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**TRAINING TACTICAL SKILLS IN SPORT
GAMES**

Bachelor and Masters Thesis

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Abstract:

Title: Training Tactical Skills in Sports Games

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Aim: In the thesis I will discuss about the Importance and the training of Tactical Skills in Sports Games.

For this paper I have used the review methodology. My aim was to put in perspective the different cognitive and mental skills that are required to be trained, developed and perfected in order for the coach/trainer to form and put in place tactics that will assist the trainer in obtaining the competitive advantage over its opponents.

My writings were based on information and studies of book and lecture notes that I have accumulated during my Physical Education studies in Charles University Prague. I have also researched and used a lot of information from different books related to the subject as well as other related information from accredited professionals, posted on the web.

I hope that you will enjoy my work, and understand the analysis of all the information presented. I have included numerous tests, examples and assessments that I believe would be enlightening in regards to tactical skill training and improvement.

Acknowledgement:

During the development of my graduate studies in Charles University in Prague, several mentors and institutions collaborated directly and indirectly with my research. Without their support it would be impossible for me to finish my work. That is why I wish to dedicate this section to recognize their constant support.

I want to start expressing a sincere acknowledgement to my advisor, Thomáš Perič, PaedDr. & PhD. and Rudolf Psotta PhD. because they gave me the opportunity to research under their guidance and supervision. I received motivation; encouragement and support from them during all my studies. With them, I have learned the essentials for training and direction to be applied in my future career as Physical Education teacher and Soccer coach. I also want to thank the example, motivation, inspiration and support I received from my friend Diogenous Iakovos and my uncle Vladimiros Prodromou. From these two persons, I am completely grateful. Special thanks I owe to my brother Savvas Sokratous for the opportunity of researching under his supervision, his support, guidance, and transmitted knowledge for the completion of my work. At last to my parents, my most sincere thanks, for all their efforts, sacrifice and unconditional support during my school years.

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INTRODUCTION AND THESIS

What is a skill, and how can it be gained?

A skill is the ability to do something well. This ability is usually gained through training or experience.¹

More specifically in sports, a skill is the ability to perform a combination of specific movements smoothly and effectively. It is the coordination of all the different muscles involved.²

Definition of Tactical

Tactical as a mean to an end is done or made for the purpose of trying to achieve an immediate or short-term goal. In the case of (sport) games and training is useful in improving bio-motor abilities of athletes such as Strength, speed, endurance and coordination.³

Tactical knowledge and how it influences the cognitive and performance skills in Sport Games vs. Traditional exercise techniques.⁴

There are a lot of different coaching methods when it comes to sports and game training. All these methods definitely have some effect in regards to the performance of the individuals trained.

The most traditional approach focuses on the enhancement of the trainees' motor skills. It focuses on the strengthening of the individuals' different muscles, endurance,

¹ "Skill." Def. 1. MSN Encarta Dictionary. 2009. Encarta World English Dictionary. 25 Mar. 2009 <www.encarta.msn.com/dictionary_/skill.html>.

² Perič, Thomáš. "Basics of Sport Training Theory." Theory of Abilities and Skills, Type of Abilities and Skills. Faculty of Physical Education and Sport, Charles University in Prague, Prague, Czech Republic. Mar. 2005

³ Grandin, Robert. The Battle of Long Tan : as told by the commanders. Crows Nest, N.S.W.: Allen & Unwin, 2004.

⁴ Farrow/Baker/Ma. Developing Elite Sports Performers Lessons from Theory and Practice. New York: Routledge, 2007

speed and even flexibility. Its goal is to produce a fit person that will outperform other weaker individuals in competition. This is satisfactory when it comes to individual sports such as weight lifting and shot put where there is no interference with the opponent and no need for coordination with team players.

When it comes to team (sport) games such as basketball, football, soccer and so on, tactics comes to play. These sports are more complex and demand collaboration between groups of sportsmen so as to out win another group in real time. That is why in addition to the enhancement of ones motor skills the coach/trainer has to put effort in developing its trainees cognitive skills through tactical training. Tactical training involves the enhancement of cognitive skills such as concentration, perception, memory and logical thinking. These are attributes that assist a player to better perform in a team environment even if he/she lacks some physical skills such as speed and force (power skills).

All types of skills are important to an athlete or an Individual. An athlete has to have a fulfilled personality that encompasses all kinds of skills; both sport specific power skills as well as basic cognitive skills. My thesis is that Tactical skills have to be given equal weight as motor and technical skills during the training and development of a team.

CHAPTER ONE

Characteristics and function of tactical skills in movement sport games

Tactical skills are a vital part in the development of athletic skills in all sports but especially in movement sport games where there is more than one kind of skills involved. Movement sports usually encompass the traditional skills such as force and speed (power skills) but also require the athlete to possess other more modern and tactical skills. These tactical skills and attributes distinguish regular athletes from elite athletes.

1.1 Characteristic of tactical skills

The following are characteristics of tactical skills:

- They are technical
- They are situation specific
- They are teachable
- They should only be combined into strategies when they are mastered
- They should be left to the athletes for evaluation and even change
- They should be mastered to the highest possible standard
- And finally, they should be modeled according to the expected conditions.⁵

1. 2. Function of tactical skills

Tactical skills in general focus on teaching tactical patterns of behavior and function as tools for the improvement of the game of individual athletes but most importantly teams. As tools of athletic improvement, they have the highest of importance because

⁵ Perič, Thomáš. "Basics of Sport Training Theory." Tactical Preparation – strategy and tactic, tactical behaviour, tactical knowledges, tactical skills. Methods. Faculty of Physical Education and Sport, Charles University in Prague, Prague, Czech Republic. Jan. 2006.

they methodically guide the athletes through a series of technical actions based on repetition, observation and change.

Let us take as example a Monday training of a soccer team that had a championship game on Sunday. The trainer/coach will observe the tactical mistakes of his team against its opponents so as to understand and reflect on his own and his teams' mistakes. During the next training the trainer/coach will try to repair those mistakes. If there were tactical mistakes then he will have to revise his strategy. Since the team will have to face another team in the near future, then the tactics to be followed have to be adjusted to the dynamics of the other team. At this point tactics come into play. Below there is a list of Tactical Training Tools that will help the trainer/coach to achieve maximum potential in upcoming sport games:

- i. Multiple repetitions of a selected game situation.

Example

A soccer team (lets call it TEAM-A) performs a game situation such as the defending during a corner kick situation. By repeating the same exercise, by "mixing" his team play and by constantly changing his players positioning as well as actions he is trying to achieve the most efficient defense tactic.

- ii. Modeling according to expected conditions i.e. opponent's game, spatial and temporal conditions.

Example 1

Let us say that TEAM-A has to face a team (TEAM B) that scores very easy because Team-B has a very good center-fore that scores a lot of headers. The trainer/coach of Team-A has to enforce the following tactical actions to stop the specific opponent from scoring. Primarily he has to give his team all the available data about this player's ability. Then he has to adjust his system accordingly. He will choose a tall defender that he will be able to stop the center-fore effectively and beat him in headers. The defenders should also be instructed to stop the wings from allowing any long fly passes in the penalty area.

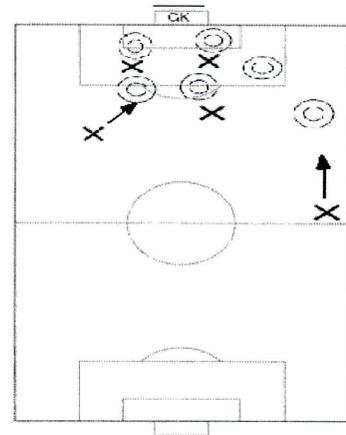


Illustration 1

Example 2

Team –A is facing Team-B during a day of strong winds. If the winds are favoring Team-A, the coach/trainer advises his players to use long passes and shoots since the winds add force to their kick. If the winds are favoring the opposing team then the coach/trainer will advise his players to try to have as much possession, give short passes and defend higher up in their half of the field so as to deter the opponents from shooting.

- iii. Frequent changes of space and tactical tasks are recommended.

The above statement dictates that a coach/trainer should have the will and not to be afraid of changing tactics and strategy if he/she believes that what is being done has not been efficient in winning the game. After all there can only be one winner but there are many tactics to be followed that can produce a winner.

CHAPTER TWO

Sport Psychology and its tactical importance

2. 1. What is sport psychology?

Sport psychology is the study of psychological and mental factors that influence, and are influenced by, participation in sport, exercise and physical activity, and the application of this knowledge to everyday settings.⁶

2.2. Why is Psychological Skills Training Important?

All sport and exercise participants fall victim to mistakes and mental letdowns. Mental and emotional components often overshadow the purely physical and technical aspects of the performance. To overcome this, one must become equally fit both mentally and physically; an individual's success or failure in the sport and exercise arena lies in the ability of the individual to practice both physical and mental skills.⁷

2.3. Psychology

There are a number of negative side effects that can affect both the physical and the mental abilities of athletes. Such side effects include tension, worrying about the outcome of the competition, breaking into a cold sweat and even finding it hard to concentrate on the task at hand.

That is why coaches should pay extra attention interest in sport psychology. The term that better describes this mental state is called competitive anxiety. It arises when the

⁶ "Australian Psychological Society : Sport Psychologists." Australian Psychological Society : APS Homepage. Australian Psychological Society Ltd. 31 Mar. 2009
<<http://www.psychology.org.au/community/specialist/sport>>

⁷ Weinberg, Robert, and Gould Daniel. Foundations of Sport And Exercise Psychology. Page 223-264. Champaign, Illinois, USA: Human Kinetics, 2007.

athlete's psychology has been weakened. It is therefore to the athlete's best interest to focus on techniques that athletes can use in the competitive situation to maintain control and optimise their performance. Once learned, these techniques allow the athlete to relax and to focus his/her attention in a positive manner on the task of preparing for and participating in competition.

2.3.1. The 4Cs

The following are psychological qualities that can substantially increase performance almost in all sports.

The 4C's

The four C's are Concentration, confidence, control and commitment (the 4C's) are generally considered the main mental qualities that are important for successful performance in most sports. Furthermore the above qualities can be assisted and achieved through relaxation, centring and mental imagery.

• Concentration - ability to maintain focus
• Confidence - believe in one's abilities
• Control - ability to maintain emotional control regardless of distraction
• Commitment - ability to continue working to agreed goals ⁸

2.3.2. Concentration

Concentration is the ability to focus on the task at hand. If this quality is not possessed then the athlete can not perform to the best of its abilities. When it comes to team sports that require movement i.e. soccer or basketball, the concentration has to be constant and intense.

⁸ Mackenzie, Brian. "Sports Psychology". Brian Mac Sports Coach. 2009. Cambridge, United Kingdom, 1st April, 2009 <<http://www.brianmac.co.uk/psych.htm>>.

There are a lot of strategies to improve concentration, but they tend to be unique and personal. One way is by goal setting prior to games; by drafting a number of small goals that will finally assist the athlete into achieving his ultimate goal. Also by performing a routine or a ritual that includes the night before, the morning, prior to competition and after competition, the athlete removes any uncertainties from his mind and is therefore completely concentrated into achieving the goal at hand.

2.3.3. Confidence

Confidence or self-confidence comes about when the athlete believes that he can reach his goal. Usually you don't have to know you are the winner but you have to feel like you are the winner.

By being confident and by having such an enthusiasm the athlete induces success even if things are not going as planned. He is able to preserve the hardships that he might face because he is enthusiastic and he knows that he is going to win at the end.

Self confidence can be improved by using visualising past good performance so as the athlete can get back into the same state of mind and get the feeling of the winner. Another way to improve self confidence is by imagining different scenarios and different ways to handle them.

2.3.4. Control

It is important for an athlete to comprehend and feel why he is having a particular emotion. By doing so he will reach control of his emotions and understand the hardships so as to remain positive and accomplish his goals. On the other hand he is deemed to fail if he breaks out in anger and by being anxious and thus have no control over his emotions. Strong people are able to hide their emotions process them and understand them.

2.3.5. Commitment

Commitment is another very important quality that has to become a lifestyle for the athlete. The athlete should hold this mental quality and apply it to all aspects of his life whether is commitment to his work, to his family, friends or his sports.

In order for the athlete to stay committed to his goals, he will need the assistance of all the people that he/she feels that they should care for him/her. Such people are his family, friends, team mates, coach, medical support and many others. Their commitment to the athlete will make the athlete feel more responsible and committed to his goals.

Within the athlete's sport, commitment can be undermined by:

- a perceived lack of progress or improvement
- not being sufficiently involved in developing the training program
- not understanding the objectives of the training program
- injury
- lack of enjoyment
- anxiety about performance - competition
- becoming bored
- coach athlete not working as a team
- lack of commitment by other athletes⁹

2.4. Four Major Performance Skills

There are four major performance skills for all elite sportsmen and women, these being technical, physical, tactical and psychological. The last two skills are more abstract and have no measurability. But don't be fooled because they are the skills that can make or break a team's efficiency and effectiveness. The coach/trainer

⁹ Mackenzie, Brian. "Sports Psychology". Brian Mac Sports Coach. 2009. Cambridge, United Kingdom, 1st April, 2009 <<http://www.brianmac.co.uk/psych.htm>>.

doesn't just have to be able to come up with tactics, but he also has to be aware of his/her team's psychology and know what to say to his team and when. For example if two equally trained teams that have in their roster equally accredited players are facing each other in derby, then psychology and tactics come into play. The coach/trainer that is able to understand the psychology of his team and of the opposing team will have the advantage over the other team. He/she has to form its strategy based on the mental situation of the game participants at this point in time. He should also be able to change his tactics, always having in mind the psychology of the game.

2. 5. Psychology Skills Training

In order for the athlete to understand the tactics that his/her coach/trainer is trying to transmit to him/her, the athlete should be first coached mentally. The method of such psychological training consists mainly of the following three stages:

- The Education stage, where athletes learn the value of psychology and its implications on performance.
- The Acquisition phase, in which the athletes learn the strategies and techniques to improve the psychological skills that they require
- The Practice phase, where athletes build up their psychological skills by repetition, practice, simulations and real life competition¹⁰

The goal is to achieve peak performance. This can be achieved when all the major performance skills are amalgamated into a balanced strategy. None of the skills is less or more important than the others but as we have seen on this chapter, psychology along with tactics can definitely give the competitive advantage.

¹⁰ Mackenzie, Brian. "Sports Psychology". Brian Mac Sports Coach. 2009. Cambridge, United Kingdom, 1st April, 2009 <<http://www.brianmac.co.uk/psych.htm>>.

CHAPTER THREE

Perceptual and cognitive skills during tactical behaviour

3.1. Perception

The mental process by which the brain interprets and gives meaning to information it receives from sense organs. Perception depends on both the psychological and physiological characteristics of the perceiver, in addition to the nature of the stimuli.¹¹

3.1.1. Perception skills

The following are perception skills that can help a coach/trainer to reach his/her goal.

- Perception: ability to process sensory information in short time
- Anticipation: ability to attend to critical cues prior to acting
- Attention: Ability to attend to one thing for period of time
- Focus & Concentration: Ability to sustain attention to one thing for extended time period
- Pattern Recognition: Ability to extract meaning from group of moving objects
- Problem Solving: Ability to use combination of cognitive abilities to arrive at a solution
- Decision Making: Ability to solve problems by choosing between alternatives¹²

¹¹ Kent, Michael. "Perception." Def. 1. Oxford Dictionary of Sports Science and Medicine. 2006

¹² Buzzell, Nancy, and Sonja Seyfort. "Decision Training Confronts the "Fear Factor" in Sport." 2008. Victoria, B.C., Canada. 27 Mar. 2009 <<http://sonjaseyford.com/articles/decisiontraining.ppt>>.

3.1.2 Perceptual-Motor Skills and Tactics

It is highly important for a coach/trainer to first realize and visualize what he wants from his training before he actually puts it into action. Even if the perceptual-motor skills have more to do with actual work and practice rather than strategizing, the coach/trainer should first visualize the desired results of his practice. The training should be designed depending on what is considered as expert performance in the specific sport of interest and, in turn, what characteristics of the particular athletes need to be improved in order to attain, or at least approach, the expert state in their sport.

3.2. Perceptual, Cognitive skills and their effects in movement (sport) games

The expertise that sport professionals have gathered through years of observation, helped them in developing highly scientific methods in being as efficient and effective in creating elite athletes that are not just stronger and faster, but are also smart and witty. Such athletes, especially the ones competing in movement sport games, they are expected to identify, retrieve and process information in the same way as chess players or physicists do. In order for them to do so, it is expected from their coach to train their perceptual and cognitive skills.

- The following seminar was carried out by Allard using basketball and it applies to all other movement (sport) games. In these studies experts and novices are presented with ‘structured’ film clips (sequences taken from regular match play) and ‘unstructured’ clips (e.g. teams warming up before a match, or players walking on to the field of play). Following a short viewing period, participants are required to recall players’ positions at the end of each action sequence (recall paradigm) or to indicate whether they had previously viewed the action sequence (recognition paradigm). The expert’s superior recall and recognition are observed on both structured and unstructured trials

(Gobet & Simon, 1996), although the differences are much more pronounced on the structured sequences. The ability to recall and recognise an evolving pattern of play is the strongest predictor of anticipatory skill in team ball sports (Williams & Davids, 1995), though there remains a vibrant theoretical debate about the mechanisms underlying such expert performance (Gobet, 1998).¹³

3.3. Tests and assessment of visual skills

There are numerous tests that can evaluate the visual ability and find out any defaults in ones vision, but there are also other that aim at measuring how an athlete can predict the level of sport performance. The following are such predictive methods of visual abilities that are not just physical but also mental and creative.

Accommodation: A number of sports, especially the ball sports, require the performer to rapidly adjust depth of focus as objects, such as balls, rapidly approach toward or depart from the athlete's viewing position. Whenever final distance has to be altered (the process of accommodation) the curvature of the crystalline lens of the eye must be adjusted by the action of the ciliary muscle to maintain maximum resolution. The lens must be made more spherical for the viewing of near objects and flatter for the viewing of distance objects. Accommodative effectiveness can be assessed by determining the speed with which an individual can repeatedly adjust resolution for different viewing distances. This is typically achieved in practice by counting the number of cycles per minute to which a subject can accommodate when the virtual distance of a target display is altered by alternating presentation of prism flippers(typically of + / -1 prism dioptre magnitude).

Colour vision: An athlete's ability to discriminate differences in colour may, in some circumstances, act as a limiting factor to sports performance (Gavrisky, 1969, 1970).

¹³ Williams, Mark. "Perceptual and Cognitive Expertise in Sport." *Sport and Exercise*. Aug. 2002. The British Psychological Society. 2 Apr. 2009 <<http://www.thepsychologist.org.uk>>.

For example, advantages may exist in team sports like football and basketball for the athlete who is able to rapidly discriminate, often in peripheral vision, teammates from opponents on the basis of their jersey colour. Likewise colour vision defects, particularly the classic red-green defects may, under some circumstances, impede performance (e.g. the case of a golfer with such a defect attempting to locate a red flag against a green background). Standard colour defects are detected clinically using the standard ishihara (1977) test which embeds red or green figures against opposing backgrounds.

Visual reaction time: visual reaction time is the time elapsed between the presentation of an unanticipated visual stimulus (usually a light) and the initiation of a response to that stimulus. Reaction time, along with movement time (which is the time from response initiation to completion), collectively constitute response time. Reaction time and movement time are independent, uncorrelated measures (Henry, 1961). Visual reaction time is the most used (and mis-used) measure in the perceptual-motor skills literature and has been frequently predicted to be critical visual parameter for performance in sports which are time stressed. The obvious rationale for this prediction, especially in fast ball sports, is that

...the player with the faster time may, if he wishes, wait for later deviations in the flight of the ball and thus react more adaptively. (Whiting, 1969, p.42)

While visual reaction time can be measured in a number of ways, the usual approach is to have the subjects make a simple finger-press response to the time of onset of a visual stimulus. The visual stimulus is typically illuminated at a variable period after a warning light in order to prevent the onset stimulus (the so-called simple reaction time) are generally in the order of 200ms and these laboratory-derived figures appear to also provide an accurate estimate of the kind of delays that are encountered in the actual performance of sports skills (McLeod, 1987).

Field dependence-independence: Field dependence-independence (or perceptual style) refers to an individual's ability to discriminate a target object from its

surrounds and has attracted some research interest from sport scientists on the premise that the capability to avoid distraction and rapidly locate key object (e.g. the ball or target) from within complex backgrounds (e.g., variegated backgrounds such as those presented in crowded playing stadia) may be an important element of successful sports performance. Perceptual style has typically been assessed using standardized, non-sport-specific stimuli such as the pencil-and paper embedded figures test (witkin,dyk,faterson,Goodenough and Karp, 1962) and the rod and frame test(see jones, 1973 for descriptions). The expectation frequently advanced (e.g., MacGillivray, 1979, 1981) is that expert performers may be expected to be more field independent than less successful performers given that

Field independent persons are greatly affected by distraction, whereas field independent persons are able to ignore irrelevant stimuli and direct their attention to the important information. (Jones, 1972, p.107).¹⁴

3.4. Perceptual skills and their training

3.4.1. Sports Vision Training

Depending on the sport, there are different vision demands. Specific sports have specific demands in terms of the visual skills that the athletes should possess. Also athletes in the same sport that have different roles in the game should possess different visual skills. Let us take baseball for example; a catcher should be able to see the ball and calculate its speed and direction before actually catching it, where as the pitcher should concentrate on getting the ball there at optimal velocity.

The following are sport specific examples of training programs that aim at bettering Sports Vision in a 30 day period. Since the athletes eye muscles are already as strong as they need to be, this training aims at improving:

¹⁴ Elliot, Bruce, and J. Mester, eds. Training in Sport Applying Sport Science.Chichester, England: John Wiley & Sons Ltd, 1998.

- Coordination
- Speed of eye movement
- And conditioning of the visual system

It is important to bear in mind that the intensity of the training increases with time and that the training is suitable for all athletes whether they are beginners in the sport, or elite professional.¹⁵

ICON KEY

B = Balance		
 = Single foot balance	 = 4-in-1 balance beam	 = Teeter board
 = Tennis balls	 = Mini trampoline	 = Balance ball
 = 2" x 4" balance board		
MS = Motor Skills		
 = Abdominal exercises	 = Backward running	 = Jogging in place
 = Jumping jacks	 = Lunges	 = Side-to-side running
 = Squats	 = Running	
RE = Resistance Exercises		
 = with dumbbells	 = in supine position	
MET = Metronome	GW = Gaze work	
J = Juggling	HM = Head movements	
OEO = One eye open	PLYO = Plyometrics	
SL = Strobe light	RE = Resistance exercises	

Illustration 2

¹⁵ Wilson, Thomas A., and Jeff Falkel. Sport Vision Training for Better Performance. Champaign, Illinois: Human Kinetics, 2004.

Basketball

The no-look pass in basketball epitomizes the application of sport vision. A guard who runs down the floor and looks one way, but passes the ball in the other direction requires eye-hand coordination, balance, near-far focusing, tracking of his teammates and the opponents, peripheral awareness, and visualization to make the play. Shooting skills and proficiency can also be increase with sport vision training. The player needs to accurately judge his distance from the rim as well as where the defenders are or may be coming from. He needs to develop eye-hand and even eye-body coordination to perfect his touch and technical skills in releasing the ball. But if he is unable to “see” the ball going through the basket, his success will be limited. Even free-throw shooting skills can be enhanced with visualization and sport vision training.

The table below outlines a sport vision program for basketball players.

Basketball SportsVision Training Program

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Focusing	Exercise 3	B 	GW	MS 	B  GW	B  HM
Tracking	Exercise 4	B 	RE	MS 	B  	B  J
Vergence	Exercise 18	B 	GW	HM	MS 	B  HM
Coordination	Exercise 25	-	-	-	SL	SL
Coordination	Exercise 39	-	B 	MS 	MET	B  SL
Visualization	Exercise 46	-	-	-	-	-

Illustration 3

Modifications for basketball

1. Exercise 1, Near-far chart, modified for basketball by placing far chart on backboard or on the ceiling of weight room. Another possibility is a partner resistance: two players stand back to back , and each tries to push the other out of a three-foot –by-three-foot square while performing exercise 3.
2. Exercise 2, dice pursuits, modified for basketball by placing numbers on the basketball rather than using a die. The numbered basketball is show to the athletes. The coach then throws the ball up in the air and calls out plus or minus. The athlete adds or subtracts the number seen to the running number shown at the start.
3. Exercise 3, Opaque Lifesaver card modified for basketball by taping card to rim of hoop.
4. Exercise 4, Letter tacking and ball bouncing, modified for basketball by placing letter chart on backboard and focusing on a letter while shooting. The coach can also put letter chart on clipboard and move around floor while moving the clipboard to stimulate eye movements while dribbling and passing.
5. Exercise 5, Flip stick
6. Exercise 6, Sport specific visualization, using basketball visualization chart.
(see Illustration 3)
 - a. Make free throws without hitting backboard.
 - b. Make free throws by banking ball off backboard.
 - c. Work on three-point shooting from behind line on court.
7. Sport vision court training:
 - a. Color the seams of the basketball with tape of a contrasting color.
 - b. Use tach targets during dribbling drills.
 - c. Visualize free throws before shooting.
 - d. Play five on five using two different colored basketballs.

Football

The tremendous visual demands of football vary by the specific needs and activities of the different positions. Vision, balance, tracking, eye movements, peripheral awareness, eye-hand coordination, and near-far focusing are all required in football. Ball handlers can significantly improve their performance with sport vision. The table below outlines a sport vision training program for Football.

Football SportsVision Training Program						
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Focusing	Exercise 3	B 	J	RE	MS  MS 	B   HM MET
Tracking	Exercise 4	RE	B 	B 	J	B  B 
Vergence	Exercise 18	HM	GW	B 	MS 	B  RE HM
Coordination	Exercise 36	B 	B 	MS  HM	SL	HM SL
Coordination	Exercise 39	OEO	B 	MS 	HM	B  SL
Visualization	Exercise 42	B 	OEO	HM	MS  MET	B   GW

Illustration 4

Modifications for Football

1. Exercise 1, Near-far chart, modified for football by putting letters on football for use as near chart.
2. Exercise 2, Dice pursuits, modified for football by having a partner push or pull player's body or otherwise distracting player.
3. Exercise 3, Opaque Lifesaver card, modified for football by performing exercise in weight room between sets.
4. Exercise 8, Juggling, modified for football by using
 - a. Small footballs.
 - b. Regular size footballs
 - c. Footballs of different sizes

5. Exercise 5, Flip stick, modified for football by:
 - a. Wearing helmets and pads while performing exercise.
 - b. Performing exercise while walking through a pattern (e.g., pulling guard, short receiver route)
6. Exercise 9, Quick exposure, modified for football by putting plays on each card.
7. Sport Vision Field training:
 - a. Place letters or numbers on the ball.
 - b. Place letter chart on blocking sleds.
 - c. Use tach targets during blocking drills.
 - d. Coach bounces football on ground, and athlete has to catch it before it bounces a given number of times (two to five bounces)

HOCKEY

This is the ultimate visual sport. The velocity and density of the hockey puck far exceed those of any other small projectile used in other sports. The hockey goalkeeper needs to be able to see and track a small rubber puck that can travel up to 120 miles per hour in a slap shot. The other player need to judge the speed and direction of the puck, attempt to control the puck using a four-inch-wide blade, change directions, and then either pass to an open teammate or shoot to the opening in the net to score. All this is accomplished on an incredibly slippery surface while five other players try to knock you off your feet to take you out of the play. This sport combines vision and balance, focusing, eye-hand coordination, tracking, and eye movements.

The table below outlines a sport vision training program for Hockey.

Hockey SportsVision Training Program

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Focusing	Exercise 2	B 	B 	J	B  OEO	B  GW
Tracking	Exercise 8	B 	GW	HM	GW HM	B  MET
Vergence	Exercise 18	B 	B 	GW	HM	MS  MS 
Coordination	Exercise 35	OEO	MS 	HM	HM MS 	PLYO SL
Coordination	Exercise 37	B 	B 	RE	GW SL	B  SL
Visualization	Exercise 42	---	---	---	---	---

Illustration 5

Modifications for Hockey

1. Exercise 10, Near-far eye jumps, modified for hockey by using a puck for near focus and the goal for far focus.
2. Exercise 11, Ball tap, modified for hockey by putting a puck on a string and tapping the puck with hockey stick. Modify further by performing the exercise with puck at different heights.
3. Exercise 3, Opaque Lifesaver Card.
4. Exercise 12, Bandages from behind, modified for hockey by using a puck and wearing helmet and glove.
5. Exercise 13, Broomstick Balancing, modified for hockey by balancing the hockey stick.
6. Exercise 9, Quick Exposure.
7. Sport vision training on the ice:
 - a. Coach uses tach targets during practice.
 - b. Put four-square charts (Illustration 6) on the four corners of the goal.

Four-Square Chart

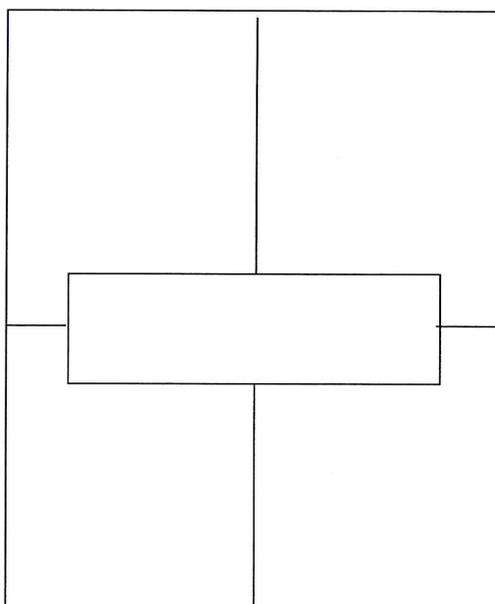


Illustration 6

- c. Put numbers on the puck for quick eye movements for the goalkeeper.
- d. Put near chart on puck (Illustration 7, slightly larger letters) and far chart on goal for individual stick-handling drills.
- e. One player wears a number or different colored vest. All players must be aware of where the marked player is. The coach gives the command “freeze” and asks where the marked player is: right, left, behind, or in front, or closest to which line.

R A D V S X P E T O
M P O E A N C B K F
Y B A K O E Z L R X
C R G D B K E P M A
F X P S M A R D L G
T M U A X S O G P B
H O S N C T K U Z L
E T H W F M B K A P
B X F R T O S M V C

Illustration 7

A B
G H S
O Q I J
T R V M X
R D E F I L

Illustration 8

3.4.2. EXERCISES:

1. NEAR-FAR CHART

Purpose:

- a. To improve the flexibility of the focusing system.
- b. To improve the ability to maintain clear vision at near and far distances.

Materials:

- a. Small letter chart (Illustration 7)
- b. Large Letter chart (Illustration 8)

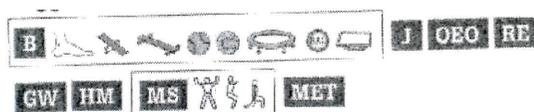
Procedure:

- a. Place the large letter chart on the wall at the farthest point where the athlete can still clearly read the letters.
- b. Hold the small letter chart four inches from athlete's face at nose level.
- c. The athlete reads letters from left to right, alternating between the near chart and far chart.

Signs of improvement:

- Ability so see letters clearly on both near and far chart.
- Ability to call letters in a steady rhythm without losing place.
- Increased speed and a accuracy over time

Suggestions for loading:



2. DICE PURSUITS

Purpose:

To increase the ability to move the eyes accurately while performing a thinking task.

Materials:

One dice

Procedure:

- a. The coach or a partner holds the die in front of the athlete's face and moves it slowly and smoothly in a random, unpredictable motion.
- b. The athlete calls out the number showing.
- c. While the die is still moving, the coach calls out an arithmetic problem (addition subtraction, multiplication, or division) and rotates the die to new number.
- d. The athlete calls out the number showing on the die, solves the arithmetic problem, and then gives the answer while keeping his eyes on the moving die.
- e. The answer to the arithmetic problem becomes the first number of the next problem.

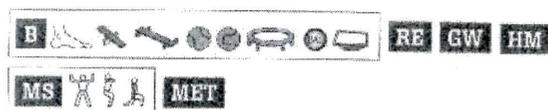
Variation:

- Start the exercise with relatively slow movement and easy arithmetic problems, and increase the speed and complexity as you go.

Signs of improvement:

- Ability to follow the die smoothly and accurately for longer period of time.
- Ability to perform mental arithmetic problems of increasing difficulty and increasing length without error.

Suggestions for loading:



3. OPAQUE LIFESAVER CARD

Purpose:

To enhance binocular vision.

Materials:

Opaque lifesaver card (Illustration 9) and pencil.



Illustration 9

Procedure:

- a. Use only the bottom set of lifesavers on the card. It may be helpful to clip a blank white paper over the others.
- b. The athlete holds a pencil centered between the lower edges of the bottom circles. The athlete looks directly at the tip of the lead and observes the circles on either side without looking directly at them.
- c. The athlete slowly moves the pencil toward her nose (always looking at the pencil tip and keeping it centered between the two lifesavers) until she sees four circles.
- d. The athlete continues moving the pencil toward her nose and observes the inner two circles approach each other until they overlap and superimpose. She should then see three circles. The athlete should stop moving the pencil at this point.
- e. The middle circle should appear smaller and closer than the original two circles.
- f. Next, the athlete tries to make the letters on the circle appear clear and in focus on the middle circle by looking far away. The athlete should remember to keep her eyes crossed.
- g. The athlete proceeds to the next set of lifesavers. The difficulty increases with each higher set.

- h. When all these steps are mastered, the athlete can try a small, gentle “no” or “yes” head motion during the exercise. The athletes should keep her eyes on the pencil tip and keep the middle lifesaver always visible and clear. When this can be done, the athlete can try removing the pencil without moving her eyes and see if the image of the middle lifesaver can be maintained. When clarity is maintained without the pencil, the athlete can again try small, gentle head motions. The athlete can also bring the card closer to her face and then move the card away from her face while maintaining the image’s clarity.

Signs of improvement:

Increased ability to recognize a central lifesaver quickly and easily and move up the chart without difficulty.

Suggestions for loading:



4. LETTER TRACKING AND BALL BOUNCING

Purpose:

To develop laterality and motor skill.

Materials:

A 20/20 eye chart (Illustration 10) and sport- appropriate ball.

1	N	C	V	K	D	H	V	Z	D	S	1
2	O	N	V	S	R	C	Z	S	H	N	2
3	Z	K	C	S	V	K	D	N	R	O	3
4	O	H	V	C	K	D	V	O	H	C	4
5	N	C	K	H	D	Z	H	C	S	R	5
6	S	Z	R	D	N	H	Z	C	K	O	6
7	R	D	O	S	N	H	C	D	R	O	7
8	C	K	Z	O	H	D	S	R	K	N	8
9	K	Z	V	D	C	O	N	R	K	D	9
10	H	D	K	C	R	V	S	H	Z	O	10

Illustration 10

Procedure:

The athlete slowly walks toward the eye chart placed at eye level on the wall about five feet away.

Level 1

As the athlete walks toward the chart, she calls out a letter for each step taken. The letters should be called out from left to right.

Level 2 Variations:

- As the athlete walks toward chart, he calls out the leg he is stepping on before calling out the letter, for example, “right leg” and then letter.
- The athlete bounces a ball and then takes a step while calling out a letter. Again, the letters should be called out from left to right. The athlete alternates bouncing the ball with the right hand and then the left. The ball is bounced once for each letter.
- The athlete alternates between the right and left hands and calls out which hand is bouncing the ball before she calls out the letter.

Signs of improvement:

Increased ability to accurately read more letters in a specific time while maintaining control of the ball.

Suggestions for loading:

SL

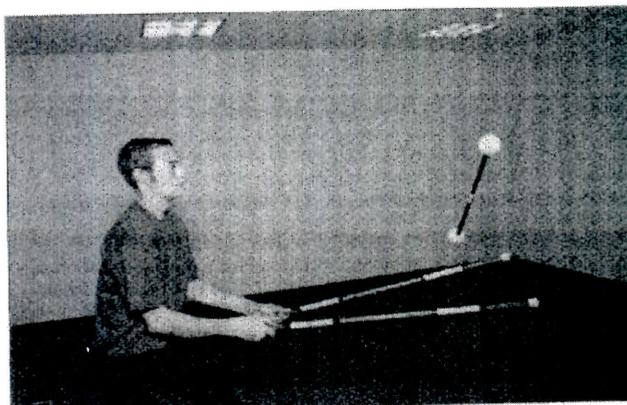
5. FLIP STICK

Illustration 11

Purpose:

To develop eye-hand coordination and eye movement speed and accuracy

Materials:

- Two dowels approximately three feet long by three fourths of an inch in diameter (catching sticks).
- One dowel approximately two feet long by three eighths of an inch in diameter (flip stick).
- Two 1 inch rubber end caps and two old tennis balls.
- Colored electrical tape, preferably in these six colors: red, blue, green, yellow, black, and white.

Procedure:

- Wrap one-half inch of white tape on one end of each of the two longer dowels (catching sticks). Then wrap nine inches of blue tape, followed by one-half inch of the tape, than nine inches of red tape, one-half inch of white tape, nine inches of yellow tape, one-half inch of white tape, nine inches of green tape, and one-half inch of white tape on the end of the dowel. Make sure each of the long dowels looks the same. Place an end cap on one end of each dowel.
- Wrap black tape around the entire length of the shorter dowel (flip stick), and then place a tennis ball on each end.
- The athlete holds the green end of a catching stick in each hand and places the flip stick on the blue end. Now, using fine motor movements, the athlete tosses and rotates the flip stick one-half turn clockwise and then catches it on the two catching sticks. Then the athlete tosses the flip stick one-half turn counter clockwise and again catches it on the catch sticks. If the flip stick falls on the floor, the athlete picks it up and tries again.
- After mastering this technique, the athlete can try the follow:
 - a. Repeat step 3, but toss the flip stick from the blue portion of the stick and catch it on the red portion. Then toss it from the red portion and catch it on the

- Next the athlete closes her eyes, visualizes the activity, and draws a line from the starting point to the finish.

See the following instructions for scoring and progression of difficulty for each sport activity.

- a. Basketball: the player visualizes shooting free throws, three-point shots, and other shots by visualizing the court and the basket and then closing her eyes and tracing the path of the ball to the basket.
- b. Football: Three players, a quarterback, a wide receiver, and a defensive back, line up their pens in their respective positions on the field. First, the quarterback visualizes where he wants to throw the ball, then closes his eyes, and “passes” the ball to that point with a pen. The wide receiver sees where the quarterback passes the ball, then closes his eyes, and tries to “run” to that point with his pen. Last, the defensive back lines up, visualizes the best point to make an interception, closes his eyes, and then “runs” with his pen to that point. Play continues until a touchdown or an interception is made (it is helpful to use real plays in this visualization exercise). Place-kickers and punters can also use this exercise by trying to “kick the ball” with their pens through the uprights, or punters can try to place the ball inside the 10-yard line.
- c. Soccer: Penalty kicks, free kicks, and corner kicks can be visualized. The player places a pen on the penalty spot and visualizes the goal. The player closes her eyes and “shoots”, trying to move the pen into the net. Free kicks and corner kicks can also be practiced. After visualizing the wall in relation to the goal, the player then closes her eyes and “shoots” around the wall and into a corner of the goal.
- d. Volleyball: Players practice serving by visualizing the court, closing their eyes, and then “hitting” the ball by moving the pen a predetermined area of the court.

Suggestions for loading:

- Two or more athletes compete.

- Establish a consequence for athletes who lose the competition or a reward for athletes who win.

7. ARROW CHART

Purpose:

To identify directions (up, down, right, and left) quickly and confidently.

Materials:

- Arrow chart
- Metronome

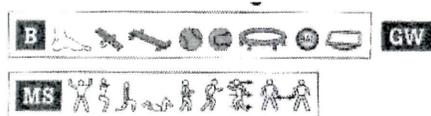
Procedure:

- Attach the chart to a wall. As the coach or a partner points to each arrow, the athlete calls out the direction in which arrow is pointing and at the same time points in that the direction.
- Add the metronome, starting slowly and gradually increasing speed.
- Have the athlete both call and point in the direction opposite that indicated by the arrow.
- Have the athlete point and call in a direction that is a quarter turn clockwise or counter clockwise from that indicated by the arrow.

Signs of improvement:

- Ability to visually keep place on chart.
- Ability to call directions accurately in a steady rhythm.

Suggestions for loading:



8. JUGGLING

Purpose:

To improve eye-hand coordination.

Materials:

- The athlete or a partner checks the answer.
- Repeat.

Variations:

- Mix numbers with letters.
- Decrease the size of the numbers or letters or increase length of the sequences.
- Make cards showing plays, formations, or other sport-relevant visual information.

Signs of improvement:

- Ability to repeat contents of cards with increasing accuracy.
- Ability to repeat contents of cards with decreasing exposure times.
- Ability to accurately repeat sequences of increasing length or complexity.

10. NEAR-FAR EYE JUMPS

Purpose:

To change focus quickly and accurately from a near point to a far point.

Materials:

Two targets (use sport-specific targets, e.g., two baseballs, two tennis balls)

Procedure:

- Place one target four inches or less away.
- Place the second target 2 to 10 feet away.
- The athlete looks at the near target, then the far target, and back to the near target. Be sure both eyes come into focus on the near target and diverge when looking at the far target.
- Do 30 to 40 near –far eye jumps each day, or repeat for three to five minutes each day.

Signs of improvement:

- Ability to change from near to far target quickly and accurately.
- Smooth eye movements.

Suggestions for loading:



11. BALL TAP

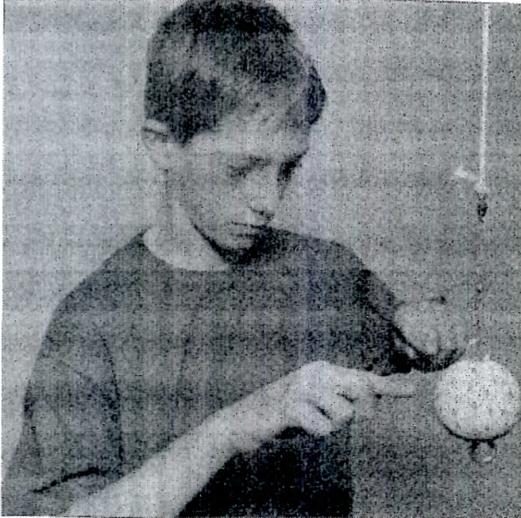


Illustration 12

Purpose:

To improve tracking abilities in association with motor responses.

Materials:

Ball on an adjustable string approximately five feet long.

Procedure:

- a. The coach or a partner holds the string so that the ball is located one to two feet away from the athlete at eye level. The athlete begins by tapping the ball lightly in a regular rhythm with his dominant hand.
- b. Then the athlete taps ball with alternate hands, maintaining a steady rhythm.(see the figure)
- c. Next, the athlete taps ball with just one finger, again beginning with the dominant hand and then alternating left and right.

- d. If the activity is too difficult, start with larger ball and then progress to a smaller one.
- e. Vary the height of the ball, and repeat step (a) through step (c)

Signs of improvement:

- Ability to follow the path of the ball with the eyes only, keeping the head still.
- Ability to keep the ball going at a steady pace.
- Ability to aim the ball at a specific target in space.

Suggestions for loading:



12. BEANBAGS FROM BEHIND

Purpose:

To improve visualization, reaction time, and peripheral awareness

Materials:

Beanbag

Procedure:

Level 1

- a. The athlete stands with her back to the coach or a partner.
- b. The coach throws the beanbag while calling out “left side” or “right side”.
- c. The athlete catches the beanbag.

Level 2

Follow the preceding instructions without stating on what side beanbag will be throw.

Signs of improvement:

Ability to catch the beanbag easily and smoothly.

Suggestions for loading:



13. BROOMSTICK BALANCING

Purpose:

To develop fine motor control.

Materials:

Broomstick, wand, dowel, racket, or other sport-specific implement.

Procedure:

- a. The athlete places the end of the broomstick or implement in the palm of the hand.
- b. The athlete learns to balance the stick while standing.

Once the athlete becomes proficient with one hand, she switches hands and learns to balance with the other.

Next the athlete learns to balance the stick on the index finger.

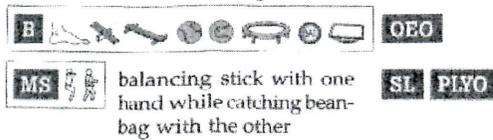
Then the athlete tries to move the stick from fingertip to fingertip without dropping it.

Repeat steps (d) and step (e) with the opposite hand.

Signs of improvement:

Increased ability to balance broomstick while simultaneously performing balance loading exercises.

Suggestions for loading:



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¹⁶ Wilson, Thomas A., and Jeff Falkel. Sport Vision Training for Better Performance. Champaign, Illinois: Human Kinetics, 2004.

CHAPTER FOUR

Decision Making as a key process of tactical skills.

4.1. Decision Making

4.1.1. Decision Making Definition

Decision making is the important cognitive process of selecting one action or policy from two or more choices to achieve a desired goal.

4.1.2. The decision making process

Decision making is a perceptual process and like all perceptual processes it involves understanding and correlating both internal (e.g. physiological ability) and external factors (e.g. wind speed, physiological abilities of team mates) and then selecting the right action.

Ideally decision making should be fast, almost instant, and it should yield optimal results. Thus the decision should be accurate and that in turn depends on the athlete's knowledge of the game, its goals as well as on past experiences of the game.

4.2. Decision-making constrains

4.2.1. Two major decision-making constrains on sport performance

These are the following

- Constraints in performance arising from selecting between variable numbers of options
- Constraints in performance arising in situation where two or more decisions must be made in rapid succession.¹⁷

4.2.2. CRT and PRT

In order to understand the effect that the above constraints can have on sports performance, one should first understand two fundamental human performance phenomena, which are:

- CRT- Choice Reaction Time
- PRT-Psychological Refractory Period

¹⁷ Elliot, Bruce, and J. Mester, eds. Training in Sport Applying Sport Science. Chichester, England: John Wiley & Sons ltd, 1998

4.3. Selecting the correct option rapidly and accurately

When it comes to movement sports where there are a lot of play dimension and a lot of different sport tasks the athlete must act both fast but also correct. Its decision will be affected both from perceptual discrimination, as well as elements of response choice.

In laboratory tests, the athletes are presented with a number of possible stimuli, and the subject is required to respond to the perspective stimuli as quickly as possible. The elapsed time between the appearance of the stimuli and the subject's response is called the CRT.

4.3.1. The Hick-Hyman law

The Hick-Hyman law (after Hick, 1952; Hyman, 1953) states that CRT is directly proportional to the amount of information (H) which has to be processed, and where H can be formally quantified from task uncertainty. The amount of information (H) is equivalent to the log of the number of stimulus response alternatives; such that CRT is increased by a proportional amount each time the number of alternative is doubled.

The Hick-Hyman law can be expressed in the form of a regression equation where

$$CRT = a + bH$$

Where a is the value of RT when there is no uncertainty, b is the information processing rate and H is the amount of information.

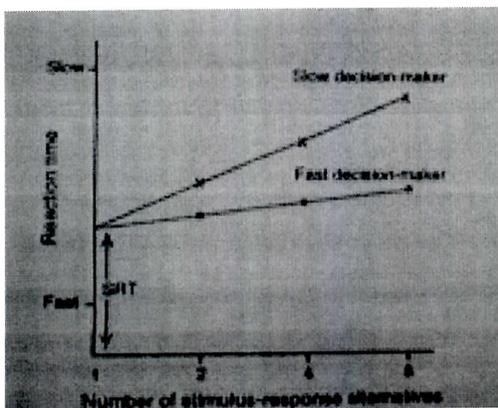


Illustration 13-Training Perceptual. The relationship between choice reaction time and the amount of stimulus information is given by the log of the number of stimulus-response alternatives.

4.3.2. Relationship to sport performance

In many sports, such as basketball, football and many others, a fast decision making rate is advantageous. A decreased rate can be achieved by decreasing the CRT through practice. Experience, and the fact that an expert athlete possesses knowledge that allow him to eliminate some option available during the game, or increase the probability of some options or sequences of play by their opponent, will act to reduce their own response time. The bottom line is that the key to reduce CRT is to reduce the amount of information that is to be processed during play.

4. 3.3. Methods and implications for training

Just as the simple relationships between predictability and CRT described in the Hick-Hyman law can be exploited in order to reduce an athlete's own decision-making time, the same relationships can also be exploited, in theory at least, to slow the decision-making of an opponent. By remaining as unpredictable as possible in their own patterns of play and by developing the capability to execute a broad range of play options with proficiency, an experienced athlete can maximize the information-processing load facing their opponent and can, in turn, maximise their opponent's CRT delays.

4. 4. Making Decisions in Rapid Succession

Decisions in rapid successions are the decisions that involve two or more decisions and associated movement response to be taken in rapid succession. This is very common in soccer where the player tries to pass another player by faking that is going to shoot or advance the ball to one direction but instead he plays the ball to a completely different direction. It is widely acknowledged that the response to such fake play is always faster for the first stimuli and always slower for the second one because you are processing it while you are still acting upon the first one.

Relationship to sport performance

It appears that there are not many studies in regards to the relation of PRP and sport expertise, but the ones that do exist are controversial. The only thing definite however is the fact that PRP cannot be eliminated by practice, and they are experienced both by elite athletes and novices alike.

To conclude this chapter, I would like to say that taking the right decision fast is of high importance, especially in movement sport games where such play as faking takes place. What is however more important is the fact that the athlete has to also be in great form, know the game and is able to strategise or predict such a strategy in his/her opponents games, so as to make the right decision at the right time.

CHAPTER FIVE

Training tactical skills in games

5. 1. Introduction to chapter five

As we previously mentioned, in movement sport games, tactics have a substantial role to play and cognitive skills should be given at least as much attention as physical-motor skills. Haven't you wondered why some athletes perform their tasks very effectively during practice but fail to put out during the actual game? Maybe the coach trainer should focus on training tactical skills by assimilating the training environment and camouflaging it into feeling just like the actual game. That could be proven very beneficial because the athlete will have the same feeling during play as it would during training and thus it would feel more comfortable and be able to perform to the best of his abilities.

Examples:

a) Name of exercise: Three touches in each zone

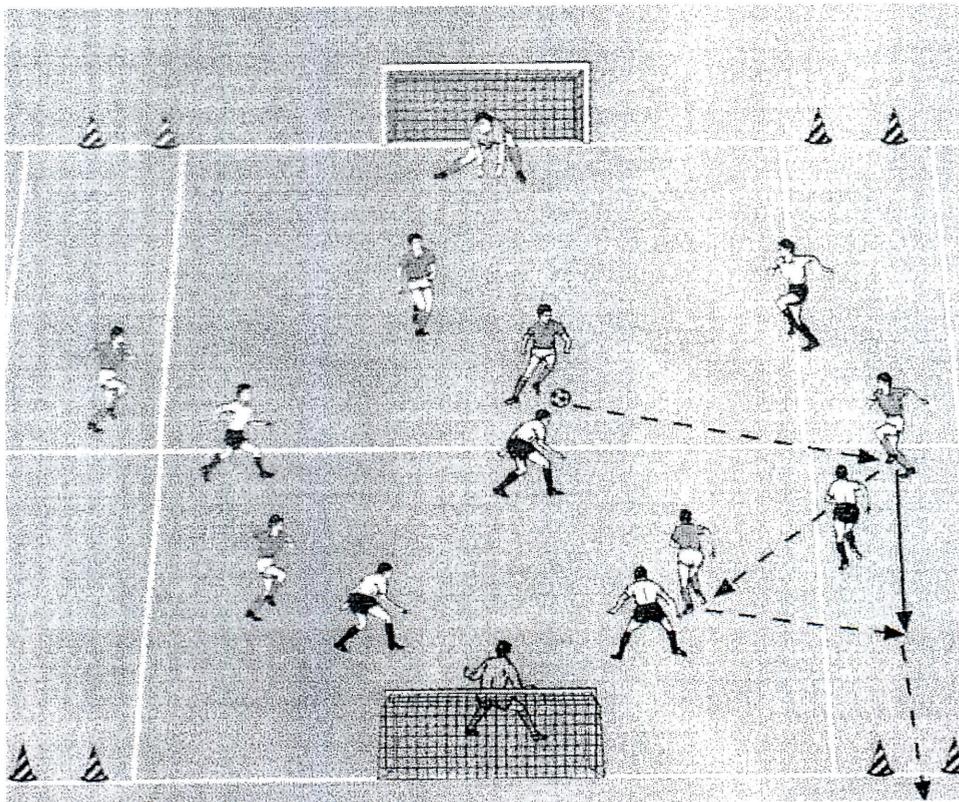


Illustration 14

Setup: Field is 50x50 yards. Set up a small goal to the left and right of each standard goal with GK. Mark out a wing zone on each side, plus a centerline. Player form two teams of six field players plus one GK. Playing time is 3x 6 minutes.

Sequence: Teams play 6v6 attackers try to score on any of the opposition's three goals. The number of touches allowed varies from zone to zone:

- I. One touch in the wing zones,
- II. Two touches in the defence zone.
- III. Three touches in the attack zone.

Variations:

- I. To work on other training concepts, change the number of touches allowed. For example unlimited touches in the wing zones and limited touches in the middle (trains the game on the wings).
- II. Only one team has limited touches

c) Name of exercise: Dribbling game

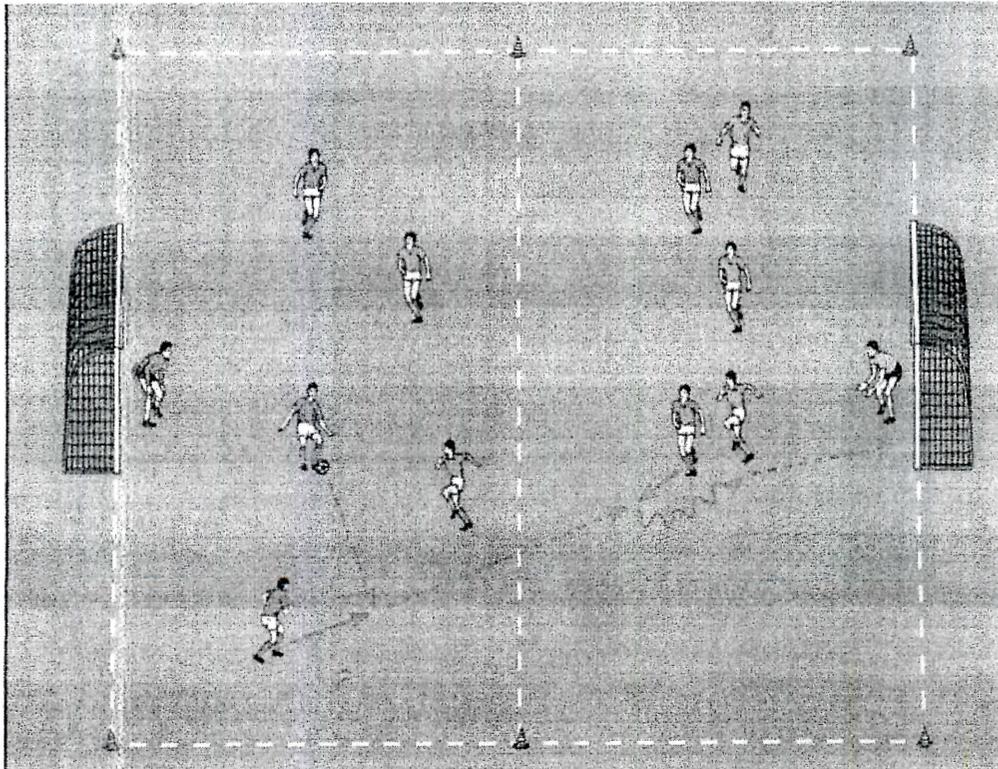


Illustration 16

Setup:

- I. Mark out a 15x20-yard field with goals.
- II. Using cones mark out a centerline.
- III. Divide players into two teams of five plus GK.
- IV. Three defenders are positioned in the defending half, two attackers in the attacking half.

Sequence:

- I. Teams play 5v 5
- II. Defenders and attackers must stay in their assigned halves.

Variations:

- I. One defender can join the forwards after passing the ball to them to create a 3v 3 situation.
- II. Two defenders can join the forwards after the pass to create a 4v 3 situation.
- III. Teams can play freely.¹⁸

¹⁸ Lottermann, Stefan. "Tactic Training Exercises." Success in Soccer Jan. 2004: 25+.

CHAPTER SIX

Perceptual skills, Cognitive skills and Decision-making Training in Tactical Skills

6.1. Decision making and its trainability

Decision making is a very situation specific skill. Therefore training athletes to take decisions will always be dependent of the sport game itself and its unique way of play. Above all however, the decision depends on the athletes abilities.

6.2. Example: Research strategy “From theory to practice” in handball

For this program the researchers asked the German handball association to evaluate this for elite athletes of different expertise and age. The theory provides guidance on how to search for information (search rule), how to generate options and stop this process (stop rule), and how to decide between the alternatives (decision rule). The strategy was called TAKE-THE-FIRST-Heuristic implying that searching for only a few options and picking the first that came to mind is a good strategy.

Because no one knew how this strategy develops, the researchers applied a longitudinal research program (3 years, with diagnostic every half a year) to evaluate different search rules of athletes (via eye-tracking), their stop rules (number and type of options generated), and their decisions rules (intuitive or deliberative decisions). It was found that spatial-oriented (e.g., options on the left side first) are better than functional search strategies (e.g. what are my pass alternatives). Second, they found that these different search rules resulted in a different number and type of generated options. The more options generated, the less effective were the decisions. Third, the intuitive decisions following the TAKE-THE-FIRST-Heuristic outperform other more deliberate strategies to decide (Johnson & Raab, 2003).

Decision Tools

In this following section 2 Decision Aids (that aim at helping athletes take the right choice) will be presented. The STICC (Situation, Task, Intention, Concern, and Calibration) is a format used to present problems and was originally developed by Karl Weick at the University of Michigan, School of Business. It was re-framed into the shortcut STICC by Gary Klein (2003). Another Decision Aid that provides a roadmap to develop and reach a smart choice within four steps is the PrOACT (Hammond, Keeny, & Raiffa, 1999) is a Decision Aid that provides a roadmap to develop and reach a smart choice within four steps.

STICC

Situation (Here's what I think we face): Define the conditions in which a decision needs to be made. Be sure that everyone sees the problem the same way.

Task (Here's what I think we should do): A brief description of the task and potential alternatives.

Intention (Here's why): The coach group or coach-athlete group needs to get the reason why this task needs to be performed to resolve the situation.

Concerns (Here's what we keep our eye on): Concerns about potential problems should be mentioned here. Especially tricky parts of the task need to be evaluated so the group can prepare for them.

Calibration (Now talk to me): The allocation of responsibilities or any questions that may arise how to reach the intended task solution are part of the last aspect of STICC. The above is a format used to present problems and its main message is that if you have a group of coaches making a decision between alternatives or athletes that are participating in a decision, than STICC provides a presentation form to discuss and decide. Thus it could be a very useful tactical tool in improving performance and effectiveness in movement sport games.

PrOACT

The PrOACT (Hammond, Keeny, & Raiffa, 1999) is a Decision Aid that provides a roadmap to develop and reach a smart choice within four steps.

Problem: To choose well, you need to state your decision problems carefully. Defining the problem includes avoiding unwarranted assumptions and option-limiting prejudices.

Objectives: A decision is a means to an end; therefore your decision should lead you where you want to go.

Alternatives: Decisions can't be better than your best alternative, therefore considering all the alternatives or at least a wide range of creative and desirable ones is requested.

Consequences: How well do your alternatives satisfy your objectives? Assessing frankly the consequences of each alternative will help to decide among them.

Trade-offs: In most complex decisions there is no single perfect alternative; therefore you need to balance conflicting objectives.¹⁹

To conclude this chapter I would like to reflect on the fact that the above aids aim at assisting in the training of the athlete via a number of different structured methods. However, decision making even though it is trainable, it depends on a number of factors such as the athletes abilities and the game (sport) itself.

¹⁹ Raab, M. Arnold, and N. & Tielemann. Judgement and Decision Making in Sports. Ed. P. Fricker. Canberra, Australia: Australian Institute of Sport, 2005.

CHAPTER SEVEN

Implications of Tactical Knowledge in Team Games Training

7.1. Introduction to Chapter Seven

As mentioned in previous chapters, tactics are an integral part of the game. The ability to set up the right tactics and form the right strategy can give the advantage to the team that is able to formulate and systematically execute their tactics and strategy.

7.2. Other Considerations

Up to this point in my thesis I strongly supported that all the above methods and skills, if properly trained and applied will yield optimal results. I didn't however clearly stated that such skills such as improvement of vision and decision making along with tactical knowledge can only be fruitful if the athletes receiving the training is adept in learning these new skills. In order for an athlete to better himself and develop these new skills,

- he should be a good receptor of information
- he should be willing to adapt and adopt the tactics given by the coach/trainer
- he should be able to identify, accept and give feedback on whether the tactics are in line with his personal skills and play

It is not however based only on how adept the athlete is to employing certain tactics. When it comes to applying tactics in training and games, the coach/trainer should also possess the following qualities

- he should be focused on the outcome of its tactics
- he should analyze the processes the tactical decision-maker (athlete) employed to achieve this outcome
- he should provide feedback in regards to the tactical decision-maker (athlete), in order for them to develop specific activities to improve their tactical skill level

By employing all the above qualities, the coach/trainer puts emphasis on the development of players who are both technically competent and makers of good tactical decisions.

Once again the importance of tactics is undisputed. This however does not mean that it cannot have negative effects and implications in games. When it comes to the athlete, he/she has developed its own skills and strategy while playing his game, and at the end of the day that is what makes him what he/she is. If the coach trainer is trying to change the athlete's game dramatically without taking into consideration the athletes skills and play, then the results can be very disappointing.

Example:

A tennis player that has been training with a coach and his play is very fast and offensive has a certain type of game. He takes more risk and is used to making decisions faster, mostly based on instinct and always having in mind to attack with his full force.

If he is to change coach and the new coach is telling him to reduce his speed and play more technical, thinking that he might be able to save some points against an offensive opponent, we can have numerous implications. The implications will arise because the athlete does not possess such technical skills as the ones that the coach's tactics require. The player might not have the technique or the patience for such a defensive play and the results might be devastating.

Conclusion

As we have analysed in the past chapters and based on my research, there is strong proof to suggest that training, developing and implementing the right tactics can help coaches and players win the game. By improving such cognitive and Perceptual skills as Decision making and visual reaction time and by encompassing these skills into tactics and strategy, we can gain a competitive advantage over our opponents. By utilising these skills in practice using repetition and also by being able to change our tactics according to the task at hand, we assist the athletes and the team to operate as one. If we set the right tactics and strategy, we can become proactive, faster and more effective than opponents that base their game play purely on such skills as power and speed.

Be advised that I am not implying that tactics is above all the other skills in team game sports and sports in general. What I am stating is that tactics and strategy is as important of an element as motor and physiological skills. In simple words an elite player or team of players should have and exercise all of the skills required to win the game. They should exert strength, endurance, speed so as to be physically stronger and competitive to their opponents, but they should also have vision, fast and correct decision making abilities as well as minimum reaction time.

Tactics however are not panacea to all problems. If a team does not possess all the required physical characteristics needed to perform in the game, tactics cannot win the game on their own. If for example a basketball team is made entirely of players that are 1.60m and they play against a team with average height of 2.00m, even if the short team has the best tactics and strategy, it is unlikely to beat the tall team because it is lacking integral physical skills. If however both teams have the same height and physical strength, then the competitive advantage will go to the team that has formulated, practiced and enforced the proper tactics and strategy in the specific game.

Finally I want to reflect on the fact that even if the right tactical skills are taught and trained, the receptor of this skills should be able to understand and implement them in his game. If the athlete is not able and willing to apply these skills during game, then the result will not be the desired one. Therefore tactical skills are going to grant the competitive advantage to the athlete or team that is utilizing them, provided that all the other game elements are in harmony and are trained optimally and to the fullest extent.

Definitions:

Close skill- A skill for which the environment is stable and predictable, allowing advance organization of movement.

Open skill- A skill for which the environment is unpredictable or unstable, preventing advance organization of movement.

Cognitive skill- A skill in which the primary determinants of success are related to decision making and intellectual functioning.

Motor skill- A skill where the primary determinant of success is the movement component itself.

Complex skill- A skill that requires the movements of many body parts as well as the coordination among them in time.

Simple skill- A skill involving a small number of joint motions and where coordination among limbs is minimized.

Discrete skill- A skill in which the action is usually brief and with a recognizable beginning and end.

Continuous skill- A skill where the action unfolds continuously, without a recognizable beginning and end.

Serial skill- A skill composed of several discrete actions strung together, often with the order of actions being critical for success.

Accuracy skills- These skills often do not involve fast or vigorous movements, but require great concentration and much practice of fine muscle coordination's.

Power skills- These skills are performed with great speed and force (power). In developing power skills, the emphasis is on neuromuscular coordination's, which result in fast and forceful movements. Some skills combine accuracy and power.

Manoeuvrability skills- The emphasis these skills are on agility (quick change of direction and body position).

Cyclic skills- The main characteristics of these sports is that the motor act involves repetitive movements. Once athletes learn one cycle of motor act, they can duplicate it continually for long periods. Each cycle consists of distinct, identical phases that are repeated in the same succession.

Acyclic skills- These skills consist of integral functions performed in one action, the athlete performs them all in one action.

Acyclic combined skills- consist of a cyclic movement followed by an acyclic movement.²⁰

²⁰ Perič, Thomáš. "Basics of Sport Training Theory." *Theory of Abilities and Skills, Type of Abilities and Skills*. Faculty of Physical Education and Sport, Charles University in Prague, Prague, Czech Republic. Mar. 2005.

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