility	Improves stride length and permits fluid technique. The player is able to skate fluidly and through a full range of motion.
Anaerobic energy	Fuels short bursts of high-intensity muscle action and delays fa-

	tigue, which can impede good technique.
Aerobic energy	Helps the player recover more quickly between sprinting situations and prepare for more high-speed activity.
Body composition	Low body fat facilitates relative strength and efficient movement.
Neuromuscular conditioning	Increases the player's ability to activate muscles as a high rate.

Figure 3. Modified from the components of high-speed skating (Twist 2007, 152).

From the Figure 3. it can be seen how the elements of skating are distributed. To be an optimal skater the player should have balance with all of these components.

4.1.1 Body position

A proper body position aids player to react to changing game situations and to prepare for choosing the appropriate decision (Tapola 2008.). A good body position includes the player having a look in the game (International Ice Hockey Centre of Excellence 2012d.).

Other elements of good body position are rhythmical forward movements of arms and legs, thigh and shin of the leg that begins the kick having a 90-degree angle and upper body needing to lean forward. (International Ice Hockey Centre of Excellence 2012d.)

4.1.2 Kick and stride

Kick is the phase that pushes a player forward.

Kick phase begins when weight is transferred on the leg that starts the kick. Proper kick is directed diagonally back. During the kick the weight is transferred from the middle of the blade to the toes. (International Ice Hockey Centre of Excellence 2012d.)

In changing game situations the player is not always able to skate technically correct or kick to the efficient direction. To be a fast player on the skates, he needs to have strong legs that keep him upraised and push him powerfully forward. (Twist 2007, 151-154)

During the stride, the body position should be held low. Stride begins with the outer edge in front of the hip line and under the centerline of the body. When the stride proceeds, the weight is first transferred from outer edge to mid edge and then to inner edge. Stride turns into kick in this phase. The direction of the stride is forward and in kick it is diagonally back. (International Ice Hockey Centre of Excellence 2012d.)

4.1.3 Return of the leg

When returning the leg after a kick, the player needs to activate his hip flexors. Skate is brought close to ice in front of the hip line, under the centerline of the body. The first contact after returning occurs with the outer edge. Foot and knee should be on the same line under the body. (International Ice Hockey Centre of Excellence 2012d.)

4.2 Shooting

The player has various options to shoot depending on what the situation is. Accuracy of the shoot is the most important element of the shot. However, the harder the shot is, the less it gives time to goalkeeper for preparation.

4.2.1 Wrist shot

Key elements of the wrist shot are a look at the goal, having hands off the body, having rotation of the mid- and upper body, lower hand first pulling then pushing or smashing, upper hand pulls, and in the end of the movement the wrists and blade turn-

ing towards the goal. Depending on the situation, the weight transfer occurs from the leg of lower hand's side to the leg of the upper hand's side or vice versa. (International Ice Hockey Centre of Excellence 2012g.)

Wrist shot can be made with three different variations; 1. Shot begins from behind the body and puck is onto blade all the time during the movement. In this variation the separate pulling and pushing phases with wrists are emphasized. 2. Shot begins behind the body but now the puck separates from the blade for a moment and the player snaps it forward. This version is called as a snap shot. 3. Shot begins from the front of the body. Use of the wrists is crucial. (International Ice Hockey Centre of Excellence 2012g.)

Wrist shot has two different styles. Depending on the game situation the player can choose how to make a shot towards the goal. A good player can produce both styles in fast situations. Both styles include weight transfer from other side of the body to another. In the first version the player transfers his weight from the leg of lower hand's side to the leg of upper hand's side. In another version the player transfers his weight from the leg of upper hand's side to the leg of lower hand's side. (Kärki 28.3.2012)

In scouting the concentration is on weight transfers to both sides, accuracy and efficiency. Wrist shot is the most used shot in the game of hockey because it is quick to make and it can be done in small spaces.

4.2.2 Slap shot

Key factors of slap shot are looking towards the goal, having hands off the body, lower hand pushing – upper hand pulling, weight transferring from the leg of lower hand's side to the leg of upper hand's side, and blade and wrists turning towards the goal. (International Ice Hockey Centre of Excellence 2012g.)

In scouting the concentration is on readiness to play after the shot, weight transfer, accuracy and the efficiency of the shot. Slap shot needs more time and space to be performed than a wrist shot but normally it is a much harder shot than the wrist shot.

4.2.3 One timer

One timer is a shot which is produced with only one touch after receiving the pass. The key elements of the one timer are looking towards the goal, making an immediate shot after the receiving, producing fluent movement of the whole body and weight transferrin towards the same direction where the puck goes. (International Ice Hockey Centre of Excellence 2012g.)

When scouting the one timer, the concentration is on weight transfer, readiness to play after the shot, accuracy and efficiency. One-time shot can be made by wrist shot, snap shot or by a slap shot and very rarely with backhand side. It is difficult for the goalkeeper because there is less time to prepare for the shot than normally.

4.2.4 Backhand shot

The key elements of backhand shot are looking towards the goal, having hands off the body, having mid- and upper body rotation, pulling and pushing with both hands, weight transferring depending on the situation, and blade and wrists turning towards the goal. (International Ice Hockey Centre of Excellence 2012g.)

Backhand shot is usually made after protecting the puck to surprise the opponent players and goalkeeper. It is difficult to put power on backhand shot but it can be very effective close to the goal. In scouting the concentration is on readiness to play after the shot, body rotation, accuracy and efficiency.

4.3 Passing

Without good passing and receiving skills it is very hard to play attacking game in ice hockey. Players have to be able to pass and receive in fast movements and read the game so he can decide which type of pass is the best in certain situations. By knowing proper techniques of various passing styles and receiving methods, the player has better capability to produce successful actions. To become a good passer is mostly dependent on training but also attitude-dependent.

Key factors of passing are looking at the receiver, having elbows off the body, having mid- and upper body rotation, lower hand pulling – then pushing, upper hand pulls, wrists and blade turning towards the receiver. (International Ice Hockey Centre of Excellence 2012e.)

In the game situation the puck carrier has to be able to see the game and the puck at the same time, this provides him to make proper decisions. Good passer can produce hard and accurate passes, hide his decisions, use both; forehand- and backhand passes, and pass during the skating movement and continue skating after the pass. (International Ice Hockey Centre of Excellence 2012e.)

4.3.1 Forehand pass

Forehand passing has two different variations: wrist pass and snap pass. Snap pass is quicker to make but wrist shot can be more powerful and accurate. According to International Ice Hockey Centre of Excellence (2012f.) passing during skating movement includes weight transfer from a leg of lower-hand's side to the leg of upper-hand's side and skating should continue after the passing.

In scouting situation the concentration is on four elements: does the game continue after the pass, can the passer hide his decisions and is the player able to give hard and accurate passes. (Kärki 28.3.2012)

4.3.2 Backhand pass

Good backhand passing skill provides more variations for a single player to play attacking game. Backhand pass is often much slower than any types of forehand passes but the skillful player can pass from both sides quickly and hard. According to Kärki (28.3.2012) the concentration of scouting includes the same kind of elements than in forehand pass; does the game continue after the pass, can the passer hide his decisions and is the player able to give hard and accurate passes. To put more power to the pass, the player makes the weight transfer from a leg of upper hand's side to a leg of the lower hand's side (International Ice Hockey Centre of Excellence 2012f.).

4.4 Receiving

To receive the passes effectively, it requires the abilities to see the puck and using the blade to show where the player wants the pass. Arms are relaxed and apart from the other body, mid- and upper-body rotates, and blade is rotated on the puck with the wrist-movement. These combined together are the key factors of efficient receiving. (International Ice Hockey Centre of Excellence 2012e.)

Depending on the game situation the player has to know what is going on around him. The player should follow the game and the puck alternately, keep the blade on the ice and show where he wants the pass, be aware of timing when showing the pass to come, be ready to receive the pass with both sides of the blade and to be able to receive the pass from skating and continue skating after receiving. (International Ice Hockey Centre of Excellence 2012f.)

4.4.1 Forehand receive

Forehand receive is the easiest way for the player to catch the pass. According to Kärki (28.3.2012) the elements of good forehand pass consist of four main objectives: does the game continue after the receive, is the player ready to play after receiving, can he

receive hard pass and can the player find free place where the puck is possible pass. Other observed elements are the ability to produce one touch pass and if the player is capable to receive bad passes.

4.4.2 Backhand receive

Good backhand receive include the same elements than the forehand receive. Can the game continue after receive, is the player ready to play after receive, can he catch the hard pass and can he take himself to a free space where the puck can be passed. (Kärki 28.3.2012)

An effective way to receive a hard pass from the backhand side is to keep the stick in one hand. In this variation the blade is placed in front of the body and touches the ice. Arm is relaxed but the wrist is tight and the puck will stop as itself. (International Ice Hockey Centre of Excellence 2012f.)

4.5 Puckhandling

Good puckhandling skills allow the player to deke and cover the puck in difficult game situations. Better the player can handle the puck, more time he has to observe the game situations and more time he has to make his decisions. To become a very good player you need to have the ability to control the puck in fast skating.

The key elements of good puckhandling are a touch to the puck, a rhythm of the legs and the arms, a range of motion and the observing of the game. (International Ice Hockey Centre of Excellence 2012b.)

4.5.1 Touch to the puck

Using different parts of the blade, using the wrists to control the motion and keeping the hands apart from the body are the key factors of the ability to touch the puck properly. (International Ice Hockey Centre of Excellence 2012b.)

4.5.2 Rhythm of legs and arms

The key factors in proper rhythm of legs and arms are weight transfers to the puck's side and to the opposite side of the puck, fast hands and slow legs – slow hands and fast legs, setting the pace of skating and puckhandling, and deking. (International Ice Hockey Centre of Excellence 2012b.)

4.5.3 Range of motion

Key factors in range of motion are various movements to both sides and front and back, upper-body rotation to different directions, using the upper- and lower hands, and weight transfers made by legs and body. (International Ice Hockey Centre of Excellence 2012b.)

4.5.4 Observing the game

Key factors of observing the game are; the ability to see both the puck and what is happening around you, and the readiness to shoot, pass or deke. The player has to recognize where the puck should be located in the blade when making the decision. (International Ice Hockey Centre of Excellence 2012b.)

5 Scouting

Mattila and Saarinen (2000.) define observing to actions where the teacher or the learner monitors another person's actions without interfering either systematically or without restraint. Systematical observing is based on well planned scheme and the observer himself is not participating in the teaching session.

According to Holtari (2007.) the objective of scouting is to find talents in- and outside of the club, to give feedback and to develop the players. Before scouting, the observer has to be able to define what areas of the performance he is observing, and has to have an ability to analyze them. Analyzing can be either methodological skill- and game analyze or hierarchical skill- and game analyze. Methodological skill-analyze means defining different phases of skill. In hierarchical skill-analyze the skill phases are defined in hierarchical order so that the overall performance requires are optimal (Mattila & Saarinen 2000.).

Understanding the game of ice hockey is crucial for the scout. Being truly interested in the game is just one of the characters what makes the scout competent. Good scout has to be able to define good hockey before he can define a good hockey player. (Holtari 2007.)

5.1 Scouting in practices and games

Choosing a location where to scout is a key factor. Holtari (2007.) mentions that it would be good if the player was scouted in as demanding place as possible but he also states that the amount of the repetition is crucial.

In games the environment is more demanding but in practices the player gets much more repetitions. In games the scouting information is dependent on the ice time of the player. Playing style and hockey sense are significant when scouting technical attributes of puck handling, shooting, passing and receiving.

According to Twist (2007, 167), the observer should have no more than six players at a time to coach effectively. This method can be used also when scouting the hockey specific skills on the ice. Observer can simplify his scouting by learning the objectives and contents with skill analysis before the scouting. Then he can concentrate more on the observing during the scouting session (Mattila & Saarinen 2000.).

5.2 Using video as a scouting tool

Observing in games and practices does not always give enough information of the player's performance and techniques. In some cases it might provide even wrong information for the observer if he sees the movements from the wrong aspect or too quickly and negligently. According to Mattila and Saarinen (2000.), this kind of situation is called as "an eye of error".

Observing the performances from video allows reviewing, repeating or pausing the picture, so the feedback can be relevant. If relevant feedback is not given in the early phase of learning process it provides the player to practice and repeat wrong techniques (Mattila & Saarinen 2000.). Incorrectly learned techniques can be very difficult to change if the athlete has done them too long.

For the observer it is crucial to know the correct techniques and especially the key factors of the technical skills, before he can give relevant feedback of the performance. It also requires the knowledge of mechanics, biomechanics, motion, velocity, power consumption and use of force during the different phases of a movement. Personal attributes and timing together with all the circumstances have to be taken into consideration. To put it briefly, the observer should have the ability to see the errors of the performances (Mattila & Saarinen 2000.). Prerequisites for the effective use of video are good facilities and good organization of shooting.

6 Evaluation

Evaluation is defined as a decision making process where quality, goodness, merit, value, or worthiness is measured. Evaluation is valuable if the results somehow are referenced in the data. (Morrow etc. 1995, 4-5)

Evaluative decisions are based either on norm-referenced standard or criterion-referenced standard. In norm-referenced standard the results of the evaluations are compared with the others. In criterion-referenced standard the result is not compared to other's performances but to the given standard or criterion. (Morrow etc. 1995, 4-5)

Evaluation has two formative and summative perspectives. Formative evaluation occurs during the training program when summative evaluation is made at the end of the training period. (Morrow etc. 1995, 6)

6.1 Grading

Grading is an effective way to evaluate people. According to Morrow etc. (1995, 124) the grades are some sort of degree of subjectivity and each grade represents some information of the performance which is related to the assessor's marking system.

Criterion-referenced evaluation is used when scouting technical skills to provide a feedback for the player. This is based on the Morrow's etc. (1995, 126) statement that criterion-referenced evaluation is based on the data from the experts or from the studies.

The process of grading in physical education includes three domains of potential objectives; the psychomotor domain, the cognitive domain and the affective domain. Psychomotor domain refers to physical performance, the cognitive domain refers to mental performance and the affective domain refers to attitudes and psychological behaviors. (Morrow etc. 1995.)

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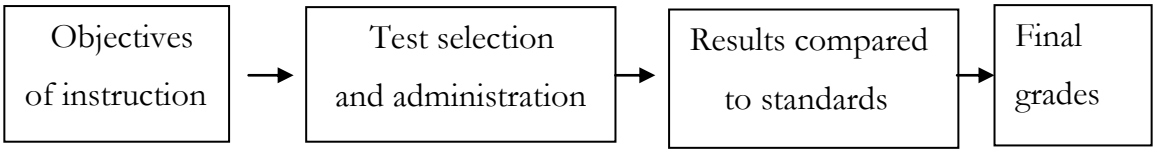

Figure 4. Modified from Morrow etc. (1995, 127). Picture describes the grading process

When determining the instructional objectives, three criteria should be taken into account: 1. Defensible objective, 2. every patient has equal chance to show his skills, 3. the objective should be measured objectively, reliably, relevantly, and validly. (Morrow etc. 1995, 127)

6.2 Rating

Appropriate rating system should be subjective and relevant. Morrow etc. (1995, 286) states that the subjective rating is a value that is to describe the level of a skill or a performance which is given by an observer.

Verducci (1980, Morrow etc. 1995, 287) presents two types of rating scales: relative scales and absolute scales. Relative scales are used with the norm-referenced approach and are mainly used to compare the people within the group. Absolute rating provides data for the performer of his performance related to the standards. Absolute scales can be numerical, descriptive, graphical or checklists. Hensley (1989, Morrow etc. 1995, 288) provides the numerical scale which is rated from one to five. With the checklist the assessor can easily check when each skill is completed or not completed. The checklist can also be used as one part of the feedback for the athlete to show which areas need the most practice. (Morrow etc. 1995, 287-288)

6.3 Issues of the evaluation system

Evaluation based on the scouting has its issues. Scouting skills by observing technical factors are based on someone's opinion about the performance.

Another issue is the amount of the key factors the scout can see. According to Holtari (2007.) it is more dangerous to collect only a little information than no information at all. To get wrong kind of data leads to bad decisions and to wrong kind of feedback.

Evaluating the athlete's personal skills in game situations provides issues. It may be that in a game the evaluated person may only touch the game instrument a couple of times or is performing only for a little while on the field. In the next game or competition the same player may perform otherwise. (Morrow etc. 1995, 286)

Typical errors with the rating system are a halo effect, where the assessor might compare the result of an athlete to his previous performances, and a standard error, where three assessors assess the rates and one of them is giving completely different rates than two of his colleagues. The third typical error is defined as a central-tendency error where the assessor chooses to give only rates from the middle of the scale and does not dare to give rates from the extremities. (Morrow etc. 1995, 289)

7 Feedback

The athlete needs feedback according to his performances. The feedback can be divided in two categories, extrinsic and intrinsic. Extrinsic feedback is given by another person than the athlete. Intrinsic feedback occurs when the athlete himself perceives his own performance. Feedback is given to motivate and to reinforce the player to further performances. (Hiltunen & Huhtinen 2004.)

Feedback linked to a performance can be either motivational or instructional. The instructional feedback indicates proper techniques, the current skill level of the player and the levels that should be achieved. Providing performance feedback has effective consequences to enhance the performances. Breaking down the skills into key factors, the specific information of the right techniques can be then given and this helps the player to learn proper movements effectively. (Weinberg & Gould 2007, 132)

Using graphs as a feedback is a simple way to indicate the strengths and weaknesses of the athlete. Graphs should be clear and detailed information about the performance. The athletes are eager to realize the errors of the techniques and how the correct performances should be done. A clear display of the graph also shows the current skill level of the athlete which is very important when designing a training program for the athlete (Weinberg & Gould 2007, 137- 138). According to Hiltunen & Huhtinen (2004.) the feedback can also be given in written format. Specific feedback and detailed requirements of the performance should be provided for the athlete to help the athlete to develop with the certain areas of skills.

7.1 Extrinsic feedback

When giving an extrinsic feedback, it should concentrate on the performance, not on the outcome. The objective of given feedback should be to get the learner's focus on the key factors of performances. Learners' age, skill level and current knowledge determines how and what kind of feedback is to be given. (Mattila & Saarinen 2000.)

According to Mattila & Saarinen (2000.) the properly given feedback enhances motivation, gives information about the errors of the performance and reinforces the correct factors of the performance.

7.2 Intrinsic feedback

The main objective of feedback is to get players themselves to recognize the errors and key factors of the performances. When the player himself can perceive his own acts, it is called intrinsic feedback (Weinberg & Gould 2007, 128). In terms of learning skills the most effective way is to reach a level where the feedback mostly comes from the player himself (Hiltunen & Huhtinen 2004.).

7.3 Using video as a feedback

Using a video is an effective way to give feedback according to players' performances. A video can be used to help and speed up the learning process of the athlete. An athlete learns best through seeing, hearing, understanding and feeling and with appropriate use of a video the learning process can be quickened. The outcome of the performance depends on the athlete's ability, and on the vision the athlete obtains of the appropriate movements, and how soon he can get proper feedback. Athlete's ability to understand cognitively the proper techniques of the movements or performances affect to the outcome, too. (Mattila & Saarinen 2000.)

Video-feedback outside the practice or game session is intended to give proper information of the performances and its details. The main purpose of this method should be in the analysis of techniques or tactics. If the athlete understands the preconditions of the execution, it assists for to good ideomotor and mental training, which enhances the internalization of the performance and quickens the automation of it. (Mattila & Saarinen 2000.)

8 Empirical part

8.1 Project planning

The main idea of this project was to create a practical scouting system for an individual ice hockey player. Planning started with discussions of what skills and attributes should be evaluated and what elements makes a good hockey player. The first idea was to create test patterns on the ice and off-ice but the best approach for us was the ability to evaluate players by scouting. If the player evaluation could be done by scouting, it would help our development as a coach and as a scout to see the hidden elements of the game better.

Several discussions with the Senior Lecturer of Degree Programme, Kari Savolainen, gave us an aspect to create a chart of strengths that gives an appropriate picture of the player's capability. To build up an easy-to-read graphic that can be provided for the player could be an effective feedback, as well as a tool to follow his development.

The next step was to decide what kind of elements we want to evaluate. First discussions led us to create the system for technical skills, tactical skills, mental skills and for physical skills, but after collecting some theory from each section we decided to mark out some of the skill areas. Technical skills were finally the subject we wanted to study.

The scouting tool and feedback graph are meant to be used in Northern Hockey Experience Ltd.'s business services but also to help ourselves to understand better the game of ice hockey.

8.2 Project implementation

When it was decided that the subject will only consider technical skills, we started to gather information from the internet and books. We limited the skills into four main categories: to skating, puckhandling, passing and receiving, and shooting. In North

America they count body checking as one major technical skill but we did not consider it to be important for the project.

When the technical skills were found, we had to find out what are the key factors and main elements of these skills. In other words, to find out what are the elements of a good skater or a good shooter. The objective was to build a detailed package of information so the scouting would be comprehensive and defensible, which makes the feedback truthful. We got respectful guidance from the skills expert Tuomo Kärki from International Ice Hockey Centre of Excellence, who led our thoughts to the right direction and gave us valuable examples of grading and evaluation. Kärki helped us to understand what elements could be scouted and what not.

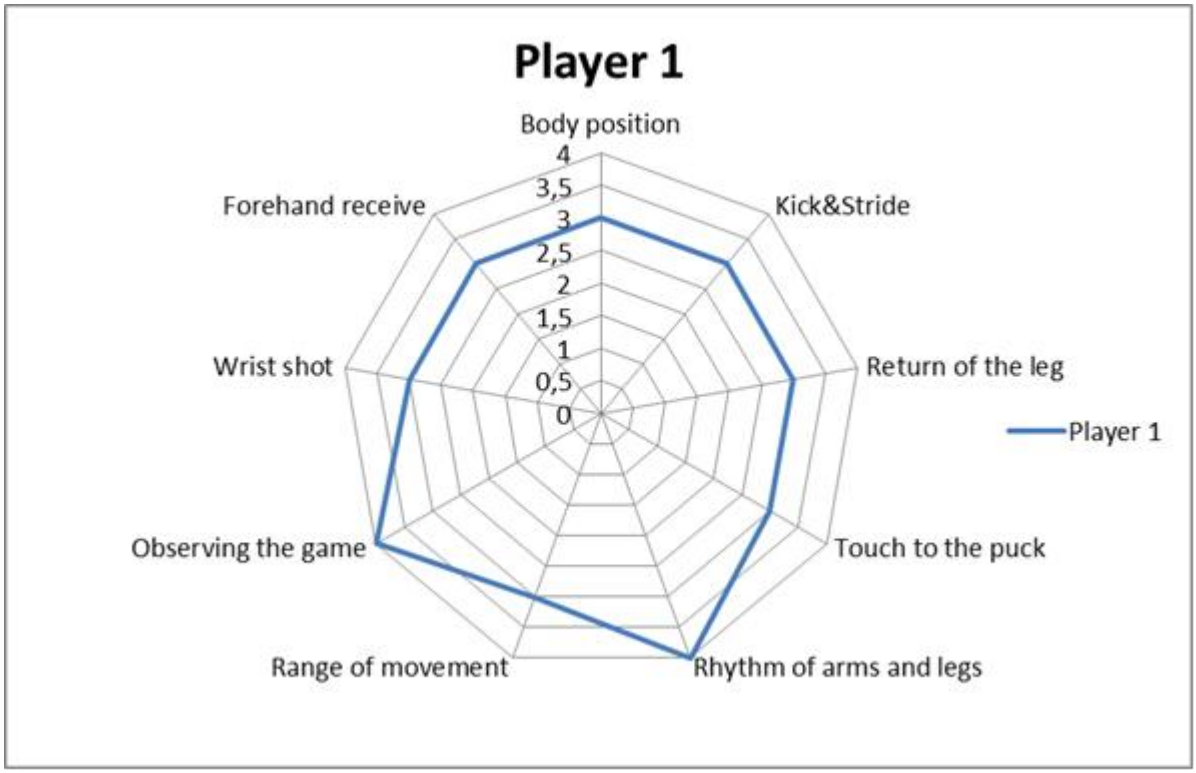

Figure5. The player evaluation graph

Figure 5 displays a very good method to use graphs as an extrinsic feedback. Easy to read and understandable form tells the athlete about his strengths and weaknesses.

This particular graph can be applied to analyze personal skill level of the ice hockey player by changing the contents of the graph.

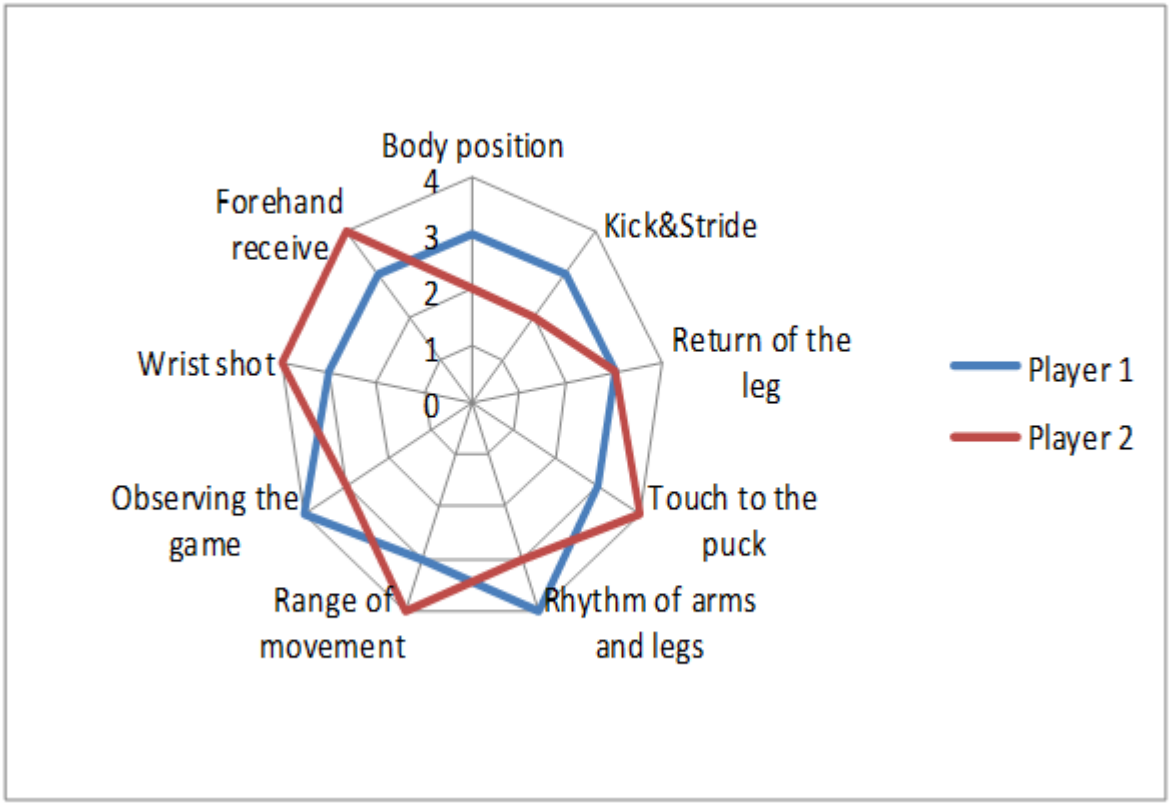

Figure 6. Comparison in the player evaluation graph

Figure 6 displays how to compare the results of the player when the evaluation has been made more than once. It can also be used to compare differences of players.

When the layout of scouting tool and feedback graph was ready, we tested it with three 13 to14-year-old players in a game. The experiment gave us views how it works in a practical manner. When doing a project we didn't have any specific age groups in mind because we wanted it to be useful for everyone.

Collecting the data from the lecture materials, books, internet and interviews clarified the big picture of the project. The theory part started with thinking of the contents of the whole project, which led us to find information more deeply about the human

skills and the game of ice hockey. Together these factors would make us understand better the hockey specific skills.

The scouting and evaluation system was developed together with Kärki. The evaluation system got its final form after combining his suggestions and data from literacy. Simple and easy-to-read graph based on the scouted elements were the main objective of this project. To support the scouting tool and feedback system we implement a manual for how to use and interpret the tools. The manual includes also the technical skill of ice hockey and some useful tips for the scout.

8.3 Project assessment

The project has two major parts: the scouting tool and the feedback graph. In scouting tool the key factors of each skill are divided to help the scout in his work. The key factors of skills are the ones which are evaluated and the main elements of each factor are only for the scout to make his notes. The tool can also be modified for other scouting objectives by changing the elements inside the tool.

The feedback graph displays the strengths and weaknesses of the player. The scouting tool together with feedback graph will be used in the future in the services of Northern Hockey Experience Ltd.

9 Summary and discussion

The purpose of this project was to create a scouting tool, which can be used to provide feedback of technical skill for ice hockey players. From our point of view the individual's amount of technical skills is the most important single factor when talking about a good player.

The biggest challenge for us was to find out what elements should be scouted and how we can see them in game- or practice-situations. After collecting the data and theory, we believe that the scouting tool and feedback method can be implemented for all practical purposes among ice hockey by changing its contents. We have now better prerequisite to evaluate players and to give them more detailed feedback according to their technical skills.

The data for the project was relatively easy to find, because a lot of literature has been produced regarding to the most topics we worked with. An only topic where we had difficulties to find a proper theory was scouting. Some general guidelines have been made for it but not any comprehensive sources of information. For future studies we would recommend someone to make an extensive project according to scouting. It would be interesting to see if the results of scouting and appropriate test results could somehow be compared.

The easiest part of this project was to design the feedback graph of strengths. From the beginning of the project we had a clear vision how it should look like, which helped our work a lot. To provide an easy-to-read feedback for a player allows him to understand better the areas that need to be trained the most and the elements he is good at.

During the project we noticed the importance of using a video as a scouting tool. Rapidly changing situations during the game does not support our work. From the video it

is lot easier to see the proper executions and review the missing parts all over again. Another issue with the project came up when we scouted different player types during the game. We were not able to gather complete data from each player because of their personal manners and individual tactics. For example, one player did not shoot even though he had plenty of chances to do that. The other player had the same kind of manners with passing. We solved the problem by listing the skills together we were not able to see and showed it to the players with the feedback graph. Although the idea to scout all the technical skills is very attractive, it is not possible. All the factors and elements cannot be seen from the stands, because it requires someone to videotape the performances from the same level than the player stands. The analysis should be based on the video after going it through several times.

The planning and writing this project was very educational for us. It made us think the game deeper and further. We now understand how comprehensive ice hockey is as a game because it requires so much from the players to succeed. The result of our conclusions is that the game of ice hockey is a skill sport.

The information this project provided will be used in Northern Hockey Experience Ltd.'s services. We hope that something new in the sport business can be built on it. The data and the theory of this project can be used when evaluating skills but also when teaching the proper techniques of skills to the players. All the necessary information we got during this project can be found from the manual, which can also be developed into further operations.

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Jääkiekon lajitaitojen tarkkaileminen ja arvioiminen

Tuukka Räihä & Akseli Aalto

2012

Sisällys

1. Johdanto

Suomen Jääkiekkoliitto määrittelee pelaajan, joka on taitava sekä yksilö- että joukkuetasolla, olevan kykenevä pelaamaan, nauttivan pelistä enemmän, menestyvän useammin suorituksissaan yksilönä ja antavan mahdollisuuden voittaa useammin joukkueen mukana.

Jääkiekko on laji, joka vaatii pelaajilta eri ominaisuuksien hyödyntämistä nopeasti vaihtuvissa pelitilanteissa. Pelaajan tulee olla fyysisesti vahva, nopea ja kestävä sekä taidokas, jotta pelin asettamat rajoitukset eivät haittaisi pelaamista. Kaiken fyysisen osaamisen lisäksi tarvitaan henkistä kanttia ja kykyä käsitellä asioita ja reagoida niihin.

Jääkiekkoilijan taito on kykyä tuottaa pelin sisällä suorituksia, joista on hyötyä itselle ja sitä myötä myös omalle joukkueelle. Taitava suoritus on kykyä yhdistää liikkeitä nopeasti ja sulavasti ilman ylimääräistä keskittymistä sen tuottamiseen.

Tämä manuaali sisältöineen on luotu auttamaan Northern Hockey Experience Oy:tä ja sen valtuuttamia henkilöitä tarkkailemaan ja arvioimaan jääkiekkoilijoiden lajitaitoja. Manuaalin sisältö on kerätty taitavien pelaajien innoittamana ja sen tuotos on tuleva auttamaan yksilöitä heidän tarpeissaan.

2. Jääkiekon lajitaidot

Jääkiekon lajitaitoja ovat *luistelu, kiekonkäsittely, laukominen, syöttäminen ja syötön vastaanottaminen*. Luistelu on taidoista tärkein koska se on välttämätön kaikelle liikkumiselle pelin sisällä ja tukee muiden lajitaitojen suorittamista. Taitava pelaaja on kykenevä tuottamaan monipuolisia ratkaisuja luistelun aikana ja kovassa vauhdissa.

Alla on jaoteltuina lajitaitojen eri elementit ja niiden laatutekijät. Elementit ovat niitä seikkoja yksittäisen lajitaidon sisällä, mitkä pyritään tarkkailemalla arvioimaan. Niiden alapuolella olevat laatutekijät auttavat tarkkailijaa selvittämään jokaisen elementin ydinkohdat.

Luistelu

Luistelun kolme elementtiä (vaihetta) ovat *asento, potku ja liuku*, ja *jalan palautus*.

Luistelun laatutekijät:

Asento	Potku ja liuku	Jalan palautus
Katse ylhäällä pelissä	Painonsiirto potkujalan päälle ulkosyrjälle	Luistin palautuu potkun jälkeen vartalon keskilinjan alle
Käsien liike eteen - taakse	Pakara puristaa potkun sivulle	Luistin palautuu hieman vartalon etupuolelle
Potkujalan kulma 90 astetta	Lantio ja polvi ojentuvat	Ensikontakti jäähän palautuksen jälkeen tapahtuu ulkoterällä
Ylävartalon voimakas etunoja	Vartalon painopiste alhaalla	Lantio, polvi ja jalkaterä samassa linjassa vartalon alla

Kiekonkäsittely

Kiekonkäsittelyn elementit ovat *kosketus kiekkoon, käsien ja jalkojen rytmi, liikelaajuudet* sekä *pelin havainnoiminen*.

Kiekonkäsittelyn laatutekijät:

Kosketus kiekkoon	Käsien ja jalkojen rytmi	Liikelaajuudet	Pelin havainnoiminen
Rystyn ja kämmenen käyttäminen	Luistelun ja kiekonkäsittelyn yhdistäminen	Ylävartalon rotaatio eri suuntiin	Katse pelissä mutta näkee kiekon
Kädet irti vartalosta	Harhautuksien monipuolisuus	Ylä- ja alakäden käyttö	Valmius tuottaa ratkaisuja
Ranteiden käyttö		Painonsiirrot jaloilla ja vartalolla	

Syöttäminen ja syötön vastaanottaminen

Syötön elementit ovat *kämmen- ja rystysyöttö* – vastaanotossa vastaavasti *kämmen- ja rystyvastaanotto*.

Syöttämisen ja syötön vastaanoton laatutekijät:

Kämmen syöttö	Rystysyöttö	Kämmenvastaanotto	Rystyvastaanotto
Jatkuuko peli syötön jälkeen?	Jatkuuko peli syötön jälkeen?	Jatkuuko peli syötön vastaanoton jälkeen?	Jatkuuko peli syötön vastaanoton jälkeen?
Osaa peittää syötön – arvaamattomuus	Osaa peittää syötön – arvaamattomuus	Viiveettömyys vastaanotossa – on valmiina pelaamaan vastaanoton jälkeen	Viiveettömyys vastaanotossa – on valmiina pelaamaan vastaanoton jälkeen
Kykenee syöttämään kovaa	Kykenee syöttämään kovaa	Kykenee ottamaan kovan syötön haltuun	Kykenee ottamaan kovan syötön haltuun
Syötön tarkkuus	Syötön tarkkuus	Tarjoaa itsensä vapaaksi syöttöä varten	Tarjoaa itsensä vapaaksi syöttöä varten

Laukominen

Laukomisen elementtejä ovat *veto- ja rannelaukaus, lyöntilaukaus, suoraan syötöstä laukaus ja rystylaukaus.*

Laukomisen laatutekijät:

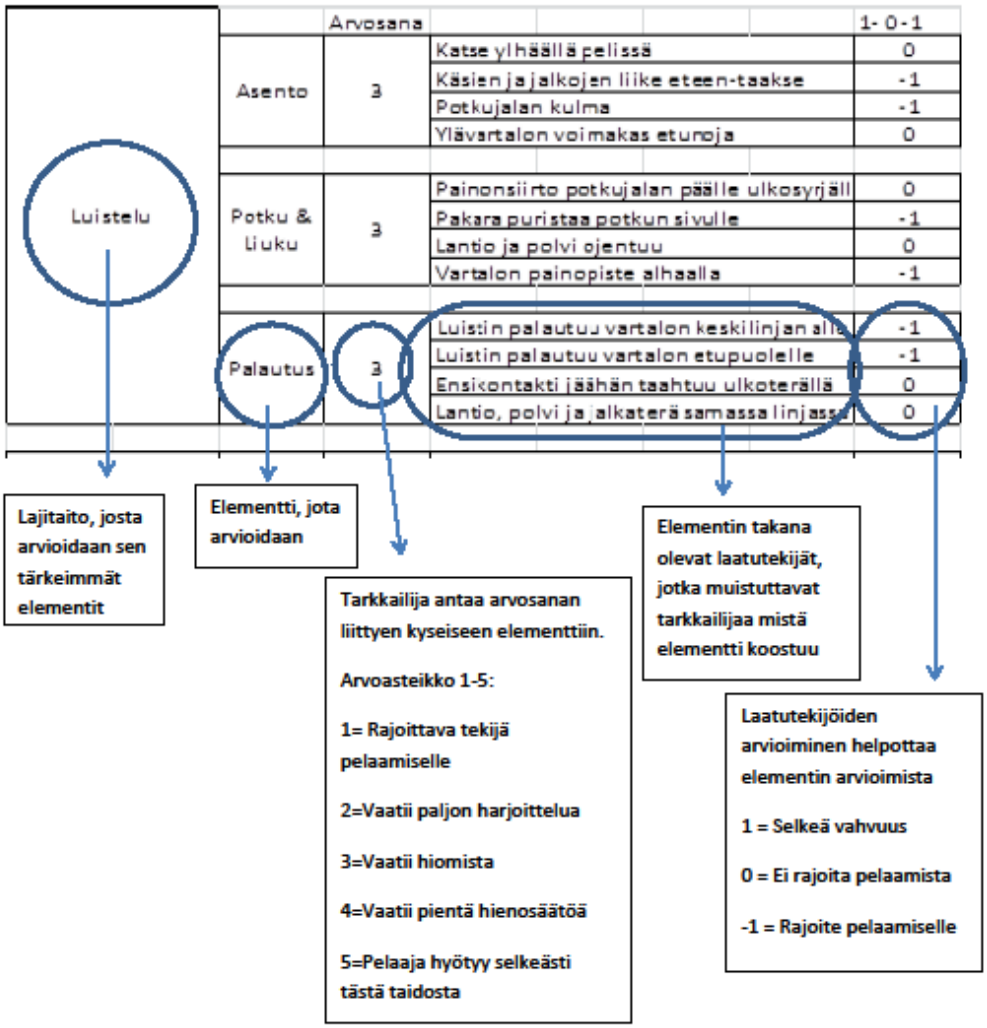
Veto-/rannelaukaus	Lyöntilaukaus	Laukaus syötöstä	Rystylaukaus
Painonsiirto yläkäden jalalta alakäden jalalle	Pelivalmius laukauksen jälkeen	Painonsiirto laukauksen suuntaan	Pelivalmius laukauksen jälkeen
Painonsiirto alakäden jalalta yläkäden jalalle	Painonsiirto alakäden jalalta yläkäden jalalle	Pelivalmius laukauksen jälkeen	Vartalon kierto
Laukauksen kohdentaminen – saatto, katse	Kohdentaminen – saatto, katse	Kohdentaminen – saatto, katse	Kohdentaminen – saatto, katse
Laukauksen tehokkuus - voima	Tehokkuus - voima	Tehokkuus - voima	Tehokkuus - voima

3. Pelaajatarkkailu

Pelaajatarkkailijalta vaaditaan erinomaista lajintuntemusta ja kykyä nähdä asioita pelin sisällä. Tarkkailun avulla voidaan arvioida pelaajan kykyjä, auttaa valmentajaa saamaan konkreettisen kuvan pelaajan suorituksista tai auttaa pelaajaa saamaan palautetta kehittyäkseen.

Pelaajatarkkailussa käytetään erillistä lomaketta, johon tehdään tarkkailun aikana merkintöjä pelaajan kyvyistä. Arviointilomake sisältää jokaisen lajitaidon elementit, jotka tarkkailija arvioi asteikolla 1-5. Jokaisen elementin takana ovat tiedot laatutekijöistä, jotka auttavat tarkkailijaa muistamaan mistä kukin elementti koostuu. Laatutekijät voidaan arvioida myös, jotta arvosanaa antaessa olisi selkeä käsitys arvioitavan taidoista.

Alla olevasta kuvasta voidaan havainnoida kuinka lomaketta tulee tulkita ja täyttää.



Ohjeet tarkkailutyökalun käyttöön

1. Tarkkaile laatutekijöitä ja arvioi niitä pelin/harjoituksen aikana
2. Anna laatutekijöiden pohjalta kokonaisarvosana elementille
3. Jokaista laatutekijää tai elementtiä ei välttämättä pysty arvioimaan jos sitä ei esiinny
4. Listaa ylös myös ne elementit, joista ei arviota pysty tekemään → sekin on palaute

Ohjeita pelaajatarkkailijalle

1. Valmistaudu huolella tarkkailuun
   - Käy etukäteen läpi asiat, joita aiot tarkkailla ja sisäistä niiden laatutekijät
   - Tutki tarkkailtavan pelaajan taustat – varo ennakkoluuloja!
2. Keskity tehtävään
   - Älä anna pelin viedä keskittymistä vaan pysy tehtävässä
   - Pyri seuraamaan niitä asioita, joita on tarkoitus
3. Selkeät merkinnät
   - Tee merkinnät selkeästi
   - Tee merkintöjä silloin kun peli ei ole käynnissä esim. pelikatkoilla, erätauoilla jne.
4. Valitse paikka, josta näet pelin hyvin (jos mahdollista)
5. Pyri tarkkailemaan pelaajaa mahdollisimman vaativassa ympäristössä
   - Vaativa ympäristö pakottaa pelaajaa pelaamaan omien taitojensa rajoissa
6. Muodosta mielipiteitä
   - Pelaajalle annettava arvosana perustuu mielipiteeseen, joten tarkkailijan on se luotava
   - Ole valmiina puolustamaan mielipiteitäsi
7. Arvioi vasta kun informaatiota on tarpeeksi
   - Pyri keräämään niin paljon tietoa kuin mahdollista
   - Liian vähäinen informaatio saattaa aiheuttaa vääränlaisia arvioita
8. Opi virheistä

Hyvä pelaajatarkkailija...

... tunnistaa hyvän jääkiekon.

... on kykenevä tunnistamaan hyvän pelaajan ja tämän potentiaalin.

... pystyy käsittelemään useita asioita kerralla ja ymmärtää isoja asiakokonaisuuksia.

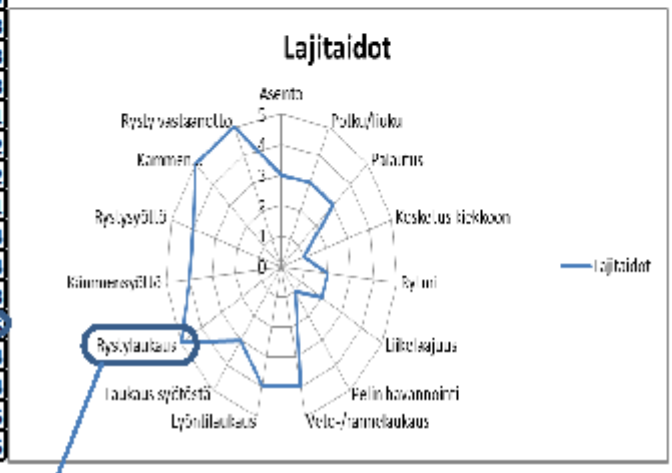
... tarkkailija näkee mihin suuntaan peli muuttuu tulevaisuudessa.

4. Palaute

Palautetta antamalla pyritään vahvistamaan jo opittua asiaa tai korjaamaan virheellistä suoritusta. Sen tulee olla selkeä ja helposti tulkittavissa. Tätä varten on luotu omanlainen palautteenanto tapa, joka muodostuu pelaajatarkkailun tuloksista.

Tarkkailun tulokset listataan Excel-tiedostoon, jonka pohjalta muodostetaan kaavio.

Vahvuuskartta	29.maalis
Asento	3
Potku/liuku	3
Palautus	3
Kosketus kiekkoon	1
Rytmi	2
Liikelaajuus	2
Pelin havannointi	1
Veto-/rannelaukaus	4
Lyöntilaukaus	4
Laukaus syötöstä	3
Rystylaukaus	5
Kämmensyöttö	4
Rystysyöttö	4
Kämmen vastaanotto	5
Rysty vastaanotto	5



Rystylaukauksen arvo listalla ja kaaviossa

Palaute voidaan antaa pelaajalle, pelaajan valmentajalle tai joissain tapauksissa se voidaan jättää tarkkailijan eri käyttötarpeisiin. Kaaviosta voidaan helposti lukea mitkä elementit tarvitsevat kriittisintä kehitystä ja millä osa-alueilla voidaan puhua selkeästä hyödystä pelaamiselle.

Pelaajatarkkailun ja arvioinnin tulee olla mahdollisimman totuudenmukainen, jotta palaute olisi merkityksellinen. Yhtä tärkeää on listata ne elementit, joista ei voida antaa arvosanaa. Esim. Pekka Pelaajan syöttämistä ei voitu arvioida pelin aikana koska hän ei syöttänyt ottelun aikana kuin kaksi kertaa. Arvioimattomat elementit tulisi näkyä myös palautteessa.

Pelkkä kaavio palautteena ei yksinään riitä vaan sen tukemiseksi on hyvä luoda myös kirjallinen palaute. Kirjallisessa palautteessa voidaan perustella ja pilkkoa asioita vielä pienemmiksi sekä kannustaa oppimista varten. Sisällön tulee käsitellä pelaajan sekä hyviä että kehitettäviä taitoja.

Itse arviointi

Palaute on tehokkainta silloin kun se tulee suorittajalta itseltään. Kohdassa 3. olevaa pelaajatarkkailulomaketta voidaan soveltaa myös itse arvioimiseen. Jos pelaaja on motivoitunut ja vastuuntuntoinen urheilija, hän kykenee arvioimaan itsensä rehellisesti ja totuudenmukaisesti. Tällöin pelaajan tulee olla tietoinen oikeista suoritustavoista ja laatutekijöistä.

Hyvä keino on antaa pelaajan arvioida itse itsensä samanaikaisesti tarkkailijan kanssa. Arvosanoja voidaan verrata keskenään ja kummankin tulisi olla valmiita perustelemaan arvionsa.

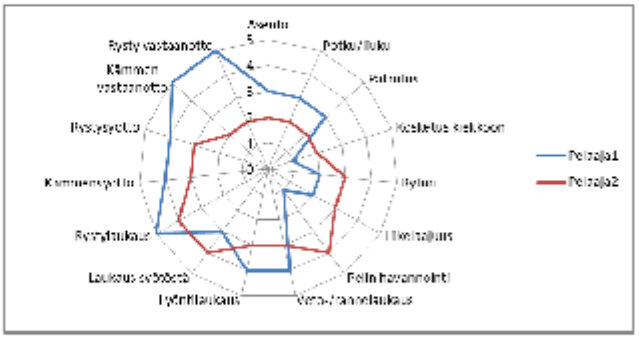
Palautteen hyöty

Hyvällä ja asianmukaisella palautteella voi olla useampia hyötyjiä. Alla olevassa taulukossa on eriteltynä miten eri tahot hyötyvät siitä.

Pelaajalle	Pelaaja saa arvokasta palautetta suorituksistaan, mikä auttaa häntä kehittymään
Valmentajalle	Valmentaja saa arvokasta palautetta pelaajistaan ja pystyy yksilöllisesti auttamaan heitä kehittymään tai puuttumaan suoritusten epäkohtiin.
Tarkkailijalle	Tarkkailija saa arvokasta palautetta pelaajista ja pystyy niitä tutkimalla etsimään mitkä tekijät yhdistävät hyviä pelaajia. Tarkkailija pystyy tarjoamaan arvokasta tietoa pelaajista eteenpäin. Agentit tarkkailevat pelaajia nykyisten ja uusien asiakassuhteiden kannalta.
Seuran pelaajahankinnoista vastaavalle	Pelaajahankinnoista vastaava saa arvokasta tietoa pelaajien kyvyistä ja potentiaalista, minkä perusteella seura voi säästää turhia kuluja, joita pelaajien värvääminen aiheuttaa. Seura saa tietoa potentiaalisista junioreista ja heidän kyvyistä.

Vertailu

Kahden pelaajan välisiä taitoja voidaan helposti verrata laittamalla arvot samaan kaavioon. Saman pelaajan kehittymistä voidaan seurata myös samalla periaatteella kun eri arviointikertojen arvot laitetaan samaan kaavioon.



5. Videon käyttö

Videoinnin hyödyntäminen on erinomainen keino, jota kannattaa kokeilla jos siihen vaan on mahdollisuus. Seuraamalla pelaajan käyttäytymistä jäällä katsomosta käsin ei välttämättä anna tarkkailijalle tarpeeksi tietoa arvioimista varten. Videolta saatu informaatio antaa syvyyttä arvioimiseen koska kuvaa voi kelata, pysäyttää ja hidastaa tarkkailijan haluamalla tavalla. Peliä tai harjoitusta nauhoittaessa tulisi ottaa huomioon mitä asioita halutaan tarkkailla ja suunnitella kuvauspaikat sen mukaisesti.

Ohjeita videointiin

- Suunnittele kuvauspaikat huolella eri tarkoitusperien mukaan
- Tee kuvaussuunnitelma ja tiedosta mitä kuvaat
- Lajiteknisiä asioita olisi hyvä päästä kuvaamaan jään tasolta
- Varmista, että akut ovat täynnä – myös vara-akut
- Pelillisiä asioita kuvatessa kuvauspinta-ala voi olla laajempi kuin teknisiä asioita kuvatessa

Videoinnin hyödyt

- Videolta voidaan näyttää oikeat suoritustavat
- Mahdollistaa pelaajan suorituksen läpikäymisen, jossa hän itse näkee oman suorituksensa
- Voidaan nopeuttaa pelaajan oppimista käymällä asioita videolta lävitse
- Kuvan kelaaminen, hidastaminen ja pysäyttäminen helpottavat tarkkailua ja arvioimista

		Arvosana		1-0-1
Luistelu	Asento		Katse ylhäällä pelissä	
			Käsien liike eteen-taakse	
			Potkujalan kulma	
			Ylävartalon voimakas etunoja	
	Potku & Liuku		Painonsiirto potkujalan päälle ulkosyrjälle	
			Pakara puristaa potkun sivulle	
			Lantio ja polvi ojentuu	
			Vartalon painopiste alhaalla	
	Palautus		Luistin palautuu vartalon keskilinjan alle	
			Luistin palautuu vartalon etupuolelle	
			Ensikontakti jäähän taahtuu ulkoterällä	
			Lantio, polvi ja jalkaterä samassa linjassa	
Kiekonkäsittely	Kosketus kiekkoon		Rysty- ja kämmenpuolen käyttäminen	
			Kädet irti vartalosta	
			Ranteiden käyttö	
	Rytmi		Luistelun ja kiekonkäsittelyn rytmitys	
			Harhautuksien monipuolisuus	
	Liikelaajuus		Ylävartalon rotaatio eri suuntiin	
			Ylä- ja alakäden käyttö	
			Painonsiirrot jaloilla ja vartalolla	
	Pelin havannointi		Katse pelissä - näkee kiekon	
			Valmius ratkaisuihin	
Laukominen luistelusta	Veto-/rannelaukaus		Painonsiirto yläkädeltä alakäden puolelle	
			Painonsiirto alakädeltä yläkäden puolelle	
			Kohdentaminen - saatto, katse	
			Tehokkuus - voima	
	Lyöntilaukaus		Pelivalmius laukauksen jälkeen	
			Painonsiirto ak-jalka --> yk-jalka	
			Kohdentaminen - saatto, katse	
			Tehokkuus - voima	
	Laukaus syötöstä		Painonsiirto laukauksen suuntaan	
			Pelivalmius laukauksen jälkeen	
			Kohdentaminen - saatto, katse	
			Tehokkuus - voima	
	Rystylaukaus		Pelivalmius laukauksen jälkeen	
			Vartalon kierto	
			Kohdentaminen - saatto, katse	
			Tehokkuus - voima	
Syöttäminen & syötön vastaanottaminen	Kämmensyöttö		Jatkuuko peli syötön jälkeen?	
			Syötön peittäminen - arvaamattomuus	
			Kovuus	
			Kohdentaminen	
	Rystysyöttö		Jatkuuko peli syötön jälkeen?	
			Syötön peittäminen - arvaamattomuus	
			Kovuus	
			Kohdentaminen	
	Kämmenvastaanotto		Jatkuuko peli vastaanoton jälkeen?	
			Viiveettömyys - valmis pelaamaan	
			Kovan syötön vastaanotto	
			Tarjoaa itsensä vapaaksi	
	Rystyvastaanotto		Jatkuuko peli vastaanoton jälkeen?	
			Viiveettömyys - valmis pelaamaan	
			Kovan syötön vastaanotto	
			Tarjoaa itsensä vapaaksi	