

24. SKILL LEARNING AND MOTIVATION

O-138 Correlation of visual function and performance outcome in premier league soccer

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OBJECTIVE Previously the level of visual function of athletes has not featured as a priority in the assessment of physiological function, however the interest in this area of Sports Science is increasing in English Soccer. Because of the wide variations both in the visual assessments performed and in the professionals performing the assessments, comparisons among research findings proves difficult. The aim of this research was to evaluate the relevance of the total of the individual players' visual ability to the final results over a season. Data was collected from senior players at a Premier League Football Club over 3 years. From this data 4 visual functions were identified as being important to soccer. From this a system was developed to produce a Vision Score for each player.

METHODS The sum of the visual scores of each player in each match in the 2004/2005 league season was calculated. This was analysed in relation to the following variables; the final result of each game, whether the assessed team scored in the first 20 minutes and/or whether they scored in the last 20 minutes.

RESULTS Although the visual ability of the opposing teams was a variable which was impossible to factor out, the statistical analysis of the results showed a correlation and relationship between the total of the visual ability of the team selected and the final score. There appears to be a further correlation between the specific visual function of binocular vision to the overall results.

CONCLUSION Research into Sports Vision tends to analyse combinations of functions such as in Dynamic Visual Acuity which requires the individual to use the functions of motion detection, smooth pursuit eye movements, binocular vision and visual acuity. This study suggested that more information regarding the relevance of visual ability to performance can be achieved if specific individual visual functions are assessed.

KEY WORDS Visual function, binocular vision, soccer, peripheral vision.

O-139 The microstructure of practice: A time motion analysis of practice activities

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OBJECTIVE A common dilemma confronting coaches is how to structure training to optimise skill acquisition (Cobley, 2005; cited in Williams and Ericsson, 2005a). Coaches have a responsibility to manipulate training to ensure both effective and efficient learning. However, current coaching practice remains determined mainly by 'lay' opinion rather than empirical research (Williams and Hodges, 2005b). Research highlights a need to accumulate vast amounts of practice; however the structure of training may be more important than accumulated practice hours. A more formal assessment of what athletes do in practice is needed. We examined the microstructure of practice in soccer by comparing practice activities undertaken by elite, sub-elite and recreational players across three age groups.

METHODS The practice activities undertaken at three clubs across three skill levels (elite, sub elite, recreational) were assessed. Three sessions from each age group (9, 13, 16 years) were filmed (n = 81). Sessions were analyzed using Time Motion Analysis. Percentage time in each activity was calculated and analyzed using Group (elite, sub elite, recreational) x Age (9, 13, 16) ANOVAs.

RESULTS Elite players spent less time in technical practice and more time in conditioned games than sub-elite and recreational players and more time spent in possession games than recreational players, ($p < 0.05$). More time was spent in phase of play activities as age increased for all skill groups ($p < 0.05$). No significant differences were assessed among the groups for time spent in all other actions.

DISCUSSION Elite players spent more time playing in 'open' forms of practice compared with their less-elite counterparts who spent more time in 'closed' practice activities. Although the amount of accumulated practice is an important precursor to expertise, the nature of the practice activities and the age at which they are introduced is equally important.

Table 1. Categories and definitions for time-motion analysis.

Activity	Form	Definition
1. Physiological	Training Form	Primary goal of physiological aspects of game, e.g., warm up, cool down, conditioning, stretching, recovery.
2. Technical Practice	Training Form	Individual or with a group, covering isolated technical skills under no pressure.
3. Skills Practice	Training Form	Individual or with a group covering technical elements under opposing pressure.
4. Functional Practice	Training Form	Re-enacting isolated simulated game incidents without focus on any particular technical skills.
5. Phase of Play	Playing Form	Opposed practice using 1 goal to cover the cognitive team strategies used to outsmart opponents.
6. Possession Game	Playing Form	No goals in which ball retention rather than scoring a goal is the primary objective.
7. Conditioned Game	Playing Form	Restrictions/variations to rules, goals or areas of play, but with teams scoring in the same way.
8. Small Sided Game	Playing Form	2 Goals, realistic to regulation rules, with teams scoring in the same way.

REFERENCES

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KEY WORDS Skill acquisition, elite performance, coaching, practice, soccer.

O-140 Ocular dominance and soccer

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OBJECTIVE Ocular dominance is a term used frequently in both vision science research and sports science research. There is some confusion between ocular preference and the perceptual phenomenon. May be best described as egocentric and relative localisation, the interpretation of the body's position in space with emphasis on it's relation to other objects. However, the role of this in soccer has not been explored. The aim of this study was to evaluate localisation in soccer players to determine whether the assessment of this phenomenon has any role in soccer sports science

METHODS The localisation of 100 soccer players aged between 15 and 30 years were assessed over 3 years using a modification of a method first described by Romano. This involves taking 5 photographs of each subject. In this method 5 categories have been identified; right, right/central, central, left/central and left. From the photographs each player was allocated to the relevant category.

RESULTS The incidence of dominance in the normal population was reported as being approximately right 'dominance' in 80% of the population, 15% left dominance and 5% central 'dominance'. In the more skilled soccer players, determined by the frequency of first team selection, the incidence of central localisation was 94%. The incidence of central localisation reduced in the younger/less skilled players.

DISCUSSION The high incidence of central localisation found in the skilled soccer players has also been found by the author in netball and hockey but not in sports where carrying the body through space is not a requisite. The reduced incidence of this feature in younger players would suggest that there is a level of plasticity of this function. The assessment of this feature would appear to have relevance.

KEY WORDS Ocular dominance, spatial awareness, egocentric localisation, relative localisation.

O-141 Motivation and self-efficacy in American football players

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OBJECTIVE Motivation, cited as the reason of behaviour, has received too much attention over the past three decades. Within an educational and sport context, researchers have also viewed motivation from a multidimensional perspective

containing intrinsic, extrinsic and a motivational factors. The theory of self-efficacy has been viewed as the most extensively used theory for investigating motivational issues in sport and exercise. The purpose of this study was to explore the relation between Sport Motivation and Self-Efficacy in American Football players.

METHODS The sample was 60 American Football players based on convenience sampling. The Sport Motivation Scale (Pelletier et. al., 1995) and Generalized Self-Efficacy Scale were the instruments. Turkish Sport Motivational Scale included 6 subscales; intrinsic motivation to know-accomplishment, experience stimulation, introjections, identification, external regulation, motivation. Multiple regression analysis was employed to analyze the data.

RESULTS Athletes were found to use mostly intrinsic motivation to experience stimulation ($x=5.52$) and leastly external regulation ($x=3.37$) for motivating themselves. Regression analysis showed that generalized self efficacy ($\beta=.33$, $p<.05$) was a predictor of intrinsic sport motivation ($F(1,58)=8.07$), however there was no significant relation between self efficacy and extrinsic motivation-amotivation.

DISCUSSION This study suggested that intrinsic motivation toward an activity can be developed by increasing person's belief in his/her self-efficacy. Thus by assessing and recognizing low intrinsic motivation in American football players, sport psychologists might be able to design interventions addressing the enhancement of self-efficacy. Then next step will be to assess how interventions affect performance outcomes.

REFERENCES

Pelletier et al. (1995) *Journal of Sport & Exercise Psychology* 17, 35-53.

KEY WORDS Sport motivation scale, self-efficacy, American football players

O-142 System of tests used for assessing coordination abilities of soccer players

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OBJECTIVE To assess motor abilities and adroitness of an athlete, deviation is estimated from the optimal way of voluntary movements' execution in standard tasks. This approach considerably increases the efficacy of tests used for controlling athletes' condition in game sports, including soccer, which demand higher level of motor and coordination abilities development. The objective of this research was to develop and validate a system of testing coordination abilities in soccer players.

METHODS National Russian teams (15, 16, 18 yrs) and 2 teams of Russian 1st League participated in the study ($n=96$). A set of tests was performed in erect position on a stabilographic platform with biological feedback. Sensibility in body movement control; lateral asymmetry; tracking movements; state of the system of motor programs control; and short-term motor memory were assessed.

RESULTS National Russian teams (15, 16, 18 yrs) and 2 teams of Russian 1st League took part in the study ($n=96$). A comparative analysis of the results of coordination abilities testing demonstrated different features of motor control in soccer players, which depend as on age peculiarities, as on their roles in game. Test results were found reliable at $p<0.05$.

CONCLUSION We have elaborated a system of tests for estimating coordination abilities of soccer players. The analysis of the movement control system operation and specific preparedness of athletes permits to determine general and individual peculiarities of their condition at the moment of testing and to give recommendations concerning corrections to be made in technical and tactical training plans.

KEY WORDS Coordination abilities, testing, stabilography, motor programs control, technical training.