

Long-term learning

with Eric Verboom

From the series :
Best Practice Sharing of
Innovative and Disruptive
Field Hockey Skills Erasmus+
Program 2019 - 2020



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POLSKI ZWIĄZEK
HOKEJA NA TRAWIE

HOCKEYCLUB
'S-HERTOGENBOSCH

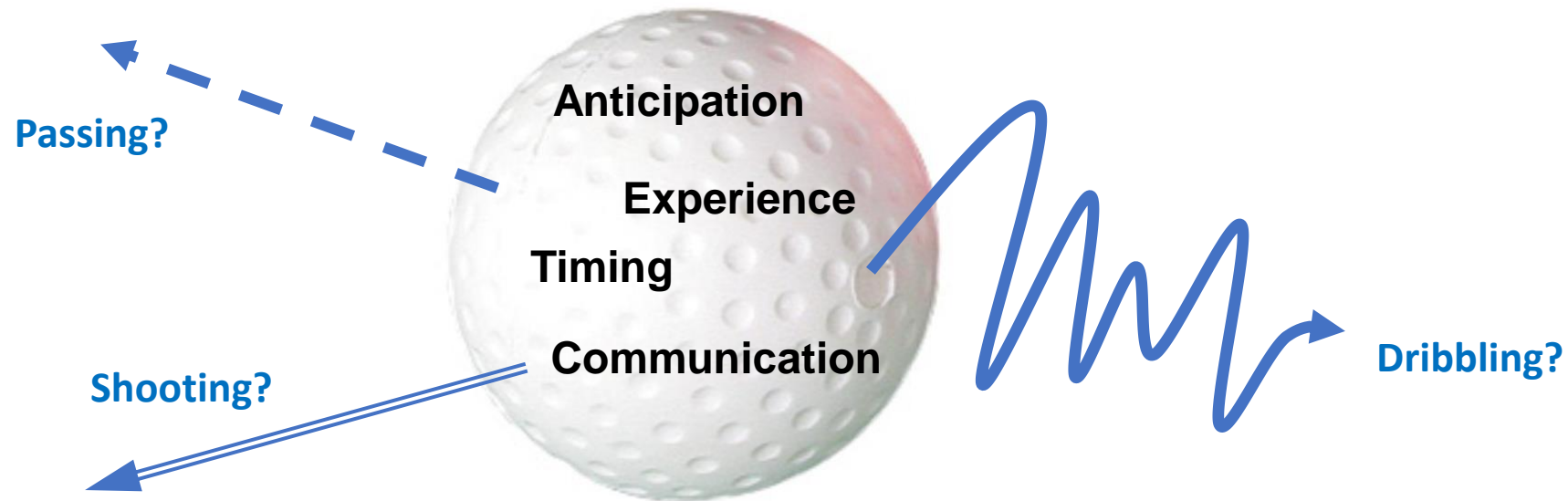


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A collaboration between

„This guy has no understanding of the game“

Do the right thing in the right moment!



Understanding of the game controls the ability to select basic technical-tactical elements such as 1 vs. 1, passing or goal scoring in the right way.

How do players solve a hockey specific „problem“?



It is important to get into ball possession,
but more important is to know what to do
with the ball!

Can we train the right understanding of the game?

YES – and we show you how!



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Key messages

- Think about methods of implicit learning during coaching sessions!
- Movements do not have to be carried out “correctly”, but successfully.
- Creativity and variety instead of permanent repetition.
More variation - less repetition.
- Create situations with more chaos.
- Make players think.
- Keep players learning in new situations using/creating their best solution.

Explicit learning = instructed

- Explicit learning takes place through the conscious recording of information, whereby knowledge content and / or memories are stored.
- Knowledge transfer is regularly instructed externally.
- Explicitly is the conscious recording of information and the active communication of learning content / target techniques / actions by the trainer.



ICH SAGTE: DEN LINKEN FUSS VOR, DIE SCHULTER-LWIE SENKRECHT ZUM NETZ. DEN RECHTEN ARM LOCKER LASSEN, DEN SCHLÄGERKOPF NIEDRIGER ALS DAS HANDGELENK, DAS RECHTE BEIN FERTIG - MACHEN ZUM VOR-SCHWELLEN

Implicit learning = trial and error

- If you acquire knowledge or skills “on the side” without having to make an effort, casually (without being aware that you are learning), you are talking about implicit learning.
- The trainer teaches less so players can learn more!



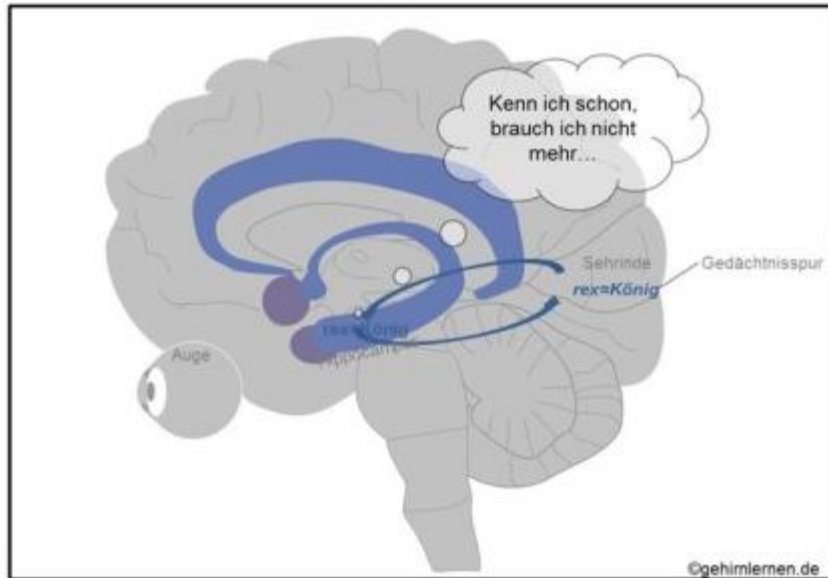
Learning by doing



- The players are in the foreground. The players are subject to certain constraints and the players will adapt accordingly over time due to the constraints.

Trial and error

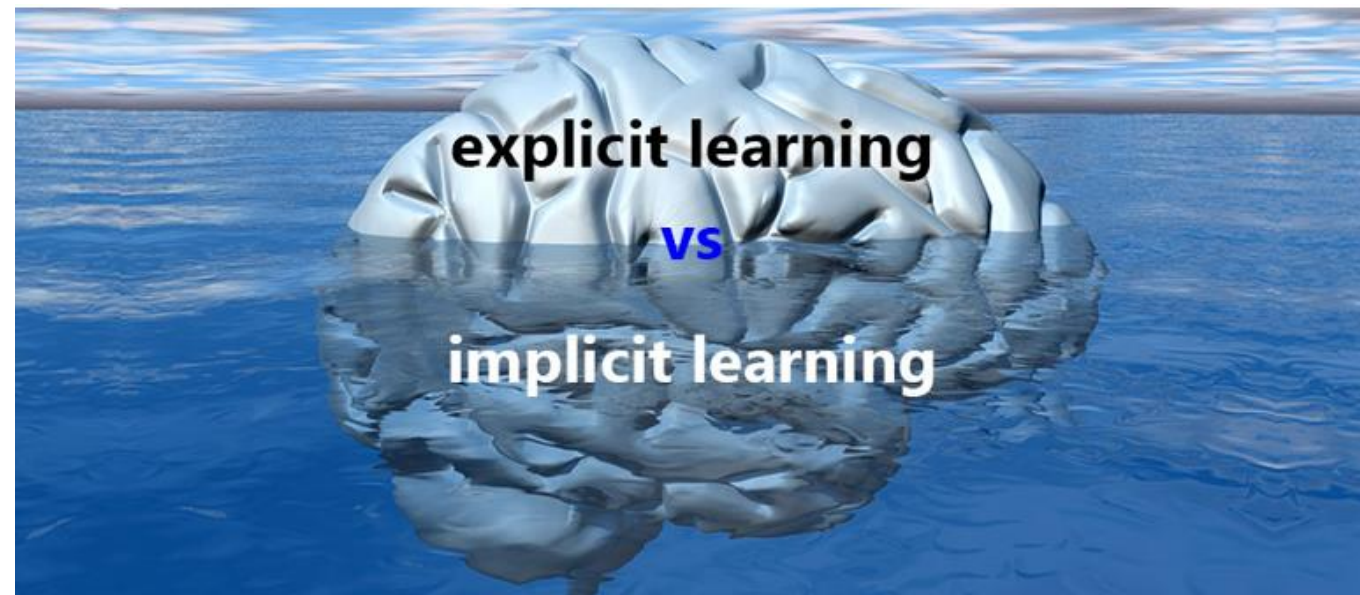
Brain and Learning



Is there a memory trace in the cortex, and the identical information is recorded again, the hippocampus compares them. If he determines that they are identical, he saves having to save them again. The content is not consolidated!
Stubborn 1: 1 repetition is unsuccessful! The hippocampus "wants to be entertained"!

Source: <https://www.gehirnlernen.de/lernen/grundlagen-des-lernens/explizites-lernen/>

Hippocampus	Short-term memory and transfer to long-term memory	unstable	Quick response to and process of new information
Cortex	Long-term memory	stable	Stable memories, wealth of experience



Which learning style do you prefer?

We help you to use more and more the implicit style!



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Implicit learning benefits

- Skills are more stable
- Increased resistance to fatigue
- More durable over time
- Not occupying attention



Approaches containing implicit mediation ideas

- A. Learn differential (theory by Schöllhorn)
- B. Heidelberger Ballschule (kids training)
- C. Life Kinetic



A) Learn differential (theory by Schöllhorn)

How to improve technique - learn differential vs. learn traditional

1. traditional method of motor repetition; the so-called grinding
2. differential teaching method
 - improve technical skills through variations -> differences in the execution of the movement are a sufficient need to trigger a self-organizing learning
 - Movements are subject to constant fluctuations due to constantly changing game situations and cannot be repeated exactly.
 - The qualitative evaluation of techniques is therefore not about aesthetics (ideal picture of a technique), but whether the execution in the corresponding situation is successful (technique appropriate to the situation).
 - In addition, movements are individual or person-specific, which means that nobody moves in the same way as another person.

B) Ballschule Heidelberg



- According to development phase – children are no „small“ adults
- **Adaptability** – children are allrounder and no specialists
- **learning without guidance** – trial and error
- **Joyful** – playing makes perfect!

Entwicklungs-
gemäßheit

„Kinder sind keine
verkleinerten
Erwachsenen!“

Vielseitigkeit

„Kinder sind
Allrounder und
keine Spezialisten!“

Spielerisch-
unangeleitetes
Lernen

„Probieren geht über
Studieren!“

Freud-
betontheit

„Spielen macht
den Meister!“



B) Concept of Heidelberger Ballschule (Minis)

<https://www.ballschule.at/index.php?id=263>

App „Ballschule Österreich“

A	Optimize motoric elementary forms	Catch, stop, bounce, dribble, throw, kick, hit
B	Learn technical-tactical building blocks	Recognize the trajectory of the ball, determine the path to the ball, determine the point of play of the ball, offer & orient, secure possession of the ball cooperatively, identify gaps
C	Improve motor intelligence - coordinative basic competence	Time pressure, precision pressure, complexity pressure, organizational pressure, variability pressure



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Working with Minis



C) Life Kinetic



<https://www.lifekinetik.de/>

C) Life Kinetic

- playful training of the brain -> unusual everyday coordinative, cognitive and visual tasks
- perform movements while the brain is being challenged
- creates new connections between the brain cells
- the more networks are set up in the brain, the higher the performance, flexibility and processing speed of the brain
- positive results -> reducing stress, improving attention, improving speed of action

“You cannot overtake anyone if you follow in his footsteps”



Methods for implicit learning - Hockey

1. Metaphors
2. External focus
3. Error free learning
4. Learning different
5. Create effective movement situations

1. Metaphors

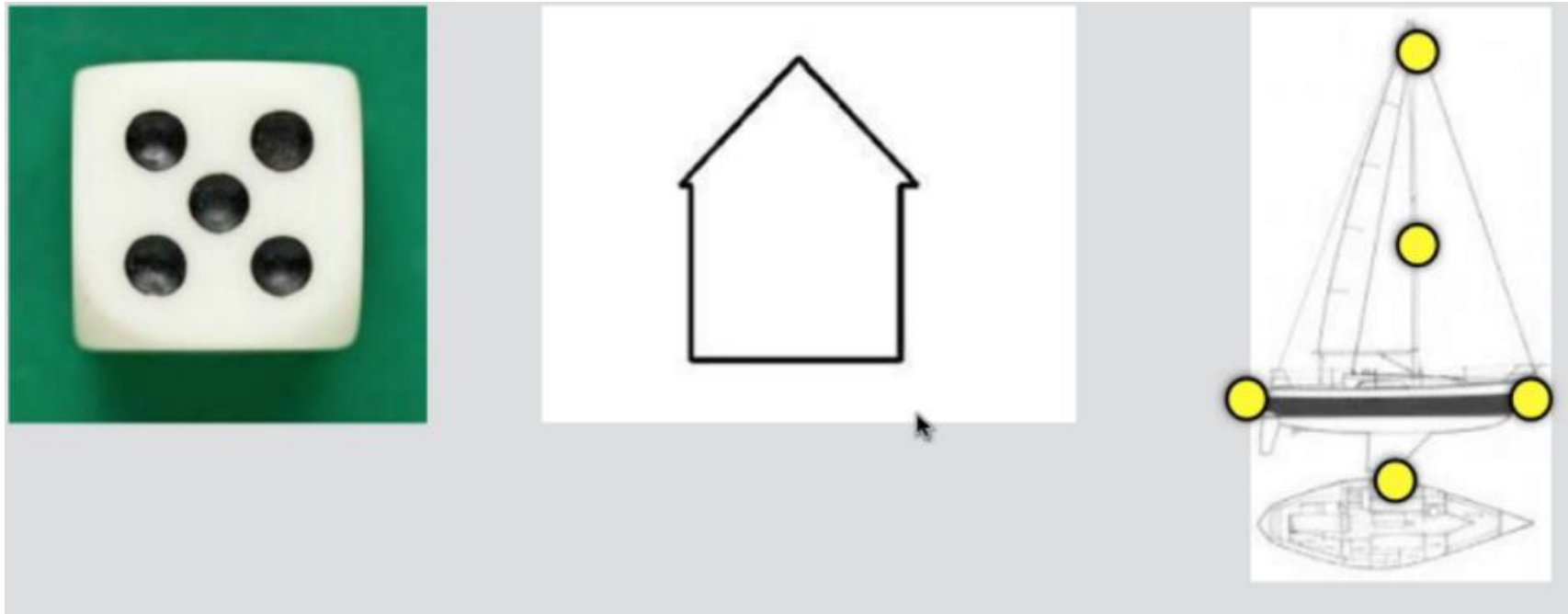
We make use of tips that appeal to the imagination.

A metaphor is used to explain a complex thought in a simple way by comparing it with something everybody knows



Examples from Eric

- Pan grip (for holding your stick for the Argentinian backhand)
- Open and closed windows (for explaining to close some areas on the pitch and keeping other open)
- Setup indoor hockey (see some examples below)



What metaphors do you use? Call out!



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Examples from the workgroup for inspiration

Shake hands (and take the stick) – right grip on the stick, put the “V” on the round side of the stick

Pancake grip – for tomahawk

Bomb – spread out (children to close around ball)

Gunfire - shoot immediately at the edge of circle

Fencing – stick control defense (tackling „the jab“)

Toblerone - triangle formation

Crane - overview before receiving ball

Play stairway - play out with forward pass and cross pass

Shaking hands with opponent – get into right distance for defending (guide attacker in a position)

Stand on opponent's feet - tight man coverage

Dragon formation - tactic for kids, one is the head, two wings, one tail

Alliens landed - while playing when everyone is in small area. After the call everyone without ball has to run in free area

Hot potatoe - pass ball as early as you can

Bus - Deep defensive on own half

Hotline – dangerous straight line between the ball and goal

Don't wake up the crocodile - practicing carrying the ball on stick without tapping it

Make movements conscious eg growing like a flower, try to reach the sky, fast as a Formula-1 car, moving arms like a propeller

Especially for the training with kids - compare movements with animals eg stomp like an elephant, quiet like a mouse



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2. External Focus

Focus needs to be on the result not in your body on the movements.

An external focus helps to simplify an instruction by describing something “outside of the body” of the players. So they focus on the external and unconsciously make their body do what is needed to perform the task.



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Examples from Eric

- Looking peripherally (instruction “green, orange, blue ...” instead of “put you left foot forward when playing the ball ...”)



Examples from Eric

- Goalkeeper footwork



Examples from Eric

- Trapping / reaction – which instruction would you give here?



Quick work (5 min) together in small groups - give me some examples for practicing with external focus?



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Examples from group

- Show numbers during dribbling - call out the numbers, make special movements for shown numbers
- Combine coordination with technical training
- Solve arithmetic problems during dribbling, goal shot, ... finding groups with result
- Calling out things (Where is Max? ...) during technical training
- Look at good soccer-sites in your country/Language and adapt it to hockey – just one example from hundreds ...

<https://www.soccerdrills.de/trainingsuebungen/passen/uebungen/vier-gewinnt/1344/>



3. Error free learning

is about giving the player the confidence he/she can do something successful. It gives them a permanent feeling of success.



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Examples from Eric

- Squash hockey & playing with larger/lighter balls



Principles how to make an exercise more simple to achieve error free learning



Participants	Less players (individual -> partner -> group)	More players
Material Throw Catch Kick	none, slow movements Small objects Large objects leightweight, large objects	small, quick movements Large objects Small objects Heavy, small objects
Time	More time for exercise	Few time for exercise
Speedness	slowly	fast
Area	large	small
To play in an area	Team in ball possession – more space Team non ball possession – few space	Team in ball possession – few space Team non ball possession – more space
Rules	fewer	more
Special tasks	more	fewer
Choices to make	fewer	more
Interaction with others	fewer	more
Movement / pass restrictions	more	fewer
Safety zones	more	fewer

Adapt activities
to the level of
player's
development

Source: Coach education Austria, Sabine Blemenschütz

Use A D A P T for error free learning

A DAPT

DIRECTION

AREA / DISTANCE

PRESSURE

TEMPO

- Use 4 principles to make your exercises easier or more difficult
- Changing directions makes exercises more difficult. Easiest is to start in a straight line.
- Greater distance between players makes exercises easier – in next steps reduce spaces or distance between players.
- Practice technical skills first with poles or cones, then incorporate semi-active and active opponents.
- Start slowly (in the stand) and then gradually build in more pace.

4. Learning different

Train with different movements.

Give the brain a lot of different experiences in movement.

It is all about variation instead of repetition!



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Example: Variation for “shot at the goal”

- Running to the goal: sidesteps, zick-zack, heels or toggle lever
- Situation: rested / rolling / springing ball (from in front or from side), with dribbling, with / without opponent (from in front, from the side)
- Foot: left or right foot in front, toes in front or to the side
- Body: more in front, more in the back, head up / down
- Stick: normal grip, short-handed, slap-shot, big/small movement, turned around stick
- Technique: forehand, backhand, push/drag/flick
- Ball: weight, form, size
- Additional: close one eye, shot at special part of the goal, combination of whatever ...

Do you have more examples?



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5) Create effective movement situations

We as coaches make exercises that athletes learn by themselves.

Give exercises that athletes can learn!



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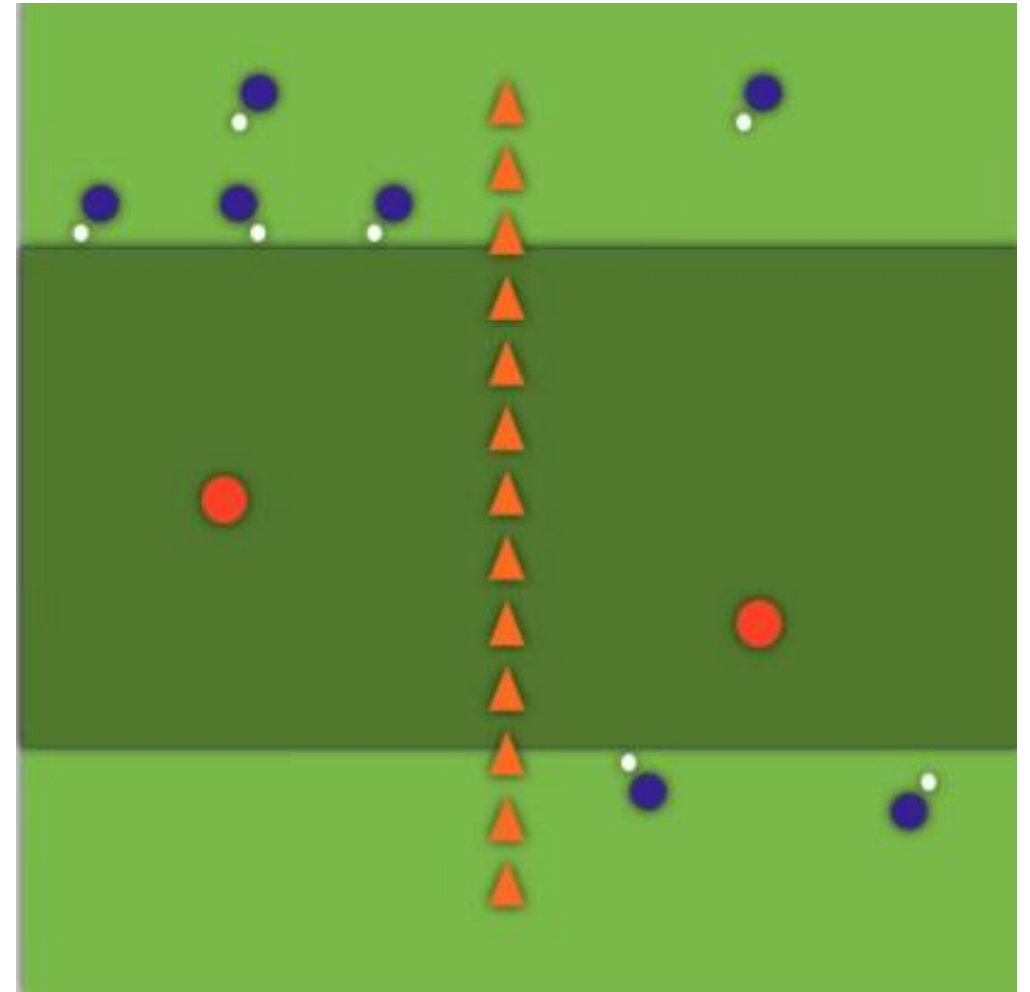
Create effective movement situations

Objective: Quick thinking and decision making

- Players need to find their solution for a problem – that is the way how they learn implicit.
- Coach can manipulate with rules - try to manipulate situations so that players have to adapt.
- Challenge your players!
- Unconsciously force different solutions!

“Cross the river” – learn decision making

- Mark a zone = river. In the river lives the crocodile (red) and it likes to eat little white balls.
- Players in blue with the ball have to bring the stuff on the other side of the river – but watch out for the crocodile!
- Blue starts running with the ball and red tries to get the ball. If blue can go to the other side they have 1 point. If they loose the ball to the crocodile they became the crocodile.
- Work in a circle.
- Make the river at the beginning very small (appr. 3m)



Open passing lines

- Use same zone (river) as before.
- 2 players against crocodile
- Player behind “the crocodile” has to come out of the shadow and open the passing line.
- Motivate your players to use fints and fakes.
- Players learn to make in-out-movements, making fakes with the ball and without the ball, defenders learn that it is better to defend with the forehand ...

Variation:

- first with a handball
- after that, with stick and hockey-ball



Open passing lines

- Use same zone (river) as before.
- 3 players against crocodile.
- Players find solutions themselves – without great explanation of the trainer.



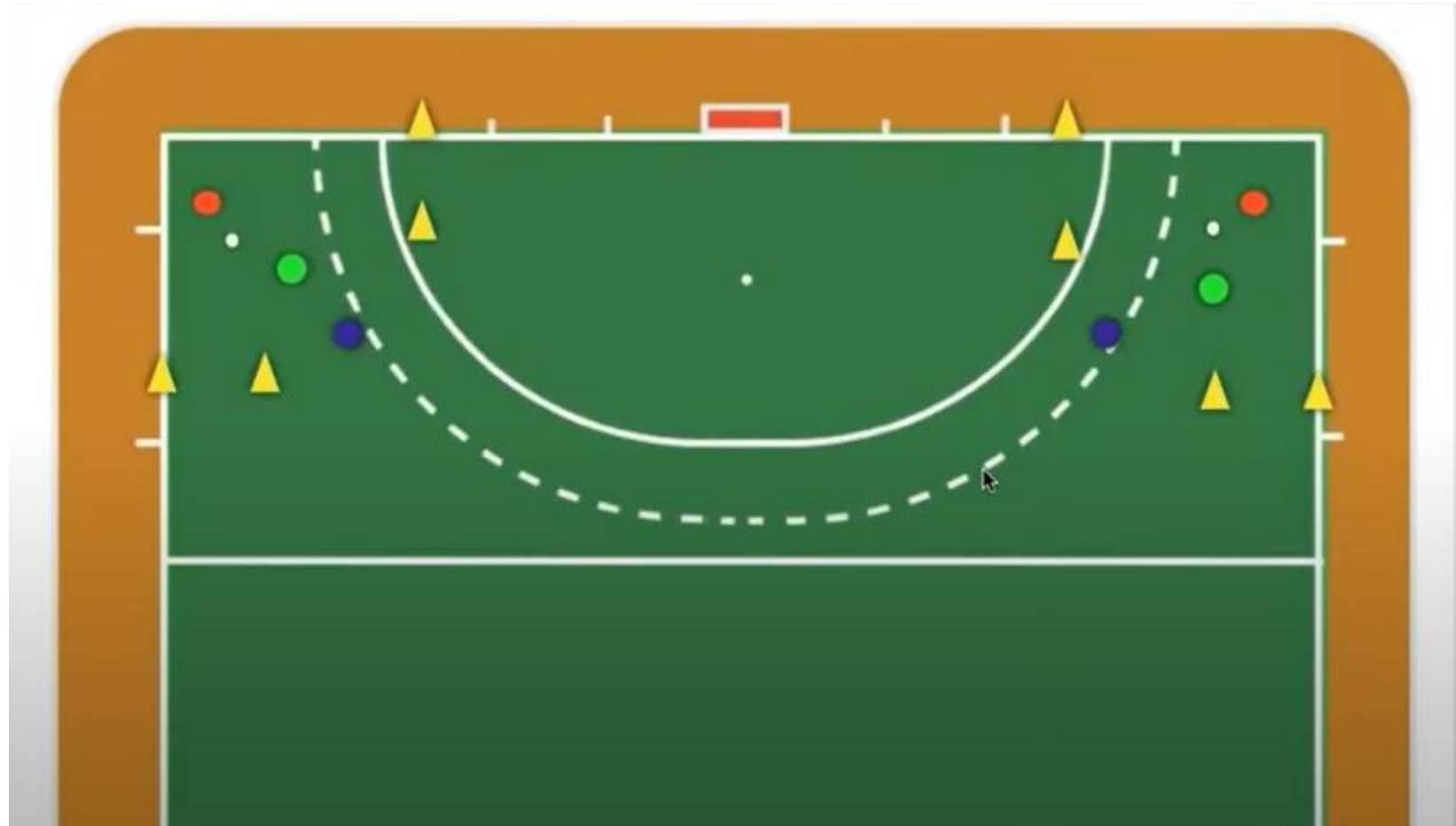
1v1 attack left side

- Attacker (blue) starts with the ball.
- Defender defends.
- Attacker can decide to go through the goal 1 or goal 2 and after that is allowed to play at hockey goal.
- Ask to show different solutions e.g. body fakes, turn arounds, finting, crossing the defender ...



Receiving in motion

- Green player plays the ball to red
- Red can escape through the left or to the right goal
- You as a coach use and change rules – players do the decision making



Receiving in motion

- Ball is played from the left side
- As soon as ball is played to the girl in white, the girl in orange can go
- White and orange play 2 vs. 2 to the goal



Defend the square

- We defend the middle of the square
- They need to find a solution to get in
- Defender need to held them out

Variation:

-1 vs 1

-2 vs 1



Defend the square (avoid that opponent goes into the center)

- 4 vs 4 in a zone
- they can score if the ball goes through the square from blue to blue or from orange to orange (pass through or pass in the square)
- The most important part is to defend the middle of the square!
- Every turnover is dangerous!



Quick thinking – striker training

- 3 vs 2 goalies
- Goalie only needs to slide the ball outside the area
- Coach gives ball to goalie or strikers
- Decision making improves!



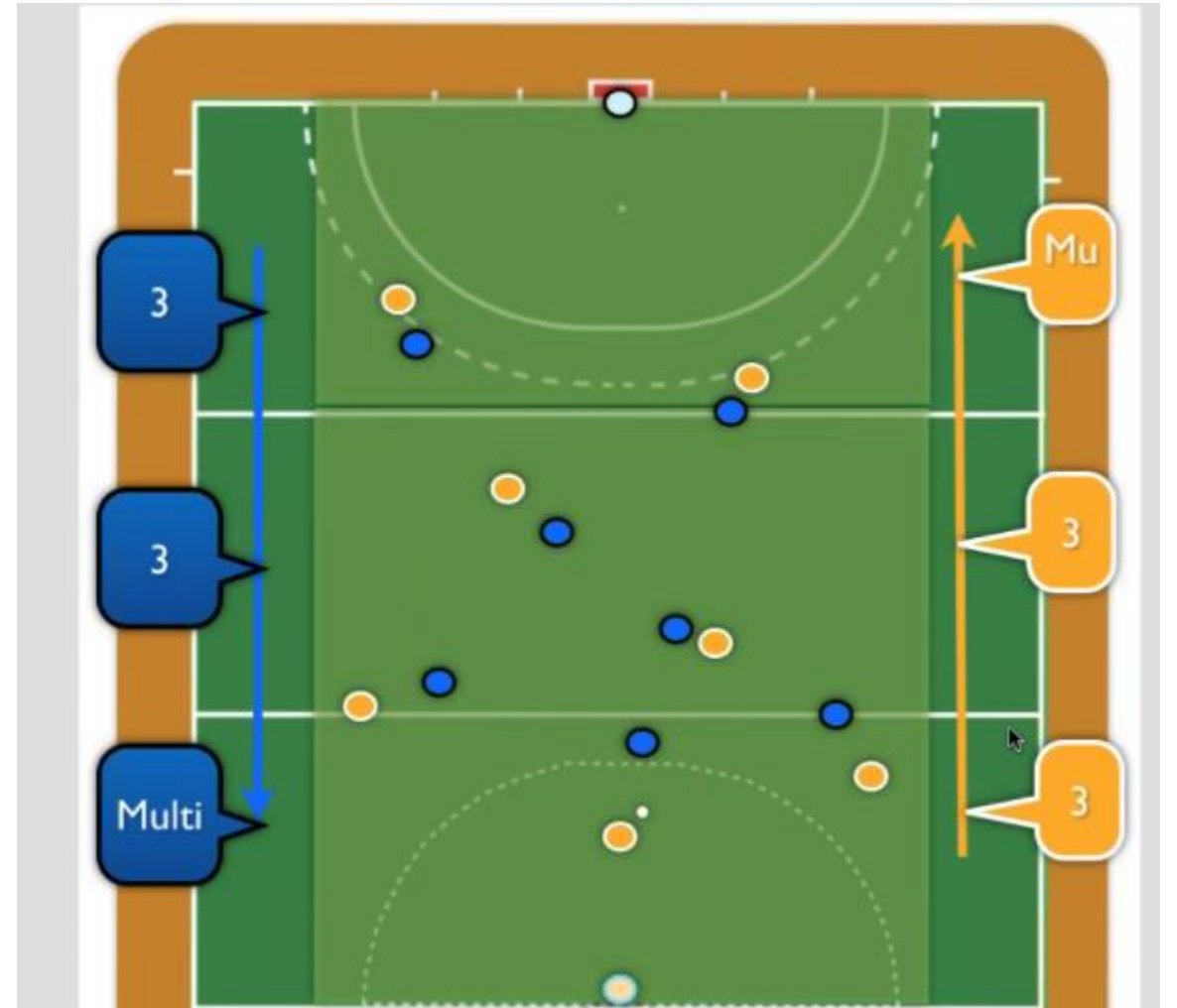
Work with game forms

- Start with 1 vs 1
- Coaches interacts and taps on the shoulder of the player who has to go in
- Players have to look around if they have overload or underload -> need to react on situation



Another game form

- 7 vs 7
- In Zone 1 & 2 only 3 touches a player are allowed, in last zone multiple touches
- You force: pre-scanning, quick decision making
- Try to manipulate situations, so that players always have choices



More ideas to manipulate situations ...

1. **Games with normal rules:** different balls (American Football, lighter Ball, Futsal, Streetsoccer-ball, balloon).
2. **Two halfgames:** until special result -> which team scores 5 goals first
3. **Size and form of playing field:** aspect ratios, with and without target zones or marked prohibition zones..
4. **Special task:** usually for passes, shots on goal, dribbling
5. **Equipment and material:** shirts, cones, markings
6. **Goals:** Mini-golas, line-goals, open goals, movable goals
7. **Variation of players:** number, neutral players, Überzahlspiel.
8. **Counting method:** eg goals played on right side count double
9. **Special rules:** three penalty corners = penalty stroke.
10. **Communication:** Name of pass receiver has to be called out
11. **Tournaments:** eg Champions-League
12. **Other team games:** handball, basketball.

Or use special counting methods for goals/points

...

1. **Result manipulation:** The result is turned with a two or three goal lead, alternatively it starts with a 2: 0 and the playing time is limited. Keeping the result is the challenge.
2. **Multiple goals:** Direct re-possession, great combinations and goals according to the previous technique count double (triple).
3. **Goal soring:** Only distance shots (from the edge of the circle) or goals that are scored with the backhand or goals with a high ball are counted..
4. **Zone goals 1:** A goal only counts if the entire team is in the opposing half.
5. **Zone goals 2:** A "normal" goal counts once, if the own team is completely in the opposing half twice and the opponent is completely in their own half, the goal counts three times.
6. **Ball possession:** If the ball is captured in the opposing half and then a goal is scored, the goal counts twice.
7. **Nice goals:** there is a point for each goal. If "beautiful" goals are scored, the trainer gives extra points. These can be great combinations before scoring.
8. **Time pressure:** A goal only counts if a second goal is scored within a certain time.
9. **Goal duo:** There are small gates in large gates. Only big balls count for the big goal, every goal for the small goal.

Or use goal variation ...

1. **Tilt:** It is played on two staggered goals..
2. **Trainer goal:** There is a trainer / co-trainer on each side of the field. Points are always awarded when they are played. The coaches can also be replaced by players.
3. **Indoor variation:** We use typical hall equipment for goals, e.g. long benches, boxes, mats.
4. **Cone goals:** cone goals are preferably played without a goalkeeper.
5. **Three-goals-game:** One team plays on one large goal, the other on two small goals.
6. **Line goals 1:** Statt Tore Instead of gates, we use lines and mark a goal zone. If the pass in the goal zone is stopped by a teammate, this is considered a goal success ("touch down").
7. **Line goals 2:** A goal is scored if a player dribbles over the goal line.
8. **One goal game:** Two teams play on one goal.
9. **Four-goals-game:** A goal is placed in each corner of the field.
10. **Backward goals:** We turn the goals 180 degrees against the direction of play. This requires innovative thinking in order to score..
11. **Open goals:** A goal is "open" if it can be used by both sides. Hats or poles are often used for this purpose during construction.
12. **Movement goals:** Two players form a goal by holding hands or a bar that connects the two. They move round on the field.

Or use goal and player's variation ...

- 13. Three-sided goal:** In the middle of the pitch we build a goal in a triangle (cones, poles). Two or three teams can play against each other on the goal..
- 14. Color gates:** Two mini are used. There are two different colored hats at each gate. The coach calls out colors for the teams. The correspondingly marked gate is then attacked.
- 15. Goal zoom:** after each scored goal, the corresponding goal will be increased / decreased.

Variation with players

- 1. Neutral player:** There is one neutral player in the field. The attacking team must have played once (twice) to this neutral player before a goal can be scored.
- 2. Neutral player on sidelines:** neutral players are placed on sidelines, each one is playing with the attacking team.
- 3. Flying change:** The teams independently organize a change mode e.g. change of player if the goal is scored - 2 minutes later, the scorer has to go out ...
- 4. Outnumbered:** Each team plays a given number of time outnumbered.
- 5. Goalscorer:** Only a certain player on the team can score goals.
- 6. Team goals:** You win the game when every player in the team has scored a goal.

Some more variation with players ...

7. **Double goal keeper:** Defending team always places two goalkeepers in goal. The attacking team plays without a goalkeeper.
8. **Interplay:** At command of the coach, the called players switch to the other team.
9. **Three-team-game:** One team attacks, one defends. If defenders get into ball possession, they attack the other goal. The third team is waiting there as defense team, so it goes on and on.
10. **Double game:** One game takes place from left to right and one from top to bottom in one field.
11. **Increase:** The game starts 1v1. Always the goal scorer of a team gets an additional player. If all players from one team are on the field, one player must always leave the game if the goal is scored. If a team scores a second goal, this goal scorer also leaves the game.
12. **Forced break:** the goal scorer leaves the field. If the other team scores a goal, he is allowed in again.

Reference materials

- <https://web.hockey.de/news/ifbd8m.html>
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Recommended literature for developing game intelligence through mini hockey

Author: Horst Wein

"Children should not be given ready-made solutions, but should be able to gain tactical knowledge and experience through independent thinking and acting, so learn what behavior leads to which consequences in which game situations."



Entwicklung der Spielintelligenz durch Mini-Hockey



Empfohlen vom Deutschen Hockey-Bund und der Trainerakademie Köln des DOSB e.V.



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