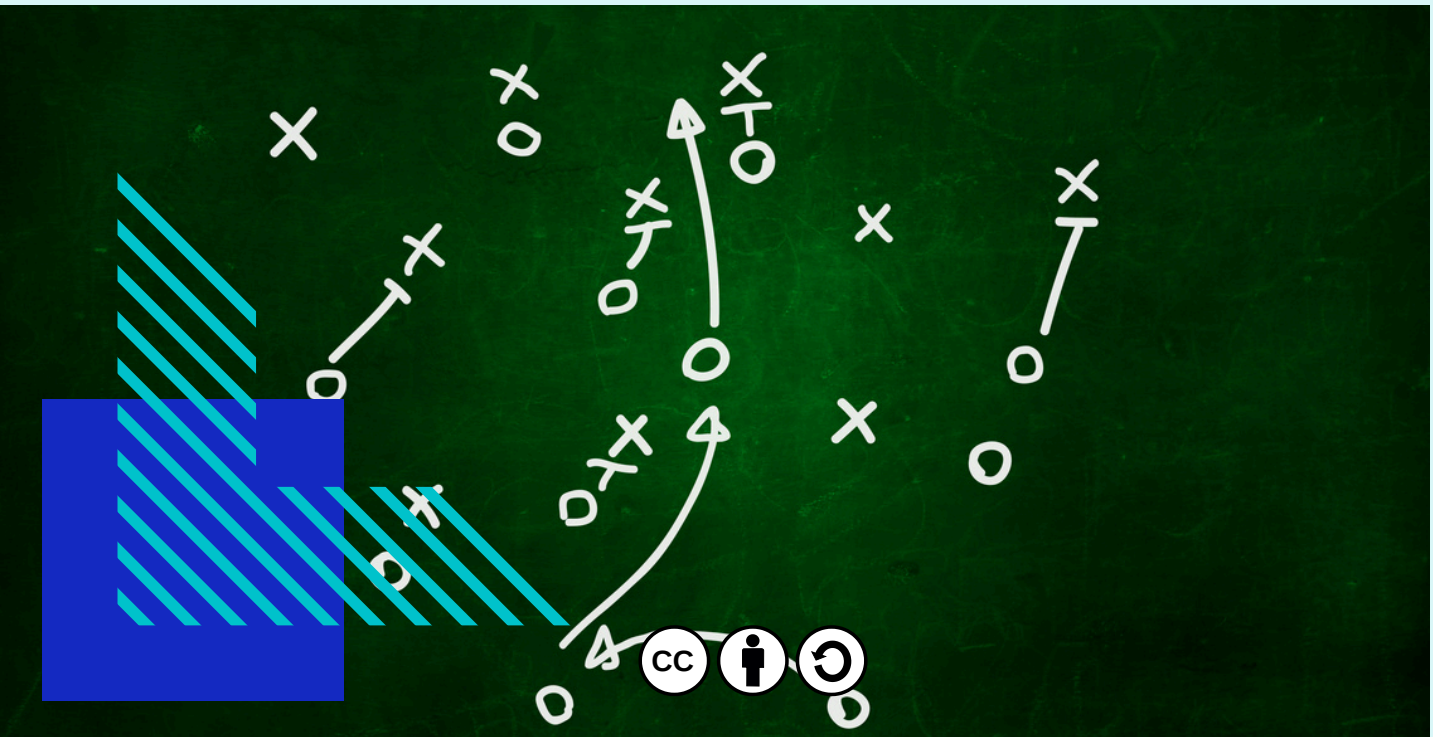
Talenttech

D2.1 Curriculum for Integrating Sports Technologies into Player Development

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1. Introduction

The increasing use of digital tools in football has changed the way talent is identified, training is planned, performance is monitored, and player development is managed over time. Technologies such as artificial intelligence, performance analytics platforms, wearable devices, video analysis systems, and immersive training environments are no longer limited to elite clubs. They are becoming progressively more relevant for football academies of different sizes, including smaller and medium-sized organisations seeking to improve the quality, consistency, and objectivity of their player development processes. At the same time, many academy professionals still require structured support in order to understand, select, and apply these tools effectively in day-to-day practice. The TalentTECH project addresses this need by developing a practical curriculum that strengthens both the digital and applied capacities of football academy professionals and supports more informed, evidence-based approaches to scouting, coaching, player monitoring, and long-term development.

The curriculum has been designed as a public learning resource that can be used in printable format and adapted for interactive e-learning delivery. It combines conceptual understanding with practical application and is intended to support football professionals working in different roles and organisational contexts. In line with the project's methodology, the curriculum is modular, accessible, role-sensitive, and suitable for blended delivery through workshops, self-paced learning, guided practice, and online collaboration.

2. Overall Aim of the Curriculum

The overall aim of this curriculum is to equip football academy professionals with the knowledge, practical competences, and decision-making confidence required to integrate relevant sports technologies into player development processes in a responsible, accessible, and context-sensitive manner. The curriculum seeks to strengthen the capacity of coaches, scouts, performance staff, and sports managers to use technology not as an isolated technical add-on, but as a meaningful support for talent identification, training design, player monitoring, injury prevention, tactical analysis, and long-term athlete progression within football academy environments.

3. Target Groups

This curriculum is intended primarily for football academy professionals whose daily responsibilities influence player recruitment, development, and performance support.

The main target groups are:

- **Coaches**, who require practical methods for using technology to inform training design, player feedback, tactical development, and individual progression.
- **Scouts and talent identification professionals**, who need to combine observation with digital tools in order to improve the consistency and objectivity of player assessment.
- **Performance staff**, including fitness coaches, sports scientists, and rehabilitation personnel, who use monitoring tools to manage workload, recovery, and physical development.

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- **Sports managers and academy coordinators**, who are responsible for planning, implementation, resourcing, and organisational adoption of new methods and tools.
- **Other football academy professionals**, including analysts and support staff, who contribute to data-informed player development processes.

The curriculum addresses the needs of these groups by combining shared foundational knowledge with role-based application. Each module includes examples and tasks that can be adapted according to professional function, digital readiness, and organisational capacity.

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4. Curriculum Structure and Learning Approach

The curriculum is structured around five progressive and complementary modules. Together, these modules provide a coherent pathway from understanding the role of technology in modern football to applying specific tools in real academy environments. The sequence is designed to move from talent identification and performance data towards monitoring, tactical review, and immersive learning environments, while also reinforcing the broader principles of practical implementation, ethical use, and organisational relevance.

The learning approach combines theoretical input with real-life football examples, scenario-based problem solving, case studies, guided tool exploration, and practical exercises. The structure is suitable for blended learning and can be delivered through a combination of:

- self-paced e-learning units,
- facilitated workshops,
- guided practice sessions,
- video-based learning activities,
- peer exchange and discussion,
- individual reflection and applied assignments.

Flexibility and accessibility are central design principles. The curriculum is suitable for organisations with varying levels of digital readiness and can be used by smaller or medium-sized academies that may not yet have extensive experience with sports technologies. It is also designed for transfer into SCORM-compatible learning environments while remaining usable as a standalone printable resource.

4.1 Digital Delivery Model and Playmaker Portal Integration

The curriculum will be delivered through the Playmaker web portal as the project's primary digital learning environment. Each module will combine printable guidance with a structured digital sequence consisting of an introductory learning unit, core content pages, short video-based explanation, downloadable worksheet or implementation guide, short knowledge check, case-based or scenario-based assignment, and a reflection or discussion task. This structure ensures that the curriculum can function both as an open public resource and as an interactive learning pathway for participating football academy professionals.

To strengthen consistency and measurability, the portal will be used to monitor learner engagement and curriculum completion. For each module, the system will record access to core learning materials, time spent, quiz completion, assignment submission, webinar or workshop participation, and post-module satisfaction feedback. A module will be considered completed when the participant has reviewed the core content, achieved at least 60% in the relevant knowledge check, and submitted the required applied task or equivalent practical evidence. This delivery logic directly supports the project's objectives related to completion, learner progression, and evidence-based monitoring of training quality.

The digital delivery model is designed to remain accessible to organisations with different levels of digital readiness. Learning materials should therefore be available in mobile-friendly format, downloadable PDF format, and SCORM-compatible format for transfer to other learning management systems where needed. Video resources should include subtitles where possible, and partner organisations may adapt selected resources into additional languages in

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order to support wider uptake, local delivery, and inclusion of participants from diverse organisational and geographic contexts.

4.2 Curriculum Implementation Framework

The curriculum is designed as a blended programme that can be delivered over approximately 8 to 10 weeks, with an expected total learner workload of around 40 to 50 hours. Modules 1 to 4 form the core pathway of the programme because they address the most immediate and transferable needs of football academies in the areas of scouting, analytics, monitoring, and video-supported development. Module 5 should normally be delivered as an innovation-oriented extension module, depending on organisational readiness, staff confidence, and available resources.

A recommended delivery cycle for each module includes self-paced preparation through the portal, one facilitated workshop or live webinar, one guided applied task linked to academy practice, and a short reflection or feedback activity. This structure allows participants to move from conceptual understanding to practical application while keeping delivery realistic for small- and medium-sized football organisations. At programme level, participants should be encouraged to complete a final applied assignment in which they prepare a short academy technology integration plan drawing on at least two of the core modules.

For consistent delivery across partner organisations, each module should be supported by a named trainer or facilitator profile, clear assessment components, and explicit minimum completion requirements. Facilitators may include coach educators, scouting specialists, performance practitioners, sports technology experts, or academy managers, depending on module focus. Participants who complete the four core modules and submit the final applied academy integration task may receive a certificate of completion, while participants completing selected modules may receive a certificate of participation or module-based recognition where relevant.

4.3 Standard Module Delivery and Validation Parameters

The following delivery and validation parameters are recommended in order to ensure that the curriculum can be implemented consistently while still allowing proportionate adaptation to local context.

Module 1 – AI-Powered Talent Identification and Digital Scouting: recommended level foundation to intermediate; indicative workload 8 hours (4 hours self-paced learning, 2 hours facilitated workshop, 2 hours applied task); suggested entry requirement basic digital literacy and familiarity with player observation; assessment components 20% quiz, 40% case analysis, 40% structured scouting profile; minimum pass threshold 60/100; evidence of completion submitted player assessment template and facilitator validation.

Module 2 – Performance Analytics for Player Development and Decision-Making: recommended level foundation to intermediate; indicative workload 8 hours (4 hours self-paced learning, 2 hours workshop, 2 hours applied interpretation task); suggested entry requirement basic understanding of football performance indicators; assessment components 20% quiz, 40% dashboard interpretation task, 40% player development summary; minimum pass threshold 60/100; evidence of completion submitted player report and short reflection on practical use.

Module 3 – Wearable Technologies for Monitoring, Health, and Injury Prevention: recommended level intermediate; indicative workload 8 hours (4 hours self-paced learning, 2 hours workshop, 2 hours monitoring task); suggested entry requirement familiarity with training planning and player welfare considerations; assessment components 20% quiz, 40% workload review exercise, 40% short action plan for monitoring routine; minimum pass

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threshold 60/100; evidence of completion submitted monitoring plan and risk-response rationale.

Module 4 – Video Analysis for Tactical and Technical Evaluation: recommended level foundation to intermediate; indicative workload 8 hours (4 hours self-paced learning, 2 hours workshop, 2 hours clip-based task); suggested entry requirement basic coaching or analysis experience; assessment components 20% quiz, 40% clip analysis exercise, 40% feedback design task; minimum pass threshold 60/100; evidence of completion submitted coded sequence or feedback workflow and facilitator review.

Module 5 – VR/AR and Applied Technology Integration in Training Environments: recommended level intermediate to advanced and normally delivered as an extension module; indicative workload 6 hours (3 hours self-paced learning, 1.5 hours facilitated session, 1.5 hours implementation planning task); suggested entry requirement completion of at least one core module or equivalent practical experience; assessment components 30% case-based reflection, 70% short technology integration concept note; minimum pass threshold 60/100; evidence of completion submitted staged implementation outline linked to academy readiness and player development aims.

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5. Detailed Description of the Five Modules

Module 1. AI-Powered Talent Identification and Digital Scouting

Module rationale

Talent identification in football is often influenced by limited observation windows, subjective judgement, and inconsistent criteria. AI-supported scouting tools can help academy professionals structure observation, compare players more consistently, and identify patterns that may otherwise be overlooked. This module introduces participants to the opportunities and limitations of AI in scouting and supports them in applying technology critically and effectively.

Main objective

To enable participants to use AI-supported tools and digital scouting methods to strengthen talent identification processes in football academy settings.

Specific learning outcomes

By the end of the module, participants will be able to:

- explain the role of AI in talent identification and scouting workflows;
- identify the types of data commonly used in AI-supported scouting;
- interpret digital scouting outputs in combination with expert observation;
- apply objective criteria when assessing player potential;
- recognise risks related to bias, over-reliance on automated scores, and poor data quality.

Core topics and content areas

The module covers the evolution of digital scouting in football, key concepts in AI-supported player identification, the use of structured performance indicators, combining qualitative and quantitative evidence, and basic considerations related to ethics, bias, and data interpretation. It also addresses how smaller academies can adopt proportionate, realistic scouting practices without needing highly complex infrastructures.

Suggested practical activities

Participants complete a scouting case in which they compare several youth players using a combination of match footage, performance indicators, and a simplified AI-generated ranking. They also develop a short digital scouting profile and discuss where human judgement should confirm, challenge, or refine automated outputs.

Role-specific relevance

Coach: uses scouting insights to understand developmental potential and fit with team needs.

Scout: applies structured criteria and digital tools to improve consistency in player assessment.

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Manager: evaluates the organisational value, feasibility, and limits of AI-supported scouting systems.

Performance staff: contributes physical and developmental data to player profiling.

Suggested assessment and validation

Short quiz on AI scouting principles, written case analysis, and practical submission of a structured player assessment template.

Expected competencies gained

Participants will gain competence in digital scouting logic, evidence-informed talent identification, critical interpretation of AI outputs, and balanced decision-making that combines technology with professional expertise.

Module 2. Performance Analytics for Player Development and Decision-Making

Module rationale

Performance data is increasingly available to football academies, yet data alone does not improve player development. Professionals must be able to interpret metrics, connect them to football realities, and use them to support decisions about training, progression, and individual support. This module focuses on turning data into meaningful developmental insight.

Main objective

To develop participants' ability to use performance analytics to support player development planning and football-specific decision-making.

Specific learning outcomes

By the end of the module, participants will be able to:

- understand the purpose and limits of key football performance indicators;
- interpret player and team data in relation to developmental objectives;
- use dashboards and reports to support practical decision-making;
- identify trends, strengths, weaknesses, and progression patterns;
- communicate data-informed findings clearly to staff and players.

Core topics and content areas

The module addresses individual and collective performance indicators, technical and physical metrics, data visualisation, dashboards, benchmarking, longitudinal monitoring, and the relationship between performance data and player development plans. It also considers how to avoid overcomplication and how to select a small number of meaningful indicators in resource-conscious settings.

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Suggested practical activities

Participants analyse a sample player dashboard and produce a short development summary for a youth athlete. They also work through a scenario in which they must prioritise training interventions based on available performance data and contextual coaching knowledge.

Role-specific relevance

- **Coach:** uses analytics to adapt training focus and evaluate player progression.
- **Scout:** considers performance trends alongside observation when assessing development potential.
- **Manager:** supports data-informed planning, reporting, and internal decision-making.
- **Performance staff:** interprets metrics linked to physical output, adaptation, and developmental load.

Suggested assessment and validation

Data interpretation quiz, practical assignment based on a player report, and reflection task on how analytics can support better football decisions.

Expected competencies gained

Participants will strengthen their ability to interpret football performance data, translate metrics into practical recommendations, and use analytics to support more consistent and transparent player development decisions.

Module 3. Wearable Technologies for Monitoring, Health, and Injury Prevention

Module rationale

Wearable technologies offer football academies valuable opportunities to monitor player workload, recovery, and physical condition. However, effective use depends on more than collecting data. Professionals need to know what to measure, how to interpret it, and how to respond appropriately in order to support player welfare and long-term development.

Main objective

To enable participants to use wearable technologies responsibly and effectively for player monitoring, health management, and injury prevention.

Specific learning outcomes

By the end of the module, participants will be able to:

- identify the most relevant forms of wearable monitoring in football;
- understand the practical meaning of common indicators such as load, heart rate, movement profiles, and recovery-related markers;

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- use monitoring data to inform training adjustments and risk management;
- recognise warning signs linked to overtraining or inappropriate workload;
- apply basic principles of ethical and secure handling of player monitoring data.

Core topics and content areas

The module introduces wearable systems used in academy settings, including GPS-based and physiological monitoring tools, workload concepts, recovery monitoring, readiness assessment, injury risk awareness, and basic data governance. It also addresses how smaller clubs can adopt simple monitoring routines without becoming dependent on expensive or overly complex systems.

Suggested practical activities

Participants review sample workload data from a training week, identify possible risk signals, and recommend adjustments for selected players. A second exercise asks participants to design a basic monitoring routine for an academy age group using realistic staff and resource assumptions.

Role-specific relevance

- **Coach:** adapts training content and intensity in response to monitoring data.
- **Scout:** understands physical development indicators as part of broader player profiling.
- **Manager:** plans practical implementation, equipment use, and responsible internal procedures.
- **Performance staff:** leads data collection, interpretation, and communication of risk and readiness.

Suggested assessment and validation

Quiz on wearable indicators, observation checklist for monitoring routines, and practical task requiring a short action plan based on player load data.

Expected competencies gained

Participants will gain competence in workload monitoring, interpretation of wearable outputs, early identification of potential overload, and practical integration of health-related data into academy decision-making.

Module 4. Video Analysis for Tactical and Technical Evaluation

Module rationale

Video analysis has become one of the most accessible and impactful technologies in football. It allows professionals to review match actions, identify recurring behaviours, support tactical learning, and provide more precise feedback to players. This module develops participants'

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ability to use video as a structured learning and evaluation tool rather than as a purely descriptive review method.

Main objective

To equip participants with the knowledge and practical skills to use video analysis for tactical and technical evaluation in player development contexts.

Specific learning outcomes

By the end of the module, participants will be able to:

- understand the purpose of video analysis in football development;
- identify and tag technical and tactical events relevant to player learning;
- use video clips to support individual feedback and team learning;
- connect video observations with coaching objectives and player development priorities;
- structure simple and effective review processes suitable for academy settings.

Core topics and content areas

The module covers principles of video-based observation, tagging and coding, technical error analysis, tactical behaviour review, clip selection, feedback design, and the use of video in player meetings and learning tasks. It also examines practical questions such as time efficiency, accessibility of tools, and the importance of linking video review to clear coaching intentions.

Suggested practical activities

Participants annotate a short match sequence, identify key technical or tactical moments, and prepare a short feedback intervention for an individual player or unit. They also compare two different approaches to video feedback and discuss which is more appropriate for a youth academy context.

Role-specific relevance

- **Coach:** uses video to reinforce tactical understanding and improve technical behaviour.
- **Scout:** uses footage to validate observations and compare players more systematically.
- **Manager:** supports implementation of sustainable video workflows and staff coordination.
- **Performance staff:** contributes contextual interpretation when movement or physical behaviour is relevant.

Suggested assessment and validation

Clip analysis exercise, short written reflection on feedback design, and practical demonstration of a basic video review workflow.

Expected competencies gained

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Participants will improve their capacity to analyse game footage, structure meaningful player feedback, link observed behaviours to development objectives, and integrate video analysis into routine academy practice.

Module 5. VR/AR and Applied Technology Integration in Training Environments

Module rationale

Immersive and simulation-based tools are increasingly discussed within football training and learning environments. Although not every academy will immediately adopt advanced VR or AR systems, professionals should understand their potential, their limitations, and their place within broader technology integration strategies. This module therefore addresses both innovation and practical implementation.

Main objective

To familiarise participants with the use of VR/AR and related applied technologies in football training environments and to support realistic planning for integrated use.

Specific learning outcomes

By the end of the module, participants will be able to:

- explain the potential contribution of VR/AR tools to football learning and decision-making;
- identify realistic use cases for immersive or simulation-supported practice;
- evaluate when such tools add value and when simpler methods may be more appropriate;
- design a basic technology integration plan linked to player development aims;
- consider cost, access, usability, and staff readiness when introducing emerging technologies.

Core topics and content areas

The module introduces immersive learning concepts, visual perception and decision-making support, simulation-based repetition, training design considerations, staff readiness, cost-effectiveness, and integration planning. It also addresses the wider issue of combining multiple technologies within a coherent player development framework rather than introducing tools in isolation.

Suggested practical activities

Participants review examples of VR/AR-supported training use cases and assess their relevance for different academy contexts. They then produce a short implementation outline showing how one emerging technology could be introduced in a staged and realistic way within their own setting.

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Role-specific relevance

- **Coach:** explores how immersive tools can support perception, decision-making, and tactical understanding.
- **Scout:** understands how simulated environments may complement observation and assessment pathways.
- **Manager:** evaluates feasibility, investment logic, and phased implementation.
- **Performance staff:** considers transfer to physical and cognitive training design.

Suggested assessment and validation

Case-based reflection, implementation planning exercise, and short presentation or written concept note.

Expected competencies gained

Participants will gain a grounded understanding of emerging training technologies, the ability to judge their practical value, and the confidence to plan proportionate, context-aware integration strategies.

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