PE STUDIES –Revision Notes Motor Learning and Coaching

Transfer of learning- the effect that past experiences have on the learning of a new skill

* Skill to Skill
  + - Occurs when a skill developed in one sport has an influence on a skill in another sport
    - Can be a positive or negative influence
    - Proactive Transfer
      * A previously learnt skill affects the skill currently being learned
    - Retroactive Transfer
      * Learning a new skill affects a previously learned skill
* Theory to Practice
  + - The transfer of theoretical skills into practice
    - Coach devises game plans which players apply to game situations
* Training to Competition
  + - Transfer of skills developed in training into a competition situation
    - Coaches must implement training sessions which replicates the demands of a game
    - Skills
    - Energy Systems
    - Decision Making Process
    - Allows players to develop information processing and decision making skills, making it more likely to execute these in game scenarios
    - Specific practise can result in significant improvement in game performance

Effects of Transfer of Learning

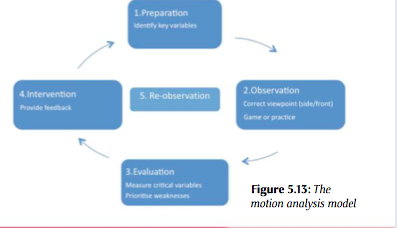
* Positive Transfer of Learning
  + - When skills and information from a previous learning experience helps with the learning of a new skill
    - The two skills are often similar in some way
    - E.g. Free throw in basketball to shooting in netball
* Negative Transfer of Learning
  + - When the learning of previously learned skills negatively impacts on the learning of a new skill
    - The skills may have seemingly similar actions but there are critical differences between the two
    - Badminton and tennis are both ball sports but critical differences.
    - Use of wrist in badminton vs. no use of wrist in tennis
* Zero Transfer of Learning
  + - When the learning of a new skill is not impacted, positively or negatively, by previously learned skills
    - Zero skill transfer between golf and AFL as the sports are completely different
* Athletes who have been exposed to a wide variety of movement experiences from a variety of sports benefit by being able to apply these movement skills to other sports
  + The greater the range of sports an athlete is exposed to, the greater the chance of positive transfer of learning as they can:
    - Recognise and select relevant cues
    - Process information received faster and more accurately
    - Have more responses available to choose from
    - Better execute selected response

Analysing Performance

* Laboratory Testing
  + - Performance is analysed in laboratory conditions s that the factors a be varied or manipulated
    - E.g. Computer analysis, use of cameras
* Field Testing
  + - Athletes performance is monitored at training in normal surroundings
    - E.g. Pull phase underwater in swimming observed at training
* Competition Testing
  + - An athlete is analysed while performing in competition

Methods of Movement Analysis:

* Quantitative – *OBJECTIVE (Based on Facts)*
  + Uses numbers to describe something
  + E.g. Skin folds, speed, velocity
* Qualitative – *SUBJECTIVE (Based on opinion)*
  + Description of a movement without the use of numbers
  + Must follow *Knudsen-Morison Model of Qualitative Analysis*

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Knudsen-Morrison Model of Qualitative Analysis

* 5 Stage Process (**P.O.E.I.R)**:
* Preparation Phase
  + Coach is concerned with the process of developing a pre-requisite knowledge base about that particular skill
  + Coach must know points of technique required for proper skill execution
    - 1- preparation to perform the skill
    - All movements that prepare the athlete for the performance of the skill
    - E.g. Back swing, run-up
    - 2- execution of the skill
    - Begins when preparation finishes and ends at contact/release of ball
    - E.g. Application of a force to ball, initiation of down swing
    - 3- follow through
    - All movements after the execution phase
* Observation Phase
  + Systematic gathering of information about the performance or movement
    - Decide on best way to observe and gather information bout the skill
    - Best angle/Method to observe
    - Direct or via video
* Evaluation Phase
  + Identification of strengths and weakness of performer and methods to improve these
    - List weaknesses in order of correction priority- which are immediate, which aren't so much
    - Large changes need more time, may be done In off season
    - '*Cause-Effect Relationship'*

The cause of arrow must be identified and addressed otherwise it will continue to occur

* Intervention Phase
  + Provide corrections and feedback to the performer, usually under practise conditions, to improve performance
  + Reasons for use;
    - 1- to Motivate the performer
    - Can provide feedback which motivates performer to continue to strive for improvement or reassure the performer and their progress
    - Must be realistic
    - 2- to Change performance
    - Feedback given aimed at changing their current performance
    - Information provided on what needs to change for the future
    - Positive feedback is most effective
    - 3- to Reinforce performance
    - Used to re-enforce learning or performance which increases the chances of the behaviour being repeated
  + Coach provides performer with visual, verbal and proprioceptive cues
    - Visual Cues-
    - Coach demonstrates the correct technique. Show performer what he is or should be doing
    - Coach gives 3-4 main points to focus on
    - Verbal Cues-
    - Single words or phrases which concentrate the performer on aspects of the skill
    - Used predominately for improvement
    - Too much information can be overwhelming and inhibit performance
    - Proprioceptive Cues-
    - Coach physically moves the player through the desired movement pattern to make them aware of how the movement should feel
    - Stimulates the CNS and provides muscle memory
* Re-Evaluation Phase
  + Observe the performer implement the changes made in similar fashion to initial observation
  + Did it make a difference or is further intervention needed

Training to Improve Performance

* A coach can use several methods/strategies of practise to teach and improve the skills of a performer
* There are three continuums which a coach will work around
  + *Simple and Complex*
  + *Shaping and Chaining*
  + *Static and Dynamic*
* Basic coaching Model
  + 1- Introduce Skill to be Learned
    - Get athletes attention
    - Make sure they can all hear an see
    - Explain name of skill and how/when it is used
  + 2- Demonstrate and Explain the Skill
    - Demonstrate the skill to the athlete
    - Point out 2 or 3 key points of technique required for successful performance
    - Ask question of he group to test their understanding of the skill
  + 3- Practise the Skill
    - Begin practice of the skill as soon as possible after demonstration
    - Practise should be fun and motivating
    - Needs to be appropriate o skill level of group
  + 4- Correct Errors/Provide Feedback
    - Learners are provided with feedback about their performance
    - Learners practise some more and try to incorporate the feedback they received

Types of skill

* + Simple Skill
    - Straightforward
    - Require little practise to learn
    - Require little cognitive ability
    - Limited number of components to skill
    - Taught as a whole
  + Complex Skill
    - More difficult to learn
    - Require repeated practise to learn
    - Require more cognitive ability
    - Many components to the skill
    - May be broken down to be taught

Teaching simple skills

* Simple skills are learnt quickly and easily
* Taught in 2 ways
  + Imitation Method
    - Coach demonstrates, learner copies
    - Minor adjustments made when needed
    - Learning made via observation
  + Demonstration/Explanation/Practise/Correction Method
    - Coach demonstrates and explains the skill
    - Learners practise
    - Feedback and correction is provided
    - More practise
    - More feedback. Etc.

Teaching Complex Skills

* More difficult to learn and need to be broken down and simplified when being learnt
* Taught in 2 methods
  + Shaping
    - Simplifying a complex skill into its main components, then adding in the missing parts
    - Suitable for *complex actions with simultaneous elements*
    - Method:
    - Coach demonstrates the skill
    - Performer practises a simplified version
    - Feedback/Correction provided
    - Add the missing components to the skill
    - Use the skill in a game scenario to further enhance understanding
    - E.g. Hurdles
    - Shaping is suitable for complex actions with simultaneous elements
  + Chaining
    - Breaking a skill into its components, practising each part separately, then reassembling the skill
    - Only suitable to *complex skills with sequential parts*
    - Method:
    - Start by teaching first part of skill- practise until **perfect**
    - Add next part of skill- practise until **perfect**
    - Etc....
    - No progression until previous part is **perfect**
    - E.g. Triple jump
* When chaining a motor skill, the order of practicing components of the skill is important
* When shaping a motor skill, the order of the rehearsed components is less important.

Drill types to develop skill

* Static Drills
  + Performer practises skill whilst in a stationary position
  + Can once trade on skill without attending to other factors
  + Limited decision making
  + Beneficial when learning a new skill
* Dynamic Drills
  + Performer is moving
  + Environment becomes less predictable
  + Increased decision making required
  + Drills become more game related
  + Used to extend knowledge an development of skill

Information Gathering

* Analysing technique using checklist and video
  + Check lists:
    - Used to determine the technical and tactical capabilities of a performer
    - Made by identifying the key criteria for successful performance
  + Mental vs Physical Performance using a Check List
    - Many athletes can perform optimally under training conditions were there I little pressure and making mistakes des no have consequences
    - Under match pressure, the same people may make unforced errors, struggle under the pressure by making decision all errors oaths can make check lists
    - Coaches can devise check lists to determine the mental strength of the athlete, which will outline the circumstances which negatively effect the performer or positively effect the performer
    - Players am coaches need to be able to determine if a performance is changed due to physical o psychological factors
    - Coaches need to be aware of weaknesses me how these weaknesses come about
    - Coaches should work to forming a psychological skill training program to overcome the identified problems
  + Other methods
    - 1- Fitness Requirements
    - GPS devices monitor the movement of players during games
    - This will give the coaches the ability to adjust fitness programs relative to each player
    - 2- Intensity of Work
    - Wearing a heart rate monitor providing data to the coach about how hard the player has worked.
    - Ensures the player is working at the required intensity
    - 3- Performance or Criteria
    - 'Key performance indicators'
    - The criteria which is essential for successful outcomes e.g. Tackles, possessions, etc.
    - 4- 'Live' Feedback
    - Coaches are given live data during the game regarding their players performances
    - Also allows the coach to access information about the opposition s changes can be made to prevent their dominance
    - 5- Analysing Tactics
    - Players are provided with information on their next opponent so they can analyse how to play against them
    - Analysing the oppositions key players can be beneficial in minimising their impact in a match

Reflective Learning

* Gathering information about a performance and looking back/analysing this performance to find the strengths and weaknesses and determine what factors limited the performance
* A reflective learner solves problems through self-evaluation and reflection
* 4 stage process:
  + 1- Reflection
  + Reflective journals: used to record all aspects o performance as a means of reflecting on when required
  + Mentoring: significant other who provides constructive feedback to the performer
  + Video Analysis: re-watch performance and adjust where required
  + Questionnaire: feedback gained from questionnaires used to make changes
  + 2- Recognition of things to Improve
  + After reflection, you are able to identify what needs to be worked on
  + 3- Planning for Future Improvement
  + Staying up to date with the sport you are involved in
  + 4- Action
  + Taking action by setting short term goals aimed at targeting the areas which need improving

Leadership

* There are three styles of leadership, each with its strengths and weaknesses and each suiting a different story of team/player
* Authoritarian Coach:
  + Best suited to pre-season, the coach uses this to establish his position in the team and his dominance
  + Makes all the decisions
  + Very strict style of coaching
  + Roles of players is to attend and listen to the coaches commands
  + Coaches believes he has the knowledge to impart on the players
  + Effective when team is winning
  + Less effective when tea is loosing
    - Characteristics
    - Intense energy
    - Confrontational when challenged
    - Demands attention to detail from players
* Democratic Coach (co-operative):
  + Best suited to in-season and finals s it allows players in the team to have a influence on decision making
  + Maintains open communication with players
  + Players feel they have a degree of ownership in the team
  + Positive and negative feedback used to reinforce and promote learning
  + Very good for inexperienced players
  + May not provide enough motivation for some players
    - Characteristics
    - Tends to be very flexible
    - Strives to create an atmosphere of mutual respect
    - Has a concern for the welfare of his players
* Laissez Fair Coach (casual):
  + Best suited to off-season and pre-season, allows players to step up and determine their leadership roles in the team
  + Relaxed and easy going coach who establishes an informal learning environment
  + No pressure form coach on players for them to perform
  + Less organised and less prepared
  + Offers guidance and advice only when asked
  + Limited improvement
  + Inexperienced players unsure of what to do
  + Serious players often this coaching style unsatisfactory
* Coaches can change or modify coaching styles depending on the demands of players or the team, the stage of the season, however not all coaches have the capacity to mix coaching styles.
* General Trends in Leadership
  + Males prefer authoritarian leadership
  + Females prefer democratic coach
  + Players in single sports prefer democratic leadership
  + Coaches looking to win, particularly at a higher level will take an authoritarian approach
  + Coaches looking for fun will take the laissez fair approach