Università di Roma Tor Vergata

Physical Activity and Health Promotion

THE CROSS RESEARCH PROJECT

Il Calciosociale a Tor Vergata

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http://web.uniroma2.it/home

CROSS COHESION AND RE-INTEGRATION OPPORTUNITIES THROUGH SOCIAL SOCCER

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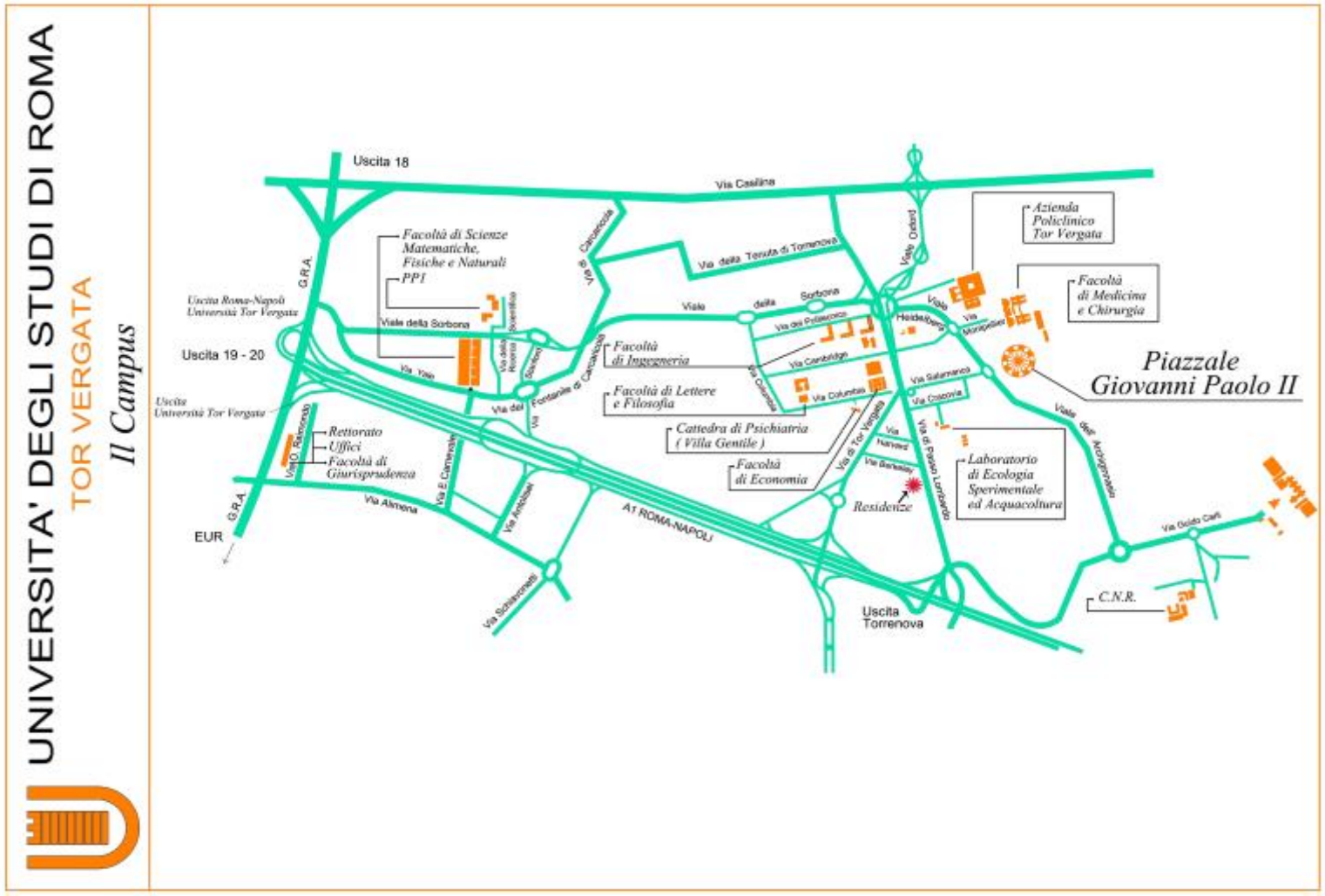
THE UNIVERSITY OF TOR VERGATA'S ACADEMIC STRUCTURE IS BASED ON SIX COLLEGES

- **Rettorato e Amministrazione centrale**
  Via Orazio Raimondo, 18 00173 - Roma
- **Economy**
  Via Columbia, 2 00133 - Roma
- **Law**
  Via Bernardino Alimena, 5 00173 - Roma
- **Engineering**
  Via del Politecnico, 1 00133 - Roma
- **Philosophy and Letters**
  Via Columbia, 1 00133 - Roma
- **Medicine and Surgery**
  Via Montpellier, 1 00133 - Roma
- **Mathematical, Physical and Natural Sciences**
  Via della Ricerca Scientifica, 1 00133 - Roma



Università di Roma Tor Vergata

A UNIVERSITY THAT IS OPEN TO THE WORLD

The University of Rome Tor Vergata is fully engaged in promoting an international dimension of studies and hence participates more and more actively in international research. Its key objectives include promoting joint degrees, developing international mobility for students and the faculty, as well as enrolling and training foreign students. In keeping with this vision 16 degree courses are “international”and most of PhD programmes are taught in English. In particular:

- Tor Vergata is the first Italian University organising an English-only degree in Pharmacy (5-year course) in cooperation with the prestigious School of Pharmacy of the University of Nottingham and Alliance Boots;
- 12 PhD programmes see a cooperation with foreign Universities (joint degrees)

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As far as international relations are concerned, the University of Rome Tor Vergata counts more than 500 bilateral and cultural/scientific cooperation agreements with partner Universities worldwide to promote joint research programmes and academic exchanges.

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Among those the most prestigious Universities of Brazil, but also the George Washington University (for bilateral student mobility with traineeships from 4 to 8 weeks - for the first time in Italy); Harvard University (to support innovative teaching and research programmes, clinical practice, fight against cancer and exchanges for the best students and researchers); the University of Oxford; the University of California, Irvine (to promote cooperation in science and didactics through joint programmes and research projects, academic activities and training in fields of shared interest).

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- As far as the Erasmus+ call for study 2014-2015 is concerned, 900 mobility grants for 673 signed and funded agreements were set up.
- The most recent Erasmus+ agreements feature the world-class University College London.

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Among the most important international networks developed by the University of Rome Tor Vergata the following stand out:

- EUA Network (European University Association): the University of Rome Tor Vergata is part of EUA Network, i.e. a network representing higher education institutions and the Rectors' Conferences of 46 European Countries. It is a reference point for and supports the development of cooperation and constant update for its members regarding political views about higher education and research.
- YERUN (Young European Research Universities Network): the University of Rome Tor Vergata is the only Italian university in YERUN, which includes 18 young European universities (less than 50 years of activity) standing out for their results in some of the most important international university rankings (QS World University, Times Higher Education and Shanghai Ranking). It aims at promoting joint research projects in fields with high social impact.
- VIU (Venice International University): the University of Rome Tor Vergata is part of VIU Venice International University, a group of Universities from all over the world sharing a common campus on the Island of San Servolo, in the Venice lagoon. These Universities devise study programs collegially to prepare their students to face the global challenges of today: sustainable development;climate change; ageing; urban growth; global ethics; cultural heritage

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About us: main rankings and results

- **QS World University Rankings by subject 2015:** In 2015 the University of Rome Tor Vergata confirmed its high positioning in QS World University Rankings, improving in as far as 5 disciplines with respect to the previous year (Modern Languages, Computer Science, Biology, Medicine and Chemistry).

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- **QS International Rankings 2015:** In 2015 the University of Rome Tor Vergata confirmed its high positioning in QS World University Rankings, improving in as far as 5 disciplines with respect to the previous year (Modern Languages, Computer Science, Biology, Medicine and Chemistry).
  It ranks 7th among Italian universities in the world rankings 2014 and it is the only Italian University in the special QS World University Rankings: Top 50 Under 50 2014 dedicated to universities established within the last 50 years (it ranked 33rd worldwide gaining 5 positions compared to the previous year).

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"Tor Vergata": the only Italian in world rankings QS Top 50 2014

"Tor Vergata" is the only Italian University in the special rankings QS World University 2014 Top 50 Under 50, which is dedicated to universities under 50 years of activity. Not only did our University won the national primacy, but also ranked 33rd worldwide (38th in the previous survey), thus confirming its growth trend during recent years.

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“Tor Vergata” graduates and labour market:
According to the 17th Almalaurea Report (2015) and basing on the interview sample, 44% of 3-year course graduates were employed a year after obtaining their degree, which is higher than the national average of 41%. With respect to master degrees, 59% of graduates were employed 12 months after getting their degree (i.e. 3 points higher than the national average of 56%). Such percentage reaches 80% of respondents after three years from graduation (as much as 7 points higher than the national average of 73%).

“Tor Vergata” is “Very Good” for foreign students

Study portals, a platform for international studies founded in 2007, awarded the University of Rome Tor Vergata with the "Very Good International Student Satisfaction 2014" medal. Such medal is assigned basing on reviews by international students who attended "Tor Vergata": in their rankings our University ratings scored 8 to 8.9 out of 10.

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- **"Tor Vergata" among the top ten Universities to study Humanities according to Censis**
  The University of Rome Tor Vergata is third in the recent Censis rankings for the top ten Universities to study Humanities, Philosophy, History, Dams (Art, Music and Show Disciplines) and Cultural Heritage. Censis evaluates two parameters: ‘student career progression’ and ‘international relations’.

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“Tor Vergata” wins the spin-off ‘bet’

According to the latest Netval Report 2014 on the state of the art of technological transfer in Italy, "Tor Vergata" ranks among the top 10 universities in Italy betting on spin-off businesses: together with Politecnico di Milano and Università Politecnica delle Marche it registers a spin-off of 2.8%.

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- **Bio-medicine: a spin-off by "Tor Vergata" signs an agreement with Hong Kong's BGI**
  The most advanced biotechnological and bioinformation technologies combine with the historic tradition of the University of "Tor Vergata" in Genetics: the first University pole for non-invasive prenatal genetic screening (chromosomal diseases) based on sequencing free foetal DNA fragments circulating in pregnant women's blood is Italian. Created through an agreement among the Chinese BGI, i.e. the world's largest genomics group, the Bioscience Institute of San Marino and the University of Rome Tor Vergata.

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"Tor Vergata"'s spin-off Innosensor among 'Startup of the Year' award winners

University of Rome Tor Vergata's spin-off Innosensor was awarded the YEI-Franci@Innovazione by the Embassy of France in Italy under the 'Startup of the Year 2014' award. This award allowed this spin-off to take part in the exhibition 'Innovation Connecting Show' in Toulouse. The company was set up in May 2012 with a mission to design and develop innovative sensors and sensory systems.

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SPORT SCIENCES IN TOR VERGATA

- Within the Faculty of Medicine and Surgery at University of Rome "Tor Vergata", there are several Sports Science Degree Courses (www.scienzemotorie.uniroma2.it).
- The chairperson of such courses is Professor Sergio Bernardini.
- The degree courses (Bachelor's Degree in Sports Science, Master of Science in Sport Sciences and Techniques, Degree in Preventive and Adapted Physical Activities) and the different Master activated (Personal Trainer, Physical Preparation in Soccer, others) are geared to provide students a preparation of high / very high level on themes of sport and physical motor activity. About 900 students belong to these degree courses, willing to find career opportunities in various fields of sport, fitness, physical education, sports management, etc.
- A considerable part of the activity, of our own institution, is oriented to issues of research and technological innovation.

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In recent years, research (with important effects on the formation and the school teaching) has pursued several lines of activity, strongly centered on the study of human and sporting performance, investigated in the various disciplinary domains:

- The **physiology of movement**, in the sense of extension, for the definition of the most advanced performing models; in particular, it emphasizes the multi-year research tradition in the **neuro-muscular** physiology and **biochemistry** of sport;

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- The **biomechanics** of human movement, particularly with regard to kinematics and dynamics of physical activities and sports, even in a preventive sense, adapted and therapeutic;
- The **Match Analysis** and study of the competitions, to research the effective predictors of performance, can be used in the technical management, technical and tactical and strategic competitions.
- The **sports medicine** in its various applications.
- To date this **operational research unit** has already produced many studies focused on the investigation of human motor skills in the field of top-level sport (**see publications**) making an important contribution on the scientific and technological knowledge, appreciated at national and international level.

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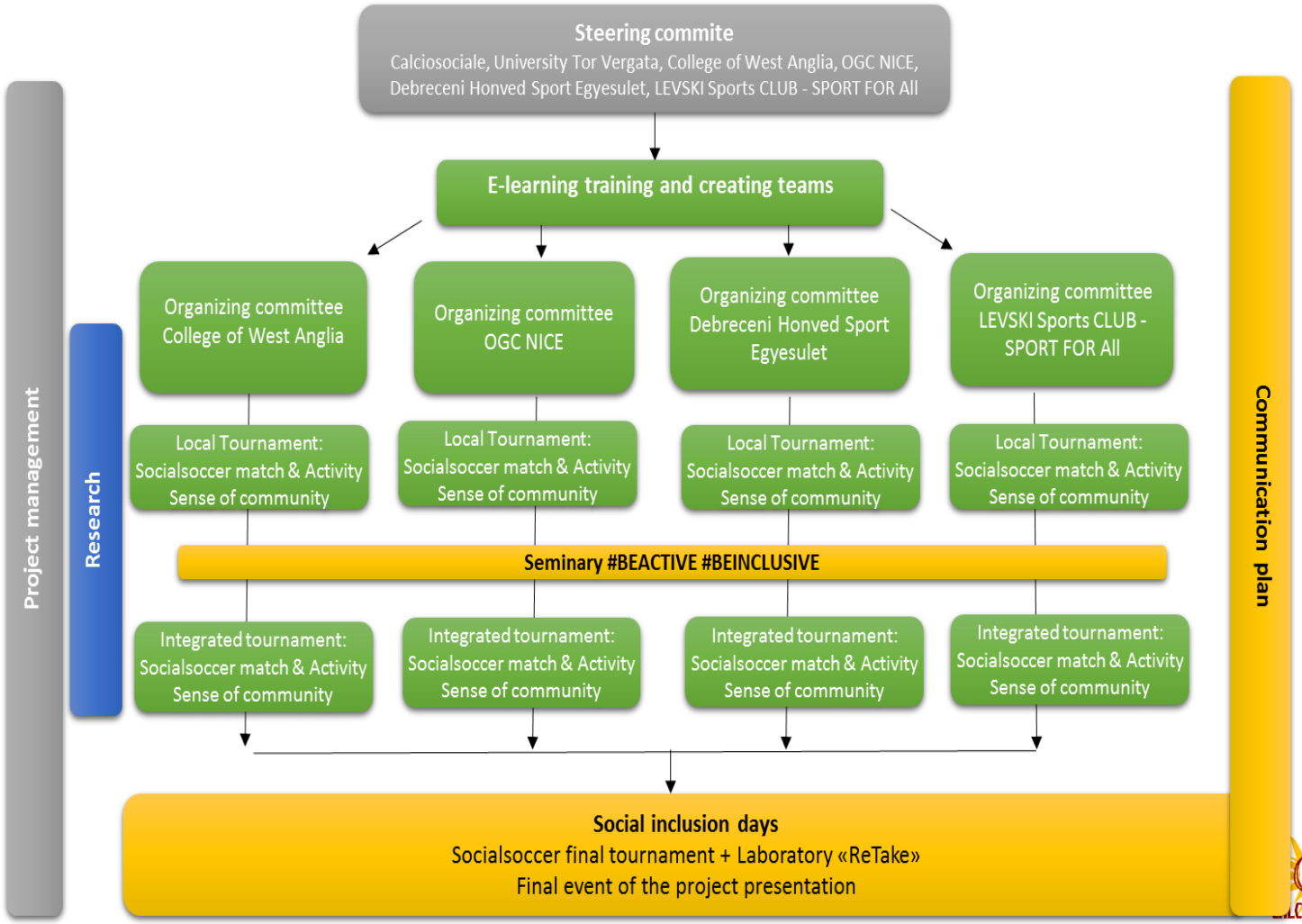
PROJECT CROSS

INTRODUCTION TO CROSS SCIENTIFIC RESEARCH: METHODS OF ANALYSIS AND DATA COLLECTION.



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HUMAN RESOURCES

The scientific project “CROSS – Tor Vergata” will be developed in the context of human resources within the “Tor Vergata” University of Rome”. The research team will be as follows:

- 1.Professor Antonio LOMBARDO, former President of the School of Sport and Exercise Sciences, Faculty of Medicine and Surgery, “Tor Vergata” University of Rome.
- 2.Professor Stefano D’OTTAVIO, President of the Master's Degree on Sciences and Techniques of Sports, Faculty of Medicine and Surgery, “Tor Vergata” University of Rome. He will act as Scientific Supervisor in the context of this research project.
- 3.Professor Mario ESPOSITO, PhD, Researcher and lecturer at the School of Sport and Exercise Sciences, Faculty of Medicine and Surgery, “Tor Vergata” University of Rome.
- 4.Professor Laura PANTANELLA, PhD, Researcher and lecturer at the School of Sport and Exercise Sciences, Faculty of Medicine and Surgery, “Tor Vergata” University of Rome.
- 5.Professor Bruno RUSCELLO, PhD, Researcher and lecturer at the School of Sport and Exercise Sciences, Faculty of Medicine and Surgery, “Tor Vergata” University of Rome. He will act as Scientific Coordinator in the context of this research project.
- 6. Mrs Di Lauro Maria Teresa, Accountant. She will be supporting the team on administrative issues.
- Additional Human Resources
- In carrying on the scientific project, we will also need more human resources, working in the context of the University of Tor Vergata too. These resources will be identified during the project for a maximum of 80 working days during this two-year research project.

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THE RESEARCH

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THE CONCEPT OF MODEL

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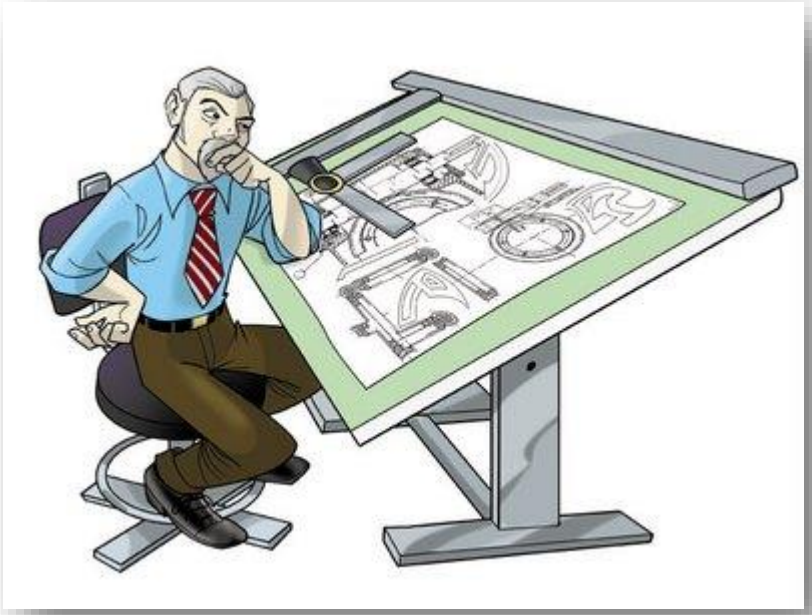
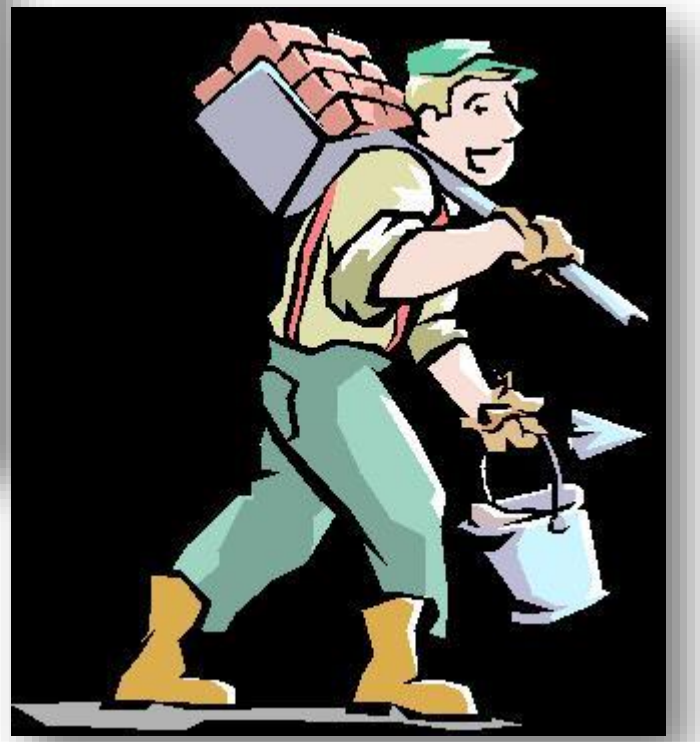
SIMPLIFY ... NOT TRIVIALIZE

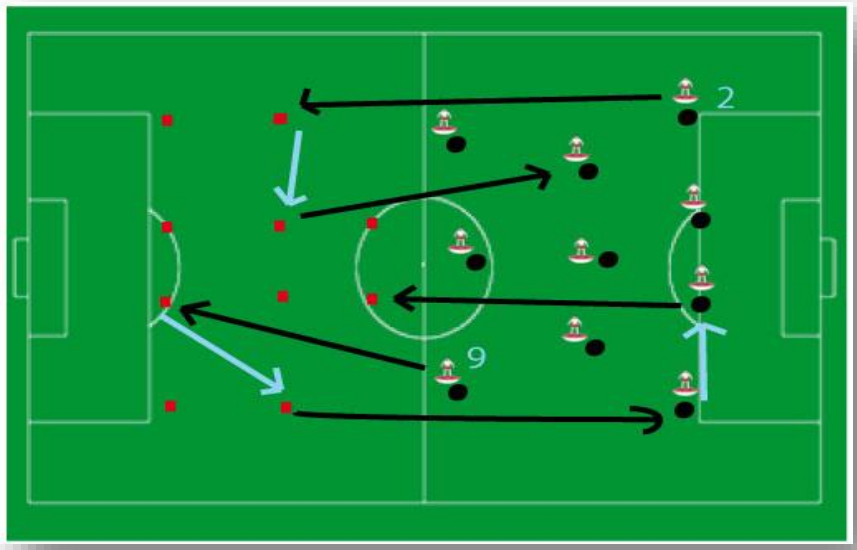
$$\frac{360}{450} = \frac{36}{45} = \frac{4}{5}$$

THEORY OR PRACTICE ...

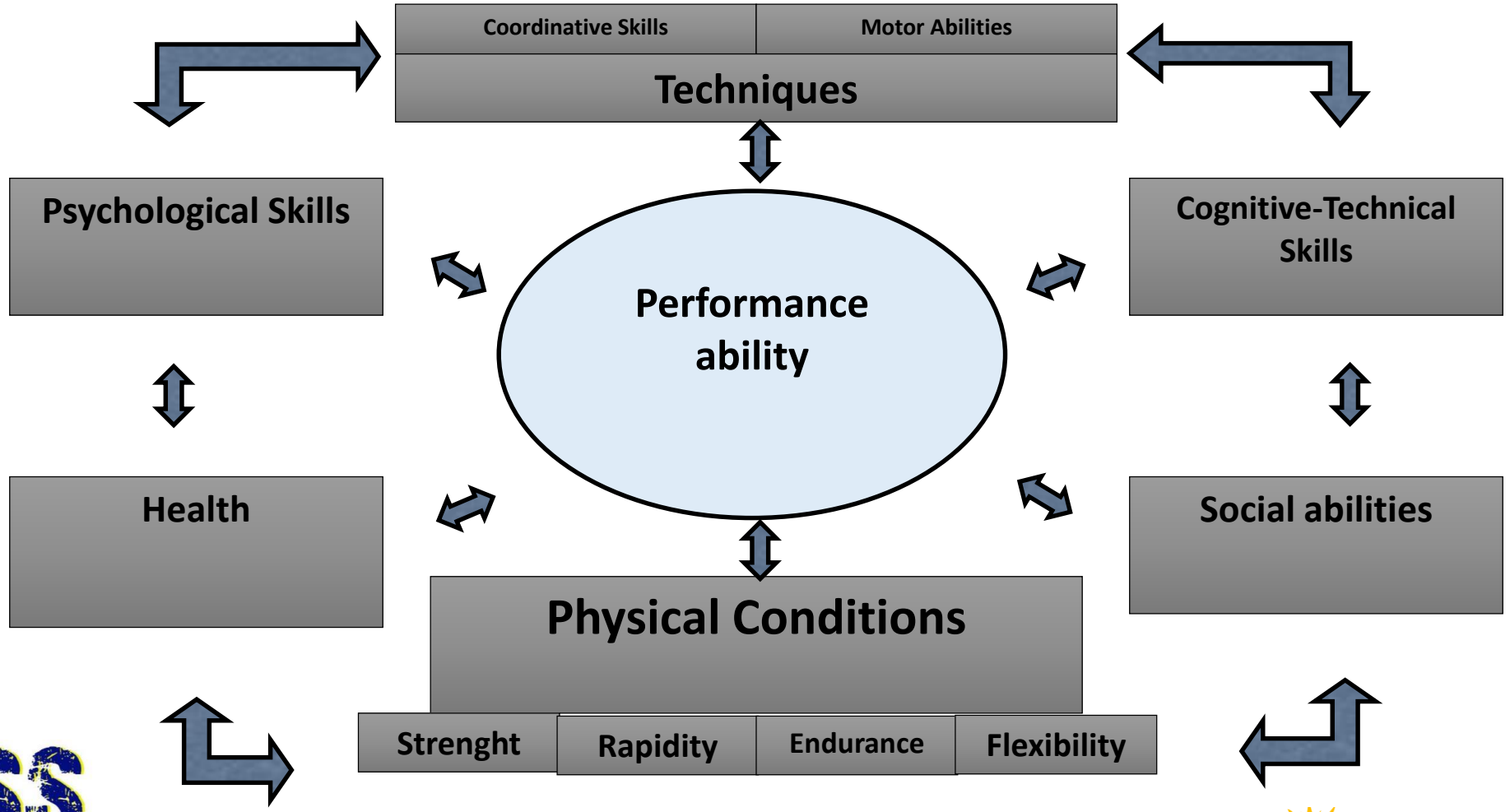




SPORT PERFORMANCE



GENERAL COMPONENTS OF SPORT PERFORMANCE



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TOP LEVEL PERFORMANCE MODEL ()

BASI FISICHE DELLA PRESTAZIONE

- FATTORI COSTITUZIONALI E DI SALUTE
- FORME PRINCIPALI DI SOLLECITAZIONE MOTORIA
  - QUALITÀ FISICHE
    - RAPIDITÀ
    - FORZA
    - RESISTENZA
    - MOBILITÀ ARTICOLARE
- ESPRESSIONI RILEVANTI PER IL CALCIO
  - CAP. DI ACCELERAZIONE
  - RAP. CICLICA E ACICLICA
  - FORZA ESPLOSIVA
  - FORME MISTE: FORZA RAPIDA, RESISTENZA ALLO SPRINT RIPETUTO (RSA) RESISTENZA ALLA FORZA
  - ESPRESSIONI SPECIFICHE MOBILITÀ ARTICOLARE

BASI PSICHICHE DELLA PRESTAZIONE

- QUALITÀ PSICHICHE FONDAMENTALI
  - CAPACITÀ COORDINATIVE
  - QUALITÀ COGNITIVE
  - QUALITÀ MOTIVAZIONALI
  - QUALITÀ AFFETTIVE
- ESPRESSIONI RILEVANTI PER IL CALCIO
  - Abilità, destrezza, capacità di apprendimento motorio
  - Intelligenza senso-motoria
  - Atteggiamenti, motivazione al successo
  - Sentimenti, temperamento, stati d'animo

Abilità nel correre e condurre la palla, rapidità di reazione complessa, cap. di adattamento e trasformazione, cap. di orientamento spazio-temporale, equilibrio, intelligenza, fantasia, creatività di gioco, ecc.

BASI SOCIALI DELLA PRESTAZIONE

- Struttura della personalità
  - Costituzio-ne psichica
- ESPRESSIONI RILEVANTI PER IL CALCIO

Capacità di imporsi, forza d volontà, fiducia in sé stesso, disponibilità al lavoro, risolutezza, perseveranza, capacità decisionale, capacità di concentrazione, fiducia nel successo, disponibilità a rischiare

- SITUAZIONE SOCIALE GENERALE
  - FAMIGLIA
  - LAVORO, SCUOLA
  - RAPPORTI CON PUBBLICO MEDIA, FEDERAZIONE, CONI, ECC
  - RAPPOR-TI CON ALTRI ATLETI
  - CONCEZIONE DEL RUOLO SOCIALE; FATTORI SOCIO-ECONOMICI, SOCIO-CULTURALI; SOCIO-POLITICI
- ESPRESSIONI RILEVANTI PER IL CALCIO

Ambiente socio-culturale, legami familiari. Il team come luogo di cooperazione reciproca e disponibilità ad aiutare. Promozione/sicurezza professionale. Rapporti con i dirigenti e gli altri giocatori.

TRASFERIMENTO ALLA TATTICA ED ALLA TECNICA DEL CALCIO

TRASFERIMENTO AL COACHING

A MULTIDIMENSIONAL APPROACH TO TEAM SPORTS' PERFORMANCES

Anticipation

Decision Making Processes

The willingness to take risks

Speed (general concept)

The ability to cooperate

W.D. Brettschneider, 1990

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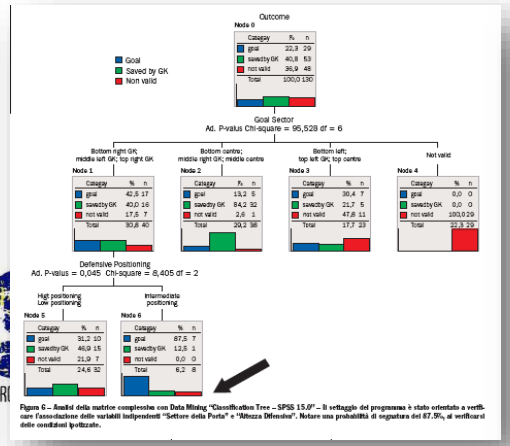
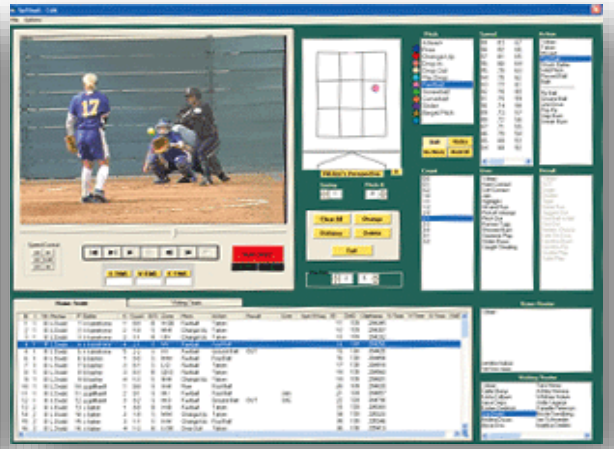
MATCH ANALYSIS

Match Analysis is a major subject among coaches, team managers and sport scientists and it is gaining an increasing relevance day by day. ***Information*** and the relevant ***data processing*** are the key factors while referring to this aspect of the sport training methodology.

Currently the concept of "**Match Analysis**" is used in several countries to define the process of observing and evaluating a "whole of behaviours" performed by the players during a match, applying different methodologies and using specific instruments and tools, in order to:

1. **collect** and **process** the relevant **data** concerning the different features of games or athletic disciplines, under different points of view;
2. **provide relevant presentations**, appropriately formatted, in order to show the collected and processed data in an ***accessible way*** to all the concerned people, at different levels (i.e. coaches, players, sport scientists, officials, managers, journalists, etc.);
3. **provide an interpretation** of the collected and processed data, in order to define better some specific feature of the investigated performance (i.e. the physiological side of the performance or the biomechanics or the tactical features of a match or a game) with the ultimate aim of improving these aspects through the appropriate administration of the relevant training processes.





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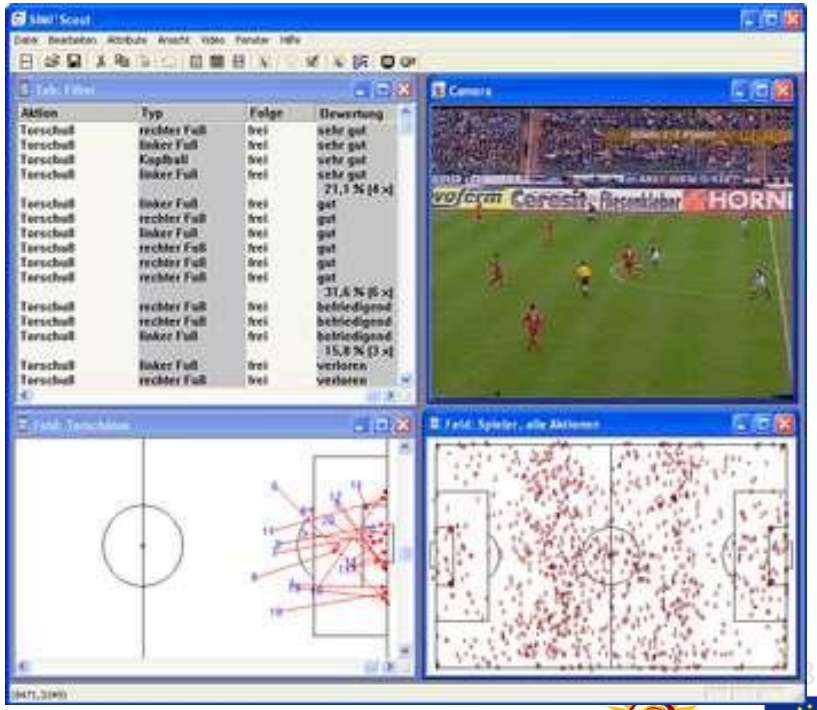
MATCH ANALYSIS – SOME DEFINITION

- Match Analysis, in situation sports, is a branch of Sport Pedagogy and Sport Sciences. Several disciplines, at different levels and extensions, combine to bring **descriptions**, **classifications**, **eventually explanations** and also to provide possible **predictions (probabilistic approach)** about some of the most significant situations that could be marked during sport events or matches.

Ruscello, 2008



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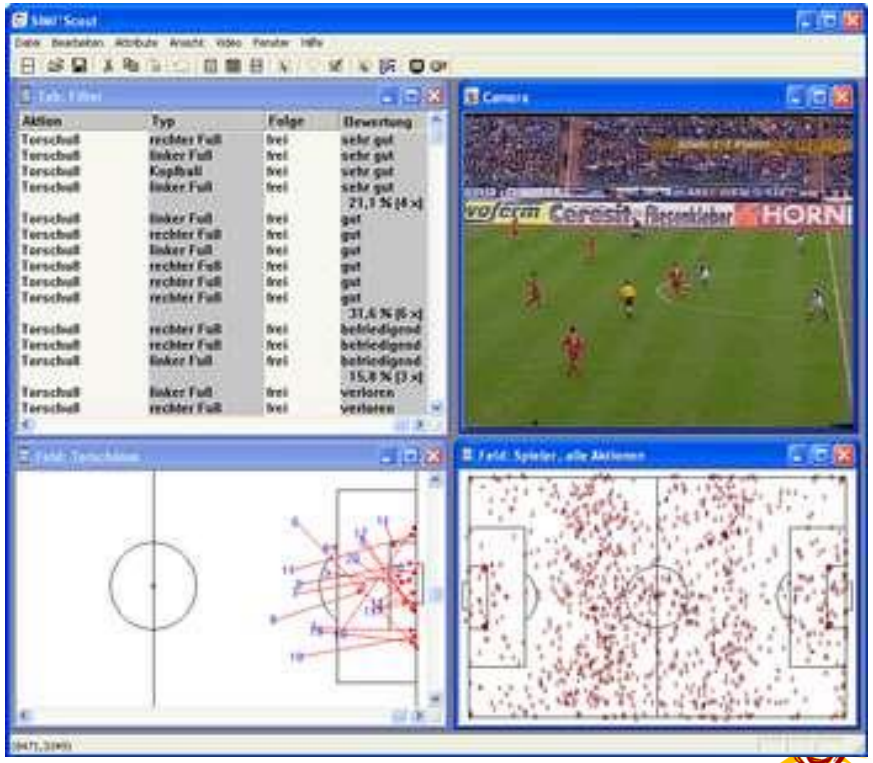
MATCH ANALYSIS – SOME DEFINITION

Match Analysis can be also described as a *"Behavioural Analysis describing sport performance, coding individual or teams actions, in order to collect information, suitable for the training/coaching process".*

Castagna Carlo, mod.; 2003



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THE PRINCIPLES OF HUMAN MOTION EVALUATION

- **Evaluation** is a basic part of any educational process, both when teaching humanities, art, logical-mathematical subjects and when the teaching of praxic-motor skills and sports is involved.
- **Evaluating** human motions in the context of sports means dealing with the very core of the Trainer profession; indeed, a trainer is constantly engaged in the difficult task of improving the performance of his/her trainees. Without adopting the right **evaluation** procedures, it is impossible to determine the **general orientation** of a Trainer's didactic, pedagogical and technical action, in terms of both efficiency and effectiveness.

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THE PRINCIPLES OF HUMAN MOTION EVALUATION

- **Checking** the improvement and the (partial or final) outcomes of the learning process is one of the **vital phases** of all teaching, training or instruction practices.
- The two **main factors** to be **evaluated** during sports teaching and training are:
- The degree of **development of motor skills** (conditional and coordination skills).
- The extent of **progress made in learning specific movements** (technical skills).

CHECKING PERFORMANCES

- Three types of **checks** are usually adopted:
- The **first type** is aimed at identifying and recording the level of performance (usually through **tests**) or learning (through **systematic observation**); in this case, the **evaluation** is **initial** and/or **ongoing**.
- The **second type** is characterized by the **sharing of data** and/or **outcomes** whose evaluation is aimed at improving performance based on the actual outcomes of the check; this type of evaluation is known as **formative evaluation**.
- The **third type** of check leads to a somewhat "**official**" evaluation: it consists of the general outcomes of the learning and training process and is focused on the relationship between the objective performance of the trainees and the teacher or trainer's requests. In sports, this is investigated during the **Competition**, that is, the **summative evaluation** of the performance.

These checks aimed at **evaluation** should always be **planned** and included in any teaching/training **process**.

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INSTRUMENTS OF EVALUATION
MOTOR TESTS

- The most common method adopted to check physical and sports performance levels is Testing. Tests are generally held as standardized instruments for analyzing and checking, usually based on performing one or several movements. The outcome of testing usually provides information on the extent to which certain motor skills have been acquired.
- One of the basic principles of the validity of any administered tests is standardization. Standardized tests must be **equal, consistent and repeatable** in terms of both administration of the test and the **assignment of scores** or **relevant evaluation**.

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INSTRUMENTS OF EVALUATION
MOTOR TESTS

When adopting motor tests, a high level of standardization is required with regard to:

- the materials used for the test
- the protocol (description) of the test
- the testers' behaviour
- the preliminary demonstration (in order to contrast the testing or learning effect)
- the verbal instructions provided during the test (e.g. encouragement)
- the observation of requested movements or positions
- the methods of measurement

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INSTRUMENTS OF EVALUATION
MOTOR TESTS

It is necessary to remind that any administered motor test must ensure:

- **repeatability** (reliability; similar outcomes in subsequent tests)
- **validity** (measurement of specific characteristics)
- **objectivity** (the test must not be influenced by those who administer it)
- **specificity** (the test must allow studying the characteristic which is the object of research).

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OBSERVATION

In both education and sports, one of the main forms of evaluation is Observation. However, observing does not simply mean watching.

Actually, observing implies the observer's selective capacity, that is, the capacity of effectively scanning the surrounding environment and looking for signals which are known and classifiable into several categories of reference. Observation is, therefore, a complex technique, which

Several mistakes are possible during observation. For the purposes of the current presentation, it shall only be mentioned that an observer is not a photo or video camera and mistakes in evaluation stemming from incorrect observations may cause several issues from both the pedagogical point of view and the outcome of sports performances must be learned, trained, and perfected over time.

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OBSERVATION

- As far as sports are concerned, being able to observe may become a powerful instrument for Trainers and Judges/Referees, each in their own capacity.
- Broadly speaking, there are two main types of observation:
- "**Natural**" Observation
- "**Systematic**" Observation

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“NATURAL” OBSERVATION

- The so-called “Natural” Observation does not require any specific procedures but the ability to “catch” as many features as possible of the observed object; it is based on the capability of memorizing events, which is, in most cases, flawed.

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“SYSTEMATIC” OBSERVATION

- “Systematic” Observation is a more solid procedure, which allows collecting extremely important data: it can and must be used as a vital instrument of evaluation in any sports and education context. As stated above, this type of observation should be learned and perfected over time. Moreover, systematic observation also concerns the reliability of several observers observing the same event at the same time.

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"SYSTEMATIC" OBSERVATION

- For the sake of simplicity, an operational definition of systematic observation is provided below: this definition can be used as a reference in our daily work as trainers:
- *"Systematic observation allows **properly trained staff** to **observe**, **record** and **analyze** (following **pre-determined guidelines** and **specific procedures**) the interactions occurring during an event. It implies the certainty (**statistical significance**) that other observers following the same guidelines and procedures, when observing the same sequence of events, may **agree** with the data collected by the first observer".*

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“SYSTEMATIC” OBSERVATION

- Systematic observation is based on a **project**, refers to a clear **theoretical framework** (e.g. the knowledge of the trainer, judge/referee), is **periodical** (data is collected according to a pre-determined schedule), is **recorded using specific instruments** (e.g. evaluation cards, grids, videos, etc.), is **reliable** (it aims at eliminating mistakes to the maximum possible extent).

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"SYSTEMATIC" OBSERVATION

From the operational point of view, a good systematic observation includes the following steps:

- Deciding what to observe
- Developing definitions for the observed behaviors
- Selecting the most appropriate observation strategy and determining whether this is the best observation method based on the observer's requirements
- Determining the observer's reliability
- Performing the observation
- Synthesizing and interpreting the collected data (e.g. Performance Analysis).

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"SYSTEMATIC" OBSERVATION

- Among the observation methods most commonly used in the motor and sports field there are:
- **Event recording**: recording a pre-determined event every time it occurs
- **Time sampling**: verifying whether an event occurs at the end of a pre-determined period (e.g. every 10")
- **Interval recording***:* verifying whether an event occurs during a pre-determined period (for example, observing for 5'- suspending observation for 5' – resuming observation for 5' and so forth)
- **Duration recording**: timing the duration of a pre-determined event every time it occurs**.**

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GENERAL PRINCIPLES OF THE OBSERVATION AND EVALUATION OF PERFORMANCES

WHY OBSERVE AND EVALUATE A SPORTS PERFORMANCE?

- Broadly speaking, achieving success at the highest levels of sports requires maximum motivation and determination in each single aspect of the sports performance. Information derived from the new technologies can be a key resource both strategically (e.g. off-line analysis, before and after a competition) and tactically (e.g. on-line analysis, during the competition).
- Technology applied to sports is playing a vital role in modern sports, in terms of both daily training practises and in the management of competitions. Thus, the training of specialized staff is becoming increasingly important.

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GENERAL PRINCIPLES OF THE OBSERVATION AND EVALUATION OF PERFORMANCES

WHY OBSERVE AND EVALUATE A SPORTS PERFORMANCE?

Currently, Performance Analysis and its derived branch, Match Analysis, are pursuing the following general goals, which can be widely applied to soccer:

- Providing each individual athlete's performance profile
- Identifying each individual athlete's strengths and weaknesses
- Providing input for improvement based on objective information
- Objectively evaluating the effectiveness of specific training methods or instruments
- Objectively evaluating the effectiveness of other measures adopted in connection with training (nutritional schemes, psychological support, etc.)
- Monitoring progress during the rehabilitation and/or reathletization phases of injured athletes
- Identifying the individual's actual performance ability against performance models of reference (elite vs. sub elite)
- Monitoring the athlete's general state of health
- Contributing to the identification of Sports Talents

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GENERAL PRINCIPLES OF THE OBSERVATION AND EVALUATION OF PERFORMANCES

WHY OBSERVE AND EVALUATE A SPORTS PERFORMANCE?

- Trying to determine the methodological framework of reference for action, based on the performance of several and various athlete groups (i.e. according to gender, age, qualification level, etc.)
- Monitoring and evaluating progress in young athletes
- Including athletes in the right training groups
- Monitoring performance year after year (data base training)
- Making hypotheses on the future development of a sport
- Providing useful data for applied scientific research

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GENERAL PRINCIPLES OF THE OBSERVATION AND EVALUATION OF PERFORMANCES

WHY OBSERVE AND EVALUATE A SPORTS PERFORMANCE?

- To sum up, Performance/Match Analysis is a branch of Sport Pedagogy and Motor Science. Several scientific subjects aimed at describing, classifying, explaining and making predictions (on statistical bases) contribute - to a greater or lesser extent - to the analysis of the most significant events which may occur during competitions.
- This may also contribute to regulating the pedagogical relationship between the Trainer/Technical Staff and the Athlete/s of a team, with the aim of achieving several goals (Ruscello, 2008).

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SPORTS TALENTS

- The issue of Talent, its definition and identification, its promotion, guidance and development, is one of the most debated topics in all the environments where...the world which is yet to come is analyzed and designed. Indeed, in every stage of civilization, the ongoing interest in young people's education and training has always been a form of investment in what is - or should be - the main asset of any social system: the young, the future protagonists of tomorrow.
- The desire to find easy ways to understand this truly complex topic often leads to an "oversimplification" of this issue and to a quest for "shortcuts". However, this widespread attitude casts some serious doubt over the effectiveness of the systems and methods employed, the ethical fairness of certain operations and the randomness which often characterizes the way Talent is dealt with.

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- Sports Talents, their identification, selection and development are among the most debated topics in sports and, together with studies on Top Level, they are at the core of much scientific research carried out in the world of sports in recent years.

FOUR GOOD PRACTICES TO ADOPT WHEN DEALING WITH SPORTS TALENTS

IDENTIFYING TALENTS (FROM FIRST CONTACT TO LOYALTY)

- **Identifying a Talent** means organizing specific actions aimed at recruiting individuals who, although they have not been fully included in the sports system, have characteristics which may potentially be enhanced in the practice of a sport. For example, this occurs during mass screening aimed at involving individuals in specific sports, as was (and, sometimes, still is) the case in some nations where sports are a vital part of the national education system. In our nation, this practice is usually left to the good will of individual clubs, local sports associations or soccer schools.
- As stated before, based on current scientific knowledge shared among the international scientific community, there are no certain predictors of the development of sports talents to be used to strictly regulate the first phases of sports practices or the selection of individuals for youth teams at several levels (local, regional, and national). This is a fact of no secondary importance: indeed, in our recent history, some trends or fads (often rooted in some groups' vested interests) have led to think that, since the very first phases of talents' selection, it is vital to act according to standards based on the potential athletes' anthropometric standards, to be later cultivated during the stages of talent development.
- This attitude, which can often be found even among experienced trainers, has no scientific grounds and may even have hindered the full expression of potential talents.

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FOUR GOOD PRACTICES TO ADOPT WHEN DEALING WITH SPORTS TALENTS

IDENTIFYING TALENTS (FROM FIRST CONTACT TO LOYALTY)

- Another issue to be considered in this phase (in connection with what has already been underlined) is the relative **age effect**. It is a phenomenon observed in many youth teams, where most athletes seem to be born in the first three-four months of the year. This leads to the conclusion that, if this connection between the month of birth and talent were true, most sports champions would be born between January and April. This is actually not the case.
- *General Guideline: soccer, as other sports, is a sport for everyone. All can become excellent players thanks to "normal" physical and psychological characteristics, to be expressed in a high-level training environment. Therefore, more emphasis should be put on the training process in its broader sense, underlining the importance of training structures offering good quality, quantity, and continuity of action*.

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FOUR GOOD PRACTICES TO ADOPT WHEN DEALING WITH SPORTS TALENTS

IDENTIFICATION OF TALENT (FROM PROMOTION OF SOCCER TO PROFESSIONAL SOCCER)

- As described above, what is commonly meant by "**identification of talent**" is the **planning** and **concrete organization** of action aimed at recognizing those individuals who are potentially able to excel in a specific sport to the maximum possible extent, based on the performance of other athletes who already practice the same sport. This implies an organization effort focused on the effective cooperation between various educational stakeholders and at several institutional levels (clubs, schools, local federations, national federation, etc.).

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FOUR GOOD PRACTICES TO ADOPT WHEN DEALING WITH SPORTS TALENTS

TALENT SELECTION

- Talent selection is the subsequent and consequential phase of the previous step of the Sports Talent identification, development and promotion process. It is aimed at including gifted youth in increasingly qualified groups (premier league youth teams, youth national teams etc.) or other federal development schemes. The key notion is **continuity of training and evaluation**, to be achieved though the ongoing monitoring of individual performance levels and the design of tailor-made training plans, to be implemented under the supervision of the association and federation's experts.
- It must be underlined that, in this phase, a Multi-Dimension Talent Search perspective is to be adopted. Therefore, further research projects should be focused on those physical and psychological characteristics and attitudes highlighted by today's scientific research.

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FOUR GOOD PRACTICES TO ADOPT WHEN DEALING WITH SPORTS TALENTS

TALENT SELECTION

Anthropometric predictors	Physical fitness predictors
(Height, Weight, Body Parts Size and Circumferences, Muscles, Somatotype, Growth, % Body Fat, etc.)	(Aerobic Capacity, Anaerobic Resistance, Anaerobic Power, etc.)
Sociologic predictors	Psychological predictors
(Family Support, Socio-Economic Conditions, Education, Interaction Trainer/Trainee, Training Volume, Cultural Background, etc.)	(Perceptive-Cognitive Skills, Attention, Anticipation, Decision-Making, Personality Features: Self Esteem, Motivation, Control Over Fear and Anxiety, etc.)

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FULL DEVELOPMENT OF TALENT

Programs aimed at fostering the full development of talents at its maximum extent attach the greatest importance to the 18-24-month period preceding the development of the individual's full potential, based on the theoretical age of maximum performance. Relevant scientific research based on retrospective approaches clearly show that the full development of the individual's best performance stems from some invariable factors, which may be summarized as follows:

- Initial family support (in its broader sense)
- Training environment (very high level of the technical skills of trainers, judges, chairpersons of federations, etc.)
- Individual motivation (especially regarding the intrinsically rooted motivation of sports performance) and actions required to contrast dropout.

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THE SCIENTIFIC RESEARCH IN THE CONTEST OF THE CROSS PROJECT

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THE SCIENTIFIC RESEARCH IN THE CONTEST OF THE CROSS PROJECT

- **Research Questions**
- In order to better define our lines of research we are providing the main questions we asked ourselves when designing our research approach to this problem:
- What exactly is the “Socialsoccer” sporting activity?
- Could it make any consistent, valid and quantifiable improvements in different aspects of the human beings (under a social, psychological, physiological and physical standpoint)?
- Are there any quantifiable and consistent differences in these aspects among the different groups that will be exposed to this sporting activity or not (experimental vs. control group)?
- Are there any quantifiable and consistent differences in these aspects among the different European partners involved in this project?

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HYPOTHESIS

- Our hypothesis is that the CS sporting activity may actually promote some interesting changes, consistent and quantifiable, on some of the participants to this study, when compared to the control group practicing soccer in its traditional version.
- In particular, our hypothesis considers highly probable a change of attitude towards certain social issues very relevant at this moment in history:
- 1) Inclusion and social integration.
- 2) No to any kind of racism and discriminations by gender, age, religion or political beliefs.
- 3) No to any form of violence.

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HYPOTHESIS

- We assume also highly likely to achieve a level of motor activity, through the Social Soccer activity, to ensure all those benefits that sport brings about the health of the citizens:
- Counteracting obesity
- Preventing diseases such as diabetes, heart disease, musculoskeletal disorders, etc.
- Improving the lifestyles in the sense of increased daily physical activity and proper nutrition.
- Preventing any form of addiction (smoking, drugs, alcohol, etc.).
- Allowing considerable improvements in physical and mental health in populations with special needs or disabilities.

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SET OF VARIABLES

- The variables considered in this study will be referring to certain measures relating to different areas of the personality (psychological and sociological variables) and of the body (physiological and biomechanical variables) of the participants.

- In this study, they will be considerate as **dependent variables**.

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SET OF VARIABLES

- As **independent variables**, we will consider:
- being part of the experimental group (E_g) or the control group (C_g)
- where the study is carried out
- the nationalities
- the gender
- the age class
- the religious affiliation
- the level of education
- the general ideological attitudes in relation to the issues of violence, racism, discriminations, etc.
- the previous motor experiences and the present training status
- in case, the possible type of disability.

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METHODS

Research Design

This study will apply a cross-sectional design and will be composed of two phases.

- Phase 1: Investigating the “CS in Europe” (two groups: Experimental vs. Control) – 2017.
- Phase 2: Measuring the “CS efficacy” (two groups: Experimental vs. Control) – 2018.

The Institutional Research Board (University of Rome “Tor Vergata” , Faculty of Medicine Ethical Committee) was asked to provide clearance for the procedures before the commencement of this study. All participants will be informed that they are free to withdraw from the study at any time without penalty. Written informed consent will be requested to all the participants after familiarization and explanation of the benefit and risks involved in the procedures of this study.

All procedures will be carried out in accordance with the Declaration of Helsinki of the World Medical Association as regards the conduct of clinical research.

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SAMPLING

- In order to study the effects of "CS" and “TS” (set as independent variables) on the identified factors (dependent variables), 10 groups (experimental and control groups) will be involved in this research project.
- Each group will be composed of 30 people, ranging from an age of 11 to 14.
- Thus we expect to carry on our research on ten groups (N=10) as follows in table 1, for a total sample size of 300 participants.

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Table 1 – Participants – Sample Size

	Experimental Group "CS" *	Control Group "TS" **	Total
Italy	30	30	60
UK	30	30	60
France	30	30	60
Hungary	30	30	60
Spain	30	30	60
Total	**150**	**150**	**300**

* socialsoccer - **Traditional Soccer

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TIMETABLE

The research actions are planned, as in table 2 (2017) and table 3 (2018), and they will be developed accordingly.

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Table 2 - Schedule "CS in Europe" research project – year 2017

	January – March 2017	April – June 2017	July – September 2017	October – December 2017
Action	Investigating on socialsoccer * - "CS"	Kick off meeting Training the involved personnel (1° training course) "CS" administration: Phase 1: CS Group (experimental group) TS Group** (control group) Testing (phase1 - 1	Processing the acquired data Reporting first semester Debating with partners Designing any minor corrections of the program	CS" administration - Phase 2 Testing (2)
Aims	Pilot Study: defining all actions related to the actual implementation of CS in different national contexts Production of the teaching materials needed to the development of the project, following the Pilot Study	Implementing CS Testing procedures both in CS and TS group (phase1 - 1): Initial evaluation of: • Physical and Physiological parameters • Psychological and Sociological parameters	First development control of the research project, in order to make any necessary correction in the subsequent development of the project.	Implementing CS Testing procedures (2) both in CS and TS group (phase1 - 2): Mid-term evaluation of: • Physical and Physiological parameters • Psychological and Sociological parameters

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Table 3 - Schedule "CS in Europe" research project – year 2018

	January – March 2018	April – June 2018	July – September 2018	October – December 2018
Action	Processing the acquired data Reporting first year's activities Debating with partners Designing any minor corrections of the program	Training the involved personnel (2° training course) "CS" administration: Phase 2 Integrated Tournaments Testing (phase2 - 1)	Processing the acquired data Reporting third semester Debating with partners Designing the dissemination program with partners	Dissemination
Aims	Second development control of the research project, in order to make any necessary correction in the subsequent development of the project.	Implementing CS Testing procedures (phase 2- 1): Initial evaluation of: • Physical and Physiological parameters • Psychological and Sociological parameters	Second and final development control of the research project. General reporting of the research project Formatting dissemination procedures: • Scientific papers • Seminars • Books/Articles • WWW • Social Media	The main objective of this phase is to allow the widest possible dissemination of the results obtained from this research project.

* Socialsoccer - **Traditional Soccer

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STATISTICAL ANALYSIS

- All the collected data will be presented as mean and standard deviation (M±SD) and 95% confidence intervals (95% CIs). The assumption of normality will be assessed using the Kolmogorov-Smirnov or the Shapiro-Wilk test. Parametric and nonparametric statistics will be used when appropriate. Normative data will reported as percentile range. The Intraclass Correlation Coefficients (ICC) will be provided as indices of relative reliability of the tests.
- To identify significant differences over time in the considered variables (within), the analysis of variance for repeated measures will be performed, for each test. After performing the Mauclhy test of sphericity, the Greenhouse-Geisser ε, will be used when appropriate.
- To test the main effect and the interactions between factors (independent variables) the factor analysis of variance will be performed.
- Effect Size (ES) in ANOVA will be computed as ω^2, to assess meaningfulness of differences, with $\omega^2 < 0.01$, $0.01 < \omega^2 < 0.06$, $0.06 < \omega^2 < 0.14$ and $\omega^2 > 0.14$, as trivial, small, moderate, and large ES, respectively.
- Pearson's product moment of correlations among the different tests will be also performed. The corresponding P values will be provided for each analysis. The value of statistical significance is accepted with $P \leq 0.05$.
- IBM - SPSS 20.0 for Windows will be used to analyze and process the collected data.

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TECHNOLOGICAL RESOURCES

The University of Tor Vergata, School of Sport and Exercise Science will provide all the necessary equipment for the development of this project (hardware, software).

The project funding will cover all ordinary and extraordinary maintenance costs, and any possible damage to the equipment.

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Relationships Between High Intensity Running and Outcome of Technical-Tactical Skills in Professional Soccer Players During Match Play

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A Study of Relationships Among Technical, Tactical, Physical Parameters and Final Outcomes in Elite Soccer Matches as Analyzed by a Semiautomatic Video Tracking System

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The optimal exercise to rest ratios in repeated sprint ability training, in youth soccer players

Bruno RUSCELLO, Filippo PARTIPILO, Laura PANTANELLA, Mario ESPOSITO, Stefano D'OTTAVIO

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Influence of the Number of Trials and the Exercise to Rest Ratio in Repeated Sprint Ability, With Changes of Direction and Orientation

Bruno Ruscello,[1,2] Nazzareno Tozzo,[1] Gianluca Briotti,[1] Elvira Padua,[1,3] Francesco Ponzetti,[1] and Stefano D'Ottavio[1,4]

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Acute effects of two different initial heart rates on testing the Repeated Sprint Ability in young soccer players

B. RUSCELLO, [1, 2, 3], G. BRIOTTI [1, 2, 3, 4], N. TOZZO [1, 2], F. PARTIPILO [1, 4], M. TARABORELLI [1, 3], A. ZEPPETELLA [1], J. PADULO [6], S. D'OTTAVIO [1, 2, 5]

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SET OF POSSIBLE TESTS

Testing the physical conditions

Sprinting

Repeated Sprint Ability (RSA)

Legs' explosive power (Bosco's Test)

Aerobic Power (i.e. Yo-Yo Test)

Testing the technique

Dribbling/carrying tha ball

Shooting

Passing

Receiving

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Technical and physical determinants of soccer match-play performance in elite youth soccer players

Owain ROWAT, Jonathan FENNER, Viswanath UNNITHAN

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Table I: General characteristics of subjects

	Subjects (n=25)
Age (years)	17.4 ± 0.9
Stature (cm)	171.7 ± 7.3
Mass (kg)	59.6 ± 7.6
BMI (kg m²)	20.2 ± 2.3
PDS (score out of 20)	15.2 ± 3.3

PDS – Pubertal Development Scale – Value represents overall maturity status of the total sample
Data are presented as mean ± SD

Table II: Descriptive statistics for three fitness tests

	Subjects (n=25)
YYIR1 (m)	972.7 ± 478.4
Fastest 35-m Sprint (s)	5.1 ± 0.2
Fastest 15-m Sprint (s)	2.4 ± 0.1
Fatigue Index 35-m Sprint (s)	0.4 ± 0.2

Data are presented as mean ± SD
YYIR1 – Yo-Yo Intermittent Recovery Test 1
35-m Sprint – Value represents fastest individual 35-m sprint for each player and presented as mean ± SD for all 25 subjects
15-m Sprint – Value represents fastest individual 15-m sprint for each player and presented as mean ± SD for all 25 subjects
Fatigue Index – Value represents decrement in maximal speed for each player and presented as mean ± SD for all 25 subjects

Table III: Correlations of performance tests, skills tests and maturity with technical evaluations of all players in SSG's of soccer

	Technical Evaluation (r)	(p)
YYIR1 (m)	0.03	0.88
Fastest 35-m Sprint (s)	-0.34	0.14
Fastest 15-m Sprint (s)	-0.23	0.32
Dribble, speed with pass (s)	-0.57	0.00*
Dribbling, speed (s)	-0.01	0.95
Passing (points)	0.19	0.37
Shooting (points)	-0.00	0.99
PDS (score out of 20)	0.43	0.05

* = significant

Table IV: Correlations of performance tests and skills tests with sexual maturation

	Sexual Maturation r	p
YYIR1 (m)	0.21	0.38
Fastest 35-m Sprint (s)	0.29	0.27
Fastest 15-m Sprint (s)	0.13	0.61
Dribble, speed with pass (s)	-0.48	0.03*
Dribbling, speed (s)	0.11	0.63
Passing (points)	0.48	0.03*
Shooting (points)	0.02	0.95

* = significant

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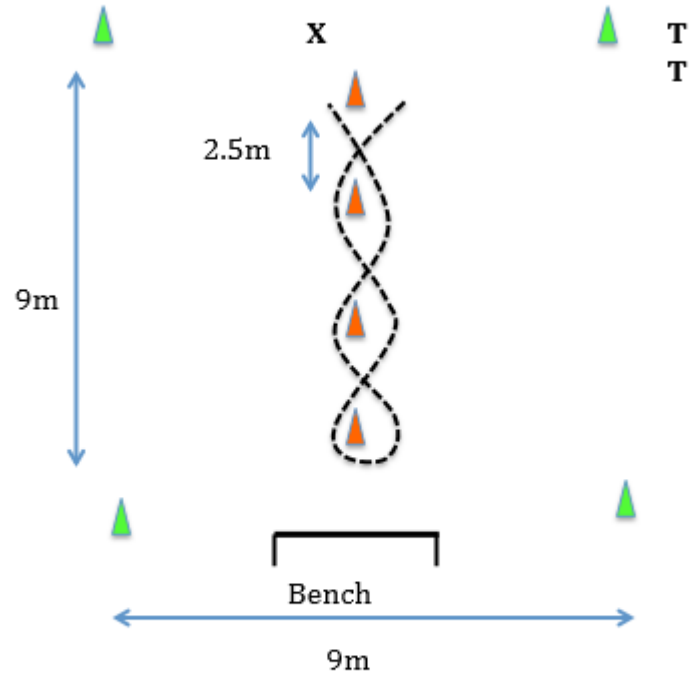
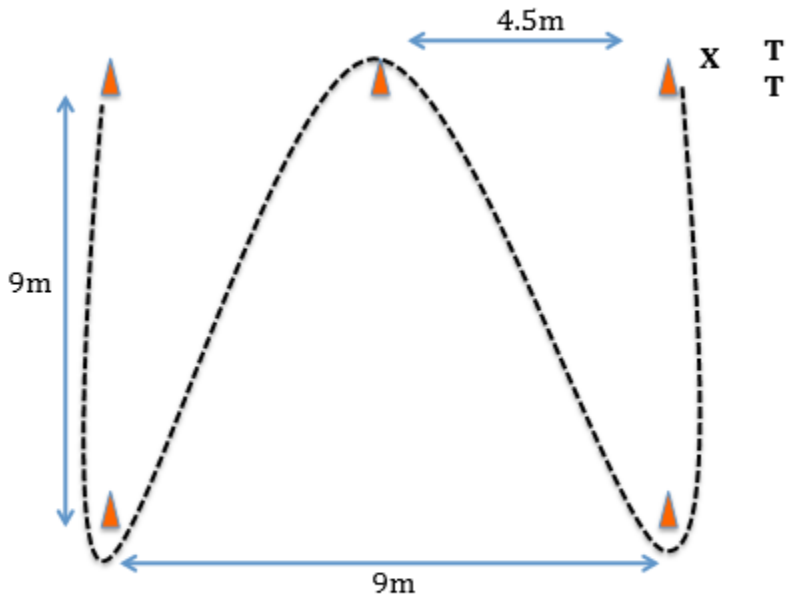
Figure 1: Diagram of test set up for skill test 1 - Dribbling skill test with pass



X = Player starting and finishing position with the ball
--- = Player movement with the ball
T = Timers position (time in seconds recorded)

Figure 2: Diagram of test set up for skill test 2 - Dribbling speed



X = Player starting position
--- = Player movement with the ball
T = Timers position (time in seconds recorded)

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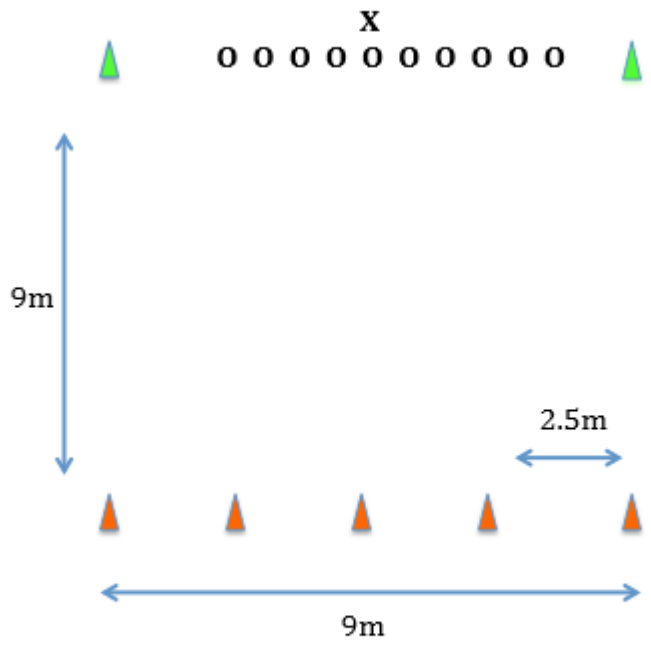
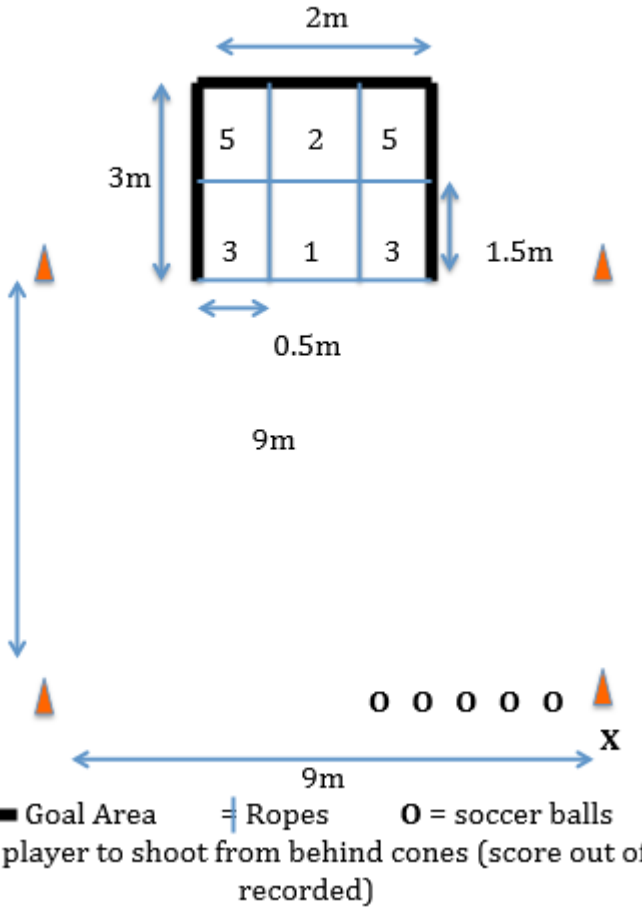
Figure 3: Diagram of test set up for skill test 3 - Passing



X = Players to stand behind green cones (players have two passing attempts at each cone)
O = soccer balls
Score out of 10 recorded

Figure 4: Diagram of test set up for skill test 4 - Shooting accuracy



Goal Area = Ropes **O** = soccer balls
X = player to shoot from behind cones (score out of 25 recorded)

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ABSRACT

BACKGROUND: To evaluate whether physical performance characteristics could be a better predictor than technical skills in determining the technical level of county soccer players in a match situation.

METHODS: With institutional ethics approval, 25 male youth soccer players aged 16-18.5 years from a professional soccer academy in South East Asia were selected and height and body mass were recorded. Players were tested for sexual maturity (pubertal development scale [PDS] self-assessment), aerobic capacity (yo-yo intermittent recovery test level 1 [YYIRT1]), repeated sprint ability (7 x 35 m sprints) acceleration (15 m sprint) and four soccer skills tests (dribble with pass, dribbling speed, passing and shooting accuracy). Players' technical ability during match play was assessed in small-sided games of soccer (5 v 5) using a novel game technical scoring chart (scoring chart completed by coaches to assess technical performance in a match situation) developed from criteria (e.g., first touch, dribbling and two footedness) used by youth soccer coaches for talent identification.

RESULTS: A Spearman's rank correlation showed the YYIRT1 test and 15 m sprint test were limited in predicting technical match performance ($r=0.03$, $p=0.88$, $r=-0.23$, $p=0.32$ respectively). A Pearson product moment correlation showed that the repeated sprint test was also limited in predicting technical match performance ($r=-0.34$, $p=0.14$). A dribbling skill with a pass was found to be the best determinant of a player's technical ability in a match ($r=-0.57$, $p=0.00$).

CONCLUSION: Talent identification and selection programmes in Asian youth soccer should include a dribbling skill performed with a pass.

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