



## **Player pathway development process in ice hockey academy of Lapland**

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## Abstract

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<b>Report/Thesis Title</b> <b>Player pathway development process in ice hockey academy of Lapland</b>
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<p>The purpose of the work is to create an operating model for the Lapland sports academy for junior high school and high school sports academy. The Finnish Ice Hockey Association's Player Path - Leijonapolku serves as the platform for the contents of the activity and provides the core points for training for each age group. The coaching philosophy is implemented from a slightly new perspective. The utilization of player-oriented coaching is increasing and players are given greater responsibility for ownership of their own training. The athlete becomes an essential part of every phase of the coaching process.</p> <p>The goal is to raise the level of Lappish ice hockey by raising the level of academy activities. With the help of academy activities and junior high school camps, material is produced for the clubs in the area of Lapland and with this, the sports expertise of the clubs in the entire area is expanded. From the player development point of view, the goal is to produce self-directed athletes towards the national top. The coaching is guided by player-oriented coaching processes, which are implemented at a high level in cooperation with individual players. At the same time, coaching skills are being developed to get the player-oriented coaching better used all the time.</p> <p>The end result is an intact and comprehensive player path through the junior high school academy all the way to the end of high school academy. At the same time, a systematic way of implementing personal coaching processes is created, which increases their quality, and the individual player gets even better coaching, as well as useful support service coaching. The athletic goal is that the athletic level of those who enter the academy will rise and that academy is producing better players for local Mestis club and for national top of ice hockey.</p>
<b>Key words</b> ice hockey, development model, player pathway, sport coaching

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## 1. Introduction

The challenge of team sports is generally combining the needs of individual players with the needs of the entire team. In ice hockey the activities of clubs, sport academies and quality coaching have taken great steps forward. The long-term performance of children and adolescents has taken precedence over short-term team success. There is a path for every player through a lifelong hockey career, which is designed based on the latest research to enhance development as a person and athlete. These player pathways enable competitive sports and life-long active lifestyle. To create these opportunities, the high-quality cooperation of clubs and many other factors are needed, so that every player has the opportunity to learn skills in technical, tactical, physiological and psychosocial parts.

Player-oriented coaching brings out the player's needs and gives the opportunity to develop them. Every person is different, which means that you cannot act in exactly the same way for every player if the goal is to reach the top-level sports. Self-determination theory confirms the impact of player-oriented activities on development. "From the point of view of holistic coaching, the one-sided manipulation of quantities and contents should be aimed at strengthening internal motivation, creating an atmosphere of values and attitudes that support learning and development, ensuring a state of alertness that supports dedication, and supporting the athlete's self-development skills." (Tiikkaja, 4/2014, p. 34). Combining and implementing all of these is not easy, but possible.

At the Lapland Sports Academy in Rovaniemi, the aim is to create the Academy's player pathway to support holistic, long-term and player-oriented training towards the national and international top of the sport. The environment in which the Academy operates is one of the best in Finland and supports top level training. Self-initiative, curiosity and athleticism are key factors at the Lapland Sports Academy. Demanding these things in a new operating environment is initially challenging for the players, but at the same time it brings the player closer to owning their own sport and development every time they come to the ice rink. The players are part of the planning, implementation and evaluation of the daily activities through their own personal training plans. Training is structured based on the player's and coach's shared vision to support the player's personal and overall development.

## 2. Athlete pathways

Several programs and frameworks have been created for the identification and development of talent. A career-long program can be found in all the leading national hockey associations. The starting point for them seems to be the universal LTAD model first developed in the 1950s (USA Hockey, 2022). However, depending on the country, it has been applied in a slightly different way. Talent development has also been discussed in the coaching literature; though the athletic pathway is not presented there based on the LTAD model.

Russel Martindale writes about non-hockey specific talent development and identification (Martindale, 2015, pp. 402-456). Identifying talent in sports is considered one of the holy grails of coaching. However, much more emphasis is often placed on identifying talent than on developing it. The definition of talent is often related to performance and less to future potential, although performance and future potential are not synonymous. Being good in the early stages of development does not correlate well with the ability to succeed in any other later stage. A self-fulfilling prophecy outlines how a coach's vision of a young person can significantly affect an athlete's perceptions of competence and subsequent behavior and his or her potential success. Therefore, from a coach's perspective, it is important to be open to athlete potential and provide equal opportunities where possible. (Martindale, 2015, pp. 402-456)

Further, Martindale writes, that someone who is not committed or motivated does not take as many steps towards maximizing their potential as a committed and motivated one does. As such, a coach would usually alleviate these factors. Skills such as planning, monitoring, realistic self-assessment, curiosity and confidence are all related to effective learning outcomes. Many of these skills can be taught. (Martindale, 2015, pp. 402-456)

Sport hobby can be started for many different reasons. The Australian institute of sport created the FTEM framework, that says there are three significant reasons that motivate to start a sport hobby; an active lifestyle, a desire to exercise, or a competitive top-level sports. FTEM (Foundations, talent, elite, and mastery) has four levels which describe the most important stages of athlete's growth. Framework ensures that the people involved in the activity get all the necessary information and material to achieve the right results with athletes. (The Australian Institute Of Sport, 2022)

FTEM framework has up to ten phases starting from early movement experiences. At a young age, a person learns the basic movement skills. With the help of environmental challenges and good and high-quality physical education, we can achieve versatile physical skills. In the third phase, sport specific skills are developed through sport training and competitive activities. Talented

Athletes who have developed physically and psychologically and in terms of exercise skills move up to the T1 phase towards the high-performance pathway. Experienced coaches at the T2 level are looking for athlete's characteristics such as coachability, positive self-management and determination to identify future Sporting potential. Athletes at T3 level are committed to achieving a high level of sport performance through more focused practice and training. At this level Holistic athlete support is critical to reduce drop out and underachievement. As they move through the pathway to T4 level athletes reach a significant break-through performance and are rewarded for their efforts. At E1 Athletes achieve elite status through selection and representation at the highest senior levels of international or professional sport. At E2 Athletes win medals at the biggest events or in the case of professional sports dominate their sport week in, week out. (The Australian Institute Of Sport, 2022)

LTAD's goal is to create an environment that ensures that training, competition and recovery periods are appropriate for the athlete at each stage of growth and development. The model emphasizes physical abilities that work as a platform for a healthy and active lifestyle and a possible career in competitive sports. The LTAD model is usually divided into five different phases, which are based on the athlete's chronological age. Different sports federations and countries have modified the model to suit their own activities. (Balyi, et al., 2014).

LTAD consists of following phases:

FUNDamentals is the first phase (male 6-9, female 6-8 years of age). Basic movement skills are working as a platform of all movement. FUNdamentals is a phase where the goal is to teach the athlete these fundamentals of sportsmanship in a fun, enjoyable, and safe environment (running, jumping, squatting, crawling, throwing, catching and hitting). (Sports Scotland, 2022) The qualities agility, balance, coordination, and speed should be considered at this stage of the athlete's pathway. The actual strength training is done using body weight, remembering that training should still be FUN. Children are recommended to participate in more than one sport. If the child has a favorite sport, participation is recommended once or twice a week. Participating in other sports 3 or 4 times a week is considered important for future development. Competing is not part of the FUNdamentals stage. Athletes are introduced to the simple rules and ethics of the sport. (Sport for Life Society Canada, 2022)

Second phase is called learn to train (male 9-12, female 8-11 years of age). At this stage the focus of the training shifts towards more sport-specific training, but basic movement skills should still be practiced and further developed. At this point, it is believed that the development of motor skills is more effective. If basic motor skills are not developed sufficiently at this stage, it may be difficult for the athlete to reach his or her full potential in the future. (Sport for Life Society Canada, 2022)

Strength training continues with using own body weight in training, to which medicine ball training is added. Endurance and speed are developed by different games. At this stage it is recommended that the ratio between training and competition should be 70:30. The training should also reflect a periodical approach. (Sports Scotland, 2022)

Third phase is called train to train (male 12-16, female 11-15 years of age). The development of sports-specific skills continues at this stage of the athlete's pathway. The effects of puberty start to show in most people, and after the peak height velocity, special attention should be paid to aerobic exercise, while not forgetting strength, speed and skill training. (Sport for Life Society Canada, 2022) As puberty ends, the importance of flexibility training increases. The ratio of training and competition is recommended to be 60:40 and the competition should be practiced daily. The main focus of training is still on learning basic sport specific skills. (Sports Scotland, 2022)

Next phase is called train to compete (male 16-18, female 15-17 years of age). At this stage, the physical condition should be optimized so that personal sports technical skills can be emphasized even more. (Sport for Life Society Canada, 2022) The implementation of training changes in a more individual direction, focusing on the strengths and weaknesses of the individual athlete. Strength training with free weights is usually started at this stage. The ratio of training and playing is recommended to be increased to 50:50. (Sports Scotland, 2022)

The last phase is train to win (male 18+, female 17+ years of age). Athletes are constantly being trained more for competitive situations. The training itself focuses on specialization and improving performance (Sports Scotland, 2022). The ratio of training and competition is 25:75, where the competition part includes the exercises that prepare athlete for the competition, where the athlete is coached and taken towards the optimal performance (Sport for Life Society Canada, 2022).

## **2.1 Player pathways in ice hockey**

When pursuing excellence, the importance of a long-term coaching process that develops and nurtures athletes from beginners to the top of their sport has grown. The content of the player pathway is the training priorities of each age group, which guide everyday activities in clubs and sports academies. The Lapland Sports Academy choose to use the Leijonapolku created by the Finnish Ice Hockey Association as a platform (Finnish Ice Hockey Association, 2022). It brings together the priorities and goals of training for each age group in terms of both ice training and off-ice activities.

Differences between different nations player pathways can be found. For example, FTEM framework is used in Switzerland. (SIHF, 2022) Comparing FTEM to Sweden's framework Hemma Plans Modellen, it gives much more precise structure how to manage daily based activities. In Sweden they have given principles for all the stakeholders around an individual player. Everyone from player to board member are included in these principles. (Svenska Ishockeyförbundet, 2022)

Some of the player pathways are based on athletes chronological age, where others work through skill level of the athlete. Even though there are differences, main part of player pathways first step is developing basic movement skills. (IIHF, 2022)

### **2.1.1 FIHA Player pathway**

The player pathway of the Finnish Ice Hockey Association (Later FIHA) is divided into 4 categories; Lion league (leijona-liiga) stage for 5-9 years old, the children's playing stage for 10-14 years old, young players training emphasize phase and the elite sport stage for adults for over 20 years old. Within these phases, priorities of training have been built in several different areas. (Finnish Ice Hockey Association, 2022)

At the FIHA's player pathway lion league stage (5-9 years old), the main priority is to create a passion for sport and playing, a healthy self-esteem and to guide the players to a healthy lifestyle that includes daily based activities. Priorities have been built around these topics in many different areas. Game and hockey specific skills are taught using different games and plays. It is important to get children to enjoy the activities that can be accomplished using different kind of games. For many children the lion league phase starts from hockey school, where the FIHA has produces ready-made materials to help clubs to offers a proper activities for children. (Finnish Ice Hockey Association, 2022)

At this phase the goal is to reach a solid foundation of developing hockey specific skills and techniques. Skating is the most important hockey specific skill in modern ice hockey. Versatility, strength, speed and endurance are the basic key point for skating, which creates a solid foundation for practicing other hockey specific skills and applying them to the game. Developing puck handling starts with skill of handling the stick, how to hold on it and how to play puck with it. Later the use of the wrists while handling the puck will be learned. Also, the range of motion for handling the puck will be taught. Other sport specific skills are passing and shooting. (Finnish Ice Hockey Association, 2022)

High-quality development of physical capabilities will enable the implementation of many movements and skills in the future. Motor development means the ability to perform skills. Children are not always ready to learn a new skill because they may have deficiencies in the attributes or basic skills they need to be able to execute before learning a more challenging skill. Although there are periods in children's development when learning motor skills is faster, it is important to keep in mind that nothing is lost, even if the child is unable to complete the skills of the stage after passing the motor developmental stage. (Finnish Ice Hockey Association, 2022)

At the children's playing stage at age 10-14, the main goals in the player pathway are to teach the game and grow into a player. In learning the game, the number of golden rules increases for both the defensive and offensive game. In learning the game, game situation roles and playing in them become strongly involved in the teaching of the children's game. Game situation roles are explained below in figure 1. (Finnish Ice Hockey Association, 2022)

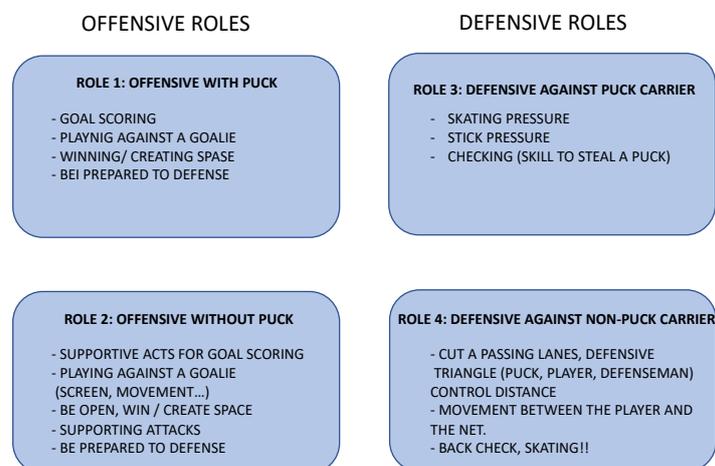


Figure 1. Game situation roles

Also, at this phase, big focus is in skating while players are trained for technical skills. Skating skills are developed in a more versatile direction. Skating requires skills to skate crossovers backwards, defender's and winger's turns, and U-turns. The quick starts and sharp changes of direction required for stop and go play are also part of skating practice. (Finnish Ice Hockey Association, 2022)

In the puck handling, emphasis is placed on playing with the puck in different physical positions and while skating with the puck. Puck handling is versatile and done simultaneously with skating. These are the basic starting points for good puck control. (Finnish Ice Hockey Association, 2022)

As the game becomes faster, the demand for dueling increases. Things to consider in learning to play duel are playing with a stick and utilizing it, pushing an opponent against the boards, shoulder contact, receiving a contact, protecting a puck, and making screens by positioning, and moving. (Finnish Ice Hockey Association, 2022)

Basic physical abilities will be refined and physical ability will be developed with a view to future strength training. At the same time, the development of muscle endurance is increased, through which the amount of physical activity in training gradually increases. Through this, the importance of nutrition and rest also increases in training. "Strength training in the early stages of puberty is challenging because the onset of puberty varies quite a lot individually. Differences can occur for boys during 4-5 years and for girls 2-4 years. Considering individuality here is a big challenge for the coach. The basics are mostly the same as in pre-puberty training. At this stage, strength training with additional weights can also be started, but the resistance should be very light. The focus remains on developing endurance, and learning about performance techniques and core control". (Finnish Ice Hockey Association, 2022)

In the young players training emphasize phase, players aged 15-19, the amount of training will increase more clearly and academy training will become part of daily based training. Game skills are refined and the practice of speed skills takes a big role on a training. Identifying the game situation and playing according to it is also taken into account in practice. In the young players training emphasize phase, the game structures and rhythms are brought in. Training special team situations becomes part of the young players training emphasize phase. (Finnish Ice Hockey Association, 2022)

As the amount of school and training increases, players are also expected to develop their mental skills. The development of life management skills and the teaching of an athletic lifestyle helps to implement quality of school and training. Players are instructed to act independently and take responsibility for their own training. (Finnish Ice Hockey Association, 2022)

Strength training focuses on developing physical abilities that support game skills. Developing strength, endurance and speed requires rhythm and scheduling for training. This also brings a requirement for self-discipline and motivation to practice. As training loads increase, more recovery is required and players are taught to take this into account in their daily activities. (Finnish Ice Hockey Association, 2022)

The main goals in the elite sport stage are the same as in the youth development phase. Players are guided to an athletic lifestyle and activities should be more proactive and self-directed. (Finnish Ice Hockey Association, 2022)

In adult phase, players need to be mentally strong because of the more important games, but also because of outside pressure, and learn how to control them. The ability to play at the top of their potential under intense pressure is one of the major priorities in practicing mental skills. The quality of life and lifestyle must also be at a good level. (Finnish Ice Hockey Association, 2022)

### **2.1.2 American development model (ADM)**

“USA Hockey’s American Development Model (Later ADM) is an athlete-centered, coach-enhanced, administrator-supported framework that aims to help all individuals realize their athletic potential and utilize sport as a path toward an active and healthy lifestyle.” (USA Hockey, 2022)

The ADM is based on LTAD model and best practices in youth sports, human development, coaching, and the sports science. It is important to note that the ADM is not exclusively a pathway for elite performance. In 2009, USA Hockey developed and instituted the ADM in part to help with retention and developing better players through age appropriate training. (USA Hockey, 2022)

*Excellence takes time*, the aim of the USA Hockey American Development Model is to help all individuals realize their athletic potential and utilize sport as a path toward an active and healthy lifestyle. It is important to develop all facets of hockey performance; technical, tactical, physical, and mental, while understanding that these factors are deeply interdependent. (USA Hockey, 2022)

*Physical literacy & fundamentals* stands for all youth should be encouraged to develop the confidence and competence in fundamental movement skills, basic sport skills and general athleticism from childhood throughout the lifespan in a fun. The primary reasons that children initially engage in sport and physical activity is for fun, enjoyment, and to experience different activities. (USA Hockey, 2022)

*Building athleticism* meaning that long-term athlete development programs should provide all youth with a range of training modes to enhance both health and related components of fitness to reduce the risk of injury. *Specialization & early sampling* is that USA Hockey encourages an early sampling approach for youth that promotes and enhances a broad range of experiences in sports and physical activity. Well-rounded, multisport athletes have the highest potential to achieve. Further highly specialized training in hockey can begin at about 14 – 16 years of age. Early specialization

has been associated with negative long-term physical and mental health such as injury and burn-out. (USA Hockey, 2022)

*Growth and individualization*, gives an understanding that normal growth, maturation, and development is critical to delivering a quality sport program. In turn, long-term athlete development pathways should understand, appreciate, and accommodate for the highly individualized and non-linear nature of the growth and development of youth. *Periodization* tells that athlete development should be guided by general training principles that allow for effective and efficient plans for a single practice or training session, as well as weekly, seasonal, and yearly plans. This includes segmenting the calendar year into time intervals for preparation (pre-season), competition, and off-season sports and activities along with appropriate rest and recovery that optimize health and performance. (USA Hockey, 2022)

*Mental, cognitive, and emotional development* emphasis in health, wellbeing, and positive youth development should always be the central tenet of the USA Hockey ADM. Youth of all ages, abilities and aspirations should engage in programs that promote both physical fitness and psychosocial wellbeing, which is also a long-term process that programs must consider along the training and competition. (USA Hockey, 2022)

*Quality coaching* defines that quality coaches, using sound pedagogical approaches are fundamental to the success of long-term athlete development programs. Quality coaching is defined as the consistent application of integrated, inter-personal and intrapersonal knowledge to improve athletes' competence, confidence, connection, and character in specific coaching contexts. (USA Hockey, 2022)

*System alignment and integration* means that within USA Hockey, the framework for long-term athlete development is influenced by clubs, schools, and ice arena facilities all with varying interests. To maximize a player's development needs, it's important those entities work together. Structure is athlete-centered and looks at the individual player's development. (USA Hockey, 2022)

*Continuous improvement* defines that coaches and administrators should seek continuous improvement by implementing new findings, innovations, and best practices from sports science, education, and coaching (USA Hockey, 2022)

### **2.1.3 Hockey Canada LTAD**

"Sport Canada's Long-Term Player Development (LTPD) Resource Paper "Canadian Sport for Life" sets out a framework for sport development of Canadian athletes. Hockey Canada's Long-

Term Player Development (LTPD) is a nine-stage model based on the physical, mental, emotional, and cognitive development of children and adolescents. Each stage reflects a different point in developing the player.” (Hockey Canada, 2022)

*Discover* phase for toddlers aged 0-4 is an important period for acquiring fundamental movement skills (running, gliding, jumping, kicking, catching...) that lay the foundation for more complex movements, thereby preparing children for a physically active lifestyle. Hockey Canada encourages children also to begin skating at an early age through Discovery Hockey programs. During the *fundamental 1* phase for kids 5-6 years old the focus is on the development of physical literacy. Fundamental movement skills should be mastered, and motor development emphasized, and participation in many sports/activities is encouraged. The basic hockey skills of skating and puck control are introduced through the Initiation Program. Fun competitions are also introduced in a team environment. (Hockey Canada, 2022)

During *Fundamentals 2* period in age of 7-8 players continue to develop motor skills and coordination. Practice sessions should be held twice a week during the season. Ongoing participation in compatible sports is strongly encouraged. *Learn to play* stage is for 9-10 years old boys and 8-9 years old girls. At this age begins the most important age to develop the fine motor skills on an individual technical skill basis. During this phase, prior to the beginning of the growth spurt, players have the best opportunity to learn and begin to master fine motor skills that can be used in combination with other skills. In most cases what is learned or not learned in this stage will have a very significant effect on the level of play that is achieved later on. *Learn to train* for boys aged 11-12 and girls aged 10-11 is the most significant period for development. This is the window of accelerated adaptation to motor coordination. Group interaction, teambuilding and social activities should be emphasized. A reasonable balance of practices and games will foster the ongoing development and mastery of essential skills in hockey. (Hockey Canada, 2022)

Next phase is for 12-16 years old boys and 11-15 years old girls. The focus during stage *train to train* is on building an aerobic base, developing speed and strength, and further developing and consolidating sport specific technical skills with an increased emphasis on hockey and a reduction in the number of other sports played. This phase will also include the introduction and development of individual and group tactics. Social and emotional considerations are addressed by placing an emphasis on teambuilding, group interaction and social activities. During *train to compete* phase 16-17 years old boys and 16-18 years old girls will participate in training with a focus on position specific technical and tactical preparation. There is as emphasis on fitness preparation and the development of position specific technical and tactical skills under competitive conditions. Important objectives are the development of aerobic capacity, power, self-awareness, and independence.

(Hockey Canada, 2022)

During *train to win* stage the player’s physical, technical, tactical, including decision-making skills, mental, personal and lifestyle capacities are fully established and the emphasis in training has shifted to the maximization of performance. This stage is for men aged 18-20 and women aged 18-22. (Hockey Canada, 2022)

It is at the stage called *excel* that all systems, including physical preparation, testing, or monitoring and others which are supportive in nature, are fully maximized and refined to ensure excellence at the highest competitive levels. (Hockey Canada, 2022)

**2.1.4 IIHF**

The goal of the International Ice Hockey Federation (IIHF) is to provide the federations of the member countries with material and ideas to develop operations and enable better player development. IIHF produces material for club operators to facilitate their daily work. As a general guideline of the IIHF is that everyone involved in the activity should offer and be part of creating an environment which develops individual players to the best of their abilities. (IIHF, 2022)

The IIHF Player Development Guide (IIHF PDG) divides the player pathway into three stages which are Start, Stay and Succeed presented in figure 2.

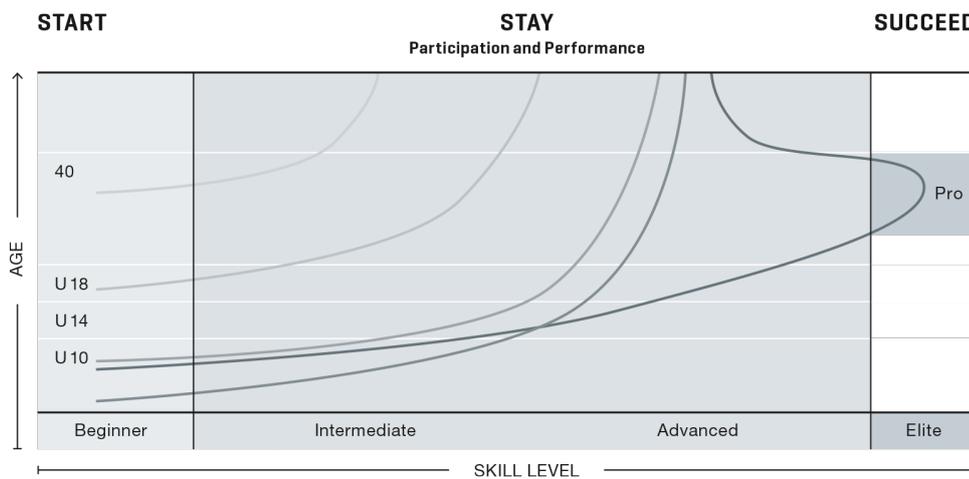


Figure 2. IIHF Player Development Guide pathway (IIHF, 2022)

The start phase is the same for every player and operator in ice hockey. It is the first contact with the sport, regardless of the age. Learning the basics is part of this phase, which provides the foundations and the opportunity to continue the hobby in the future. The start phase is meant to be

an enjoyable experience, which creates interest in practicing the sport. Stay phase is aimed at life-long hobby. The activity is offered as competition and hobby, where the aim is to provide everyone an environment where they want to play hockey. In this way, it is also important to modify the environments to suit their activities, so that the needs become filled. In an ideal situation, players who have played professionally will return to this stage after their competitive career. Succeed phase is not part of every player's career. Only a few players reach the national and international level to play as a professional. (IIHF, 2022)

IIHF has divided their player pathway into four skill levels; Beginner, intermediate, advanced and elite. Beginner stage is usually players aged U10. The training focuses on the basics of hockey and sports skills, as well as basic movement skills. Training takes place station-based and the games are played on a small field as 3 on 3 games. At this stage, players are encouraged to participate in the activities of other sports as well. The IIHF says on its website that the players should be encouraged to participate in the activities of up to four other sports. (IIHF, 2022)

The intermediate stage usually takes place in players aged U14, where the focus is still on comprehensive development on and off the ice through fun and enjoyable activities. At this stage, the practice of technical and tactical skills also increases. At this stage IIHF recommends that the away game trips would not be longer than 100 km from home rink to away game. (IIHF, 2022)

Advanced stage, normally aged U18 is focused on sport specific training on ice and well planned off ice training. The aim is to bring the activities to a high level. In game training, the focus is on developing the players' decision-making skills, while also developing sports skills. Emphasis in training is puck handling, changes of direction, and understanding of the game. At this stage, the number of practices and games varies depending on the level played. It would be recommended to keep one day a week completely free from training. (IIHF, 2022)

Elite stage are professional players, where the age of the players varies greatly. The IIHF has stated that at this stage it is no longer able to support the development of professional players, but the responsibility is given to the national leagues and clubs, as well as the national teams. (IIHF, 2022)

The IIHF gives recommendations on the beneficial use of ice time, the costs of the hobby, and e.g. about the influence of the importance of competition and results on the hobby. The IIHF says on its website that it is not only a federation that sets the rules, but also federation that produces a lot of material for the use of coaches, teams, clubs and sports federations, with the aim of developing hockey worldwide. (IIHF, 2022)

## 2.2 Athlete centered coaching

In the sports world, there are many relationships between different factors that affect the activities of the club, team, and individual player on a daily basis. The relationship between the player and the coach has been found to be extremely important when thinking about the player's development. (Jowett & Cockerill, 2002, pp. 16-31)

The relationship between the athlete and the coach does not act as a supplement or by-product of the coaching process, and it is not based on the athlete's performance, age or gender. It serves as the basis of the coaching process. In the developing relationship between the coach and the athlete, the goal is to increase appreciation and respect for each other between the players. Overall, the coach-athlete relationship is embedded in a dynamic and complex coaching process. It provides the means by which the needs of coaches and athletes are expressed and fulfilled in daily activities. (Jowett & Cockerill, 2002, pp. 16-31)

Athlete-centered coaching is not an approach in which things develop by themselves. It is an approach that requires the coach to understand himself and the athlete. The coach must understand that the athlete has a history psychologically, cognitively and physically, and learn to understand it. The task of the coach and the athlete is to think about how the athlete takes responsibility and ownership for his own learning and performance. In an athlete-centered environment, the athlete decides the goal, is responsible for it, and thus takes responsibility for his actions and performances. (Kidman & Lombardo, 2010, pp. 11-47)

Deci and Ryan (Ryan & Deci, 2002) claim that there are basic psychological needs that every individual must satisfy in order to achieve personal growth and development. There are three basic needs; the first need is the need for competence, which refers to the general feeling of functioning effectively in social and achievement environment, it emphasizes the importance of experiences or the lack of experiences in which the individual has the opportunity to optimally utilize and show his strengths and abilities (Ryan & Deci, 2002). The second is the source or origin of achievement behavior. Autonomy means that actions are based on one's own interests and values and are based on personal initiative. The last need is called relatedness. It emphasizes a sense of connection and affection love other people. There is a dichotomous view that the individual cares for others and that others care for the individual (Ryan & Deci, 2002)

Mageau and Vallerand have suggested seven broad coaching behaviors that promote the satisfaction of the three basic needs (Ryan & Deci, 2002) mentioned above and therefore impact positively on self-determined motivation. (Mageu & Vallerand, 2010, pp. 883-904) The seven coaching behaviors are following: providing as much choice as possible, providing a rationale for tasks,

inquiring about and acknowledge feelings and perspectives of others, providing opportunities for initiative taking and independent work, providing competence-based feedback, avoiding controlling behaviors and reducing perception of ego in competitive sports environment through task focus.

### **3. Case ice hockey academy of Lapland**

The work was done for the Sport Academy of Lapland to raise the functional level of ice hockey. Sports academy of Lapland operates in Rovaniemi at the Santasport sports college. The Lapland Sports Academy is one of the nineteen sports academies in Finland and at the same time the northernmost in Finland (Finnish Olympic Committee, 2022,). You can apply to the academy from junior high school, high school and military. Junior high school academy operates in the form of a camps, where five week-long camps are divided to a semester. The players live for a week in the housing of the sports academy and thus combine school and sports effectively. High school academy works as a morning practice. There are practices three times a week on Tuesdays, Wednesdays and Thursdays.

Goal was to create an optimal learning environment based on latest knowledge. Vision was to bring together player orientated coaching method using self-determination theory in order to produce and develop inner motivation. Coaches in Rovaniemi are educated professionals who work for local club RoKi. All this takes place in the environment that sport academy has in Rovaniemi providing the best possibilities for aiming to the top.

#### **3.1 Problems and needs**

The level of ice hockey in Lapland has fallen behind the rest of Finland partly due to the small population. The number of players in clubs around Lapland region is small, and the clubs' activities are not aimed at top level sports. In Rovaniemi the number of players is significantly bigger than in all the other Clubs in Lapland. Young players come to study in Rovaniemi which means that the players from the rest of the Clubs in Lapland will at some point play ice hockey in Rovaniemi. To use this effectively, the level of the main club Rovaniemi Kiekko ry (RoKi) and academy is necessary to increase. In addition, the sport academy of Lapland has one of the best facilities in Finland to produce top level athletes. The question was, what and how we need to operate as an academy and region to maximize the player development in Lapland.

The project was started in 2018 together with the Top sports Coordinator of Sport academy of Lapland Reijo Jylhä, head of coaching of RoKi Kai Jansson and women's' academy coach Tuomas Liitola. At that point players were not satisfied with the academy's on ice or off ice activities. Players were not motivated and there were a lot of absences. First meetings were held with head of coaching Kai Jansson, who gave a permit to try something new. At the beginning the method we used was fierce but it worked, and since then the model has been developed.

The final result of the work will above all benefit the players, who have the opportunity to develop into top level athletes. The local club RoKi can combine its own activities with the Academy's operating model and develop its own coaching activities through it. Clubs around the Lapland region will receive material and operating methods for their club's use, which will later benefit the entire ice hockey in Lapland. The model can also be used in each junior team's everyday life by combining team training with this coaching process created by the player and the coach together.

### **3.2 Quality and outcome measurements**

Measurements that were used are mainly showing the athletic side of the academy model. Sport academy of Lapland is responsible to take care of the rest of the measurements, including athletes' nutrition and mental qualities. On ice development was measured daily by numbers and short-term goals set by players themselves. For example, when looking into developing shooting or goal scoring, the measurements were made at the same time when the practice plan was created. Player watched two or three his or her own games and counts all the shots. Shots were marked as missed if the shot has missed the net, save if the goaltender makes a save, and goal if the puck goes in the net. The amount of shots were marked down as a starting point for that skill. After that the short-term goal was set. Short term goal was set according the starting point number. For example, during the practice the athlete aimed at the goal of shooting 100 pucks into top left corner during the practice. There can be fakes, skating skill or other skills added to that particular drill, but the amount of quality shots matter in the end.

Training was changed constantly during the training period according to the achievement of the short-term goals. The progression was made in the beginning of the period and it was changed if necessary. Player had a meeting with the academy coach if achieving the short-term goal appeared to be too difficult. Then the progression and goals would be set again. After the training period another measurement was done the same way as the starting point numbers. Starting point numbers were compared to measurements done after the training period. From there the athlete and the coach can see the possible development of that training period.

Physical tests are showing the improvement of the off-ice training. Test were held twice a year, in the end of August and after the season around April and May. Ice hockey academy of Lapland is using tests from Finnish ice hockey federation. Measuring physical load, the players started to use Polar activity watches and all the players who had one were connected to coach's computer application called Polar Coach. This way the coach was able to track athletes training to avoid

overloads. Polar was not used to spy the players if they practice or not. We wanted to avoid the overload situation and increase the efficiency of the training.

In the end the main measurement was that how many players will play 2<sup>nd</sup> or top-level ice hockey and how many players will play in top level U20 leagues. During the junior high school, the measurement for junior pathway in Lapland was measured by how many players will participate Pohjola camp, that is the first national team event for U16 players.

After the project was started 2018, RoKi's U20 team have played last two season on a top level in Finland. U18 team have become a top team on a 2<sup>nd</sup> level and U16 team is also playing on a top level. Women's team have played on a top level for 3 seasons now. Two players from women's team played Swedish top league SDHL during season 2021-2022. From season 2018-2019 till now, eleven players who were in high school academy made it to local men's Mestis team or played regular season games in Mestis.

### **3.3 Process development**

The project was not planned in advance but developed over time by experimenting with different models and methods. With the help of the discussions held among the working group, we gained new perspectives on the operation and got ideas for developing the operation. Changes were made mainly based on player activity. Changes were developed when the old way was found to be unusable. Difficulties during the process were caused by the lack of coaches and the big number of players. The last steps towards the model in use today were taken when another coach was added to the academy coaching staff.

#### **3.3.1 Season 2018-2019**

As mentioned earlier, the process was started on November 2018 because players were not satisfied with the academy's practices. First method used was unusual, but it worked. All the players who wanted to participate to the planned practice were welcome to participate, but those who did not had another end of the rink for their use. This continued for month or so, when some of the players who had not participate came to ask why they are not getting any coaching. At this point the model needed to take a next step. We sat down and started thinking how to get those players engaged that really are academy level athletes on training- how to help them to get motivated?

Individual plans were introduced to the players the next day. Three players out of thirty came up with a topic to next practice. To get the rest of the group also activated we coached only those three, who had some topic. Drills were planned on ice and it was not the most effective way to run the practice. Soon after that, we made instructions how to plan a 4-7-week plan and asked the players to create a plan. Players sent the plan to a coach and after that they were ready to start to implement the plan. Coach knew what each player was practicing and what were the key points for their training. However, it was pretty heavy job for the players to do it all by themselves.

Proper sheet for planning training period was created late 2018. Now the players were told that if they needed help with planning, they would come and have a meeting with academy coach. In the meeting athlete went through the whole training period step by step. Goal, progression and key points were pointed out clearly for the coach and the athlete. During the season 2018-2019 only six players were doing the planning and training as it was intended to be done . Most of those players were first year students who had not been on an academy before. Older players had an experience from earlier years where training was a lot different and the change that took place was hard to get used to?

At the beginning of the 2018 season, the junior high school academy's camp activities were also developed during the first academy week. Each camp was themed according to game situational roles, so that one role was always practiced for one week. The first camp was used to learn the key points of all four game situational roles. Each role was reviewed on and off the ice. The roles were also reviewed in lectures and with the help of various games. To enhance the learning of the roles, different tasks was given after each camp. When the camp where topic was game situation role 1 was over, the players were given an assignment to take home, where they evaluated their own actions through the practiced role. The coach also evaluated each player using the same questions from each camp. The players returned the assignment to the coach using the RoKi's Jopox web server.

### **3.3.2 Season 2019-2020 and 2020-2021**

On season 2019-2020 academy had two coaches, that helped a lot with different training plans. Plans were done in the same way as in the end of the last season and about ten players were now doing the training by the new model. Although, it still was too big of a task for young players who had just started a high school. Next meeting was held by the three academy coaches, where we decided to help athletes more with the planning. The new sheet for planning and goal setting, presented in table 1. was made and now the players were told to have a meeting every time the

training period changes. Now implementing on ice coaching became easier because all the players had a proper plan, key points, measurements and short- term goals for training. More players started to work by the model, but still many players were just coming on the ice with no plan and asking coaches what to do. At the same time some of the players were asking what else they could do and ended up adding nutrition and mental coaching to their program.

The last version of the training planning sheet includes all the essential focus points of individual training plan. It helps athletes to divide the main topic into the smaller details. The sheet guided athlete while he or she was planning the practice. When planning with the coach, athletes had support throughout the planning process.

Table 1. Training planning and goal setting sheet

									
<b>Name</b>	<input type="text"/>								
<b>Date of training period</b>	<input type="text"/>								
<b>Game</b>	<table border="1"> <tr> <td><b>Defensive game</b></td> <td><b>Offensive game</b></td> </tr> <tr> <td><b>Game situation role</b></td> <td></td> </tr> <tr> <td><b>Specific part of a game</b></td> <td></td> </tr> <tr> <td><b>Supportive sport specific skill</b></td> <td></td> </tr> </table>	<b>Defensive game</b>	<b>Offensive game</b>	<b>Game situation role</b>		<b>Specific part of a game</b>		<b>Supportive sport specific skill</b>	
<b>Defensive game</b>	<b>Offensive game</b>								
<b>Game situation role</b>									
<b>Specific part of a game</b>									
<b>Supportive sport specific skill</b>									
<b>Measurements</b>	<input type="text"/>								
<b>Goals for training period</b>	<input type="text"/>								
<b>What to take to notice to reach the goal</b>	<input type="text"/>								

On a season 2019-2020 we started to develop the junior high school so that it prepares players towards the high school academy. Because junior high school work as an academy weeks five times here and there during the season, long- term coaching processes were hard to implement. Instead players were challenged to plan some of the drills in a small groups and academy coaches held lectures what, why and how should be done and taken into account when planning a practice plan.

In the end of the season 2019-2020 academy coaches had another meeting where we discussed how to develop the model even more. We discussed the possibility of doing training 50/50, so that half of the training would be planned by the players and other half by the coaches. We decided to stay on the same way of implementing, so that players plan and decide the topics for their training. Women's training was made little bit differently. They had first 20 minutes of the practice planned by the players and the rest of the practice was planned by the coach, because the players were not skilled enough to do the full plan yet. To make it easier for the new players who started the first academy season, we introduced the academy model for U16 team in the end of the season. Players were asked to think their strengths and weaknesses and think what kind of a player they wanted to be. Questioning sheet for players were made to have feedback from training. Players fill up the sheet in the middle of the season and by the end of the season. Questioning is used to get feedback directly from the players, so model could be modified when needed.

Progress took place during the season 2020-2021. The new players who started their high school academy were better prepared and ready to start training than before. The 50/50 idea was used part of the season, and it worked well. Players were able to build their own training plan based on the one that was planned by the coach. Training that was planned by the coach included more small area games and drills where players had to use their own planned skill in a game like situation. This way the training was able to be taken closer to a game like training.

### **3.3.3 Season 2021-2022**

On 2021-2022 season the model that was developed last season was been used. Every player came to have a meeting with the coach when earlier period was ending. Plan was made together with the coach. On ice training was followed by coach and possibly a fellow player who had a same topic. Sheets for planning and goal setting made during the season 2019-2020 were still in use. Off ice training was implemented by the plan that was used in players` ordinary team, so players did not plan a separate plan. 2021-2022 season was the first season that went through the way it was supposed to. Players knew how the model worked and training was planned and implemented mostly by players. Academy now had the material developed and it was used.

### 3.4 Development Methods

There were four different methods used during this process. Firstly, we started meetings with the key people in Santasport environment. Development meetings and discussion with Reijo Jylhä, Kai Jansson, Tuomas Liitola and coaches from other sports were important part of the process development. Meetings took place in the beginning of the process, when the biggest changes were made. Idea behind it was to have others opinion concerning the changes made. Having more than one opinion was important and useful when developing model such as this one. Later on, in the process the meetings were held between the academy coaches. Those meeting included more specific information about players individual training plan. Although, every meeting was critical to develop the model to this point that it is now.

Secondly, players were interviewed throughout a season what was their opinion of the way of implementing training. At some point players said that there could be 10 minutes of game in the end of the practice, and so we changed it that way. Other opinions about changing the way of implementing academy training was not introduced.

The third idea of implementing the individual training plan came from other sports. We spent time and used the same facilities with volleyball, weightlifters, cross country skiers and track and field. While following the track and field coaching process, we tried the same kind of idea in ice hockey. The similarity with individual sports that can be seen in our model is that player and coach are communicating more throughout the process. Players are encouraged to ask help if they have a problem while practicing on and off the ice.

- From the day one we decided to try something totally new. We knew it is not going to be easy. Still, we believed that this way of implementing long-term coaching processes is more effective than the way it was done before this project. In order for us to create an athlete-oriented environment in a short time in the middle of the season, we had to force the players to act in accordance with the new way of training. First, the players had to decide whether to participate in the planned training or not. Players who did not participate also did not receive coaching. The same method of operation was used when individual training plans were introduced. Coaching was given to those players who had shown their desire to practice and receive coaching. Players who did not have a plan and who did not communicate with the coach regarding the plan did not receive coaching. With some players, a completely successful coaching process did never happen. Today, however, every player in the academy practices according to the developed model.

#### **4. The process outcome: A new player development pathway for Sport Academy of Lapland**

The sports academy's player pathway was built to take players towards the top of the sport. Junior high school serves as the first step on the Academy's elite sports pathway. During it, the player learns the basics of an athletic lifestyle, the technical and tactical basis of the sport, and the way of working in team sports. The high school academy acts as a preparatory stage for the elite sports path, where the players learn to take responsibility for their own training, analyze and evaluate their own skill level, and develop themselves as a holistic athlete. During high school, the amount of training increases, the load increases and the level of demands rises.

At the center of everything was a player-oriented operating model. Junior high school was also acting as a preparatory phase in this sense, but high school players had a big responsibility for planning, implementing and evaluating their own training. All activities were supported by academy coaches. Players had the opportunity to influence which skill or feature they want to practice. They could also choose if they wanted to practice alone or in a group? The players always evaluated their own skill level at the beginning of the training period. Tools we used were videos from games and previous training measurement outcomes. The goal was to develop high-quality and well-trained athletes who had the opportunity to develop to the top of their sport.

##### **4.1 Junior High School**

As a result of junior high school, a new camp model was created, where the learning of game situation roles is enhanced. The game situation roles are divided in order of importance based on the challenge of the game situation roles. Placing the most challenging roles at the beginning of the season enables the materials made available for the clubs in the Lapland region to utilize them during the whole season. The dates of the academy camps are determined according to the camp calendar drawn up by the sports academy. Academy calendar is presented in figure 3 below. Several sports are practiced during one camp week and the weeks are divided based on the players' school grade.

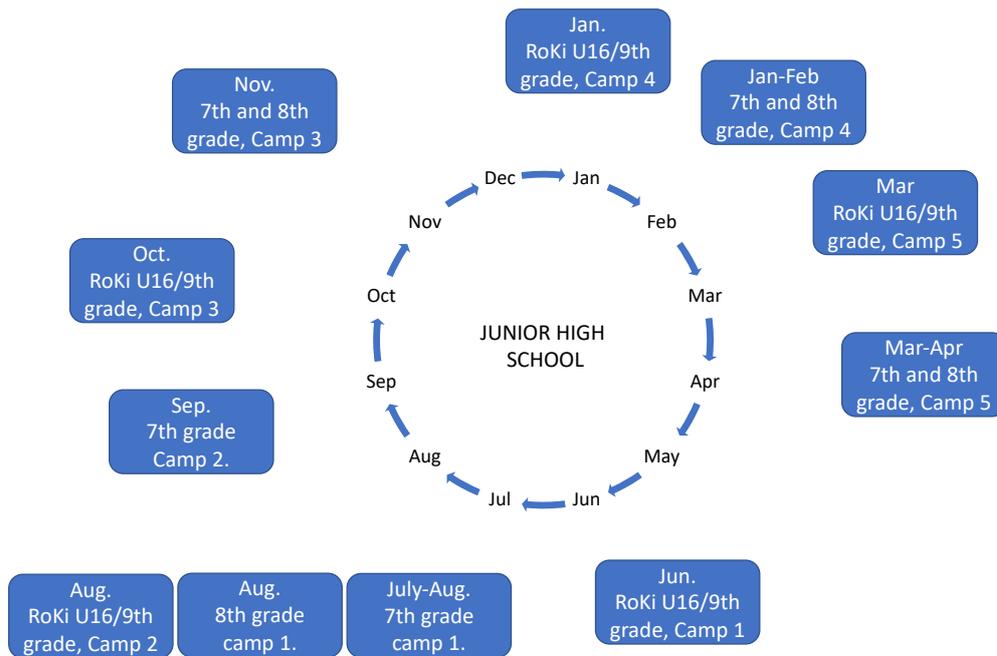


Figure 3. Annual schedule for junior high school camps

Junior high school is working as the starting phase of the elite athlete pathway. Setting a high level of requirements is important in the camps, so that the quality of the activities is high in the 8th and 9th grade before the transition to the high school academy. Responsibility for one's own actions and supporting and encouraging other players are emphasized due to the development of the atmosphere. The players are prepared to transfer to high school academy by giving opportunities to influence the camp activities. A part of the planning of the content of ice training or off ice training can be given to the players. No one in the 7th or 8th grade of the junior high school academy has to plan the exercises by themselves. The work is done in groups. The reason for this is the players' inexperience with planning. At the same time, cooperation skills are also developed. Academy coach makes a final decision what is the players part of planning. The content of each camp is divided according to the Game – Characteristics – Skating model used by the Finnish Hockey Association, where game skills, mental skills, and technical skills are taken into account. The content is always built in accordance with the theme of the camp. This makes the camps more versatile and comprehensive. Contents of junior high school camps is presented below in table 2.

The topic of the first camp is to learn the basics and concepts of all four game situation roles. This makes teaching easier on other camps when the players already know the basics. The camp rules, operating methods, goals and themes of the season are also the subjects of the first camp. Setting goals at the beginning of the season allows to insist on them throughout the season at every camp. Setting the players' personal goals guides the individual player's activities in the camps, as well as in their own club during the time between camps.

Table 2. Contents of junior high school camps

Grade		CAMP 1			CAMP 2			CAMP 3		
		Game	Charasteristic	Skating	Game	Charasteristic	Skating	Game	Charasteristic	Skating
7th Grade	Theme	Working in a group and academy rules			Testing and long term training - Result?			Succeeding together		
	Big Picture	Game situation roles (GSR)	Basics of working as a group	Versitile sport specific skills	GSR 4	Communication	Skating	GSR 2	Cooperation	Change of rythm
	Topics	Principles of the roles	Rules and working methods	Skill evaluation for the future	Finding the player + low triangle	using voice, Key words, commitment	Blade technique for ward power skating	Creating and winning space	Considerations of others and cheering to others	Reactions
	Importance	2	5	3	5	2	3	3	2	5
8th and 9th Grade	Theme:	Working in a group and academy rules			Testing and long term training - Result?			Succeeding together		
	Big Picture	Game situation roles (GSR)	Basics of working as a group	Versitile sport specific skills	GSR 4	Communication	Skating	GSR 2	Cooperation	Passing
	Topics	Principles of the roles	Rules and working methods	Skill evaluation for the future	Distance controll and movement directions	Commitment	Basick of power skating	Scoring, creaating and winning space, preparedness to defense	Grouping, be yourself in agroup	Passin from movement to movement
	Importance	5	3	2	4	5	2	5	3	2

Grade		CAMP 4			CAMP 5		
		Game	Charasteristic	Skating	Game	Charasteristic	Skating
7th Grade	Theme	Winning and small things			Summary and planning		
	Big Picture	GSR 3	Passion and wnnng	Stamina	PTR 1	Long term athlete	Scoring
	Topics	Skating, stick and body pressure	It's the small things that matter	Power skating and turns	Shooting	Testing, athlete interviews	Explosiwness
	Importance	2	5	2	1	5	3
8th and 9th Grade	Theme:	Winning and small things			Summary and planning		
	Big Picture	GSR 3	Passion and wnnng	Skating endurance	PTR 1	Long term athlete	scoring
	Topics	Batteling, skill to steal a puck	It's the small things that matter	ability to move in four directions	Shooting and scoring	Testing, athlete interviews	Explosiwness
	Importance	5	3	2	3	5	2

From the second camp on, one game situation role is practiced on each camp. The theme of the camp guides the action and is designed to support the practiced game situation role. The players' share of activity planning is gradually increased during the season. However, in junior high school players do not plan the entire training event by themselves.

In order to support holistic development, the players' program at junior high school camps includes mental coaching and nutritional coaching. The training is carried out in lectures where the basics of nutrition are covered, as well as e.g. the importance of goals during an athlete's career. In the players' program, there is also time set aside for schoolwork every day.

## **4.2 High School**

The high school academy serves as a preparatory phase for the elite sports pathway. It emphasizes player-oriented training as well as player's ownership of their own development. Players must be curious and ready to take responsibility for their own development. The coaches' job is to help the players whenever they need it. The environment in which the Academy operates allows coaches and players to interact continuously, because some of the schools where the players study, are right next to the ice rink and the academy coaches are full-time employees.

In the high school academy that is based on morning training, there is an opportunity to significantly influence the schedules and contents of individuals own training. The academy's annual calendar is structured in such a way that it is possible to schedule training according to the needs of each player. Calendar is described in figure 4. The tests at the beginning and end of the season and the player discussions held at December are the only events marked on the calendar in advance. At other times during the season, the players have their own individual training periods, which the players themselves plan. School application times in the spring do not affect the activities of the athletes at the Academy. Selections from new athletes to high school academy are made during May-June.

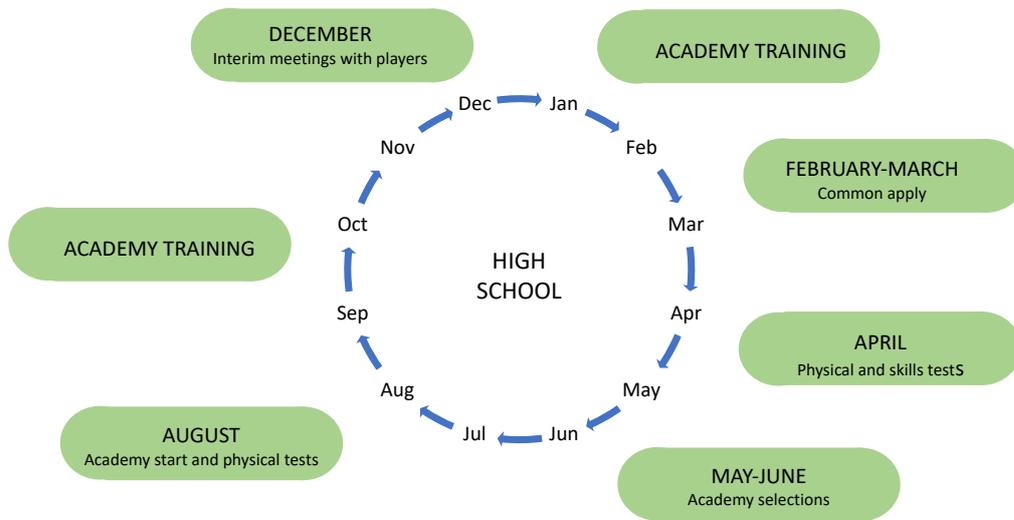


Figure 4. Annual schedule of high school academy

The construction of the players' personal training plans starts a week before the end of the previous period. This way, a new training period can be started as soon as the previous one ends. The player fills out the form used in the planning (table 1.) with the coach whenever planning a new episode. The coach's task is mainly to ask the right questions, through which the player finds the right topics for the next training session. For more experienced players who have been in the Academy for several years, planning can also be assigned independently. However, you should remember that the most important thing is a good and high-quality plan. The purpose is that the player is actively involved in building the training program and participates in making decisions.

The topics of the players' plans can be chosen from topics that are important to the player or the planning can utilize the periodization of academy training presented in table 3. The periodization is structured to facilitate the planning of individual plans. The player can choose to follow the academy's schedule if finding their own subjects seems difficult. This is an important tool specially for those in their first year at the Academy. The tool enables an easier way to familiarize yourself with the operating model and to plan your own training independently. The content has been divided into three parts according to the player pathway of the Finnish ice hockey association. The only difference in that characteristics section has been changed to athleticism. Athleticism is one of the high school Academy's core values, and we wanted to emphasize it in the training content as well. The contents are based on the time of the year. During the darkest time of the year, the emphasis is on recovery, nutrition, and rest. At the end of the season, sustaining training and

activities must be taken into account. After the end of the season, the players' ability to act independently while doing independent training is emphasized.

Table 3. The content guiding the individuals planning process

<b>High School: The contents guiding the individual's planning process</b>			
	<b>GAME</b>	<b>ATHLETICISM</b>	<b>SKATING</b>
<b>AUG</b>	▷ Scoring		SKILLS WITH PUCK
<b>SEP</b>	▷ Offensive play in all zones		▷ Puckhandling
<b>OCT</b>			▷ Shooting
			▷ Passing
<b>NOV</b>	DEFENSIVE PLAY	▷ Recovery	▷ Skating skills
<b>DEC</b>	▷ Dual	▷ Sleep	▷ Power skating
<b>JAN</b>	▷ 1 vs 1 play	▷ Nutrition	▷ Versatile skills of skating
	▷ Game situation roles 3+ 4		
<b>FEB</b>	OFFENSIVE PLAY	▷ Maintenance training	▷ Combination of skating and playing with puck
<b>MAR</b>	▷ Game situation roles 1 + 2		▷ Dekes
<b>APR</b>	▷ Emphasis of observation-decision making		▷ Threat with puck
<b>MAY</b>		▷ Initiative individual	▷ Shooting
<b>JUN</b>	-----		▷ Puck handling
<b>JUL</b>			▷ Supportive training for skating

To support holistic development, the academy also offers mental and nutritional coaching. The use of these support services in the high school Academy is up to the players themselves. If the coach sees a need for the use of support services, he suggests to the player and presents the possibility of using them. All conversations between the coach and the player are confidential. In addition, the players also have access to a doctor and physiotherapy services, which are located in the premises of the sports academy.

## 5. Discussion

Overall, the process was complicated, difficult to implement, and long. It was difficult to plan the steps of the process in advance because, according to our knowledge, no similar work or method of operation has been done before with such a clear player-oriented method of operation. The final goal was known, but the way in which it would be implemented became clear only later as the process progressed. The implementation of the project resembled the Agile method, where the process is planned, implemented and piloted in stages (Pulkkinen, 2022). Feedback on the activity is collected from the target group which is then used to develop the activities. In our own process, the players feedback was not used the way it could have been used. Thinking about the 2018-2019 and 2019-2020 seasons, the development of the operation according to the feedback received from the players could have taken the project further from the current result. Many of the players who were used to the old operating model did not adapt to the new operating model. In the future, the feedback received from the players could be used more when the model is established in the sports academy.

In the early stages of the process the implementation was forcing and guiding the players towards a model where the player has more freedom to act independently. The reason for the forcing was that the players were not willing to implement the new model of academy training. Forcing was therefore necessary for the sake of change, so that the players could be introduced to the new model. Coaching also had difficulties adapting to the new way of working. For example, the support the players received from coaching was very little in the early stages of the process. The reason for this was partly the need to observation, as well as the coaches` inexperience with the new operating model. From the initial piloting phase, a lot of experience was gained for the players and the coaches.

In the end, we developed an operating model that can be used in many different ways in different environments. We believe that in addition to the players, the coaches will benefit enormously from the operating model. Coaching is truly one-on-one with each player in the coaching process, where many different influencing factors must be taken into account. In addition, the operating model can be used as part of team activities to enhance the development of personal sport specific skills. Utilization of the model in this way is in use at the sport academy of Lapland. The model also works regardless of group size. The activity can be carried out appropriately for players at junior high school age, as well as for young people under 18 and under 20 years old and adults.

In summary, the impact of the work on the activities of the sports academy was significant. The model was necessary for creating and developing an athletic environment. We also saw the importance of maintaining the quality of operations and the environment. Too often the operating

model changes with the coach. At the same time, we wanted to create a manual for future academy coaches, with which they can implement high-quality player-oriented coaching activities. The work enables continuity of operations, even if the players and coaches change in the academy.

The goals of the work are realized in the current operating model. The model enables individual training combined with team training. In the sport academy, players are encouraged and guided to a holistic coaching process. The cooperation between the club and the Academy works and supports the players' development throughout the season. The model is based on player-oriented coaching activities, which are carried out every day with the players participating in every step of the coaching process, planning, implementation and evaluation. Junior high school activities also support the development of the Lapland region by distributing material and instructions to the clubs in the region regarding the planning and implementation of training.

Since the model is new the development of the players has not yet been properly monitored long term. RoKi's players who made it to their own men's team are listed in section 3.2. Monitoring where the players continue playing after junior high school and high school is definitely a development point in the future. The number of drop outs in the junior high school academy are also important indicators in terms of the quality of the academy activities. In the future, following the player path of these players as well as players who have left the club should serve as a measurement method.

In our opinion, period-specific goals work excellently as a measurement of game skills. Goals are created and measured from the player's own game performance. The benefit of period-specific goals is also that the player can monitor his development during the period. The possible observed development also increases the athlete's motivation to train. The player's development is always noted in the meeting held at the end of the training period. The evaluation made after the period is compared to the evaluation made before the period from which a conclusion can be drawn as to whether or not development has taken place during the period.

Since the work has only been in use as it is for about a year, it is difficult to find bigger development targets. We believe that by using the operating model, the requirements and needs of the model will also become clearer. For example, measuring inner motivation would justify the functionality of the model even better than before. In addition, in the operation of the high school Academy, we believe that combining the training of U18 and U20 players would especially benefit the development of younger players. To make the players' planning easier, it would be good to create ready-made long-term and short-term process models, which the players training plans could be based on.

The main weakness of the operating model was people's attitude towards it. There were many discussions with the players and the players' parents about what the coach's job is in the academy. The use of the model had to be justified for the first two years, although at the same time some people began to understand its benefits. Another weakness in the process was that the players could not be prepared for the change. Since the old model didn't work, a new one was created and the players were told that this is how we will work from this day forward. It didn't make it any easier that the players would have accepted the model right away. We see the support we receive from the club and Academy management in developing the model as benefits. RoKi head of coaching Kai Jansson and the Top sports Coordinator of Sport academy of Lapland Reijo Jylhä told to try different options for the development of activities and gave their support when problems appeared. Another benefit is the close cooperation between the club and the Academy, which now also works in terms of sports activities and promotes player development. Practice plans are built in cooperation with the academy and the club. Now, in addition to team training, the players' training also has the opportunity to carry out their own personal skill training.

My personal coaching skills took a huge leap during the process. Right from the start, I found myself in a difficult situation where the motivation of the players did not match mine. During the development phase, I familiarized myself with a lot of different ways of working, talked with coaches of different sports and tried new things. My collaboration skills developed while working with many different peoples. I learned to utilize the environment where the Academy worked. Above all, I learned how to work with players and develop player-coach relationships. Along with the process, I also found a lot of development targets in my own process work. Developing planning skills, creating a plan and sticking to it are often important. However, in this process it was often beneficial that there were constantly new ideas for developing the operational model.

## References

- Arvaja, M. & Mustonen, P., 2016. Psykkinen näkökulma. In: *Huippu-urheiluvalmennus*. Lahti: VK-Kustannus Oy.
- Arvaja, M. & Mustonen, P., 2016. Sosiaalinen näkökulma- huippujoukkueen toimintaedellytykset. In: *Huippu-urheiluvalmennus*. Lahti: VK-Kustannus Oy.
- Balyi, I. et al., 2014. *Long Term Athlete Development*, s.l.: Athletics Canada.
- Finnish Ice Hockey Association, 2018. *Yläkoulutoiminta*, Helsinki: Suomen Jääkiekkoliitto.
- Finnish Ice Hockey Association, 2022. *Leijonapolku*. [Online]  
URL: <https://www.finhockey.fi/index.php/pelaajalle/leijonapolku>  
[Accessed 2 May 2022].
- Finnish Olympic Committee, 2022,. *Urheiluakatemiaohjelma*. [Online]  
URL: (<https://www.olympiakomitea.fi/huippu-urheilu/urheiluakatemiaohjelma/>)  
[Accessed 13 June 2022].
- Hockey Canada, 2022. *LTPD Stages*. [Online]  
URL: <https://www.hockeycanada.ca/en-ca/hockey-programs/coaching/ltpd/ltpd-players>  
[Accessed 14 April 2022].
- IIHF, 2022. *IIHF Player Development Guide*. [Online]  
URL: <https://www.iihf.com/en/static/20489/general-information>  
[Accessed 3 May 2022].
- Jowett, S. & Cockerill, I., 2002. Incompatibility in the coach-athlete relationship. In: *Solutions in sport psychology*. London: Thomson.
- Kalaja, S., 2013. *Taitokartta*. [Online]  
URL: <http://www.valmennustaito.info/taitokartta/liikkumistaidot.php>  
[Accessed 5 May 2022]
- Kalaja, S., 2016. Taitoharjoittelu. In: *Huippu-urheiluvalmennus*. Lahti: VK-Kustannus Oy.
- Kidman, L. & Lombardo, B. J., 2010. *Athlete-centered coaching, Developing Decision Makers*. Worcester: Innovative Print Communications Ltd.
- Mageu, G. A. & Vallerand, R. J., 5/2010. The coach-athlete relationship. *a motivational model*.

Martindale, R., 2015. Talent development. In: *Practical Sports Coaching*. London and New York: Routledge.

Mero, A., Nummela, A., Kalaja, S. & Häkkinen, K., 2016. *Huippu-urheiluvalmennus*. Lahti: VK-Kustannus Oy.

Pulkkinen, A., 2022. *Agendum*. [Online]

URL: <https://www.agendum.com/post/agile-waterfall-kanban-6-projektinhallintamenetelmaa>  
[Accessed 26 July 2022].

Ryan, R. M. & Deci, E. L., 2002. *Handbook of Self-Determination Research*, Rochester, NY: The University of Rochester Press.

SIHF, 2022. *FTEM Switzerland*. [Online]

URL: [https://www.sihf.ch/media/13734/sihf\\_broschuere\\_ftem-konzept\\_a4.pdf](https://www.sihf.ch/media/13734/sihf_broschuere_ftem-konzept_a4.pdf)  
[Accessed 2 May 2022].

Sport for Life Society Canada, 2022. *Long-term development stages*. [Online] URL:

<https://sportforlife.ca/long-term-development/>  
[Accessed 5 June 2022].

Sports Scotland, 2022. *Long-term athlete development, What, why and how*. [Online]

URL: <https://sportscotland.org.uk/media/2878/latda3poster.pdf>  
[Accessed 5 May 2022].

Svenska Ishockeyförbundet, 2022. *Hemma Plans Modellen*. [Online]

URL: <https://hemmaplansmodellen.se>  
[Accessed 2 May 2022].

The Australian Institute Of Sport, 2022. *FTEM Framework*. [Online]

URL: <https://www.ais.gov.au/ftem>  
[Accessed 27 April 2022].

Tiikkaja, J., 2016. Toiminnalliset painopisteet ja valmentautuminen pelaajapolun eri vaiheissa. In: *Huippu-urheiluvalmennus*. Lahti: VK-Kustannus Oy.

Tiikkaja, J., 4/2014. Ihmisen kasvu- Valmentajan ja urheilijan yhteinen matka. In: *Valmentaja*.

USA Hockey, 2022. *American Development Model*. [Online]

URL: <https://www.admkids.com/page/show/910488-what-is-the-american-development-model->  
[Accessed 13 April 2022].

## Appendix 1. FIHA player pathway

		Enthusiasm phase of children's hockey	The phase of playing children's hockey The "preparatory" phase of children's hockey	Young players training emphasis phase A phase aiming for the top	Adult top athlete phase
		5-9 years olds - lion hockey school and lion league	10-14 (U12-U15)	15-19 (U16-U20)	20-
	Priorities of activity "Functional values"	ENTHUSIASM IN GOOD ATMOSPHERE Generating a passion for playing Guiding to an active lifestyle Healthy self esteem	PLAYING IN GOOD ATMOSPHERE - Teaching the game Developing the courage to play Growing into a player	QUALITY AND WINNING IN A GOOD ATMOSPHERE- Guiding to a sporty lifestyle Developing speed of playing Developing into a winning and self directed player	
Playing	Developing individual - teaching tactical skills	Getting used to the contact game ("angling") Golden rules of playing Playing "head up", observing the game Applied small area games as learning environment Games and competitions	Versatile development of individual tactical skills: scoring, checking and getting checked Teaching game situation roles; focus on offensive play -> defensive play Principles of transition play 2-3 player co-operative drills to 5 players drills Start of whole rink playing Verstie ball games	Refinement of game skills, development of speed skills Transition play without delay Reliability and speed of performance in game Scoring under pressure Recognizing the game situation; attacking and defending in SH, PP and 4 vs 4 situations=game situation roles/priorities	"Winning" playing of game situations Utilization of individual strengths: The player recognizes the situations, make winning choices through priority play and the game system
	Developing team play	Learning the rules of the game Working in a group Playing with a friend Rotating positions	Willingness to play in versatile game situations, playing in different roles Rotating positions	The priorities of "Our game" (structures and rhythms) Cooperation between the goalie and the skaters Changing playing positions according to the requirements of the game Playing in special situations	"Total hockey - Winning Team" Winning cooperation of five skaters in offensive and defensive play Winning play of five skaters in areas influencing the result (e.g front of the net and bluelines)
Character	Developing mental skills	Enthusiasm for an active lifestyle The development of healthy self esteem everyone is treated encouragingly and fairly Trying to do your best Listening and focusing Athlete's self confidence - a sense of ability	Developing cooperation skills Guiding to be exemplary Tolerating adversities Guiding to independence Teaching life management skills Thinking about one's own personality - increasing individual self knowledge Self-development capabilities-increasing understanding of the effects of the training process	Profiling the athlete's mental characteristics; "growing into leadership" Comprehensiveness at all levels of activity (psychological coaching) Development of life management skills Quality of training - goal orientation and tenacity Independent activity and goal orientation (enjoyment of training) - growth of innate motivation Pressure tolerance - recognition of emotional states	"At one's best under pressure" Comprehensiveness (mental training) The ability to play at the upper limits of potential consistently from match to match Quality of life management - the lifestyle and life management of a top athlete Pressure tolerance - skills and means to manage and control emotional states
	Developing sports specific techniques and skills	Basic technical skills in skating, puck handling, passing and shooting	Versatile technical skills in skating, puck handling, passing and shooting		The technical skills of the sport guarantee the winning playing of the game situations
Skating	Developing physical capabilities	Versatile basic physical skills: agility, coordination, balance and speed	Refinement of basic physical capabilities Muscle balance, flexibility and poise Importance of nutrition and rest Development of muscle endurance	Development of physical characteristics that support playing skills; strength, endurance, speed Periodization and rhythm of training Comprehensive promotion of recovery	Development and sustain of physical capabilities

Operating environment					
Home	The atmosphere that encourages to sports Yard games	The atmosphere that encourages to sports Yard games "Sports as a way of life" - nutrition and recovery	Supporting the sports selection "Time management" - school, training, free time	Supporting the sports career	
School	Club activities and school series	The beginning of hockey academy	Sports schools and academy activities	Vocational and higher education Academy activities	
Club	Lion Hockey School Suburban hockey action Versatile sports activities (within hockey club or other sports) Non-supervised afternoon ice activities Playing and club activities	Activity by skill level (emphasizing playing skills in differentiation) Versatile sports activity (within hockey club or other sports) Guidance for independent practice Creating independent game groups Skill and talent ice activities	Comprehensive training activities Organizing enhanced training Activity by skill level Skill and talent ice activities "Time management" - school, training, free time Career planning Postural and functional assessments	Consideration of family life Making studying possible Career planning Health checks and antidoping activities	
Region	Lion league	Starting the series of different level Regional coaching Club visits Antidoping activities	Hobby hockey activity	Hobby hockey activity	
National association	No national game activity	Cross-regional operations (D-C2 juniors) Player evaluation operations (D1-C2)	National competitive activity National Teams activity Club visits Health checks and antidoping activities	National Teams activity Club visits Preparing for life after a sports career Antidoping activities	
Amount of exercise					
Hockey's share	5-7 yrs min. 20 hours/week, of which ¼ is guided training (ice hockey and other sports) and ¾ is self-paced exercise 7-9 yrs min. 20 hours/week, of which ¼ is guided training (ice hockey and other sports), ¼ is school hockey and yard games and ¾ is self-paced exercise	10-11 yrs min. 20 hours/week, of which ¼ is guided training (ice hockey and other sports), ¼ is school hockey and yard games and ¾ is self-paced exercise 12-14 yrs min. 20 hours/week, of which ¼ is guided training (ice hockey and other sports), ¼ is school hockey and yard games and ¾ is self-paced exercise	15 yrs min. 20 hours/week, of which ¼ is guided hockey training, ¼ is school hockey and yard games and ¾ is self-paced exercise (other sports) 16-19 yrs min. 20 hours/week, of which ¼ is guided hockey training and ¾ is self-paced exercise (other sports)		