



SMART EDUCATION RESOURCES
IN VOLLEYBALL ENVIRONMENT

SURVEY REPORT

Using digital tools in sport education and training in secondary schools
and sports clubs

Good practices in the development of dual career in sport and the
competences of outdoor education manager



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THE SERVE PROJECT

I.1. Project summary

SERVE is a joint idea of leading European stakeholders in sports and education inspired by the common will to strengthen the recovery and support crisis resilience of the sports and education sectors during and in the aftermath of the COVID 19 pandemic. SERVE is Smart Education Resources in Volleyball Environment. The project is engrained into the general needs of the project participating countries (PPC) volleyball environments, calling for new policies, practices, and actions for sustainable and perspective volleyball development. The main objective of the project SERVE is to promote education in and through sports and encourage dual career (DC) of athletes by setting up a Trans - European network of three national volleyball sports federations and two leading sports science Universities from 4 European countries to develop, elaborate, test and evaluate a sustainable European educational and training model in Volleyball. The aim of the project SERVE is to increase skills in grassroots sports, school education and recreational family sports and provide a new dual career path for sports talents.

SERVE's new model includes elaborating a brand new European sports federation - based comprehensive eLearning program and a mobile application on How to play Volleyball as a hybrid digital tool based on VOLLEY science, data, and media. SERVE program targets grassroots sports club athletes, including 300 children and adolescents 9-19 years of age, 30 volleyball coaches, PE teachers, and students, as well as recreational volleyball players. SERVE will include volleyball sports people from different ages and from diverse cultural, social, and economic backgrounds living in remote areas or facing socio-economic difficulties whereas social inclusion and gender equality principles are embedded in all project activities. SERVE is designed fully in line with the European green policies as foresees the green approach to be applied during the whole project lifecycle.

SERVE is a project with two general objectives - creating skills in sport and education and supporting dual career athletes. The two strands are interlinked, with the common idea of promoting education in and through sport. All planned activities are accessible to all people regardless of their gender and socio-economic background, including those from remote and poorer communities. All phases of the project include green practices -

the multiplier sport events will take place on World Earth Day with the dissemination of green European policies. SERVE foresees the use of digital tools and learning methods to deliver the programme to the project target groups and improve collaboration between partners. All activities related to the platform and data collection (e.g. user profiles, emails, etc.) will be fully GDPR compliant. GDPR is the regulation that governs data protection for citizens living in the European Union, which came to unify each of the data protection laws of each EU country.

I.1.1. General and specific objectives

We live in extraordinary times in the midst of a global pandemic that has changed our lives unpredictably. Since its onset, the COVID-19 has disrupted the regular aspects of life in almost all world countries. Social and physical distancing measures and national lockdowns challenged the European Sports and Education sectors to embark on an adaptive learning journey to online education and training challenges. SERVE is a joint idea of leading European stakeholders in sports and education inspired by the common will to strengthen the recovery and support crisis resilience of the sports and education sectors during and in the aftermath of the COVID 19 pandemic. SERVE is Smart Education Resources in Volleyball Environment. The project is engrained into the general needs of the project participating countries' (PPC) volleyball environments, calling for new policies, practices, and actions for sustainable and prospective volleyball development.

SERVE main objective is to promote education in and through sports and encourage dual career (DC) of athletes by setting up a Trans-European network of three national volleyball sports federations and two leading sports science Universities from 4 European countries to develop, elaborate, test and evaluate a sustainable European educational and training model in Volleyball. SERVE new model includes elaborating a brand new European sports federation – based comprehensive eLearning program and a mobile application on How to play Volleyball as a hybrid digital tool based on VOLLEY science, data, and media.

SERVE eLearning program embraces athletes from 9-19 separated in age target groups, volunteering coaches and athletes which will take part in Dual Career module.

The new eLearning program will be delivered to 300 athletes and 30 coaches in 30 EU volleyball clubs in PPC, focusing on increasing grassroots sports people education and training skills. **SERVE** new program, Unit 1, will be elaborated in 3 modules whereas the first two modules target different aged athletes' target groups and the third module focuses on the coaches. Unit 1 is based on the pre-project extensive study on the existing Volleyball training club-based programs and the needs of the athletes and coaches.

The partnership has evaluated the main strengths and weaknesses of the nowadays training resources and practices in grassroots Volleyball.

The existing grassroots training programs are based on the recent Volleyball sports methodologies and techniques not including latest SCIENTIFIC and BIG DATA developments, as well as multimedia and digital approach. However, there is an ultimate need to improve them with new scientific content, holistic athletes' development approach integrated into an interactive multimedia eLearning program.

SERVE specific project objectives are as follows:

1. To explore and disseminate best European practices in integrating digital platforms, tools and apps in interactive educational programs to promote and teach volleyball at European schools and sports clubs;
2. To study, identify, promote and share good practices in DCA (dual career of athletes) at sports federation and sports club base, more specifically aiming to introduce outdoor education manager's competencies to talented sports athletes and to increase outdoor education managers' capacities in European Grassroots Volleyball.
3. To elaborate, pilot, disseminate and evaluate an innovative eLearning program in EU volleyball clubs and schools based on the integration of volleyball sport in physical and science formal and non-formal education, using the latest innovative sports technologies, gamification, and peer-to-peer learning with 300 athletes and 30 coaches from Bulgaria, Serbia and Croatia. To draft New Volleyball training guidelines including a coaches' module at federation base and transfer it among Volleyball federations and clubs in 3 PPC.
4. To increase the European volleyball sports organizations' competencies in elaborating DCA programs based on eLearning education. To raise the awareness of the sports organizations' employees and managers in DCA.

5. To draw conclusions from DC pilot actions and draft a Policy Recommendation Report, transferable to any Volleyball or other interested sport organization (Transferability Plan).
6. To raise the awareness about the importance of studying among talented young volleyball athletes through STEM Volleyball part in the program, as well as to provide a new dual career path for them as outdoor education managers through SERVE DC module thus promoting the EU Dual career of athletes' guidelines;
7. To encourage the cross-sectoral collaboration between EU sports clubs and schools in the integration of sports in education activities for the students;
8. To raise digital skill sets, scientific knowledge and social skills of athletes, coaches, students and teachers, as well as the adolescents' creative thinking and educational skills through Serve program and platform, EUTeen Lab program, and the How to Play Volleyball mobile application.

I.1.2. Expected outcomes and results

SERVE is in line with the primary goal of Cooperation Partnerships by allowing the partners sports federations to increase the quality and relevance of their education and training activities through exchanging best practices and experience in research and elaboration of educational and training resources in Volleyball. The action will help the project organizations develop and reinforce their networks of partners, increase their capacity to operate jointly at transnational level, boost the internationalization of their activities, and create new practices and methods in sports education and training and share ideas.

SERVE multilayer framework envisages:

- 1) to strengthen the role of volleyball coaches through training them in the new program and increasing their coaching network at EU level;
- 2) to promote education in sport through educating and training the talented volleyball athletes in interactive innovative program modules;

3) to develop the target groups' digital and environment culture, thus contributing to reach the European Union objectives within the third priority Sport and Society as well as complementing the priority Economic Dimension of Sport of the WP for Sport 2017-2020. SERVE is falling into "to promote education in and through sports" Erasmus Plus Sports specific priority, with a particular focus on skills development and encouraging Dual career of talented athletes. SERVE will highly impact the athletes and coaches, physical education teachers and students, and recreational volleyball players by all project activities and results. The project will increase their educational, scientific, digital, and training skills, whereas the sports talents will learn about the school outdoor education management profession. SERVE will support the participating organizations as follows:

1) volleyball federations - with unified training methodology and new programs for athletes at European and national level, based on science and digitalization, as well as new Dual career policies and paths;

2) secondary schools with Volleyball sport in PE curriculum - with updated science-based and interactive school sports program, more specifically STEM OUTDOOR volleyball programs

3) the sports universities as well as sports faculties and departments of universities - with direct contact with the grassroots volleyball organizations and athletes at the center of their sports research, with opportunities to develop the current way of teaching,

4) talented athletes - with new Dual career path. The new Volleyball interactive multimedia eLearning program will be embedded in sports practices in volleyball clubs – members of the sports federations and other clubs, thus providing the project legacy and sustainability.

Successful project implementation will lead to the following outcomes and results:

1. Elaborating a new EU grassroots Volleyball federation - based model for training and education, including SERVE Dual career module to serve as a dual career path for talented volleyball athletes;

2. Empowering talented young volleyball athletes and their coaches with new skills and knowledge alongside their sports training, motivating them to keep the optimal balance between the study and competitions;

3. Improved quality of physical and natural sciences curriculum and extracurricular education programs in 10 regular European schools and enhanced physical and natural sciences education teachers' competencies and skill levels;

4. Enhanced sport-related skills in adolescent students;
5. Raised awareness about the educational potential of sports as well as the importance of education in sports and support of EU Dual careers (DC) of athletes' guidelines;
6. Developing a sense of awareness of the environment in the young people, their coaches and teachers;
7. Outreach to athletes and students, coaches and PE teachers of different ages and from diverse cultural, social, and economic backgrounds living in remote areas or facing socio-economic difficulties.

SERVE project outcomes and results will increase the target groups' personal digital, scientific, and learning skills by providing a high quality eLearning education and training program in volleyball based on science and media. The new SERVE platform and the mobile app How to Play Volleyball will allow for intensive communication between athletes and coaches, students and teachers thus increasing their social skills.

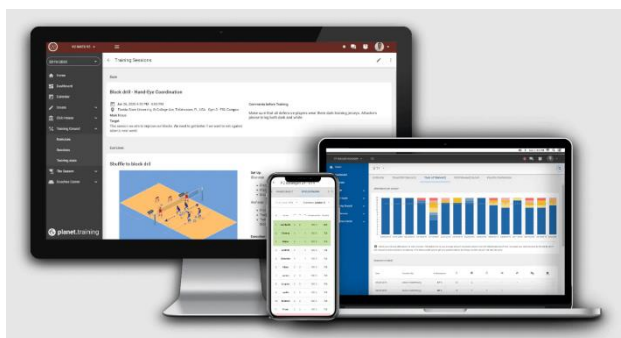
After the project's end the sports federations will provide for project Hybrid Digital tool work and upgrade by inviting Volleyball federations from at least 5 new Volleyball federations or unions to join SERVE network and mutually exploit the results of this project.

RESEARCH DESIGN AND METHODOLOGY

II.1. Aims and structure of the research report

The survey has two basic aims:

- to study and analyze the practices in using digital tools in the physical education and sport training classes at the secondary schools and sports clubs (volleyball clubs).
- to study and analyze the government policy and the framework of laws and regulations for implementation of a dual career in the field of sport as well as to study the opportunities for realization of a dual career in the structures connected with the development of elite sport (volleyball in particular) with adolescent athletes.



The development of digital technologies and their use in sport help for the top achievements of the elite athletes in various disciplines. They include programs, applications and other software available on a digital tool (tablet,

laptop, smartphone, or other) which enhance the organization and control of the training process, the monitoring and analyses of sport results and training loads as well as the theoretical preparation of junior competitors.

When it comes to introducing new technologies in physical education, the benefits extend beyond education itself. There is a positive impact on students' health, too.

Good practices of using digital tools in training volleyball are distinguished by their effectiveness in learning the technical elements, they also motivate competing players for more active participation in the training process and help the coaches to measure and analyze the training loads.

The subject of the research:

Topic of research "Digital tools"		Topic of research "Dual Career"
*	Chairman / managers in sports clubs	Chairman / managers in sports clubs
*	Representatives of national federations	Representatives of national federations
*	Representatives of educational institutions	Coaches in sports clubs
*	Coaches in sports clubs	Adolescent elite athlete – volleyball players
*	Teachers in PE and sport in secondary school	

For conducting qualitative research, questionnaires were created on the two research topics:

Topic of research "Digital tools"	
1	Who needs to use digital tools in sport education and training?
2	Is there available national policy in your country (a regulatory framework) for the application of digital tools for education in the programs of physical education and sport at school and in volleyball? If there is, please specify what it is.
3	What good practices for the use of digital tools in the sport education and in the training process at the volleyball clubs you are familiar with? Please, describe them, specifying the level of gained results, the year, range and effect of their application!
4	What digital education tools you apply in your practice? Please, describe them!
5	What are the results from the application of digital tools for education in your practice? Please, specify the digital tools you have used, and the effect of their application.
6	Please, describe the difficulties you have faced with the application of digital tools in the sport education at secondary schools and in volleyball clubs?
7	What is your opinion of the applied practice?
8	Have you taken part in any education courses connected with the introduction of digital tools in sport education and training? If your answer is YES, specify who organized this education?
9	What recommendations would you give for widening of the application of digital tools in sport education in secondary schools and volleyball clubs?



The term "dual career" for elite sport persons by definition includes engagement in the areas of sport and work (professional education or employment), education and healthcare ("EU Guidelines on Dual Careers of Athletes", DC4AC, 2016; ISBN: 978-92-79-31162-8; doi: 10.2766 / 52 683), EU document published in 2013). Having in mind the

target group of the project (15 to 19 year-old talented athletes), a dual career is understood as the opportunity to reconcile / combine active sport practice with quality education.

Topic of research "Dual career"	
1	Are you familiar with the national strategies and policies on the development of a dual career for young athletes in your country (programs, approaches, concrete actions, which enhance combining elite sport and education for adolescents)? Please, specify.
2	What are the main problems, standing in front of your junior athletes (aged 15 – 19) connected with the reconciliation/balancing between elite sport and quality education?
3	What are the main barriers in front of your institution to the realization of practices for a dual career of junior athletes?
4	How do you help the development of dual careers for young athletes (aged 15 – 19) in your institution (federation, sport club)?
5	Which of the existing good practices is well accepted in your country for the development of dual careers for junior athletes (aged 15 – 19)?
6	If there are no (good) practices for development of dual careers for young athletes (aged 15 – 19) in your country, what is the reason for that in your opinion?
7	How do you receive information about the opportunities for development of dual careers for junior athletes in your country?
8	In your opinion, is it necessary for specialists engaged in the development of dual careers for junior athletes to work in your institution?
9	What competences are expected from the specialists, responsible for the development of dual careers for junior athletes?
10	What sources of funding are used by your institution in order to provide the development of dual careers for junior athletes? Please, specify!
11	What recommendations would you make for the optimization of the development of dual careers for junior athletes?

The "Dual Career" topic will feature interviews with talented adolescent volleyball players, with the following questions:

1	Do you receive support in order to keep the balance between your sport activity and your education? Who supports you?
2	I have selected my school for the following reasons (the form of education should also be specified)
3	How is your time distributed between sport and school?
4	What is your vision for professional realization after the end of your sport career?
5	What difficulties do you face when balancing between sport activity and education?

The term “good practice” is accepted/assumed as the set of measures which correspond to the European policies in the field (digital tools / dual career) and provide effectiveness, accessibility, sustainability and reliability when they are applied. "Best practice" is the one leading to the desired result which has been proved by research work and experiments.

SURV 1: Topic of research “Digital tools”

III.1. Policy analysis. Survey of good practices in European countries

For the purpose of the study, the national digital policies of the four countries that are part of this project were examined: Bulgaria, Serbia, Austria and Croatia. A survey was also carried out on some of the countries in the European Union.



The survey BULGARIA

The study in Bulgaria led us to the National program “Digital Bulgaria 2025”, which is a continuation of the National Program “Digital Bulgaria 2015”, taking into account the achievements and the new European strategic and programming guidelines for achieving a smart, sustainable and inclusive digital growth for the period up to 2025 which aims at modernizing and widespread implementation of intelligent IT solutions in all areas of the economy and social life by creating an environment for widespread use of information and communication technologies , new technologies for businesses and citizens, uniform standards and a high level of network and information security and interoperability. It sets out the objectives, measures and activities related to the development and widespread use of ICT, the commitment of the different institutions within their sectoral policies.

Two of the main objectives of this programme are:

- ✚ *Supporting ICT research and innovation;*
- ✚ *Modernizing school and tertiary education in the area of information and communication technologies.*

The survey in Bulgaria showed there is no program for digitalization in sports. Some of the volleyball clubs arranged themselves the delivery and use of the different kind of tools helping the education and training activity connected to it. Mainly they use the tools to help the work of the coaches and teachers to control the overall activity of the players and students, their fitness readiness and health during the work.

The survey SERBIA

Digitization in education is one of the strategic goals of the Government of the Republic of Serbia. It is implemented through three basic activities: Building human and institutional capacities; Equipping schools with ICT infrastructure and connecting them to the Internet; Creation and establishment of electronic services (JISP, Es-Dnevnik, digital textbooks...). All three listed activities contain numerous sub-activities that, implemented in sync, provide additional opportunities for learning and improve the educational experience of students. The strategy for the development of education and upbringing in the Republic of Serbia until 2030 contains a special segment related to digital education.

The main pillars of development are: development of a unified information system of education (JISP), improvement of ICT infrastructure, strengthening the capacity of schools for development planning with a focus on digital transformation, improvement of students' digital competences through the application of innovative teaching and learning programs, improvement of digital and pedagogical competences of teachers research and improvement of evaluation and monitoring systems in the field of digital education The education system of the Republic of Serbia has a clear goal to support the future economic development of the country by encouraging and creating such an educational environment that will enable students to acquire knowledge and skills, as well as to master modern technologies and use their potential in their future workplaces. Digitization of the education system is one of the key reform measures aimed at

modernizing the education and upbringing system through the introduction of digital technologies, the responsible use of which should ensure a higher level of achievement of learning outcomes, increase the quality of young people's digital competences, and enable their competitiveness on the labor market. Digitization of the education system is based on two pillars. The first is that digital technologies are introduced into teaching processes and programs, and the second is that the Ministry of Education works on the development and introduction of the Unique Education Information System (JISP), which will represent one of the most important landmarks for the future definition of educational policies.

The survey AUSTRIA

In the report on the digital ROADMAP of Austria, we can find some important information about the framework of Austria regarding digitalization. *The foundations of digitization:* When shaping digitization in a positive way, key political tasks include the issues of data protection and cybersecurity, a modern legal framework for new business models, and the fair structuring of working conditions. Three areas form the essential foundation for successful digitization – development of an education system that prepares students for digital opportunities, providing a firstclass digital infrastructure, and development of research and innovation policies that specifically promote Austria's strengths. *Digital opportunities through education:* Digitization requires our education system to evolve rapidly. Routine tasks become less important in the modern working world, while the scope of the work becomes more complex. There is a growing need for specialists in the digital economy, while participating in society also requires digital skills. The education system needs to take into account these requirements at all levels. Using digital tools in the education system must become standard practice. Digital media literacy is becoming an integral part of basic education. Retraining people who are already in employment ensures their employability. Innovations in education must be accelerated and quickly incorporated into the regulatory system on a wide scale.

Visions for Austria 2025 The aim is for our country to play a leading role in shaping digitization as an innovation leader. Only then can we ensure that everyone in Austria can benefit from the advantages of digitization.

In 2025, young people will benefit from an equal opportunities education and training system that prepares them for the opportunities and challenges of a digital world. A modern curriculum, innovative forms of teaching, and digital learning platforms will ensure that educational institutions – from nurseries and schools to universities – impart values, knowledge and skills that support personal development and employability.

The survey CROATIA

In the National report from the digital government of Croatia we find a good example of the work of the governments in the digital future. This is the pilot project “eSchool” Establishment of the Digital Maturity Schools Development Programme. As part of a new curriculum in 2018, obligatory ICT classes were introduced in the 5th and 6th grades of primary school. The School Establishment of the Digital Maturity Schools Development Program (pilot project), was a successful pilot project in the Republic of Croatia in the field of eEducation which was completed in August 2018. Through the pilot project, the schools were equipped with LAN, digital classrooms and tablets. Digital 10 Digital Government Factsheets - Croatia2 educational content and drafts for STEM subjects were made for primary schools and high schools. eServices of digital educational content repositories, education organisation applications, a classroom management system, and an IT system for computerisation of the business of the institution were created. The framework for digital maturity of schools and the digital competence of principals, teachers and professional associates were developed. Due to the success of the first phase of the "eSchool" project, the second phase of the project was rolled out for the remaining schools in 2019. Through the advancement, transparency and linking the operations of business and teaching processes in schools, the necessary preconditions for the use of ICT were created.

The survey SPAIN

There are several initiatives in Spain for better use of digital tools in both education and sport. A common framework of digital competence for teachers has been published by the Ministry of Education, available from January 2017. Developing digital competence

in education requires integration of informational and communicative tools (ICT) in the classroom and teachers properly skilled in that competence. The Spanish framework (Competencia Digital Docente, CDD 2.0) is based on the European framework for digital competence for citizens (DigComp 2.0), which identifies the main elements of digital competence grouped in five areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving. CDD 2.0 proposes competence descriptors in three levels (A-basic, B-intermediate and C-advanced), subdivided into six levels (A1-C2) for each competence included in the five areas. It is complemented by an online tool for teachers where teachers can create a digital competence passport by continuously self-assessing, updating and listing digital competences gained throughout their professional life until they reach higher standards. The process started in 2012, with the intention of offering a descriptive reference to be used for training purposes and in evaluation and accreditation processes. It reflects work undertaken by the ministry with the participation of the regions and external experts, such as the IPTS-JRC. According reports from TALIS (2009) and the European survey of ICT schools in education (2013), Spain was ranked first in ICT training hours per teacher. However, in relevant surveys, teachers assessed their training as insufficient to integrate all available technological means. This paradox suggested the need to rethink the efficacy of teacher ICT training and how best to apply ICT in the classroom. The importance of digital competence was recognized by the European Parliament and by the European Council recommendation on key competences for lifelong learning (2006) when it identified digital competence as one of eight key competences essential for all individuals in a knowledge-based society.

Two key and potentially transformative initiatives for including digital tools in education are centrally led in Spain. The Escuela 2.0 programme is revitalizing the use of ICT in schools, with a major focus on distributing mobile and tablet devices to students. Similarly, ground-breaking is the creation of a national repository of digital content, *Agrega*, with content from each Autonomous Community. In higher education, there is also a solid ICT infrastructure and lots of uses of ICT. However, ICT has yet to impact significantly on innovative content and new teaching and learning pedagogies (Kim, 2018).

A key lever within Escuela 2.0 is 1:1 device for students - so far 500,000 devices have been distributed, and many teachers have been trained in how to effectively introduce ICT into classroom teaching and learning. Regions are focusing on different aspects, for instance: Extremadura has become known worldwide for its commitment to open software and its excellent rates of computers per pupils; Aragon is introducing tablet PCs and Interactive White Boards; and Catalonia is introducing netbooks in schools. The wide differences in approach and implementation of Escuela 2.0 across regions are evident (Valencia-Ortiz, Cabero-Almenara, Ruiz, & Robles, 2021). Several regions have implemented State wide roll outs of mobile devices, and these have been merged with the Project Escuela 2.0 mentioned above. Some regions such as Madrid and Valencia are reticent about rolling small screen devices out due to concerns about eyestrain; others such as Aragon, Andalusia have already made great strides. The wide disparities are particularly clear when the model of device ownership adopted within Escuela 2.0 is compared. Aragon, for instance, allows students to make use of laptops throughout the compulsory education stage, but with a commitment to return them when finished. Andalusia also adopts this model, but students would own them if they successfully complete their studies, whilst Catalonia has chosen co-payment (see case study below). Part of the project includes the digitization of teaching resources and it is expected that 80 public schools will be the first to use e-Books for the academic year 2010-2011. Of the total, 64 schools will work primarily with laptops both online and offline, using materials developed by publishers. The remaining 16 will focus on developing teaching materials in electronic form.

The Agrega project (Agrega is the Spanish word for "add") is a federation of learning Digital repository which is to be used by 19 educational authorities in Spain. Each educational authority will have its own repository loaded with curricular learning objects created according to standards, and each single repository will be able to integrate and interoperate with other learning systems locally and worldwide (Wikipedia, 2021).

The project objectives are to:

- ✚ Promote, unify and establish a common cataloguing, packaging and publishing standard of Spanish education community learning objects

- ✚ Create a technological reference framework where learning objects can be accessed under different models of utilization
- ✚ Generate a common procedure and establish the best practices to create digital learning objects from standards.



III.2. Study of good practices from scientific literature

The educational process is continually adapting to the changes that occur in society, which rapidly evolve in the development of new information and communication technologies (ICTs). These advances in ICTs enable the development of new instruments, such as digital blackboard, tablets, smartphone applications, etc., that can produce more effective results in the teaching-learning process of students. The use of these technological resources provides immediacy, interactivity, flexibility and adaptability to the circumstances in which the process is conducted. ICTs are often used to replace traditional educational methods and approaches (e.g., the use of digital boards instead of traditional boards). Their employment can change the process followed by students in their learning, since they can interact in real time with the digital board or with your tablet, while they advance in learning and improve their attitude and predisposition, including their motivation and interest.

As a result of the new necessities of society, athletes and students, respectively, some good progressive practices are applied by specialists both in professional sport and school education. The following are examples of how digital tools can support the preparation of elite athletes, also the basic training for beginners.

1. VERT team system

The technology allows monitoring players' workload and performance and injury prevention as well. Used by the USA national volleyball team and over 500 universities, colleges and teams, the VERT jump monitor, which fits around players' waists, calculates their jump heights and counts. It then sends real-time data to an accompanying app.

The Vert device demonstrates excellent accuracy counting volleyball-specific jumps during training and competition. While the device is not recommended to measure maximal jumping ability when precision is needed, it provides an acceptable measure of on-court jump height that can be used to monitor athlete jump load. The data received can be used by coaches, staff and players as well for an accurate physical feedback and as a subject for discussions about load management – one of the most important factors to consider when preparing a training program.

2. Volleyball tracking technology based on image processing and 3D pace matching

This tracking technology shows the movement trajectory and drop point of the ball sent out by the player, judging the direction of the player's kicking the ball more accurately, statistical data retrieval etc., which is very important for the coach to make targeted tactical arrangements and analyze the characteristics of the opposing players.

3. Action standardization based on 3D dynamic model

In volleyball training, if the coach cannot accurately and timely discover the wrong actions of the players, it will directly affect the training effect, and in the long run will affect the players' performance on the court. For this reason, this research studies the standardization method of volleyball actions based on the 3D dynamic model, and improves the experimental test to prove the effectiveness of the proposed method.

4. Flipped classroom (FC)

In this methodology, students become the ones who manage their learning time with the material provided, while the faculty performs tasks such as problem solving, learning through discussion, practical tasks or other higher-order thinking activities to guide their students' learning. Another characteristic of the FC methodology is the collaborative process that takes place among students instilling in them greater autonomy, commitment to study, and responsibility. Studies show that using the FC approach, teacher students have higher levels of motivation and flow status than those who teach using a traditional methodology. The digital educational tool «EdPuzzle» is an example for learning theoretical content and effective flipped classroom strategy.

5. Blended learning

This is a model of learning when students learn by electronic and online media as well as traditional face-to-face teaching. Blended learning provides great variability and many options for diversification of the learning/coaching process. There is data showing the positive effect of blend learning in improving the under-hand skill of passing the ball.

Technological evolution has led to many changes at both professional and academic levels. The inclusion of Information and Communication Technologies (ICT) has caused dizzying changes in the different contexts of life (educational, professional, social). More and more applications are being downloaded by users to their mobile devices, both for entertainment and training. There have been several studies based on the need to assess the knowledge and attitude of university students towards downloading existing educational applications. In this way, the use and frequency of these tools in the teaching-learning process of the students was analyzed. Quantitative methodology applied in the research has been taken into consideration, the collection of data with a sample conformed by a total of 278 students of Higher Education between Spain and the Czech Republic. For this purpose, a survey has been prepared as an instrument of analysis, which has been validated by experts in the field. Among the most outstanding results, it can be seen that in both countries, students download educational apps to a greater or lesser degree, according to their interest and subject matter. Likewise, there is a lack of competences and skills in the use of these new technologies as a training complement. Based on this, it is proposed that the continuous training of students and teachers in the knowledge and pedagogical use of ICT in general and educational apps in particular must

be undertaken in order to provide a better understanding, and a more utilized use of those technologies (Casas Moreno, Caldeiro-Pedreir, & Havráňková, 2020). It is widely agreed that the traditional process of schooling can benefit from the usage of computers as supportive tools. Of various approaches using computers in education over the last decade, e-learning and edutainment have become the most prominent. Recently, a number of authors have criticized these approaches arguing that they conserve traditional 'drill and practice' behavioristic methods of teaching instead of enhancing and augmenting them. It has been proposed that a 'paradigm shift' is needed and that this shift may come through utilizing all the advantages of full-fledged video games, so-called digital game-based learning (DGBL). However, several case studies reported serious problems with the DGBL. Among the most notable issues are the lack of acceptance of games as an educational tool, problems with integration of games into formal schooling environments, and the so-called transfer problem, which is the problem of the inherent tension between game play and learning objectives, the tension that mitigates the ability of students to transfer knowledge gained in the video game to the real-world context. Group of authors presented a framework for an augmented learning environment (ALE), which verbalizes one way of how these problems can be challenged. The ALE framework has been constructed based on the experience with the educational game, Europe 2045, which was developed and which has been implemented in a number of secondary schools in the Czech Republic during 2008. The key feature of this game is that it combines principles of on-line multi-player computer games with social, role-playing games. The evaluation which authors present in several papers indicates the successful integration of the game and its acceptance by teachers and students. The ALE framework isolates key principles of the game contributing to this success, abstracts them into theoretical entities we call action-based spaces and causal and grounding links, and condenses them in a coherent methodological structure, which paves the way for further exploitation of the DGBL by educational game researchers and designers (Brom, Šisler, & Slavík, 2010).

In recent years, the use of science and various technologies to improve the training process in various sports has become increasingly widespread. On the basis of video research, technological platforms with a wide range of applications have been developed, allowing a significant improvement of the training activity in initial and subsequent training of volleyball skills using laptops, tablets and mobile phones connected to large-

sized monitors such as television screens. Various scientific studies in many countries show over 80% improvement in physical fitness and technical skills of beginners and more experienced young volleyball players with regular use of digital tools in training activity in secondary schools and sports clubs. Similar observations show similar results in Bulgaria.

The purpose of the increasingly large-scale use of digital tools is to monitor the movements of athletes when performing movements specific to volleyball actions, as well as to control the improvement of their physical engagement in these actions and overall in the general training process. This allows for a more detailed involvement of coaches and sports managers in the assessment of the quality of the training activity of young athletes and the perspective of their development.

Using digital tools in sport education and training in secondary schools and sports clubs in Croatia.

Using of digital tools in secondary schools as well as in sport clubs was not such a common practice in Croatia, up to 2020 and the outbreak of COVID pandemic. Even though there was an official National Strategy for implementation of digital technology in high school education given in the document: [https://pilot.e-skole.hr/wp-content/uploads/2018/04/Prirucnik Integracija-digitalne-tehnologije-u-ucenje-i-poucavanje-i-poslovanje-skole.pdf](https://pilot.e-skole.hr/wp-content/uploads/2018/04/Prirucnik_Integracija-digitalne-tehnologije-u-ucenje-i-poucavanje-i-poslovanje-skole.pdf)

During the period of 2020 and on, more and more digital tools are being used, either directly through schools on a free basis, or ppv material used individually on YouTube or other platforms. Nevertheless, digital tools in sport education (volleyball) are barely even present. Athletes are free to use all material available on-line, but totally individually and on free basis, as there is no practice of using any on-line tool organized or suggested on sport club level.

Using digital tools in sport education

Digital media are currently one of the main topics in discussions about schools and teaching. In this context, there has been a wide range of research in physical education

(PE) in areas such as health, gamification, and wearable technologies. This raises the question of the goals pursued regarding the use of digital media in PE.

Overall, using digital media and online tools in training and PE presents at the same time possibilities and limitations of digital media in PE and highlights the goals in the categories of physical, cognitive, social, affective, and school framework conditions. While benefits from the usage of digital media in training in terms of motivation or theoretical knowledge are accounted as positive, improving sport-specific motor capabilities and skills as well as physical condition could be identified as barriers regarding the preparation of PE teachers as well as athletes. More specifically, the benefits of using digital media to achieve PE-related goals are many times in collision with practicing sport itself. However, specifically addressed learning via media, including topics in direct connection to a specific situation or issue could be of substantial asset, help and support a face-to-face training.

Digital media permeate the everyday lives of children and youth. The various technologies may change, but their general interpretation follows a similar pattern with many positive attributes including educational innovations. However, digital media are associated with opportunities and risks, such as insufficient physical activity or addiction. Since these can hardly be completely avoided, they must be dealt with in a pedagogical manner. Moreover, schools are tasked with adequately preparing students for life in present and future society, which now also includes a deeply mediatized world.

Therefore, both should be used in an adequate ratio in order to achieve optimal results.

[Digital technology in physical education: a systematic review ...
https://link.springer.com >](https://link.springer.com)

Because of the rapid technological developments taking place today, it is inevitable that these developments will show themselves in every aspect of human life. These swift transformations constitute many changes in the structure and living conditions of society. Technology, which has developed rapidly in all its aspects especially in the present century, is important in terms of helping people reach through mass media whatever there is in the field of scientific achievements and innovations as soon as possible. In this context, many countries create systems that produce sports technology by integrating

technologies into sports. These technologies, which are not limited only to sports products, have already shown their effect with the specialised technical tools used by referees who are in charge of decision making in sport. Consequently, the use of digital learning tools could be very beneficial, in terms of enabling the sport specialists to analyse as many situations as possible from the comfort of their home instead of being present at the venue. Showcasing all potential situations is much more cost-efficient and simpler than ever at present, using the digital technologies and platforms with video material and on-line learning courses. Moreover, the introduction of digital technologies (VAR; Hawkeye or similar systems) enables smooth running of any sports event minimizing the potential of a human error.

Sport has become one of the areas where technology has advanced a lot. Technology helps many sports branches in many different categories provide a number of opportunities for both professional and amateur athletes and their supporters in the development of sport (Ansal, 2018). Adding the feature of watching to the elements that exist within the sport, such as competition, winning, losing, rivalry and the rapid developments in the sports media has become a phenomenon that wide circles follow with a lot of interest. The use of information and communication technologies becomes especially important in sports education, in the preparation phase of internet-based distance education and in teaching activities during the training period. In order to be successful, and to catch up with competitions on the sports field which have become a big issue today, education must be given to future generations in accordance with the requirements of the age, in order to provide maximum benefits from the information and communication technologies. The use of information and communication technologies is gaining importance in the preparation of web-based distance education and in the teaching activities especially during the training process.

In September 2017 the Swiss Olympic Committee and the Swiss universities signed a declaration to assist elite athletes who would like to combine studies and sport. In that way, the athletes were enabled to pursue university degrees while studying part-time, in order to continue with their elite sports careers.

What is more, the declaration stated that individual universities were to develop models for part-time studies in as many course areas as possible. In addition, athletes

were to be offered opportunities for semester examinations, as at that time 37% of Swiss Olympians studied at university.

<https://www.fisu.net/news/nusf-news/swiss-olympic-unveil-dual-career-plan-with-support-of-swiss-universities>

There is an interesting study comparing the Dual career opportunities and environment in three European countries – Switzerland, Denmark and Poland, outlining the specific aspects of each country while at the same time analyzing and outlining the differences between them, comparing the results derived from each approach.

The entire study can be found in the material below:

[https://www.researchgate.net/publication/329403617 A cross-cultural comparison of dual career environments for elite athletes in Switzerland Denmark and Poland](https://www.researchgate.net/publication/329403617_A_cross-cultural_comparison_of_dual_career_environments_for_elite_athletes_in_Switzerland_Denmark_and_Poland)

As one of the most digitalized countries in the world, Denmark has made steps towards an interconnected knowledge society in recent decades. During this development, digital media have also been incorporated into sports education and form a considerable part of contemporary learning spaces. Digital skills are viewed as essential for children. The Danish Ministry of Education provides didactic guidance for teachers and a digital learning portal (Børne- og Undervisningsministeriet, 2022a).

There are online sports education resources available (both paid and free) for both face-to-face teaching and distance learning in Danish. These resources include courses, inspirations for lessons and training sessions, and theoretical content. (Børne- og Undervisningsministeriet, 2022b). Beyond opportunities provided by the government, additional paid services are available, such as a video- and media-based educational platform called “Skoletube” (Skoletube, 2022).




In Denmark, student athletes receive financial aid for additional teaching to catch up on learning for each day they cannot attend school due to a sports event (EU Guidelines on Dual Career of Athletes, 2012). Education for elite athletes is normal: “Acknowledging that a sports career might be over anytime soon, athletes are aware that you need to have a proper education to get a job in the future.” The Danish agree that every kind of

education can be combined with elite sports. They appear flexible in many ways and even think that athletes who receive specialized education are more balanced and thus more successful in life (Kuettel, Christensen, Zysko, & Hansen, 2018).


The use of digital tools and media are a very active topic in German sports education. The recent “DigitalPakt Schule” aims to lay the financial foundation for the digitalization of German schools (Bundesministerium für Bildung und Forschung, 2021). The net effect on sports education so far mostly consists of recommendations for the use of digital media in sports classes. Applications that are proposed include video analysis, video demonstration and the use of audio recordings (Greve et al., 2020). In detail, progress and available opportunities like learning platforms differ enormously between the various *Bundesländer*.

There are a lot of great initiatives for the use of digital tools in both education and sport environment in Romania. A more thorough analysis of technologies used in different aspects of life was done by EdTech company. They gathered 50+ of the existing initiatives, to offer an insight into the ecosystem (Bucea-Manea-Toniş et al., 2022; Matiuta, 2021) of digital technologies.

E-learning / High-school

-  iziBac — a mobile app focused on facilitating the learning process for the final high-school exams; it uses gamification and rewards;
-  eMedi — an educational platform for high-school students who want to prepare for the final high-school exam (baccalaureat);
-  Prepi — a smart solution that helps students achieve good results at the final high-school exam (baccalaureate) by learning efficiently.

E-learning / Other

-  iTeach — an online platform for the continuous professional development of the teaching staff by encouraging participation and exchange of resources, facilitating collaboration, training of pedagogical and specialized skills;

- ✚ Hypersay — a Learn Forward product, developed as a tool for teachers, lecturers, and conference speakers to enhance PowerPoint files and engage audiences using real-time interactions;
- ✚ Mondly — language learning experiences that will stimulate people around the world to learn new languages not only out of necessity, but because they genuinely enjoy it;
- ✚ StudHub — a platform focused on improving the process of finding and distributing study materials among students; after creating an account, they can browse and also add materials to the platform;
- ✚ Startarium — an entrepreneurship online learning tool, that gives access to experienced mentors and inspiring stories;
- ✚ Tactile Images — a tool built for visually impaired (and blind) people, that gives them the option of learning by themselves; it can also be used by children with autism, can help Alzheimer patients remember things, and many more;
- ✚ Digitaliada — a national program that supports digital education for secondary schools;
- ✚ Bit Benefit — an online platform with lessons for children that includes subjects such as programming, foreign languages and personal development;
- ✚ History Lapse — a natural and easy way to learn history;
- ✚ Education Cloud — free tool to learn digital marketing, created by expert marketers from squirrly.co;
- ✚ Coding a story — a concept that aims to teach children coding through stories.

Education management

- ✚ Kinderpedia — provides technology-based solutions which turns every classroom into a vibrant connected community where teachers and parents engage to improve education, to the benefit of children;

- ✚ Scoala pe Net — a platform developed as a reaction to the measures imposed in Romania, in the light of Coronavirus pandemic; it offers a collection of advice and tools for the Romanian teachers, to help them continue the educational process while schools are closed.
- ✚ Adservio — a digital platform dedicated to integrate all parties into a one-stop shop cloud solution, capable of organizing and centralizing all school information, turning them into easy-to-use assets for parents, teachers, departments of education and governmental bodies;
- ✚ 24edu — education management solution that doubles as a digital school catalogue, aimed at teachers, parents and students;
- ✚ Galileo — a platform that connects experienced freelance teachers with students from around the world;
- ✚ Collabos — a portal that provides freedom and stability to experienced professionals and education to those who want to learn — on one side — and complete transparency, fast turnaround, real-time monitoring to those who need stuff done (any type of work that can be done remotely) — on the other;
- ✚ Livresq — owned by Ascendia, LIVRESQ is an integrated platform for creating, publishing, editing, consulting and managing online digital interactive books;
- ✚ HEdu Guide — a support platform for future students coming to study in Romania, that helps them through the application process and takes over all the formalities involved;
- ✚ Invata Online — a solution to manage online trainings;
- ✚ Learning Solutions — a software that makes it incredibly easy to upload training materials and store them all in one dedicated place where students can learn without distractions.; developed by squirly.co;
- ✚ Notis — education management platform for primary, secondary and high schools;

Portugal is considered a country with centralized state government and in this respect, the responsibility is placed on high education institutions (HEIs) to provide programs and support to student-athletes through legislation, statutory requirement, or government regulation.

Governmental efforts are made to improve the sports and education support. As an example, in 2016, a pilot program called "Support Units to High Level Sport" was created to support student-athletes in basic and higher education, improving the communication between schools and clubs/federations to help the student-athletes in several aspects of their lives. In 2017, the pilot program expanded to five schools and nowadays the aim is to introduce it in 16 different schools. Although this program is focused on basic and higher education, the political importance of this topic is increasing.

The Portuguese legislation differs from HEI to HEI as well as the student-athletes' duties and rights. To illustrate, when analyzing the student-athletes' duties in some institutions, the students who represent the HEI in university sports events are considered student-athletes, while those competing in federation competitions are considered only athletes. Despite those differences, the benefits of being a student-athlete do not vary much from institution to institution.

HEIs provide, generally, the following rights: 1) Priority in choosing schedules and classes; 2) Justification for absences from classes, or other teaching activities; 3) To require examinations in the special season; 4) If the period given to develop a paper or its due date coincides with the day of the sporting event, the postponement of this date; 5) Request an exam in two curricular units, at a special time of the academic year in which the right was recognized.

III.3. Study of good practices form realised projects

In the study period, an overview was made of the European projects implemented from 2015 to 2022 regarding digitalization in sport. The results showed that in recent years digitisation projects have become huge in number, but projects specifically on digital technologies in sport are almost entirely missing. Many of the projects related to digital technologies are primarily focused on the education system and youth access to technology.

The Erasmus+ project "RESTART" (2020-2-CZ01-KA105-078621) which started in 2020 aims to develop the digital literacy of young people aged 14-17 from the Czech Republic, Romania, Estonia and Portugal and at the same time to motivate young people for more educational activities in the Erasmus + program. An educational activity in the form of youth exchange can motivate participants to further their education. In the project, they will develop digital literacy that will contribute to their personal development.

The increase in the number of projects related to digital technologies is also due to the global COVID crisis launched in 2020. After two years of isolation, people found a way to be close and continue their professional way only through technology. That is why the projects related to digital technologies in this period increased significantly.

The project "Digitally Yours" 2020 by Erasmus + program was inspired by the coronavirus pandemics that made us aware of the benefits of technology, such as: health tracking, learning through apps, staying connected to friends and family, meeting new people, working remotely etc., and taught us to appreciate them more. We realized that the jobs which include basic computer or customer service experience or advanced technical skills, were almost not affected by this crisis, because those specialists did not have any problems with transferring their work remotely. On the other hand, translating the quality and legitimacy of your working abilities to the job market online can be a difficult task for many up-and-coming professionals.

In 2021 the volleyball project is one of the few projects related to digitalization in volleyball. "Volleyball4All" increases a healthy lifestyle by the physical participation of youths and people with intellectual disabilities offering inspiration, high quality programs and digital education. *School programs:* In a 2-year cooperation between the volleyball federations of the Netherlands (applicant), Belgium, Norway, the Czech Republic and Slovenia, elite players in all partner countries inspire youths at schools (Heroes on Tour) and educate them about the importance of physical activity and healthy lifestyle. In addition, children are offered a program to play volleyball in a game like and approachable way at local squares (SchoolVolley+). This provides a connection between in-school programs and additional after-school programs. *Fundamental movement skills:* For youths 6-12 years old, 2 programs are developed and implemented at club level. The focus is on






the development of fundamental movement skills with special attention to volleyball. The Volleyball Playground involves children (4-6 years) to practise multisport activities with special attention to ballgames. Action Volley offers youths (6-12) the opportunity to learn volleyball basics in a unique innovative way, also based on fundamental movement skills. *Digital education:* The mentioned programs contribute to life-long-participation in sports and are implemented at club level. Voluntary coaches are educated to lead the activities in a safe and inspirational way through digital education about fundamental movement skills, specific characteristics of age groups and volleyball activities (E-learning). Volleyball4All involves more people in volleyball and creates awareness about social inclusion. G-Volley offers volleyball activities for people with intellectual disabilities and is implemented at club level. It encourages participation of the target group and stimulates awareness at European, national and club level about social inclusion in sports during multiple sport events and transnational meetings.

The projects implemented in this period are not only aimed at children and improving their technical competences, but also at teachers, who had to enter the modern world very quickly so that they could meet the needs of adolescents. An example for this is the project "ICT in Active Learning & Teaching-Inspiring, Challenging, Terrific Where" realized in 2016. Where is the balance between using handouts and worksheets and using ICT at the lessons? How much does the teacher speak during the lesson and what about students? Is the teacher still the main manager (leader) during the lesson? What should be changed about the lessons? How to help teachers improve their lessons? What is needed to support the teacher (courses, experience, advice, examples)? The answers to these questions were found by working together on the project "ICT in Active Learning & Teaching-Inspiring, Challenging, Terrific". The aim of the project is to facilitate the understanding of how students can work better together to improve their well-being, and how teachers can work better together to improve their teaching skills with the use of ICT in the lessons and how to organize the lessons to be more active and modern where the role of the teacher has changed from the leader to the adviser.

The project DigiCulTS - Digital Culture for SMEs under the Erasmus+ program held in 2019 aims to show SMEs their current digital skills and make them aware of the challenges, opportunities, and risks. How fit are they for the digital future? What transversal digital key competencies do they already possess? Which digital technologies

can be used collaboratively and creatively and should be critically considered in the cultural context?

The project goals are:





-  to increase awareness of and motivation for digital transformation;
-  to strengthen digital competencies through application-oriented learning units and Microlearning;
-  to support the transformation of business models;
-  to reflect on and shape digital transformation;
-  to enhance the integration of the developed outputs into learning arrangements of education providers and companies.

Besides fostering practical digital skills, we emphasise the cultural aspects. The term "digital culture" is intended to express that the "digital revolution" is not only a technological revolution but also a cultural one. With this approach, we want to motivate SMEs to use their chances to implement new business models without resistance to a transformation, changing all aspects of life and business.

The project "Be ready for the digital transition in Adult Education" aimed to support teachers of adult education centers (CVO) in improving their digital skills by introducing e-didactics and courses focused on e-content creation. In this way they received special skills and knowledge for the digital transition within education in general and adult education in particular. They learned the possibilities of using an LMS and the different blends in teaching through new technologies. The focus was, among other things, on new methodologies and the use of different tools with the main aim of improving their digital skills. Creating a learning community was a necessary condition for effective learning. This 'new' form of learning resulted in CVOs attracting different target groups, especially in the case of 100% online learning. The people who coordinated the digital transition within their CVO were supported with insights on how to manage the transition processes through the necessary tools, because digital transition goes much further than just introducing IT tools within everyday teaching/classroom practice.

The project “Physical edUcation Learning: e-platform for exerciSing at homE” (PULSE). The benefits of physical activity are well explained in multiple EU policy documents such as the White Paper on Sport, the Commission’s White Paper Strategy for EU on Nutrition, Overweight and Obesity related health issues and the Amendment of the 2019 Annual Work program for the implementation of the Erasmus + Sport program. The project PULSE is about taking pro-active steps to reverse the decline in physical activity. Its contribution will be the development of attractive and interactive educational formats regarding promotion of Physical Education through – building an online physical education platform, using the opportunities of the mobile information and communication technologies, creating a freely available platform for the development and implementation of educational content on modern digital devices with the opportunity to exercise at home. The PULSE project’s focus is on building capacity to implement online and distance teaching and learning through the PULSE learning platform. It aims at developing digital pedagogical competences of educators, enabling them to deliver high quality inclusive digital education through short-term training of teachers. The development and use of high quality digital content such as innovative online resources and tools are provided through the PULSE project training.

In the end of this survey we can say that there are several types of digitalization projects:

-  projects to raise awareness among adolescents and not only about the use of digital tools in education;
-  projects aimed at teaching students and teachers how to use digital technologies in their work at school;
- as well as
-  projects aimed at developing technology in different fields;
-  projects aimed at equipping educational centers or schools with digital facilities.

All these examples of projects related to digitalization in the education system, and not only, show the needs of modern society today. After the pandemic in 2020, the world needs a different approach. One of these options is precisely the development of new technologies offering a different viewpoint to modern sport, to modern volleyball. In

conclusion we can say that in terms of digitalization in sport. and more specifically in volleyball, there is a lack of projects to develop the digital technologies needed in training. Most of the projects are focused on awareness and training of teachers and students to work with digital technologies. The development of new digital technologies in volleyball directly related to the education of adolescents will also support the work of teachers in schools, as well as bring many new opportunities for clubs and organizations working in this field.



III.4. Results from the survey about using digital tools in sport education and training in secondary schools and sports clubs

According to the developed methodology, a total of 9 questions related to digitalization in sport were selected. Each partner country conducted a survey with a minimum of 30 participants. The survey results were aggregated against each question in the questionnaire.

Question: Who needs to use digital tools in sport education and training?

Survey CROATIA

- ✓ Students - 63
- ✓ Competitors - 12
- ✓ teachers in secondary schools - 42
- ✓ coaches - 27
- ✓ club managers - 5
- ✓ secondary school principals – 15
- ✓ nobody – 0

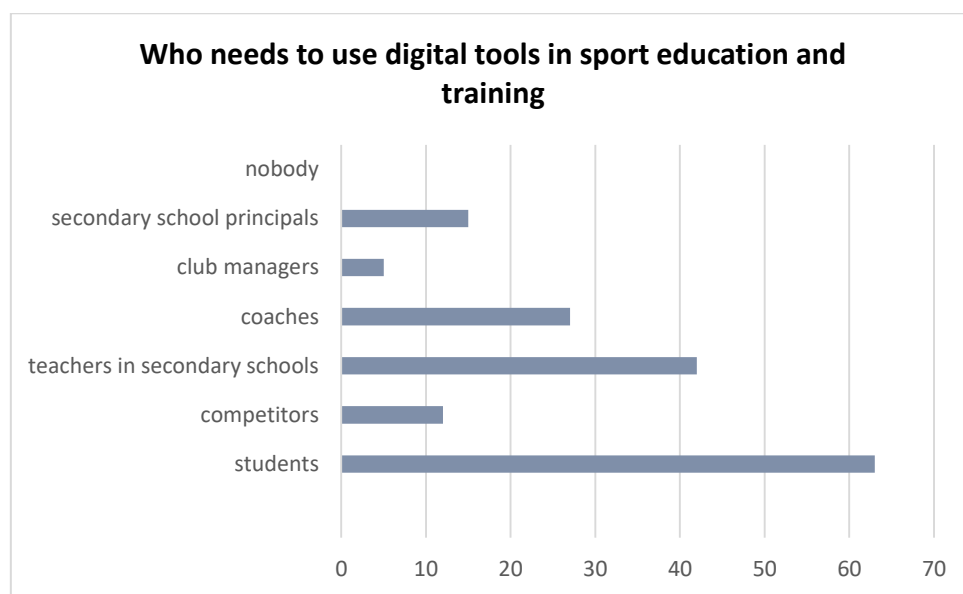


Fig.1 Needs to use digital tools in sport education and training (Croatia)

In general, all included groups of persons need to use digital tools in their sports education and training, if possible. Especially the competitors and coaches, they need these tools very much. The same is valid for teachers in the secondary schools but that depends on the possibility to deliver the tools to the persons concerned and how deeply they are involved in sport education.

Survey AUSTRIA

Using our network as a sports science institute, we contacted a wide range of participants to obtain a broad picture of the use of digital tools in training and sports education in Austria with a focus on volleyball. Our participants (n = 31) include sports teachers, coaches, and members of sports clubs and sports federations.

The following results have been obtained: Most of our participants agree that competitors and coaches (both ca. 90%) should be using digital tools. Opinions are more mixed towards their application in schools with around 70% of participants believing that sports teachers in secondary schools should be using digital tools and around 50% that students should be using them.

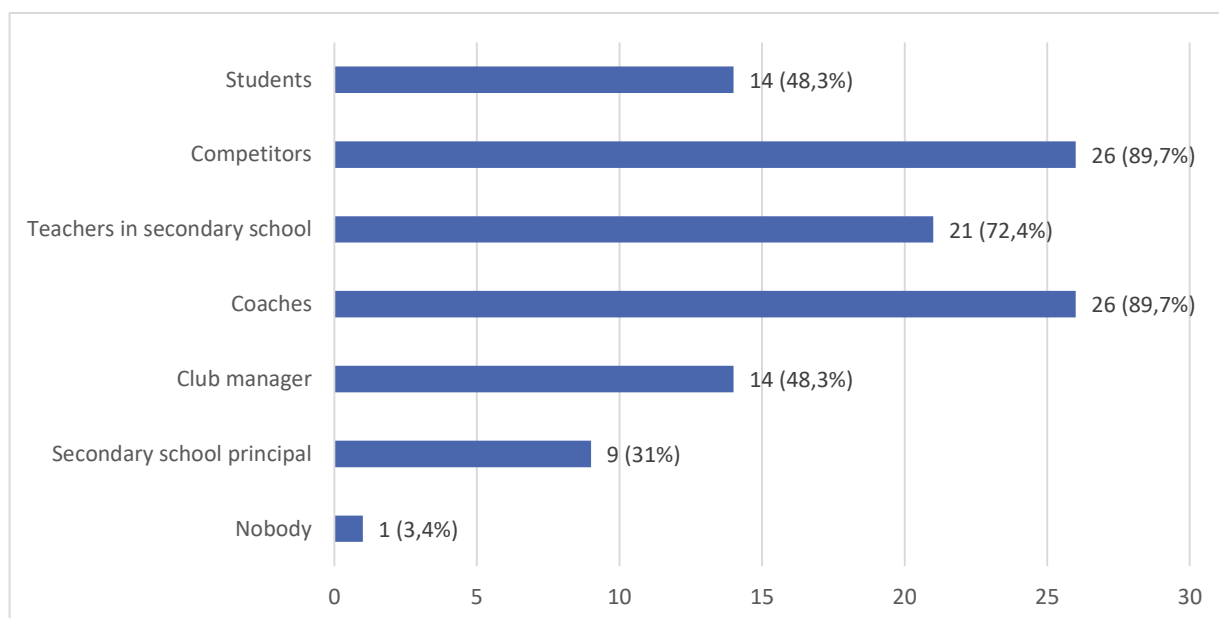


Fig.2 Needs to use digital tools in sport education and training (Austria)

The Survey SERBIA

Results from the Survey 1. directed towards the use of digital technologies and tools in education and training has given an interesting insight into the current state of the digital “landscape” in those areas.

The vast majority of subjects was inclined towards the answer that students, competitors and coaches should mostly be the ones using the digital tools in education and training (Fig. 3).

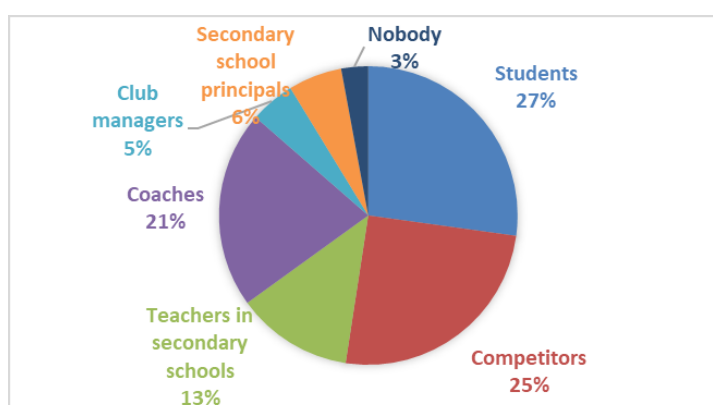


Fig.3 Needs to use digital tools in sport education and training (Serbia)

Survey BULGARIA

In general, most of the participants need, if it is possible, to use digital tools in their sports education and training. Competitors and coaches need to use digital tools more than other research groups. The same is valid for the teachers in the secondary

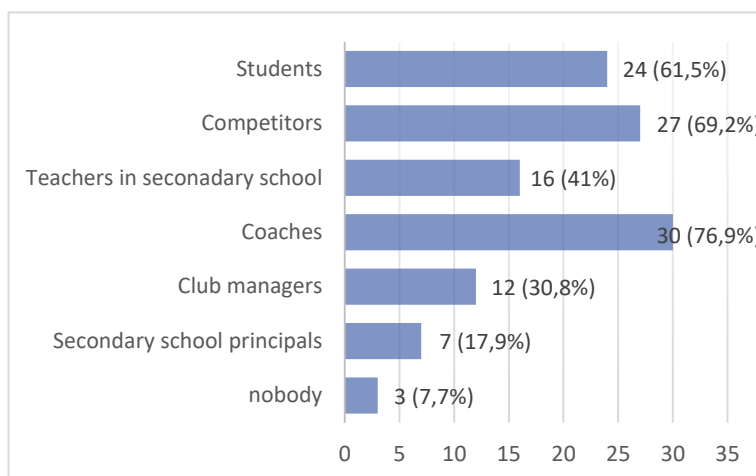


Fig.4 Needs to use digital tools in sport education and training (Bulgaria)

schools but it all depends on the possibility to deliver the tools to the concerned group and on their involvement in sport education. In order to answer the questionnaire more objectively, 39 participants were interviewed. Figure 4. shows the results which were obtained.

Question: Is there available national policy in your country (a regulatory framework) for the application of digital tools for education in the programs of physical education and sport at school and in volleyball? If there is, please specify what it is.

Survey Bulgaria

In Bulgaria there is no regulatory framework for use of the digital tools. Some of the volleyball clubs arranged themselves the delivery and use of the different kind of tools helping the education and training activity connected to it. Mainly they use the tools to help the work of the coaches and teachers to control the overall activity of the players and students, their fitness readiness and health during the work.

Survey Austria

The participants primarily mentioned privacy policy, in particular the DSGVO which protects sensible data collected during physical education classes. Other than that, there appear to be a few official regulations.

Survey Serbia

Only in Spain there was some awareness of the existing government policies regarding the use of digital tools in sport, while other countries reported that the use of digital tools was mostly directed towards educational institutions, and the main reason for that was the pandemic which caused for the classes to be predominantly on-line.

Survey Croatia

In Croatia there is no regulatory framework for use of the digital tools.

Question: What digital education tools you apply in your practice? Please, describe them!

The main part of the Bulgarian participants reported the use of computers, laptops, tablets allowing to observe the training sessions, recordings of matches played by the clubs and national teams. Some of the tools are equipped with different adequate programs, helping the educational and training process in the secondary schools and volleyball clubs. An example is the **Data volley** program used by many teams and the Volleyball Federation itself in the preparation periods and in competitions.

The following tools are used by some volleyball clubs:

Vert 1. Return to play project. It is an application developed in Florida (USA) by the high school fitness coaches for the safe return of young athletes after the Covid-19 pandemic. It offers a comprehensive guideline for athletic directors, administrators, coaches, teachers, parents and athletes how to play after the Covid-19 pandemic. There are useful recommendations for the creation of plans about daily organization of safe training, which could be used by all persons involved.

Train with purpose. It is a Push Pro System, uniting all persons involved in the training process. It represents a velocity based coaching and training solution, empowering the coach to plan, assess and improve athletes' performance. With this system it is possible to help coaches and athletes to get the most out of their training sessions every time they step in the gym. The integrated hardware / software solution empowers every athlete to use the most appropriate training loads, to receive an accurate

feedback of the output and to create dynamic reports. It is a pocket – size lab, which does all the above mentioned operations and presents a complete picture of the athletes' results, supporting coaches with objective data.

Aver media – Live gamer portable. This application allows for athletes or specialists to record and transmit the recordings of a training performance in order to analyse the training process later, in out of sport hall conditions.

Dataproject.com/products/eu/en/volleyball/datavolley. This very important application is used by almost all clubs and teams in Bulgaria. It allows to record and analyse the players' performance in matches and helps the coaches to determine the next tasks of the players.

The Ball Coach Radar. It is a pro-level radar gun and speed training tool for smart player development through one-on-one coaching or self-guided drills, and hands-free operation keeps it simple.

Smart PSS. It is an application to control digitally the players' performance using a computer program. Different tablets, laptops and similar devices could be used for this application.

Heart Guide. It is the OMRON health care product helping to control the health of the players during the training activity. It is the first-ever wearable blood pressure monitor in the innovative shape of a wristwatch, which monitors High Blood Pressure, controls the track fitness.

On this issue, the survey of the other three partners showed again, various video analysis and feedback tools have been primarily mentioned. As for hardware, tablets are popular, because of their flexibility. In training, positional tracking systems are used by some teams. Similarly, to previous question, coaches reported the use of digital tools in game analysis and during practices as a reference point for improving individual technical as well as tactical skills.

Question: *What are the results from the application of digital tools for education in your practice? Please, specify the digital tools you have used, and the effect of their application*

The obtained results of the research show the connection to the improvement of the playing performance as a result of receiving a good vision and comprehension of the assumed inaccuracies in the training and match performance. In principle, all participants agree that it leads to the achievement of more effectiveness in all aspects of the players' preparation.

Most of the participants report the positive results of using the different digital tools. They help the performance of the players and the teams in different competitions and in the professional work of the coaches, managers, administrators and teachers in the secondary sport schools. Digital tools allow for paperless control of the simultaneous work of all components in the training and educational activity of students and players.

The possibility for athletes to become aware of their movements from an outside perspective and subsequently, to improve them has been clearly pointed. Video analysis allows one to inspect even small details of motion and identify mistakes which would be hardly visible otherwise. Many participants also mentioned an increase in clarity and focus during training. Higher motivation and a decrease of language barriers through visualization have also been reported.

The results were mostly positive and enhanced both tactical and technical knowledge of volleyball players.

Digital tools are as previously listed: e-books, You-tube video material, video/audio recordings, live stream of real matches or lectures. Nevertheless, the most commonly used material in volleyball preparation and training are video material from own matches, as well as video recordings of the opponent team as a preparation material before the competition match.

Question: Please, describe the difficulties you have faced with the application of digital tools in the sport education at secondary schools and in volleyball clubs?

Survey results on the issue led to the following summary by the four countries:

Technical problems of hardware and software are a very common problem, such as limitations in functionality, crashes, lack of wireless internet, insufficient batteries, etc. Also, the lack of personnel trained in the use of digital tools is another issue. Sometimes,

there is also lack of equipment and lack of interest of decision makers to invest in (possibly expensive) digital equipment. High time expenditure, too large groups of students/athletes and data privacy concerns are additional problems.

Several coaches reported their own lack of IT literacy which made it quite difficult to introduce digital tools into their day to day practices. Majority of coaches did not report any difficulties with the use of digital tools.

Not many coaches are familiar with the use of new digital technologies. Using digital tools is actually quite opposite to sport itself – as there is no physical activity. The paradigm – if you do not train – you lose.

Using digital technology in sport education is mostly connected with the negative effects of the lack of exercise. While acknowledging the digital tools as useful, some of the participants have also noted that it is problematic in this context, as it undermines the goals of sport in many ways.

Teachers sometime find the use of digital devices during classes disturbing for students, and causing lack of focus. Moreover, teachers and coaches can design the learning and coaching environment and thus prepare and support the learning / coaching process of the students / athletes, whereas in the digital environment everything depends on the student acting accordingly as a self-forming individual and the learning process is entirely dependent on the student / athlete.

Question 6: What is your opinion of the applied practice?

On the places where the tools are used, the tendency is positive about the effectiveness of their application. The specialists involved have given their objective opinion of the positive results achieved with the persons trained by them. Digital tools are viewed as more common in elite sports rather than sports education while opinions are divided on whether schools should catch up on this or not. Many participants mention that coaches need to be trained more to use digital tools, especially less tech savvy coaches currently missing out on the potential of digital tools. Overall, the sentiment seems to be that, while things are improving, digital tools are not nearly used as much as they could be and that there is a lot of unused potential both for schools and clubs.

Question 7: Have you taken part in any education courses connected with the introduction of digital tools in sport education and training? If your answer is YES, specify who organized this education?

The survey in the four countries shows that most have not participated in an educational process to implement digital tools. In the survey of Austrian partners, a proportion of participants indicated their involvement in Berufssportakademie Linz and the University of Vienna.

According to the Serbian partners' survey, only 5 of the 30 participants had attended any educational courses related to the introduction of digital tools in sport education and training (Fig. 5).

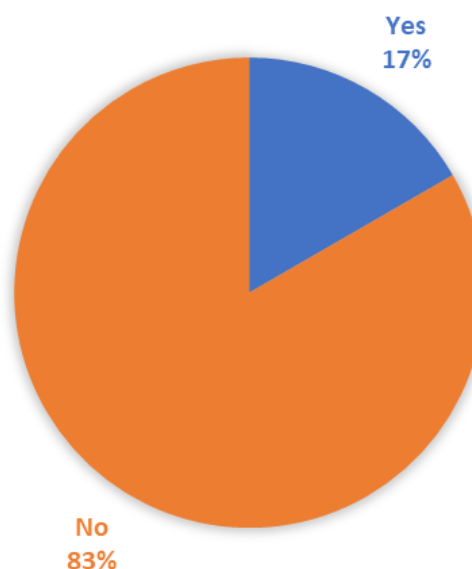


Fig.5 Participation in educational courses

Question: What recommendations would you give for widening of the application of digital tools in sport education in secondary schools and volleyball clubs?

Due to the variety of participant responses to the question, the responses will be split according to the surveys and analysis done by each partner.

The survey BULGARIA

There is a big variety of answers. Most of the participants propose the organizing of an information campaign and seminars, in order to educate specialists more familiar with the implementation of digital tools. Club administrators, managers and headmasters of secondary schools should apply to the financial authorities for the delivery of all possible

digital tools, pointing out the advantage of using digital tools for the effective preparation of young and prominent players and students.

It will be useful to organize a special digital platform with easy access for teachers and coaches, so that they could implement its content in everyday practice with students and players. That will improve the level of competence of secondary school teachers and coaches working with their students to prepare for sport competitions.

The survey Austria

The majority of our participants would like to see more specialized trainings to improve the knowledge of coaches and teachers about technology in sports. Tools should also be made more practical and accessible. Information about them should be more widely available and well-curated. Funding is also an important issue, in particular for buying equipment (e.g. tablets for schools). Additional recommendations include the adaption of teacher education curricula and having a collection of ready-to-use videos available.

The survey Serbia

Subjects mostly recommended the improvement in understanding what digital tools could offer to both coaches, and players. With added layer of knowledge, they would be more prepared to search for the most appropriate tool for them.

The survey Croatia

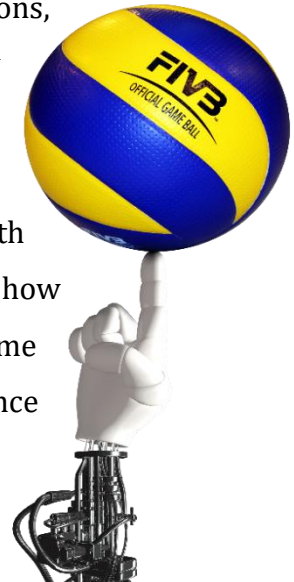
Digital tools in sports education are still not widely used due to the lack of training of coaches and teachers in the use of digital communication and its implementation in training. First of all, through the digital use of tools coaches and teachers should focus on individual work with players, considering that elementary things and technique are best learned and perfected through individual work.

The use of this type of tool should be divided in two branches. The first branch should deal with recording the real state of the player, analysis and support through communication, pointing out errors or room for improvement. The second branch should offer video materials as an example of "perfectly performed movement" so that the player

could see and perceive the movement that needs to be performed. When implementing a digital tool in team training, it is necessary for the group of players we work with to learn how to use the digital tool in training. If the players do not know how to look at and use that tool, its effect could be counterproductive.

Learning methods can and must be different when using the tool, given that there are specialized positions in team sports, and the biggest advantage of using this application during training should be that each player, through his/her movements and positions in the team, understands how he/she can perform something and at the same time get something out of it. It is used by everyone, the team and a player as an individual.

It is necessary for today's sport, that through digital applications, clear learning goals and training exercises are implemented by teachers, coaches and players in the simplest and most efficient possible way. The goal of using a digital tool should be not only to achieve better sports results, but also to preserve the good health condition of players, because this type of application is the best way to show players in what positions and postures they actually perform some exercises and to indicate the bad consequences which poor performance of certain movements could have on their health.



III.5. Conclusions and Recommendations

In summary, our surveys identified several key components of successful integration of digital tools in sports. Our survey illustrates the benefits of integrating digital tools into training and education, especially regarding movement learning.

However, coaches and teachers often lack specific training on the technical possibilities. This should be focused on in the future, e.g. by offering more courses on that topic. Also, there is lack of well-researched and concise guidance on digital tools for sports teachers, especially in countries like Germany and Belgium where education is less centrally organized than in Denmark or Austria. This problem could be addressed by developing and providing high-quality educational material on this topic, possibly in a transnational manner.

The inspected countries have numerous projects and national initiatives in the field of digital tools in education and sport. The surveys on the other hand revealed a severe lack of knowledge about those initiatives among the population of volleyball coaches, players, and high school teachers and students.

In conclusion, there is a great need for a more potent means of spreading information about the aforementioned fields, which are a crucial part of modern engagement in sport. This endeavor should be transnational, since the national policies failed in terms of popularity among those who should use them the most.

Following the results of Surv.1, it is evident that the volleyball community accepts definitively the need of the use of contemporary digital tools in modern volleyball and evaluates positively their benefit in the training process helping for a better match performance. In the same time, volleyball and sport education functionaries underline the problems of the effective implementation of digital tools – not enough availability of financial resources, especially for small clubs, lack of available personnel educated for proper use of the tools, lack of enough seminars how the tools should be easily introduced into practice. In conclusion, almost all of the participants agree on the benefit of using digital tools and on the need of widening their applications.

Recommendations for future work should be directed towards making a user friendly software which could serve as both fun and useful tool for training and playing volleyball. This software would be intended for club managers, coaches, parents and athletes with different aspects for each group.



SURV 2: Topic of research “Dual Career”

IV.1. Policy analysis. Survey of good practices in European countries

National policies and good practices are presented to the partner countries and other countries of the European Community are included in the study for wider coverage.

Austria

In Austria, KADA is a large non-profit association for supporting and advising elite athletes in combining sport and education as well as full personal development. It offers tailor-made approaches to combine both activities at a high level and to prepare them for realization after the end of active sport. KADA is funded by the Ministry of Sport (BMKÖS) and the Austrian Employment Service (AMS - KADA is their official consultant), so the services it offers are free of charge. It has a wide range of partnerships with Austrian sports federations and organisations, with educational institutions and with enterprises (with social commitment). KADA is cooperated with Austrian elite sports schools. The work with students aims to draw their attention to the possibilities of successful combining of educational and sporting activities, and to prevent them from dropping out of one of the two systems (sport or education). They counsel talented adolescent athletes (over 15 years old) and introduce them to dual career opportunities from an early stage. They also partner with public and private Austrian universities. KADA guides elite athletes in finding a suitable educational program tailored to the sports calendar. Support is targeted at athletes (from 60 officially recognized Austrian sports associations) competing at a high level and meeting certain performance level criteria. (<https://www.kada.co.at/>)

Bulgaria

The term “**good practice**” is accepted/assumed as the set of measures which correspond to the European policies in the field (digital tools / dual career) and provide effectiveness, accessibility, sustainability and reliability when they are applied. "Best practice" is the one leading to the desired result which has been proved by research work and experiments.

In the Bulgarian elite sport, priority is mainly placed on sporting results and there is lack of a legal framework about Dual career (DC), as well as a sustainable government policy. The status of a "student – athlete" is not clearly defined and thus those students and their careers are seriously affected. In June 2016, the Bulgarian Minister of Youths and Sports declared its intention to make the DC one of the key issues during the Bulgarian Presidency of the EU in 2018.

The elaboration of different and effective "good practices" for the dual career of young players and students depends of the education system, career guidance, vocational education and training (VET) in Bulgaria. The two bodies responsible for Vocational Education and Training (VET) are the Ministry for Education and Science and the Ministry of Labour and Social Policy. The Ministry for Education and Science has the overall responsibility for the entire school system and is the main policy-making body with responsibility for the budget, and control over Initial Vocational Education and Training (IVET). The Ministry of Labour and Social Policy and the Ministry for Education and Science are both responsible for adult education, often referred to as Continuous Vocational Education and Training. The National Agency for Vocational Education and Training works to assure and maintain the quality of the vocational education and training of young people and adults. It aims to do so according to the labour market needs, in order to develop the competitiveness of the Bulgarian economy. The Agency also cooperates with social partners in implementing of coordinated policies for lifelong learning, of continuous vocational training, and in introducing successful European practices. The main aim of the Agency is to provide access to work-related training for the unemployed, and expand the access to vocational education for all citizens, according to the needs of the labour market. It is currently also working to develop the State Educational Requirements (standards) for acquiring qualifications.

The Dual Career is included in important Bulgarian national documents: National Development Programme 2020 "Providing a dual career to talented athletes - quality education and sports training"; in the National program for the development of physical education and sports 2013 – 2016, the dual career is also mentioned as "development and implementation of flexible learning paths, allowing the realization of "dual career" - education and sport". So far, a dual career is still just an intention, or a declaration, from the point of policy and legislation.

Nevertheless, there are some good practices in Bulgaria allowing possible development of a Dual Career:

The Centre for Elite Sports at the Ministry of Defence and the Centre for Training and Sports at the Department of Physical Training and Elite Sport at the Academy of the Ministry of Interior annually accept and update their staff. The main objectives of these centers are to support athletes with proven results at World Championships and Olympic Games (medallists and finalists) who, along with their military training, continue their training and competition activities. This practice could be used as a perspective for the adolescent players.

Admitting to the higher schools without a competitive examination Positive changes are reflected in the Physical Education and Sports Act (Art. 26, par. 5 of 02.08.2013): Medallists from the Olympic Games, World and European Championships have the right to be admitted to the higher schools without an entrance examination, approved under the Higher Education Act. The admission is made on the proposal of the Minister of Youth and Sports outside the approved number of the students admitted under the Higher Education Act and after a decision of the academic staff of the higher school.

The individual education plan of the NSA "V. Levski" provides elite athletes with the necessary information for academic education in due time and in a synthesized form. Another possible way is the introduction of distance learning at some of the universities in Bulgaria.

Sport Schools provide a degree of professional qualification. As a result of cooperation between the Ministry of Youth and Sports, the Ministry of Education and Science and the NSA "Vasil Levski" from the school year 2011-2012, there is a training course provided in the sports schools, for acquiring a third degree of professional qualification in the professions from the professional field of Sport: "Assistant Coach", "Fitness Assistant Instructor" and "Organizer of Sports Events and Championships". The implementation of the approved curricula for training in the sports schools is a prerequisite for attracting promising young athletes and for their successful realization in life.

The career center of NSA "Vassil Levski" realizes the following activities: consults the students in their preparation for job interviews, putting together a CV and motivational letter, also interviewing candidates for participation in activities with future legal employers. Moreover, it explores the possibilities for work for professionally trained specialists in the field of physical education and sports; gives information to the students

about availability of suitable jobs; helps students contact the employers; conducts analysis of the conditions and progress of the labour market through modern means and technologies (consultations, work meetings, conferences, scientific research, etc.); gives students information for alternative working possibilities in different fields of physical education, sports and tourism; organizes and conducts national and international events concerning career orientation and realization of students (<http://www.nsa.bg/en/page.1243>).

Work-based learning (dual training) – The Swiss Model Amendments and supplements to the Law on VET adopted in 2014 enabled better match between the acquired competencies and the requirements of the labour market. Among other things, changes in the law regulate the possibilities of introducing a new form of vocational training - work-based learning (dual training). It is applicable for persons aged 16+ (students and adults). Erasmus + Programs S2A Sport - From Strategy to Action: Supporting the professionalization of sport organizations through the definition of work-based competencies and the development of fit-for-purpose training for Sport Administrators” <http://www.s2a-sport.eu/> ; <http://nsa-erasmus.com/en/s2a-sport/> One of the key parts of the S2A project is the implementation of the “7 Step Model” for the development of industry-led occupational standards, specifying the standards of performance, and defining the precise knowledge skills.

The Bulgarian Volleyball Federation has a project in cooperation with CEV (the European Volleyball Confederation) which is a part of the Initiative “School Volleyball”, co-financed by the European Commission.

The initiative “With Volleyball in the school” is a long-term project, which is aiming to increase children’s interest in sport activities and to facilitate the sport clubs in discovering and selecting prospective children for future development in the most successful team sport in Bulgaria – volleyball. Education and sport are the two sound foundations for success in the future. A successful sports career, especially in Volleyball, provides access to the most prestigious world universities with a full scholarship. The main aim of the project is not only to build successful athletes but to build successful persons. The best examples of the positive outcome of this project are the realizations of two young prominent athletes who continued their education in prestigious universities in the USA, playing at the same time in the Bulgarian National teams.

Croatia

A dual career is a multidimensional concept that includes special conditions and professional support for the education and the sports career of athletes, i.e., their future employment and sports career, for the purpose of pursuing a career in sports or other professions after their athletic career. Thus, the former Ministry of Science, Education and Sport of the Republic of Croatia, as one of the partners of the Croatian Olympic Committee and in co-operation with other partners, carried out the project "Categorized athletes in the education system" and prepared a "Recommendation on the study requirements for categorized athletes". The recommendation was made by the Rector's Office of the higher education institutions of the Republic of Croatia at the session that took place in Rijeka on 22 April 2009. The aim of the project was to align the study requirements with categorized athletes' obligations with regard to preparatory and competitive activities and to enable a second career for categorized athletes after they complete their sports career. In addition to the project "Categorized athletes in the education system", the COC, in co-operation with the competent ministry, carried out activities within the framework of another project: Athletes and Education 2012 - 2016, within which promotional days "For Career and After Sports Career" were organized in co-operation with CSSF and CASF, and an agreement was signed between the COC, the Croatian Rectors' Conference and CASF (2015). At the proposal of the Commission for the Implementation of the Agreement, on 4 November 2016, the Rectors' conference adopted the Rulebook of the Rectors' conference on student athletes studying at higher education institutions of the Republic of Croatia, regulating the rules and conditions of studying not only for categorized athletes but for all athletes studying at higher education institutions of the Republic of Croatia with the aim of further developing academic sports. The COC proposed and adopted on September 4, 2017, the "National Program of the Development of Sports Career and Career following Sports Career 2017 – 2020". Furthermore, pursuant to the Sports Act, Article 7, paragraph 5, which stipulates that an athlete competing for the Republic of Croatia and winning a medal at Olympic Games, Paralympic Games and Olympic Games of the Deaf is entitled to a scholarship grant for university studies, in 2017 for the first time, funds to subsidize tuition of top athletes at higher education institutions were provided by the state budget of the Republic of Croatia, and for academic years 2017/18 and 2018/19 the Central State Office for Sport invited applications for tuition fees to top athletes at higher education institutions. In the educational programs of secondary education there are classes for athletes (grammar school program), in which teaching is

adapted and a mentoring approach is provided for the daily obligations of student athletes. Students earn points for their athletic success based on which, along with their school marks, they win the right to enroll in special classrooms for athletes. The criteria for this are set by the national sports federations. However, athletes' education through elementary, secondary school and higher education is adapted in the high school system, in the athletes' departments, while the rest of the education system requires additional adjustments to support athletes [NATIONAL SPORTS PROGRAM.pdf \(gov.hr\)](#)

So far the role of the educational manager in clubs does not exist.

Serbia

There are not many dual career programs led by the government in Serbia which could contribute to better understanding of the issue, offering useful practical solutions on how to balance involvement in both sport and educational endeavours.

On 5 February 2019, Serbia joined the Erasmus+ Programme as a Programme Country and it is fully ready to join 2019 Erasmus+ Collaborative Partnership proposals in dual career of athletes. On May 20, 2019, at the City Hall of Nis, Serbia, the EAS role and activities in dual career were presented to the City authorities (Marina Kostic, Assistant Mayor for the information and public relations; Goran Milosavljevic, Assistant Mayor for the economic development; Marija Ciric, representative of the school administration of the Nisava Administrative District; Jelena Cvorovic, representative of the Regional business chamber for the sector of dual education; Vesna Stojanovic, representative of the local office of the Ministry of education, science and technological development) and representatives of the Faculty of Sport and Physical Education of the University of Nis (Mirsad Nurkic, PhD, Vice Dean for education; Nenad Stojiljkovic, PhD, Vice Dean for the science and international cooperation; Petar Mitic, PhD, assistant professor of Sports psychology; Nemanja Stankovic, PhD, assistant professor of Combat sports; and Mladen Zivkovic, PhD, assistant professor of Anthropomotrics). During that meeting EAS President Prof. Capranica was able to disseminate the activities of EAS in the recent EU projects like AMID, EMPATIA, EU-Media, DONA and STARTING11. As a result of that, the University of Nis will apply for membership within the EAS network, as the first Serbian institution. Initiated by the conference of EAS held in Falun the Faculty launched the first activities related to the dual career of athletes. During the XXII International scientific conference „FIS COMMUNICATIONS 2019“ (17 – 19 October 2019) organized by the Faculty, a panel discussion with the topic “Dual career of athletes” was held. Special guests

of that panel discussion were Dejan Savic, Head Coach of Serbian water polo national team and former water polo player, and Predrag Danilovic, president of the Basketball Federation of Serbia and former basketball player. During his playing career, Dejan Savic won two Olympic bronze medals (Sidney 2000 and Beijing 2008) and one Olympic silver medal in Athens 2004. Under his leadership as head coach the Serbian national team won the 2016 Olympic Games, the 2015 World Championship, three European Championships (2014, 2016 and 2018), and six World League titles. Predrag Danilovic also had a great sports career. With the national basketball team, Danilović won the gold medals at the the 1989 Euro Basket, 1991 Euro Basket, 1995 Euro Basket and the 1997 Euro Basket. He was also a member of the silver medal winning national team of Yugoslavia at the 1996 Atlanta Summer Olympics. After his successful sports career, he started to work as administrative staff. From 2007 to 2015 he served as the president of Basketball Team “Partizan” and from 2015 to present he is the president of the Basketball Federation of Serbia. This panel discussion was one of the first activities in Serbia devoted to the dual career of athletes. This was an extensive discussion with a lot of questions from the audiencem which is a certain clue that this field has potential for development in Serbia. The Faculty of Sport and Physical Education in Nis acted as a leader in the development of the dual career of athletes in Serbia with a distance learning master studies program for athletes.

Belgium

The "Universitaeit Vrije Brussels" masters' program in “Physical education“ has a study course named “Elite Sport Career“. Athletes who participate in this program can decide on their own which courses, containing physical activity to choose at the university and to adjust to their own training and sport events. Furthermore, they have special classes in professional sports, dual career, sports psychology, biomechanics, anatomy, management and some more, to help them gain knoledge and qualification in their specialization as well as for a possible career as trainer/manager/coach later (EU Guidelines on Dual Career of Athletes, 2012).

The Belgian program “Study and Talent Education” supports student-athletes to reach their educational an sporting goals but also helps them get ready for a successful career after elite sport (Sotiriadou & de Bosscher, 2013)

Czech Republic

The Czech Republic, Estonia and Hungary focus on reforms in the field of education and sports, encouraging young people to watch and take part in sporting events and to be informed about sports regularly. In this context, the adoption of normative acts that will lead to the establishment of a framework of national guidelines on double careers will have the effect of regulating those concrete measures regarding the education, work, health and financial provision of athletes. At the same time, ensuring the continuation of high physical activity levels and national policies in this area, as well as continuously promoting the regular exchange of information and good practice on the role of physical activities to improve the health of the population, are also objectives that can be implemented at national level in close synergy and cooperation with the World Health Organization (WHO) (Budevici-Puiu, 2018).

Denmark

In Denmark, athletes who are part of “Team Denmark” can remain at school for an additional year and get financial support when studying at university. What is more, Danish elite athletes are provided with sports psychologists and a career counsellor in the course of a mentoring program conducted by the organization “Team Denmark” (EU Guidelines on Dual Career of Athletes, 2012; Team Denmark, 2022). Further, “Team Denmark” can give students in secondary schools a sporting approval so that they gain more flexibility and understanding from the school as well as additional training sessions. “Team Denmark” also have information meetings where student-athletes can learn about different education opportunities and how to manage a dual career, they can receive information about the local and regional services and gain inspiration for personal development (Team Denmark, 2022).

England

In England, the TASS (Talented Athlete Scholarship Scheme) and its Scottish equivalent of award-winning students have been established to take the lead in

supporting dual careers nationally. These organisations are funded by national government and are partners between government, athletes and educational institutions.

In the UK, the Athletes' Careers and Education (ACE) programme, established in 1999, provides not only careers advice but also personal growth services, balanced lifestyles, educational guidance, transition support and social psychological support [*]. Launched in 2003, TASS has built on this system and now forms a team around the individual athlete, addressing different aspects of their development and wellbeing.

Finland

Combining studying and goal-oriented sports is challenging. This thesis looks at the path of successful high-level athletes to the top and how they have experienced the combining of two careers. It looks at the experiences that athletes have of combining sports careers and studies at different levels of education and what they have found challenging and what has been, on the other hand, successful. On average, sports careers at the top level are short, and after the end of their careers, many athletes find employment in jobs corresponding to their studies. The best way we can understand athletes' experiences is if we are also aware of how to develop into a top athlete.

The data of the study consists of seven interviews. Seven Finnish athletes who have had successful sport careers and who also have had varied study experiences were interviewed for the purpose of the study. The study data was collected in autumn 2021 through a thematic interview. The interviews were recorded and then transcribed. A phenomenographic approach was used in the analysis of the data.

Based on the research results, athletes had similar experiences combining study and sports in the comprehensive school. Combining these did not require any special effort. However, the sports-oriented classes in the comprehensive school provided an opportunity for morning training. In the high school, they had different experiences. It was possible to combine sports and studies in a regular high school, but it required initiative and support from the school authorities. In sports schools, it was easier to combine the two careers, and the school provided significant support to promote athlete careers. In higher education studies, combining sports and studies was considered challenging. In particular, courses requiring attendance slowed down the completion of studies. However, the interviewees agreed that studying and graduating is possible during

a sports career. Studying was seen as a counterbalance to the sport. Sports academies aim to simplify the combination of sports and studies. However, not all athletes knew how to take advantage of the services provided by sports academies because most of them were unaware of their existence. In the future, the activities of sports academies should be developed so that they are even more efficient and accessible to athletes.

France

As a good practice, the French Ministry of Sport created the public body INSEP, which applies a labelling system to regional sports centers to encourage the development of individual athletes in their sport and for future careers. It is supported in this by 17 Regional Elite Sports Centres (CREPS) and ensures that there is a dual career person in each sports federation. Such labelling leads to the creation of a network of accredited centers that improve collaboration and communication between stakeholders, as well as athlete mobility. INSEP uses labels - bronze, silver and gold - to indicate the quality of each CREPS in terms of the facilities and services it provides.

Germany

The use of digital tools and media are a very active topic in German sports education. The recent “DigitalPakt Schule” aims to lay the financial foundation for the digitalization of German schools (Bundesministerium für Bildung und Forschung, 2021). The net effect on sports education so far mostly consists of recommendations for the use of digital media in sports classes. Applications that are proposed include video analysis, video demonstration and the use of audio recordings (Greve et al., 2020). In detail, progress and available opportunities like learning platforms differ enormously between the various Bundesländer.

The Deutsche Sporthilfe is a very big and important association for German athletes. They support around 4000 elite athletes and provide between 10 and 12 million euros for them per year. Depending on their success Sporthilfe offers different categories of financial promotion. Athletes who were very successful get financial support for around three years after ending their sports career. Furthermore, Sporthilfe offers a studentship for getting an education or a job as fast as possible, provides mentorship for future guidance and personality development, and a career-portal that informs about

possibilities for their future (Sporthilfe, 2022). The Sporthilfe start-up academy is a foundation established in 2018. It helps athletes set their own business. They offer workshops teaching the basic and most important knowhow for the development of a business idea and its successful realization. They support around 20 athletes per year (Deutsche Sporthilfe, 2022).

“Eliteschulen des Sports” are German schools which combine education and sports and make it possible for student-athletes to pursue these two careers without much effort. They are always near an Olympia Sports Center and offer apartments for little money to save as much time and resources as possible. Their motto is about how to become world champion and graduate at the same time (DOSB.de, 2022).

“Sport mit Perspektive” is a guideline for young German athletes, coaches and parents and should help in difficult situations of the athlete's career. It informs about different paths for the future and how to make the right decisions in all situations (Thomas, Benthien, & Brand, 2020).

The six steps for a dual career from “Sport mit Perspektive!” are: Determine your status quo; Set a goal; Describe cornerstones; Make a plan; Think about: what else is to be done?; Analyse the outcome. One big role model of “Sport mit Perspektive!” is the Austrian association “KADA”.

The “Deutsche Olympische Sportbund” is the umbrella organisation of the German sports and is connected with the national Olympic committee of Germany.

The association supports and advises elite athletes concerning education and employment during and after their sports career (DOSB.de, 2022). The DOSB designed a program consisting of 10 points they want to realize until 2028. These are: the career guidance at the Olympia centers; the cooperation between schools and elite sports; the ability to coordinate university and sports; the compatibility of employment and sports; national institutions for sponsorship; sponsorship for athletes after retirement; dual career in elite clubs; public relations concerning dual career; personality development and dual career; the teams of specialists for dual career of the DOSB (DOSB, 2016).

Italy

In Italy there is no formal national policy for supporting the dual career, but several agreements and activities have sprouted from partnership between different stakeholders. It is important to underline that these initiatives are not managed and developed at national level. The scope of the policy is reduced to the regional, local, particularities of the sports and educational systems.

As a good practice for supporting dual career in Italy, we can point several projects financed by the European Commission:

“GEES: Gold in Education and Elite Sport” - The general objective of the project is to implement the European Guidelines on Dual Career, especially focusing on the main competencies to develop a DC and a life after sport and on the quality of services offered to athletes for DC. They found five main competences: - Life management - Emotion and mind management - Self-awareness and goal setting - Career Planning - Networking

“Developing an innovative European Sport Tutorship model for the Dual career of athletes” - The overall objective of the project is to make Europe and society stronger by supporting social dimension in European higher education (talented and skillful human resources). The project also aims to contribute to the process of ensuring high quality education to athletes, parallel to their sports career, and thus to integrate athletes into the labor market after their sports careers.

“B-Wiser” - The initiative aims to support athletes and former athletes in the management of their post career.

FIBA (Badminton) – “#Project Youth #20e24” - FIBA project complies with the model of sport talent development and scouting, implemented by other important federal projects. It includes talented young athletes, selected by national coaches, who move to Milan for training at PalaBadminton, the technical centre for Olympic preparation. Through a common program, the project tries to develop athletes’ talent providing them different services: training in a high-level sport facility; massage room; physiotherapy; gym; the possibility to have personalized diets; room for studying and entertainment.

FIBS (Baseball and Softball) - “Italian Accademy of Baseball & Softball” - The project wants to promote and sustain the technical, educational and cultural development of young talented athletes of baseball and softball and to improve the Italian heritage of these sports

FIC (Rowing) - "University College of Rowing" - The College University of Rowing initiative offers the possibility to talented athletes both studying and training at the same time. The dual career proposal complies with the American college model, and the formal collaboration between the involved sport organizations provides various services such as: economic benefits for university taxes, room and boarding; the possibility to live in the University College; personalized study path with flexible lessons, exam and a tutor. Ad hoc training with professional equipment and qualified technical assistance - medical and psychological support.

FIDAL (Track and Field) - "College Mezzofondo Insubria Varese" - The aim of the project is to support gifted University athletes to continue their training activity at the best technical level possible into the National Federal College. In collaboration with the University Sport Centre (CUS), it is a prerequisite for enrollment in University and becoming an athlete with a status of "national interest".

Good practices can be referred to in the Handbook of best practices in dual career athletes in the countries participating in the DC4AC project Final version, May 2017. [Handbook of Best Practices in Dual Career of Athletes in DC4AC project participating countries \(europa.eu\)](http://europa.eu).

North Macedonia

Research on good practices concerning dual careers in North Macedonia was performed thoroughly. Nevertheless, little information was found. We searched through all North Macedonian volleyball teams, volleyball players and their sponsors, the National Olympic Committee, we checked in google scholar for "dual career North Macedonia" and "sports and education North Macedonia". Furthermore, we checked every single university and sports school of North Macedonia without any information about dual career offerings or support for studying athletes. In conclusion, public information and availability of such opportunities clearly appear to be lacking.

Poland

A good practice in Poland encouraging dual careers is that scholarships are provided through the government or sports federations and qualified athletes receive additional employment rights and benefits. Elite athletes in Poland are not automatically admitted to higher education, but those who achieve "outstanding results" can gain admission, with

the permission of the Ministry of Education and Sports at the request of the Polish Sports Organisation.

Portugal

Portugal is considered a state-centered country where the responsibility is placed on High Education Institutions (HEIs) to provide programs and support to student-athletes through legislation, statutory requirement, or government regulation.

Governmental efforts are also made to improve the sports and education support. As an example, in 2016, a pilot program called "Support Units to High Level Sport" was created to support student-athletes in basic and higher education, improving the communication between schools and clubs/federations to help the student-athletes in several aspects of their lives. In 2017, the pilot program expanded to five schools and nowadays the aim is to spread it to 16 different schools. Although this program is focused on basic and higher education, the political importance of this topic is increasing.

The Portuguese legislation differs from HEI to HEI as well as the student-athletes' duties and rights. To illustrate, when analyzing the student-athletes' duties in some institutions, the student who is representing the HEI in university sports events is considered a student-athlete, while others competing in federation competitions are considered only athletes. Despite those differences, the benefits from being a student-athlete do not vary much from institution to institution.

HEIs provide, generally, the following rights: 1) Priority in choosing schedules and classes; 2) Justification for absences from classes, or other teaching activities; 3) To require examinations in the special season; 4) If the period given to develop a paper or its due date coincides with the day of the sporting event, the postponement of this date; 5) To request an exam in two curricular units, at a special time of the academic year in which the right is recognized.

In addition, an interesting study comparing the dual support careers for junior athletes in different European countries (including Portugal) is given in a document below: [An international analysis of dual careers support services for junior athletes in Europe \(dcja.eu\)](https://www.dcja.eu/en/publications/an-international-analysis-of-dual-careers-support-services-for-junior-athletes-in-europe)

Spain

Career Assistance Program (PROAD), passed by the Spanish government (The supreme council for sports and Ministry of culture and sport) facilitates the dual career. There were several papers published regarding the efficiency of the aforementioned initiative. Most of the athletes perceived the dual career as difficult. Their most significant barriers are related to time management. The PROAD athletes and the non-PROAD athletes encountered the same barriers to studying. In general, the PROAD program seemed to have a positive effect on the academic level an athlete achieves. The athletes enrolled in the PROAD were more informed than the non-enrolled athletes. PROAD athletes were more proactive in demanding help and they had a closer relationship with the Spanish Sport Council than the non-PROAD athletes. Sport psychologists should reinforce the athlete's strengths, and they should seek the opportunities the sport context provides to athletes. The barriers could be minimized by adopting certain strategies. The PROAD program seems to be useful in terms of providing information, in ensuring elite athletes work or study before the end of their sports career, in making them responsible and autonomous, and in being more active (Conde, Martínez-Aranda, Leiva-Arcas, García-Roca, & Sánchez-Pato, 2021).

One of the similar projects, was the Erasmus+ project Development an innovative European Sport Tutorship model for the dual career of athletes-ESTPORT. Several researchers analyzed the effects of such a support program and reported that the implementation of support programs for the student-athletes through models that prove effective for the adequate conciliation of sport and studies could be presented as an opportunity for countries which, although aware of the problem, do not have specific measures due to legislation and different support policies. The main pillar would be an effective tutoring system based on communication and designed for the development of a dual career for student-athletes, which would facilitate individualised attention. An action protocol could be created for the incorporation of student-athletes in support programs where certain conditions could be taken into account to indicate whether the student-athlete is a potential academic “risk” (depending on their sport discipline, gender, etc.), which could help anticipate potential academic problems. In practical terms, the model works: (1) to detect and identify the athletes' needs; and (2) to guide and advise future work, simultaneously taking into account the particular sport and academic career. It is necessary to emphasize that the monitoring of incidents is vitally important in the model so that they are either resolved quickly or transmitted to the corresponding

department or tutor. Examples of such incidents may be: adaptation of exam dates to training programs or competitions; the management of class absences due to attendance at competitions; various administrative procedures; or the need to access and interpret information on academic aspects. Therefore, the methodology used in this program helps student-athletes to reconcile their education and professional careers in the best possible way and according to their needs (Conde, et al., 2021).

Switzerland

In September 2017 the Swiss Olympic Committee and Swiss universities signed a declaration to assist elite athletes looking to combine studies and sport. In that way, the athletes were enabled to pursue university degrees while studying part-time, in order to continue with their elite sports careers.

Specifically, the declaration says that individual universities are to develop models for part-time studies in as many course areas as possible. In addition, athletes are to be offered special courses for semester examinations, as at that time 37% of Swiss Olympians studied at University. [Swiss Olympics unveil dual career plan with support of Swiss universities \(fisu.net\)](#)

There is an interesting study comparing the Dual career opportunities and environment in three European countries – Switzerland, Denmark and Poland, outlining the specifics of each country and at the same time analyzing the differences between them by comparison of the results derived from each approach. [\(2\) \(PDF\) A cross-cultural comparison of dual career environments for elite athletes in Switzerland, Denmark, and Poland \(researchgate.net\)](#)

Romania

Romania, as a country has a great sport tradition. In terms of early education Romania has more than 80 High Schools with special sport programs, most of them directed to one or two performance sports only. They accept to support young athletes, providing flexible school programs regarding athletes' participation in training camps and/or competitions. After graduating high school, athletes choose to apply for a university degree, mainly in Physical Education and Sport. There are 23 Faculties of Sport and Physical Education, quite evenly distributed in all main regions of the country.

According to the Government Decision 1004/2002 there is no examination at the enrolment in higher education (Sport and Physical Education faculties) for athletes who

achieved international level of performance and their studies are free of taxation. Two special orders of the Ministry of Education (order 5159/1998 and 4799/20102) establish that: a baccalaureate exam special session will be held for the high school graduates selected in the national teams and preparing for the Olympics or other major international sports competitions; a prolonged or open examination session (higher education) is suggested for performance athletes engaged in major competitions; all athletes have free accommodation in student campus.

The Romanian Olympic and Sports Committee has a long-term collaboration with ADECCO in implementing a project called Athletic Career Programme (2012-2020) for offering vocational formation to athletes withdrawing from high performance (Oros, 2016).

Sport – best practices:

The Sport and Physical Education law (69/20003) and a government decision (1447/2007 4) stipulate that the State must provide appropriate conditions for training and competing, also sport equipment and free medical services. There are 9 state-financed regional training centers which are fully dedicated to performance sports for talented and elite athletes; daily allowances and other incentives are provided for performance athletes that are part of national and Olympic teams.

The Ministry of Youth and Sport of Romania is conducting the Pierre de Coubertin Program for all national sport federations; the new action plan addresses issues of educational, social and economic aspects of sport, public health, social inclusion, volunteering, funding, social protection of athletes, the environment, highlighting the role of sport for society.

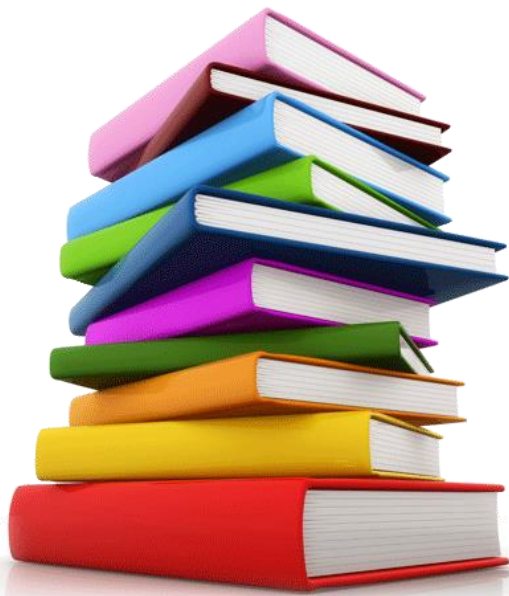
Social integration – best practices:

As we already mentioned, in Romania there are not too many concrete initiatives and legal framework regarding dual career of athletes. However, some support measures and actions are worthy of being mentioned: athletes who have won a gold medal at European or World Championship and those with any medal in the Olympic Games, have the right to request a life annuity at their retirement (law 69/2000); the annuity is paid by the Ministry of Youth and Sports and comes without taxation; the Professional and Amateur Football Players Association in partnership with National Trade Union Bloc and National Authority for Youth and Sports has conducted a project of social security and professional re-conversion of athletes (2009- 2011) called E-learning for social partners;

project targeted: active athletes, athletes near the end of their career and retired athletes, in all sports, regardless of gender; the same Professional and Amateur Football Players Association has initiated and developed a project named Academy online (2010-2012); actually, a platform for distance learning dedicated to former football players, through which they can specialize in sport-related areas as sport marketing, sport management, by covering 10 course modules; a pilot project preparing more than 20 senior athletes as entrepreneurs was in action, as a direct result of the DC4AC project, with the implication of Romanian Rowing Federation.

IV.2. Study of good practices from scientific literature

A dual career is one of the answers to the question “What happens after the end of my sports career?” A question each athlete faces sooner or later, since a sports career is



restricted, on the one hand by age limits, on the other by the extreme physical loadings every athlete experiences and the ability of the human organism to react to them. The achievement of top sport results engages elite athletes in continuous daily physical exertion, which according to Stambulova & Ryba (2013), places them in conflict with the education tasks they have to do. This type of conflict leads to the necessity of making a choice, which Stambulova et al. (2015) explain as

a dilemma between two alternatives - whether to combine sport competition activities with education, or to do only sport competition activities. However, Grove et al. (1997) believe, that athletes choosing to practice only sport take the risk of experiencing difficulties at a later stage in their life, and when they complete their sports career, they could face many problems, even inability to adapt to their new way of life.

The combination of sporting pursuits alongside education or vocational endeavors (i.e. a dual career) is considered reliable in coping with adversity, preventing mental health problems or burnout, and providing a future perspective for athletes. Aquilina (2013),

Ekengren et al. (2020). Additionally, athletes who undertake a dual career are often more prepared for athletic retirement and experience a more successful transition out of sport in comparison to retired athletes who followed an exclusively sport pathway Knights et al. (2016). In light of the support for the benefits of undertaking a dual career, within Europe there has been a significant increase in dual career provision, with programs developed to provide an integrated dual career pathway for many athletes.

A dual career is defined as the reconciliation between education and sports. Studies report that a well-balanced dual career can help maximize the contribution of athletes to society, building on the capabilities athletes have developed during their careers, and can be seen as good preparation for them to become potential role models in society. European Commission, (2012), North & Lavalley (2004), Stambulova et al. (2015). The premise is that a balanced dual career provides better opportunities for student-athletes, society, and the labor market, giving way to professionals with leadership skills, teamwork ability, work ethic, ability to make decisions, time management capability, and the ability to take responsibility for themselves and others Ferrera et al. (2017).

However, the student-athlete definition is not well consolidated, being differently used between EU countries. The same occurs with the policy and programs for a dual career across Europe. Even with the increase of interest around the topic, not all Member States (MSs) have national policies to support dual career. The European Commission (2016) proposed a Europe-wide framework, but it is unclear which environments are the most effective in supporting individuals in their athletic, academic, and personal development Morris et al. (2021). Although it is a work in progress, there is "an urgent need for clear terminology and interpretation across Europe for this new policy domain" European Commission, (2016). The opportunity to combine sports and education increases the motivation to pursue a professional and a sports career, facilitates life transitions and improves athletes' quality of life. Aquilina (2009), European Commission (2016), Knight et al. (2018).

The major aim is the successful combining of two basic activities, which has to lead to a final positive result. However, according to De Brandt et al. (2018), the balance between training and education is a challenge which requires time, effort, motivation to deal with a busy schedule, flexibility when changing plans, organization, prioritizing tasks, personal life issues and deprivations. A dual career with students could be defined as a dynamic process, suffering constant necessary changes. That is why, it is important but

also hard. In analyzed interviews of Olympic level athletes with a dual career, it is revealed that they adapt more easily and experience less difficulties in finding their place in society after leaving sport, compared to athletes, placing sport above everything else (Torregrosa et al. 2015).

According to Stambulova & Harwood (2022), there are several types of students: 1) sports students, who dream of high sports achievements, but later in time they often find their dreams unrealistic and invest more of their energy in education. By means of a dual career, they continue practicing their sports activities for social reasons or for love of the game or other sport; 2) sport students who accept sport as their passion and education as a necessity, so in their life they focus mainly on sports training and competitions, while at the same time they do what is necessary to receive good education; 3) sports students who try to find an optimal balance between the two careers.

Balance in a dual career is defined as a combination between sport and studies, which allows sport students to achieve both their sport and education goals, to lead fulfilling social and personal life and to maintain their physical and mental health. A sports career development is dynamic and changing fast. Some athletes manage to reach top sport levels, others retire from sport prematurely for various reasons, or naturally with the advance in age. In general, a sports career goes through different stages of development. These are also the stages of human development – from childhood, through adolescence to mature age (when in most cases the sports career is terminated).

Scientific research shows that “10 000 hours of purposeful practice are needed for an expert level to be reached” Ericsson et al (1993). This is an enormous period of time for making important decisions. Good balance between sport and education activities involves some personality factors such as character type, motivation, self-discipline, organizing skills (planning and prioritization of tasks) and external support – mentors (education managers), communication between institutions (federations, sports clubs, educational institutions), compromises, deprivations, and others. The solution to the problem is in the creation and constant upgrading of suitable programs for the development of dual careers for young athletes, adapted individually – according to sport specifics, personality traits, the sports calendar and the school curriculum. But, above all, every competitor must have conscious personal motivation, in order to succeed in both directions – education and sport.

This requires the forming and development of separate practices for implementation of sport competition and educational activities at the same time, providing the future professional realization of an athlete; and their subsequent transformation into sport federation policies or state policies - a prerequisite for sport development and social development. The introduction of policies and practices aimed at the realization of athletes after their retirement from sport competition activities is a mark of responsibility to the individual competitor, to the educational institutions and to society. Such actions largely reveal the social function of sport. The practical application of this function could be explained as providing a gradual transition from sport to the labor market. While in historical terms sport developed as a necessity, a natural way for active relaxation in connection to the professional activity of an individual, at present it is an independent sphere of human activity considered as a profession. It is a profession which in most cases could be practiced up to the age of 30 – 35, and after that it becomes necessary to search for a new professional realization. This is the major reason for the introduction of the term dual career, as an approach for parallel personal development in a top level professional sport activity and an educational activity connected with an athlete's future professional career in different social spheres.

In the specialized literature there are many theoretical concepts about the dual career. The increased research interest escalated further after the publication of the strategic document “EU Guidelines on Dual Careers of Athletes” in 2012. The efforts of the expert group for “Education & Training in Sport” result in the common political framework and guidelines for actions supporting the dual career in high-performance sport. The term “dual career” in sport includes a wide range of services, aimed at finding a balance between high-sport performance, education and career development (European Commission, 2012). We find a broader view on the subject in the concept of Aquilina (2013), Lally (2007), Carless and Douglas (2013), Henry (2013). The authors define a dual career as the combination between sport and education, or sport and work, and the benefits they bring to the athletes in supporting the balance between sport and non-sport engagements in their preparation for “life after retirement from sport”. On the other hand, the general picture of the theoretical interpretations on a dual career in sport is mostly connected with the challenge of being an active athlete and the importance of the support needed to manage a dual career. In this regard, authors such as Parkp et al. (2013), Torregrosa, et al. (2015) consider that the complex development of young and

talented athletes is their own right which can be realized by combining a sports career with educational activity giving them an opportunity for future professional realization after the end of their sport career.

In our review of specialized literature on dual careers we found a great variety of documentation and research works on the problem. Viewed on a large scale and from management (marketing) perspective, the development of children's and youth sport and its transition to high-sports performance in the national sport systems is determined by the complex influence of different factors – national legislation, the existent sport infrastructure, financial security, efficient financial policy, and others.

Orientation towards elite sport and turning this activity into a main occupation, according to D. Ilieva (2016), is a major form of professional sports career, which as mentioned above, is realized at an age which is in contrast with the corresponding education age. In terms of marketing and management, as can be seen from the figure presented, there is no prospect of professional realization after the end of a sports career.

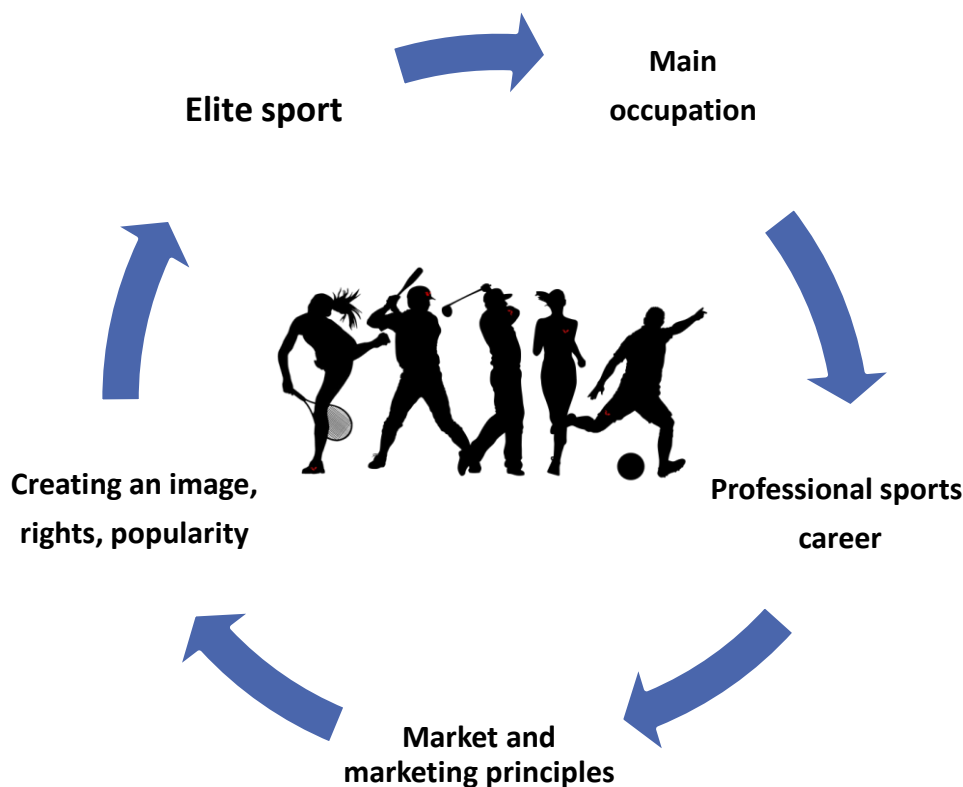


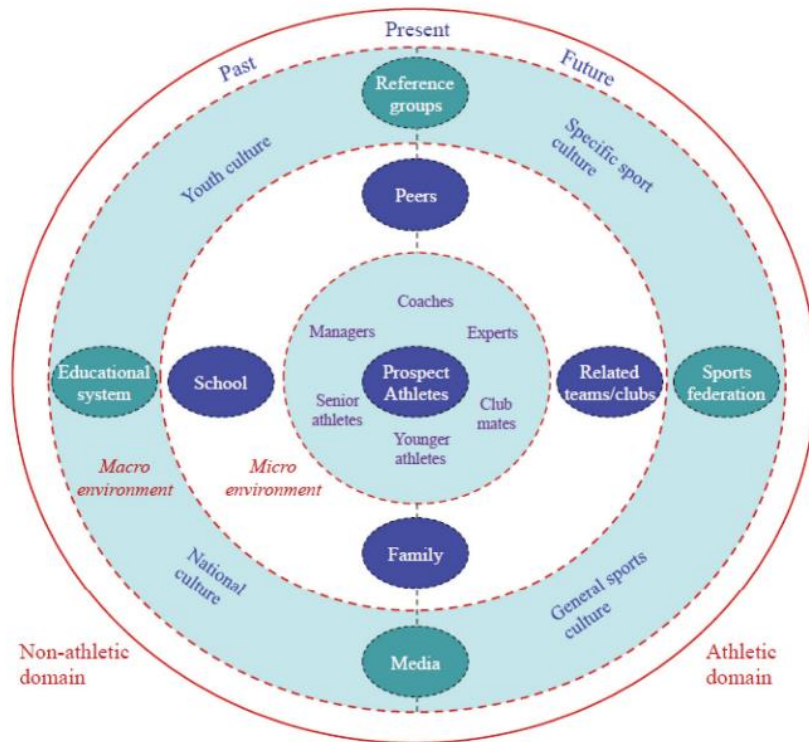
Fig. 6. Interrelation between elite sport, management and marketing

In addition, D. Ilieva (2016) highlights as a major task of contemporary sports systems the need for athletes to receive a combination of *specialized services* such as: 1) access to modern sports infrastructure, appropriate equipment, safe conditions for sport preparation and competitions; 2) providing opportunities for year-round competitive performance against prominent contestants, organizing training activities using the latest scientific and technological achievements; 3) organizing and conducting sports preparation camps in most appropriate climatic, infrastructure and resource condition. Also *non-specific issues* such as: 1) an easier access to education and receiving professional education in higher schools; 2) access to programs for social re-adaptation, including opportunities for career development after the completion of competitive activity (coaching career, occupying managerial positions, consultants, experts, assistance with finding a job, and others); 3) receiving various social and economic privileges during and after the end of a sports competition career, directly related to the development of policies and practices in dual careers.

To the specific services and issues mentioned by the author above, we could add a different point of view on the problem. According to Capranica et al. (2022), there is a need of education structures for the parents of talented children, who on their part have

to provide conditions for combining the sports career and educational activity of their children.

Fig. 7. A model for the development of a dual career after Linner et al. 2017



In addition to the view point of the author quoted above, in the specialized literature we find a theoretical model for development of a dual career, presented in figure 7, including a wide range of factors, distributed in two levels – micro and macro level (Linner et al., 2017). The model summarizes the social environment factors whose interaction determines the choice of an athlete and the potentials for career development. Similar to Capranica et al. (2022), the role of the family is analyzed, also the peer environment which in the period of adolescence and later is of major importance in shaping the attitudes and behavior of an individual.

The social environment and support, concerning the choice of a dual career, are among the factors derived by López-Flores et al. (2020), who conducted a systematic study focused on dual careers of adolescent athletes, the existing resources and the roles of social support providers. Applying content analysis of 26 specialized articles from magazines published between 2014 and 2020 the authors made a number of findings. One of them is related to the fact that similar types of research works, especially studies

dealing with specific target groups, are still very limited and there is a clear necessity for studying the existing systems, services, and factors for support of talented young athletes. Another important point in the research is the conclusion that adolescent athletes also face obstacles and challenges in order to balance between two major commitments – sport and education, and have to consider a number of factors necessary for overcoming these problems.

The analysis and interpretation of the research works above suggest that the adolescent and post-adolescent period in the age groups 13,14 to 19 is a key period for choosing and support of a dual career. Authors such as Pummell et al. (2008), Stambulova & Wylleman (2014), Baron-Thiene & Alfermann (2015) bring out and specify the reasons, because of which precisely this age period could be considered as important, especially the age group 15 to 19. The main reasons they point are the following:

1. High risk for the athletes to drop out of sport;
2. Failure to balance sporting and non-sporting commitments.
3. Inability of the athletes to manage their time.
4. The age and psychological characteristics predetermine the lack of a clear vision for development.
5. The transition from children's and adolescent sport to elite sport, considered as the most challenging transition period in an athlete's career.

In addition to the evidence brought out by the cited authors, we can present the conclusion of Condello et al. (2019) specifying that a sports career usually starts in junior age, a period approached in contradictory ways with reference to the educational policies of different countries, which necessitates the creation of dual career policies and practices.

The transnational research of Hong and Coffee (2018), involving 19 countries from 5 continents studied the organization of the transition period in the sports careers of elite athletes, analyzing the existent resources for management of a dual career together with the development of life skills. The authors found that most of the countries already have programs, services and practices to support the athletes in balancing their sport and non-sport commitments. However, that refers mainly to athletes competing at international level. Among the most important services, the authors pointed the provision of educational, professional, personal and career development and also of services for support of life skills.

On the basis of a detailed theoretical analysis, Hong et al. (2022) specify the existing systems for support of young talented athletes (aged 15-19) and the role of the sports organizations in this process – the sports clubs and the national governing bodies in different European countries. The authors make four basic conclusions:

1. The most popular form of support offered to talented athletes aged 15-19 is financial support.
2. The existing state and institutional support is not limited only to that age group of athletes but is quite varied, including a larger age scope.
3. Some higher education schools offer a complete support package for outstanding athletes, while others provide only educational and financial support.
4. There are very limited systems for support of a dual career at secondary education level (aged 15-17).

The cited authors identify the measures to support a dual career of athletes in two separate levels – macro and micro level, similar to Linner et al. 2017, but they also specify the concrete institutions involved, which are presented in figure 8.

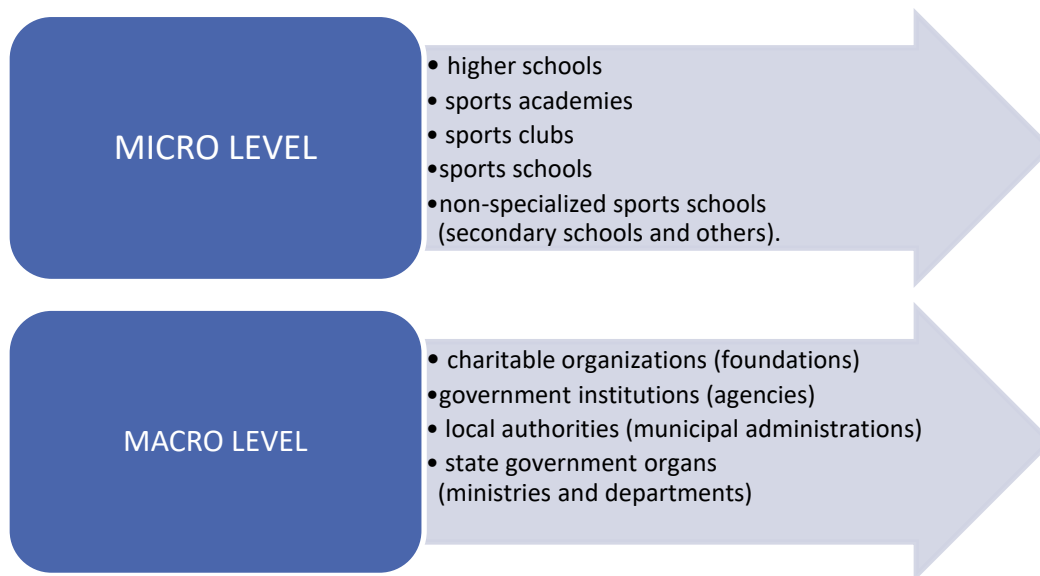


Fig. 8. Institutions, supporting a dual career (macro and micro level) after Hong et al. (2022)

Focusing the literary review more precisely on the capabilities of junior athletes – high school students (volleyball players) to combine their sport and education activities, we must note that elite sport is also professional sport, which takes a large part of the athletes' personal time for training and competition activities (Vilanova & Puig, 2013). Reaching a professional level of sport preparation requires a great amount of dedication

and hard work (Wylleman et al., 2013). This also coincides with the period of high school education. A period, favorable for the development of sport talents but also crucial for taking an important decision – in what area of education the adolescent athletes (volleyball player) should be guided in the secondary school, in order to continue their education at university and to have a successful realization after they complete their active sports career. According to the model of Wylleman & Lavellee (2004), the adolescence period - early maturity period, is pointed as the optimal time for the development of a high level of sports career.

To achieve a satisfactory outcome in their academic and sports career, some student athletes spend 30 hours per week studying, plus 20-30 hours of training. This dedication has immediate implications on the lifestyle of the individual, affecting their relationships and well-being. Due to these factors, the major concern is to prevent a dropout of sport or higher education, providing conditions for a complete sport and study career. To achieve that goal, student athletes should be supported by institutional and government policies. A dual career is the tool enabling athletes to prepare for life after their sports career is over. What should the sport community do? It should guide governments, sport structures and education institutions to make better decisions in the management of sports and education.

A research of Aquilina (2013) in European context provides evidence on the successful dual career development of student athletes. The opportunities and limitations which the competing student athletes have to face are pointed, and conclusions are made that “a sport and an academic career are not only compatible, but they complement each other” Vidal-Vilaplana et al. (2022). One of the first attempts for realization of dual career practices in Bulgaria was embedded in the idea of the structure and functioning of sport schools, the first of which was created immediately after World War II. The State School of Physical Culture and Sport was opened in the town of Plovdiv in 1949, and in the same year it was transformed into the Technical School of Physical Education and Sport. The main aim of this educational institution was to provide an opportunity for combining active sport training and sport competition activities with education activities, focused on forming knowledge and skills for future professional realization. In the following years to the present day, sport schools in the country undergo a number of changes in terms of structure and functions. Until 1990 their number was 36, after that they were reduced to 9, and at present they are 21. Some of the big changes in functional aspect are in

consequence to the introduction of the sport term “dual career” in the White Paper on Sports in 2007. It is an expression of EU support on the athletes’ rights of holistic development through the parallel realization of a sporting and an academic career. European Commission (2007, 2012, 2016, 2022); European Parliament (2015, 2017, 2021). In effect of the indicated European trend, in 2009 changes were made to the Law on Physical Education and Sports and the Regulations for the Implementation of the Law on Physical Education and Sports from 2009. According to the changes introduced by the newly created Ministry of Youth and Sport (MMC, 2006), students in sport schools can acquire one of the following three professional qualifications “Assistant coach”, “Assistant fitness instructor” and “Organizer of sport events and championships”, giving them the opportunity to practice the profession after graduation.

These official decisions about a dual career provide practical opportunities for combining “high sport performance and education”, according to the EU Guidelines on dual careers of athletes - recommended policy actions in support of dual careers in high-performance sport, (2012). With reference to the institutions involved, this is a very good current approach for smooth transition from one stage of development to another, as pointed by Lopez-Chamorro & Simon, (2018). On the basis of a research organized by the EU (2016) and on the present study of literary sources, we can state that, in order to find an efficient working solution of the dual career problem, there must be interaction between all parties involved. Finding the correct solutions for the successful realization of dual career practices is based on the sound organizational and functional interaction between educational institutions, i.e. the secondary and higher schools on the one hand, and the sports clubs and federations representing elite sport, on the other. A similar conclusion is reached by Teubert, (2009). In addition, Amantova & Abele (2020) state that the development of a dual career with adolescent athletes must be grounded on clear and direct communication, realized by following strict rules. Multi-aspectual support is also needed for its achievement, including communication and interconnection with the family and friends, the teammates, the club management, the coach and coaching staff, the school leadership, the teachers, and mentors. Last but not least, the national policy for development of dual careers is of crucial importance.

The development of suitable policies also requires creating a new type of specialists, whose functions are entirely focused on the practical application of the policies aimed at the establishment of good connections between the educational institution and the sports

club, and by the educational institution and the sport federation, respectively. These specialists could be called education managers. They should be persons who possess competencies similar to those of experienced lobbyists who consult and support talented young athletes in planning their near and future activities and in setting realistic goals. They must also be able to act as mediators between sport institutions and educational institutions, in order to adjust the athletes' schedules for the parallel implementation of their competition and educational activities. Knight et al. (2018) state, that talented adolescent athletes need support in combining efficient sport competition activity and quality education. Graczyk et al. (2018) define the process of coordinating sport and education activity, and worries about possible consequences, as a stress factor for many adolescent athletes. In the age of adolescence this can lead to problem behavior situations and sport overloading. In their study Nawrocka et al. (2018), state that supporting athletes to prepare for their career transition decreases stress and helps for the development of more complete personalities, which could lead to better sport results. They also add that the stakeholders must reach an agreement to work together in support of the athletes' dual careers with clearly defined goals and commitments. We find a similar statement in the report of the EC "Dual Career and Career Transition for Athletes; Common Position of the European Elite Athletes Association", analyzing elite athletes' opinions on the problem of a dual career.

To provide conditions for the realization of these activities and to spare athletes the burden of additional organization and mediation, it is necessary to bring out new professional competencies and to create a new type of specialists who can be called educational managers. In the early years of the sport realization of adolescent athletes they will take over the functions of organizing the dual career of the athlete.

IV.3. Study of good practices form realised projects

Project activity in the field of dual careers is widely covered by a number of European Erasmus+ projects. In the context of this study, implemented projects with results for the time period 2015 to 2021 are covered.

Collaboration between educational and sport institutions to promote dual careers of athletes is widespread in the projects analysed. On the one hand, the reconciliation of

education and sport, on the other hand, the pathways to fulfilment after the cessation of active sports activity.



A large part of the projects cover universities as an educational institution and a smaller part - secondary schools. Guidance for dual careers in modern lifestyles must start at an earlier stage, namely secondary school. Sporting activity has specific aspects. But, the guidelines for developing the personality of a talented athlete are already set at school ("Dual career in education and sports" [Search | Erasmus+ \(europa.eu\)](#)). Proceeding from the requirements of school education and sports activity, the problems of coordination and time, organization and needs of student athletes are brought to the fore. A clear assessment of the stress of combining education and sport is given, and guidelines for reducing it are identified. The aim is successful performance in both activities. Guidance and options to prevent dropout from education or sport are also given. In the results of a study of 12 - 20 year old female volleyball players (DONA [Search | Erasmus+ \(europa.eu\)](#)), the fact that the acquisition of competencies to balance between education and sport, and preparation for the different transition periods in a sporting career, should start from an earlier stage (as early as secondary school), clearly emerges.

A significant role in supporting the development of the athlete's personality (the adolescent athlete) is played by the family - their understanding, support in personal development and the ability to balance education and sport (both at a high level). EMPATIA ([Search | Erasmus+ \(europa.eu\)](#)) is such a project - aimed at parents of young athletes. The idea is to increase their competencies in dual career issues, to have quality communication. The goal is clear - parents to be one of the leading factors in supporting the challenge of "successful results in education and in sports".

Consortia between different partners from European countries are working on projects with the focus on developing and putting into practice programmes and approaches to develop dual careers of athletes, as well as involving the educational manager as an important factor supporting this activity.

The elite athlete has an extremely busy schedule in terms of training and competition. But s/he is an individual who needs to develop - to receive an education that will be the basis for fulfilment after the sporting career is over.

The project activities build on the European Union's Dual Career Guidelines by creating a network of stakeholders to develop and implement innovative programmes (ICDC [Search | Erasmus+ \(europa.eu\)](#)). They are targeted at athletes and coaches. Collaboration between educational and sport institutions is actively sought. This cooperation is expressed in finding ways to reconcile education and sport - active communication between institutions; flexible training programmes tailored to the busy sport calendar; creation of online education platforms (Smart Sport [Search | Erasmus+ \(europa.eu\)](#); GOAL [Search | Erasmus+ \(europa.eu\)](#)) promotion of national policies for dual career development; seminars and training courses; meetings with employers, etc.

Different partnerships provide different perspectives to support talented elite athletes. Centralised sports training with vocational training (+DECA [Search | Erasmus+ \(europa.eu\)](#)), the use of digital technologies (GOAL [Search | Erasmus+ \(europa.eu\)](#)), innovative educational technologies (AFE [Search | Erasmus+ \(europa.eu\)](#)), language and vocational training, tackling unemployment and targeting employment (B-WISER [Search | Erasmus+ \(europa.eu\)](#)), mobility (AMiD [Search | Erasmus+ \(europa.eu\)](#)), STICK project [Search | Erasmus+ \(europa.eu\)](#), acquisition of competences, mental health as a factor in the development of dual careers. In some of the projects, the issue of mentoring (ESTPORT [Search | Erasmus+ \(europa.eu\)](#), ELITE-iN [Search | Erasmus+ \(europa.eu\)](#)) in academic and extra-academic structures is extensively addressed, as a key factor of support and guidance, coordinator in the actions of reconciliation of educational and sporting activities. A "Mentoring Handbook" has been developed and has been actually implemented in a "Mentoring Programme", the final product of an implemented project of students for students (Dual career in education and sports [Search | Erasmus+ \(europa.eu\)](#)). The skills and competencies of the manager are highlighted as leading to the development of the players (MindTheGap [Search | Erasmus+ \(europa.eu\)](#)), and emphasis is also placed on running workshops in different organisations in this regard. In the projects reviewed, attention is also paid to managers, coaches, and the leadership of sports clubs and federations. They are an essential factor in the development and management of dual careers of athletes. They provide support for athletes' academic and business opportunities, as well as pathways for the development of coaching staff (The

European Institute of Hockey – EIH [Search | Erasmus+ \(europa.eu\)](#)). The creation and implementation in real-life settings of educational modules in sport management aim at the acquisition of knowledge and skills for better employability in the labour market (PASSPORT [Search | Erasmus+ \(europa.eu\)](#); STARTING 11 [Search | Erasmus+ \(europa.eu\)](#)). Again, online platforms and online tools are used, with educational modules focusing on - marketing, dual career management, finance management, projects, sport events, etc.

DC4AC ([Search | Erasmus+ \(europa.eu\)](#)) is a realised project that offers a qualitatively new approach to developing dual careers in sport. The support is towards educational activities and consists in the application of "privileges" of different types, according to decisions and orders at ministerial level.

In another context and type of new approaches, a group - projects - can be distinguished with the focus on developing dual careers by linking sport to the business environment (SCORES [Search | Erasmus+ \(europa.eu\)](#)). By using the skills of athletes (acquired in their sporting career), employment opportunities are opened up. The role of the coach is important as an essential factor in encouraging towards dual career development. The sport and business environment (labour market) need to work in partnership. The acquired skills of athletes can serve as a basis for good entrepreneurship and starting their own business (Athletes as Entrepreneurs [Search | Erasmus+ \(europa.eu\)](#)). The aim is to develop competences and reduce knowledge gaps regarding business ventures. Training and mentoring programmes are being developed as well as models for future entrepreneurship training. Developing the entrepreneurial potential through a European education programme of elite European athletes is the aim of another major project (Athletes Learning Entrepreneurship - a new Type of Dual Career Approach [Search | Erasmus+ \(europa.eu\)](#)). It includes intensive language courses and flexible interactive learning in an international environment.

IV.4. Results from the survey about good practices in the development of a dual career in sport and competences of education manager

The study was carried out with the participation of presidents/managers of sports clubs, representatives of national volleyball federations in different countries, as well as

volleyball coaches. The number of respondents was in line with the adopted research strategy (Figure 9).

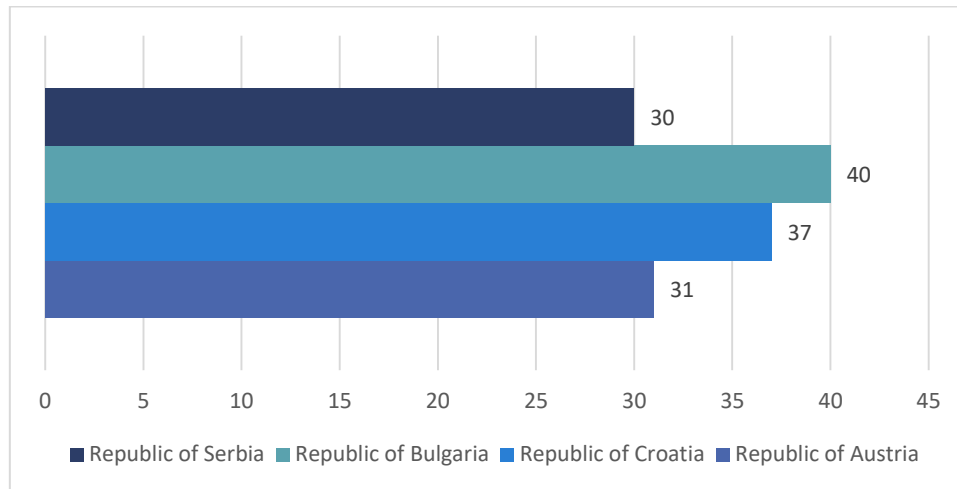


Fig. 9 Number of persons surveyed

Question: Are you familiar with the national strategies and policies on the development of a dual career for young athletes in your country (programs, approaches, concrete actions, which enhance combining elite sport and education for adolescents)? Please, specify!

The perspectives in the development of European sport policy are multifaceted: supporting the transition to a sustainable and innovative future, strengthening the principles of the European sport model, renewing good governance and integrity, etc. National policies follow the recommendations and proposals for the European sport sector in all areas of application. At the heart of elite sport are the athletes and their achievements, the result of the combined influence of a number of factors, including access to dual career opportunities. Analysis of the information obtained in the four country studies provides concrete actions that can be implemented at national level. It is notable that mentioning the names of specific programmes is rare. Respondents rather associate dual career development with a specific NGO. For example, in the Republic of Bulgaria, the Association for Development of Bulgarian Sport is mentioned. It tries to promote and support good governance in athletes' sport careers. Similarly, experts in Austria mentioned KADA and Bundesheer as specialised structures that support elite athletes to varying degrees. Some projects and specific programmes implemented by educational and sport structures are reported as positive experiences in Croatia.

The development of national strategy documents containing specific guidelines for action, programmes and mechanisms could be a constructive solution for optimisation of the dual career management. Improving the documentation in this area will contribute to raising the profile of dual careers for athletes.

What are the main issues your adolescent athletes (15-19 years) face related to reconciling/balancing elite sport and quality education?

Dual career management issues vary in dimension and nature depending on national legislation. The quantitative data from the surveys highlight some similarities across the four countries, creating a common framework of critical points in this area. In Austria, for example, the most serious issues are lack of time/ability to attend classes regularly and to cope with the tasks set for independent work (Figure 10).

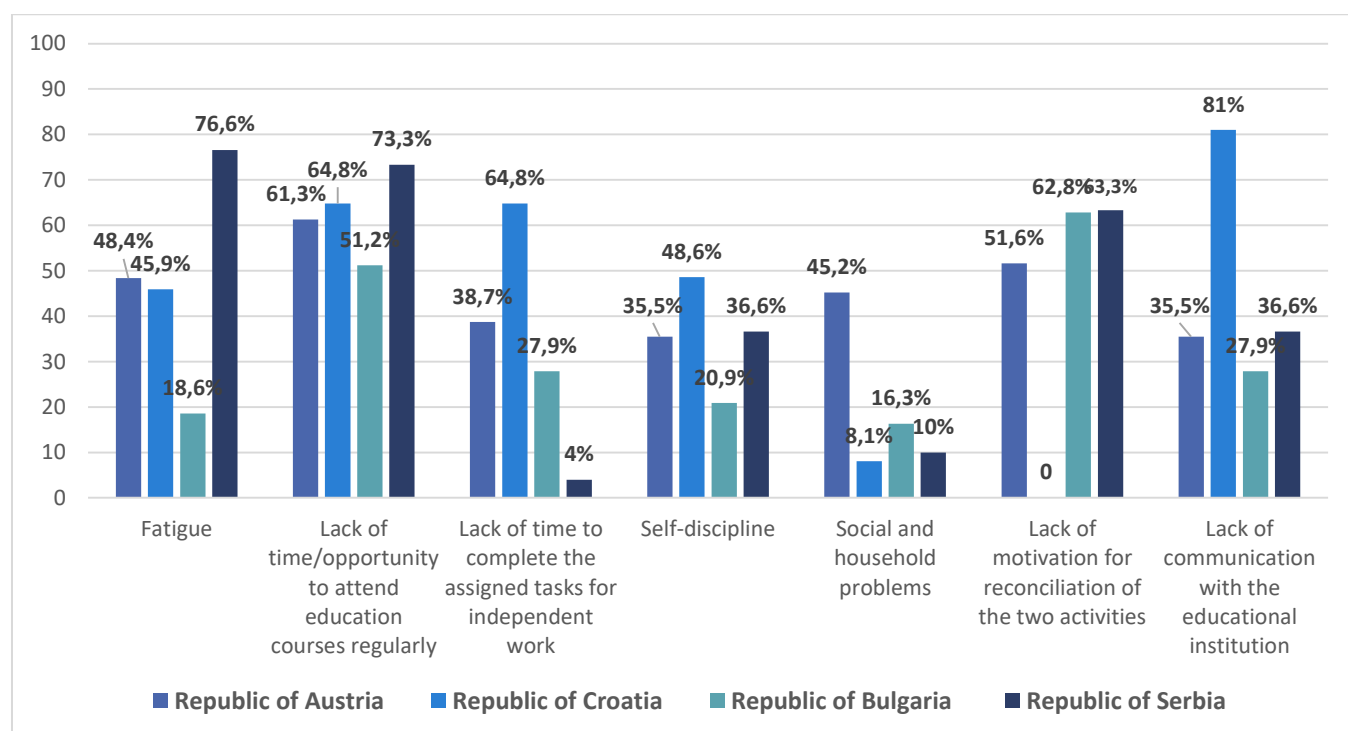


Fig. 10. Key issues facing adolescent athletes (15-19 years) in partner countries related to the balance between sport and education

In Serbia, in addition to the challenges mentioned above, respondents also mentioned the presence of fatigue and lack of motivation to combine the two activities at a high level. In Croatia, the most significant problem is the lack of communication with educational institutions. The presented problems can be translated into concrete goals for federations and clubs to implement in their future activities.

What are the main barriers your institution faces in implementing dual career practices for adolescent athletes?

Data from this question complement the diagnostic analysis in the project partner countries. Operationally, overcoming these barriers will contribute to an overall improvement of the dual career management process for volleyball players. In Croatia and Austria, the data support already shared facts, namely the lack of targeted information on the balance between sport, education and employment. Alongside this, the Croatian respondents also identified certain reservations in the staffing of the system - specialists in the 'dual career' portfolio. This barrier is also among the leading predictors in the Republic of Bulgaria.

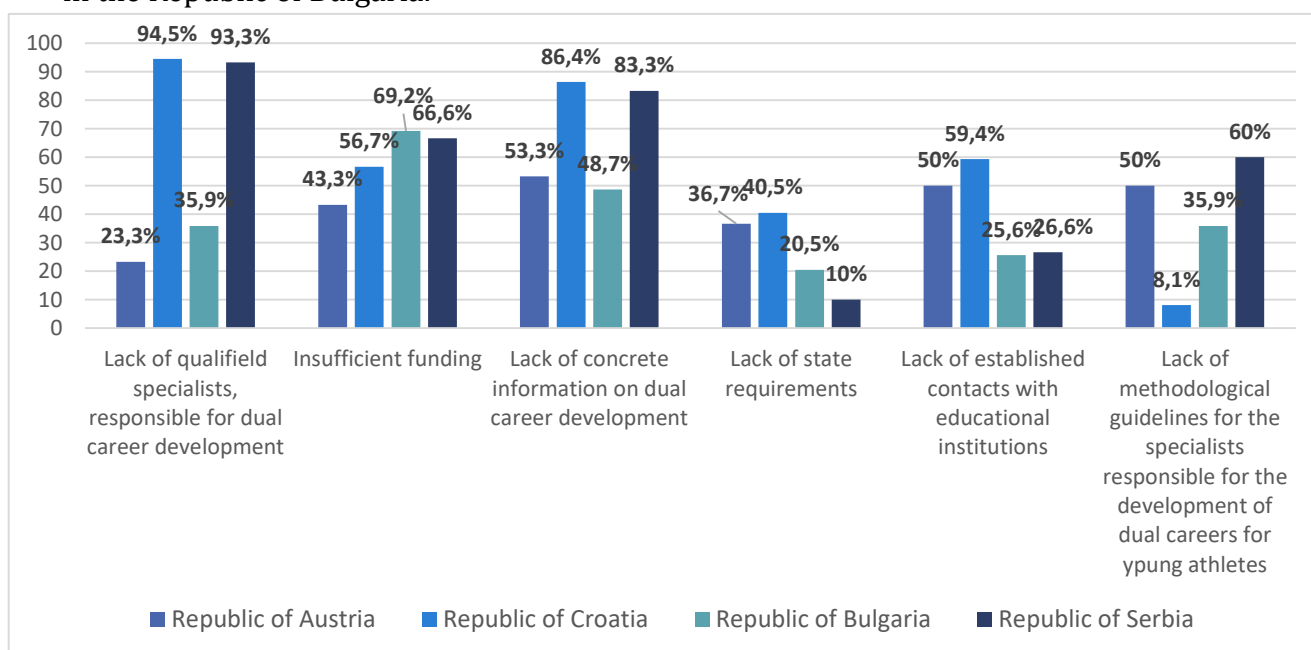


Fig 11. What are the main barriers your institution faces in implementing dual career practices for adolescent athletes

Bulgarian respondents also said that the lack of established government requirements affects the preparedness and qualifications of professionals working in dual career support. It is also not to be overlooked that a big number of respondents in the overall sample feel that there is a lack of established contacts with educational institutions, both at high school level and in higher education.

All the challenges mentioned have a complex impact on the operational opportunities to develop an effective dual career. They can be a starting point in developing an overall strategic vision for its development.

Question: How do you support the the development of dual careers of adolescent athletes (15-19 years) in your institution (federation, sports club)?

Community sports organisations (sports federations and clubs) are key structures in any national sports system that support talented athletes to balance their sporting career with education and employment. The strategic role of these organisations is under study in each partner country. The statistics identify some similarities in dual career support policies. For example, Croatia, the Republic of Serbia and the Republic of Bulgaria apply active communication with the sport club – the educational institution – the family to the greatest extent. It is noteworthy that in Austria the role of the human factor in managing dual careers of athletes is emphasised. Among the most frequently applied forms are providing a mentor, and organizing consultations with specialists in career development. Next in importance are partnerships with educational institutions and targeted information between the sport institution, the educational institution, and the family.

The uniform distribution of responses in Croatia is presented in fig. 12 Here, the second most preferred answer "partnership with educational institutions" is somewhat at odds with the opinion of respondents who rely to the previous question that "there are no established contacts with such structures". This contradictory information is probably due to the fact that the sports organisation has occasional contacts rather than permanently established relations with structures in the field of education. In order to overcome the situation described in this way, it is recommended that joint 'sport-education' programmes and initiatives be set up and supported by long-term contractual relationships.

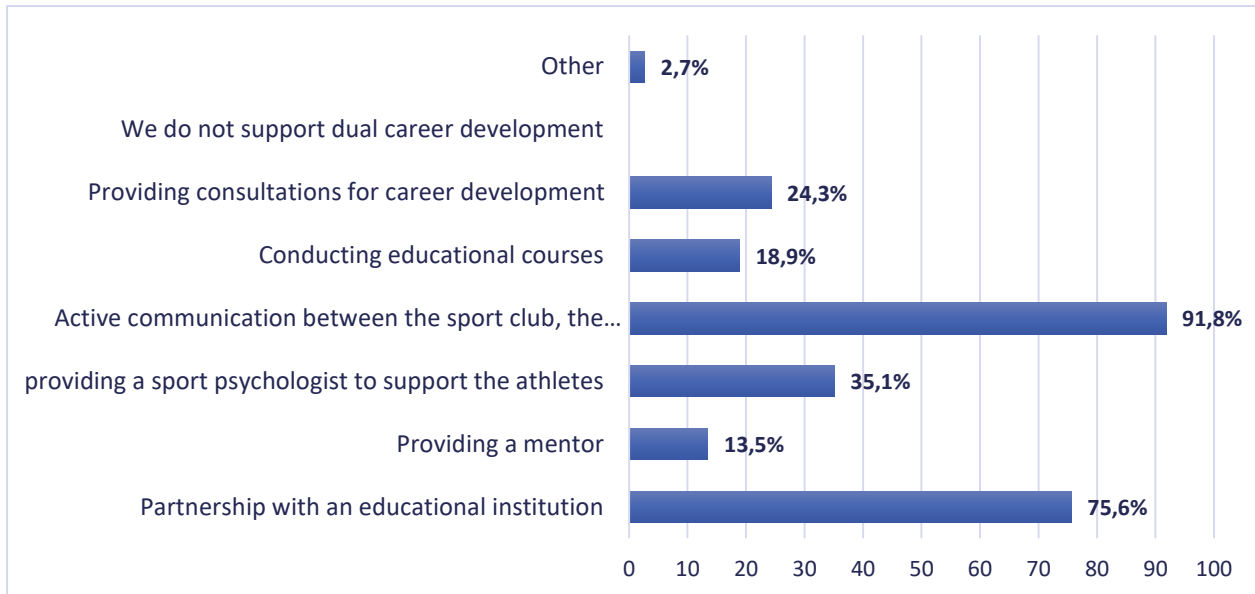


Fig 12. Supporting the double career in Croatia by federation and clubs

The recommended measures to support dual careers are limited to expanding the range of specific practical mechanisms, including targeted and systematic work with sport psychologists, exploring opportunities to include sport specialists in specialized educational courses.

Question: Which of the existing best practices is well accepted in your country for developing dual careers in adolescent athletes (15-19 years)?

The content analysis of the obtained results reveals a good practice shared by the surveyed persons in the Republic of Bulgaria. The Bulgarian Volleyball Federation and sports clubs support motivated players to continue their studies in Bulgarian universities and abroad. The established partnership between the federation and the National Sports Academy "Vasil Levski" attracts elite volleyball players to continue their studies in the "Bachelor" and "Master" degree programmes. As good practices in the policy of the university can be mentioned:

- ✚ Flexible form of training for **"active athletes"**, which provides students with synthesized knowledge of all academic disciplines in a schedule adapted to their professional commitments.
- ✚ The form of training of **"elite athletes"**, which allows planning of training activities and examinations, fully tailored to their sport-competitive activity and professional sports performance - participation in competitions.

✚ Medalists from Olympic Games, World and European Championships have the right of admission to the National Sports Academy "Vasil Levski" without a competitive examination.

✚ The Career Center of the National Sports Academy "Vasil Levski" - explores job opportunities for professionally trained specialists in the field of physical education and sport; provides information to students about the availability of suitable jobs; helps students to contact employers; provides information about alternative job opportunities in various fields of physical education, sport and tourism.

In secondary education, three countries share experience on implementing good partnerships and supporting talented athletes. In Austria and Bulgaria, sports schools are a key educational hub for adolescent athletes. In Croatia, we find additional mechanisms in terms of: organising the timetable of control and examination papers for students with the status of national athletes; the possibility of on-line lessons and courses in private high schools.

Alongside this, the NGO KADA operates in Austria to support dual careers programmatically, logistically, and in terms of staffing.

Given the age profile (15-19 years) addressed in the studies, we believe that shared practice-oriented forms are meaningful and relevant.

Question: If there are no (good) practices for developing adolescent athletes (15 -19 years) in your country, why do you think this is?

The critical analysis in the responses to this question has a strategic orientation to improve dual career management at the national level. The results of the expert surveys present operational options for making this process more effective. In Austria, the categorisation of sports in terms of their socio-economic importance comes to the fore. Respondents said that the low status and reduced popularity of sports are among the main reasons for the lack of specific, workable dual career mechanisms in the country. In addition, we also find "lack of communication from institutions". The latter is supported by the analysis of the situation in the Republic of Bulgaria. There are similarities in the restrictions for supporting athletes in the Republic of Bulgaria and the Republic of Serbia. These are expressed in the lack of targeted information on dual careers, as well as underestimated interest of sports institutions to encourage and support young athletes. Experts from Croatia identify restrictions on a national

scale - a lack of a clear vision for the development of both the sport and education sectors, as well as the absence of a dual career development strategy with specific measures and policies.

One way to overcome the "crisis" situation described above is by organising more initiatives, including educational ones, to clarify the importance of dual careers. Holding national round tables, discussion panels and conferences initiated by the national government. It should be stressed that increased cooperation between the institutions involved in supporting dual careers is crucial to the decisions that will be taken in this area.

Question: How do you receive information about the opportunities for development of dual careers for junior athletes in your country?

Raising the awareness of those directly involved in managing both the sport and competitive development of athletes and making specific decisions to support them is a prerequisite for improving dual career management. Notwithstanding the dominant role of digital forms of awareness in people's everyday lives, the leading sources of awareness pointed by the surveyed individuals in the Republic of Bulgaria is "the sports federation" (fig.13). In many cases, the information exchanged depends on thematically targeted and positive intra-institutional communications - at the level of the sports federation, volleyball clubs, etc.

The top positions in Austria are shared by "internet sources" and "human capital" (53.3%). In Croatia, "educational institutions" are identified as a source of priority (59.4%). In conclusion, all of the above-mentioned options for available information are relevant and applicable in the daily lives of the professionals in the partner countries. However, what matters here is the regularity of the use of information resources, know-how and scientific developments in this field. The fact that this sector is one of the priority sectors funded by the European Commission should engage people working in the sports sector to follow new trends and perspectives to support elite volleyball players.

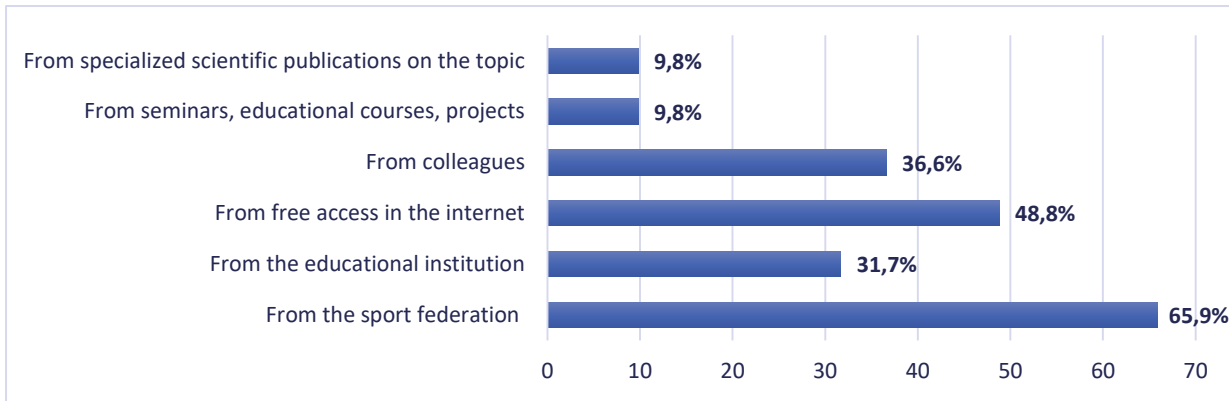


Fig. 13 How do you receive information about the opportunities for development of dual careers for junior athletes in Bulgaria?

Question: In your opinion, is it necessary for specialists engaged in the development of dual careers for junior athletes to work in your institution

The empirical data obtained from the case studies clearly establish the need to employ professionals directly involved in supporting talented volleyball players in their dual careers. This conviction is shared by the study subjects from the Republic of Bulgaria, the Republic of Serbia and Austria (fig. 14). Respondents from Croatia are of the opposite opinion.

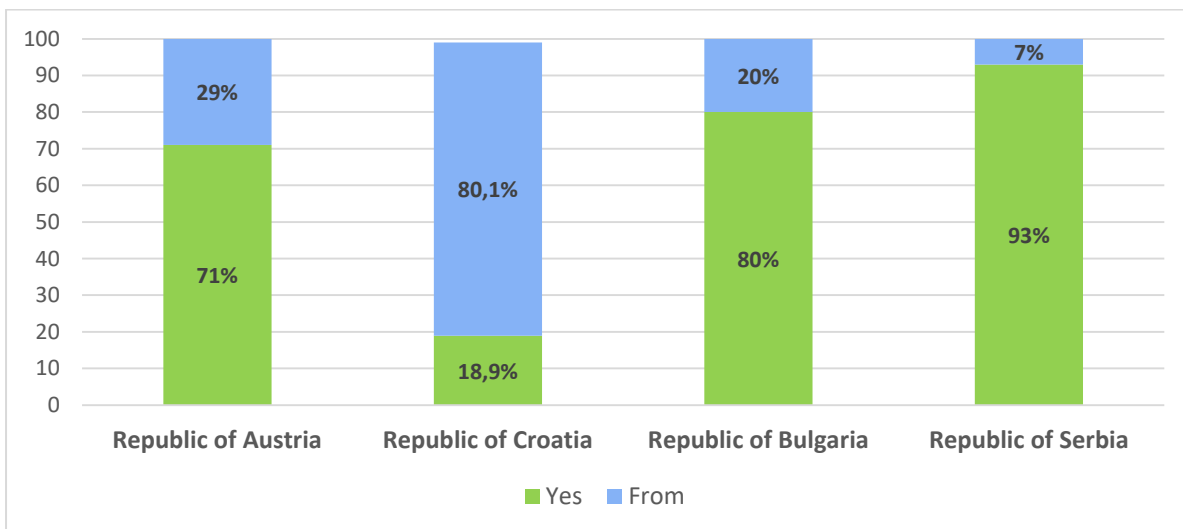


Fig. 14 In your opinion, is it necessary for specialists engaged in the development of dual careers for junior athletes to work in your institution

Question: What competences are expected from the specialists, responsible for the development of dual careers for junior athletes

Analysis of the qualitative data illustrates a wide-ranging and divergent scope of competencies of professionals responsible for dual career development in volleyball. Responses from Serbia centered around pedagogical and sociological competencies. In Austria they focus on social skills, motivation, discipline, ambition and good time management. Opinions from Croatia are related to competences of cooperation, reflection and self-management, about relationships, organisational competences and readiness for professional development and education. In Bulgaria, management in sport and science is highlighted.

Based on the analytical data, we will present a multi-component profile of a dual career specialist (fig. 15).

- Dual Career Knowledge
- Knowledge of the sport - volleyball
- Managerial skills - planning, coordination, regulation, organization, control.
- Pedagogical competences
- Social skills
- Leadership
- Communicability
- Cooperation and mutual assistance
- Reflection and self-management
- Personal experience in dual career
- Aspiration for professional development

Question: What sources of funding are used by your institution in order to provide the development of dual careers for junior athletes? Please, specify!

Financial provision in the sport system is of paramount importance to enhance the competitiveness and socio-economic dimensions of sport. The share of funds from the state and municipal budget is distributed in all subject areas of the sport system - **elite sport**, sport for all, school and student sport, sport for the disadvantaged, etc.

What is the situation regarding the funds that each partner country uses to develop the dual careers of its volleyball players? In the Republic of Serbia, it is found that there are no state and public organizations that provide funds in this area, and no other funding mechanism.

Respondents from the Republic of Bulgaria indicated that the support of elite volleyball players towards educational qualification and employment is provided through funds generated by the typical funding sources of the respective structure. These include: earmarked funds from municipal budgets, funds under contracts from sponsors, from the sale of advertising rights, funds under programmes of the Ministry of Youth and Sports and the Bulgarian Volleyball Federation.

In Croatia, the main mechanism to support dual careers is the grant in three modifications:

1. At state level. The subsidiary body is the Ministry of Sports for elite athletes.
2. At state level. The National Olympic Committee allocates earmarked funds for Olympic training to athletes with official NOC categorization.
3. At the local level. Municipal support for athletes with outstanding sporting achievements.

There is also the practice of supporting students/athletes from educational entities (schools) as well as private business entities.

The individuals surveyed indicated that the sports club or national federation did not have the ability to obtain targeted funding for dual careers. If funds are allocated they are personal to the player.

Question: What recommendations would you make for the optimization of the development of dual careers for junior athletes?

In conclusion, the overall study should highlight key recommendations related to improving the management of dual career outstanding students/volleyball players (15-19 years). The practical mechanisms presented transcend national boundaries of individual partners and can be adapted in each country.

At state level:

- Development of a state strategy (program) and policy combined with concrete actions to support outstanding students/volleyball players.
- Establish a clear vision in defining dual careers and thus establishing clear pathways for program implementation.
- Develop technology on the implementation of a targeted awareness campaign in the sports sector on the importance of dual careers for athletes.

At regional level:

- Incentivise local authorities to support talented students/athletes through scholarships, career development advice.
- Create tailored programs for students/athletes, tailored to the requirements of each sport in particular.
- Establish partnerships between schools and sports clubs for the long term.

At club level:

- Encourage clubs to participate in various initiatives to support dual career talented volleyball players ages 15-19.
- Activate clubs in seeking additional funds to support dual career volleyball players, including participation in project funding.
- Create an internal dual career database and periodically distribute to athletes.
- Increase communication between sports clubs, the national volleyball federation and educational structures regarding the problems of young athletes.

SUMMARIES OF INTERVIEWS

Based on the methodology presented earlier in the report, we conducted interviews with active athletes that combine sports and educational activity. The survey contingent covered a total of 27 boys and girls playing volleyball in the age range between 15 and 19. Each one answered a total of 5 questions that form the basis of this analysis.

When asked if they receive support to reconcile sport and education with a view to a



smooth transition to their future profession, different perspectives of the respondents are revealed. Among the interesting viewpoints are those of three of the Bulgarian volleyball players who say that they have not had such support so far, and in their opinion, they do not need it. They also say they do not need support because they manage to successfully cope with all their duties and responsibilities both at school and in sport. Most participants in the interview also have similar support. They most often claim that such support is received by parents and family, who purely logistically provide the balance between their training

duties and training activities and even participation in competitions. It is also the coach who supports the combination of the two main activities, and the interviewees believe that they control the process of doing their learning duties through conversations with teachers or other responsible persons in educational institutions. One of the participants surveyed from Austria even said that he had received similar support from a non-governmental organization, but added that he had accidentally found out about this opportunity and it was quite possible to miss it.

We received interesting answers from the interviewees regarding the reasons that prompted them to choose their school. In most cases, school choice was led by the possibility to combine sport and education. Some of the interviewees indicated that they chose schools that could not be defined as elite, but at the same time had programs to support athletes and allow them to combine sports and education. In general, the participants in the interview expressed their willingness to put training and competitive activities before educational ones.

Very often they pointed out that when choosing a school, they were looking for an educational institution which does not have great requirements or offers special programs for athletes allowing them to actively engage in sports. A small number of respondents indicated that their choice of educational institution was a consequence of the possibility to remain in the field of sport as coaches after completing their competitive activity.

The next question we asked gave us the opportunity to reveal the approaches that athletes use to balance time and sport. Almost all of the interviewees said that they were able to divide efficiently their time between academic and competitive activities. According to them, this opportunity is available because they have chosen an individual form of training or are trained in a school that offers a special program for prospective athletes. There are also a few openly stating that they spend more time on sport and miss out on some of their education duties. Another small group specifies that in addition to time for sports and education, they also find time for meetings with friends or walks, relaxation or various social activities that usually remain in the background for young athletes.

Judging by the answers to the next question, which treats the vision of the future, we can divide the participants in the interview in two groups. One clearly states in what direction their overall preparation is aimed, and the others believe that it is still too early to look far into the future and are focused on the present activities in their professional sports career. The group that has built a vision for future professional realization points to a variety of professions which they would like to pursue in the future. Most often, these professions are directly related to sport. Future coaches, psychologists and teachers are most often highlighted here. Others, however, point to professions, such as dentists, accountants or professions related to the arts, which are far from the realm of sport.

The last question we asked in the interview was to highlight the difficulties experienced by the respondents in combining sports and educational activity. Undoubtedly the leading opinion here is the accumulating fatigue, which is a consequence of insufficient time for rest and recovery. Another significant problem is the early rising, dictated by the need of school preparation or competitive activity, and the long duration of the day for the same reasons. There are also participants who say that the main problem they experience is the stress at school caused by insufficient time to prepare educational tasks. The need to balance between sport and education, according to others, deprives them of the possibility of a social life, which

they point as a significant problem for them. There are also interviewees who do not experience any difficulties in carrying out all their duties.

Analyzing the responses of the interviewees, we can summarize that at the time of the interviews, the leading activity for them is the sport competition activity, which they believe will provide them with the opportunity for a professional sports career in the future. At the same time, they are also concerned about their realization after the end of an active competitive career, looking for opportunities and educational institutions that would allow them to combine sport and learning. Analysing their responses, we believe that their dual career can be realized efficiently if they receive the support they need from parents, coaches and teachers. In our opinion, however, there is lack of programs and activity on the part of sports clubs and federations, what is more, lack of national policies for the realization of dual careers of athletes. A dual career is important, because it would ensure their adaption for life after sport and open up a different activity in which they could put their efforts.

IV.5. Conclusions and recommendations

Based on the research and results, and guided by the expected outcomes of the project, we have made the following summaries, conclusions and recommendations:

SERVE is a project with a very good partnership and cooperation between the Bulgarian Volleyball Federation, the Volleyball Federation of Serbia, the Croatian Volleyball Federation, the University of Vienna and the National Sports Academy “Vasil Levski”. This comparative study allows the sports federations and partner universities to increase the quality and relevance of their activities in the two main areas - the use of digital tools for volleyball training and the development of dual career management activities for talented adolescent athletes (volleyball players). By exchanging good practices and experience, the participants in the project can develop and strengthen their joint work at transnational level. Alongside they can share experience internationally and create new practices and methods in the field of sports education and training. Innovative education resources (digital platforms, education and training programmes, etc.) can be developed and put into practice, based on this project work.

The role of sports federations and sports club representatives (management and coaches) as leading factors in the acquisition of knowledge, skills and support for the development of dual careers for adolescent athletes is highlighted.

The main objective is towards the creation of a new training methodology at European and national level. Therefore, it is necessary to develop a research-based and interactive sports program for secondary school students that will enable adolescent athletes to combine successfully their education and sporting activities. On the other hand, academic institutions and structures (sports universities, sports faculties and departments) will have direct contact with volleyball organizations and athletes, with opportunities to update the current way of teaching.

Talented adolescent student athletes will be given an early introduction to dual careers. In this way, they will be able to develop their knowledge, skills and competences. They will make a successful choice of education, and they will be able to combine it with their active sports career. An interactive multimedia e-learning programme developed and put into practice, will ensure the sustainability of dual career development with the help of an educational manager.

The development of dual career policies requires creating a new type of specialist, whose functions are entirely focused on the practical application of the policies aimed at the establishment of good connections between the educational institution and the sports club, also between the educational institution and the sport federation. They should be persons who possess competencies similar to those of lobbyists who consult and support with their experience talented young athletes in planning their near and far future activities, and in setting realistic goals. They must also be able to act as mediators between the sport institutions and the educational institutions, in order to adjust the athletes' schedules for a parallel performance of their competition and education activities.

To provide conditions for the realization of these activities and to spare athletes the burden of additional organization and mediation, it is necessary to bring out new professional competencies and to create a new type of specialists who can be called educational managers. In the early years of the sport realization of adolescent athletes they will take over the functions of organizing the dual career of the athlete.

The term "**good practice**" is accepted/assumed as the set of measures which correspond to the European policies in the field (dual career) and provide effectiveness, accessibility,

sustainability and reliability when they are applied. "Best practice" is the one leading to the desired result which has been proven by research work and experiments.

European countries currently have different practices regarding the development of dual careers. Some of them are implemented at national level, through the involvement of different institutions (ministries, secondary and higher education institutions), while others are managed by NGOs. Regardless of the governance, many of the good practices have been developed and implemented in project work funded by the European Union.

The main activities include: seminars, training courses, research and conferences to develop dual career activities, discussions and meetings with outstanding athletes and coaches to share their experiences in combining sport and education; individual forms of training (in secondary schools and universities); "privileges" for outstanding athletes based on established classifiers, according to the importance of sporting achievement (e.g.: scholarships for training; admission to university without a competitive examination, etc.).); the inclusion of educational managers (mentors, coaches, tutors) and sports psychologists, etc. Apart from all these activities, various organisations in the academic and non-academic circles advise the persons concerned about their preparation for a job interview, as well as the preparation of the supporting documentation (preparation of CV, cover letter); they carry out the liaison and legal relations with representatives of the business environment (employers).

It is also a good practice to operate sports schools, which provide vocational training to graduating students. Through a flexible but professionally committed training programme, tailored to students' busy sporting schedules, it is possible for promising young athletes to balance sport and education, and subsequently to make a successful career.

The cooperation and active communication between different ministries, National Olympic Committees, national federations, sports clubs and educational institutions is another good practice that supports the development of dual careers (during and after an athlete's active sporting career).

A valuable product of the project activity is the provision of the results of the research and the implementation of the activity as feedback between the athletes and the management of educational and sport institutions, as well as representatives of the business environment. The cooperation and clear communication between them gives broad perspectives in the field of dual careers.

We can summarize that the focus of most of the implemented projects is primarily on the development of dual careers of professional (elite) athletes, and to a very small extent on adolescent talented athletes. In the future, efforts should be directed towards them in order to acquire competences for combining education and sport and a clear vision for future professional realisation. Building a “structured environment” for life after sport is also a leading area.

Creation of online learning platforms is a major outcome of the implemented projects. If put into practice, they provide opportunities for education tailored to the busy schedule of the talented adolescent athlete. The use of innovative technical tools (platforms) allows flexibility in changing the plan in everyday life, a higher degree of organization, reduces stress, which is a major negative factor affecting the personality of the young athlete.

Mentoring is another important theme. The involvement of an educational manager in the organisation of activities and the balance between quality education and efficient sport practice is urgently needed. It is this competent person who has to coordinate and provide support by realising the links between the educational institution, the sports club and the sports federation, also of the sports club (federation) with representatives of the labour market. The ultimate goal is to create conditions for realization of the full potential of an athlete. We cannot fail to mention the role of the family as another important factor in the development of dual careers (especially for adolescent athletes). As a good practice here, we can point to the manuals and programs created and implemented for mentors, indicating and developing the competences they should possess.

Last but not least, we will point out the need for close contact with the representatives of the business environment, as future employers of the athletes after the end of their career. Their requirements and needs can greatly facilitate the student athletes as to which field of education to pursue (according to their desires and their abilities).

Among the constructive solutions to optimise dual career management are the adoption of national strategic documents containing specific action plans, programmes and mechanisms, based on the European Union guidelines for dual career development. The development of a national policy in this area will also increase the process.

On the basis of the survey, generalizations and recommendations can be drawn in three directions. A clear vision of the concept of the "dual career" of adolescent athletes should be created. This will facilitate the pathways and approaches for its realisation. At government

level, a national strategy needs to be developed, with specific actions to support adolescent student-athletes. Subsequently, information and education campaigns (seminars, courses, round tables) should be held in the sports sector to discuss the importance of dual careers in sport. The creation of tailor-made digital training programmes for student-athletes could also contribute to improving the balance between sport and education. At regional level, talented athletes need to be incentivised (e.g. through scholarships) for their career development. At the level of national federations and sports clubs, there is also need for encouragement and various initiatives to support dual careers for talented volleyball players aged 15-19. There should be additional funds to support actions in this direction. It is also possible to create a database containing targeted information (best practices, implemented projects and partnerships, etc.). Long-term partnerships and increased communication between educational and sports institutions will be useful in resolving problem issues young athletes have to face. It is important to include an educational manager to assist adolescent athletes in combining quality education with an effective sports activity.

From the analysis of the interviews conducted with talented volleyball student players, it can be summarized that sports competitive activity is the leading one for them, as the main opportunity for a professional career in the future. At the same time, they look for other ways of development after the end of their sports career, especially choosing educational institutions that allow them to combine sport and learning. In the realization of their dual career, student athletes need the advice and support of their coaches, teachers and last but not least - family and friends. Putting into practice educational managers who can guide the activities providing a balance between sport and learning is of particular importance. These specialists will be the main coordinators between educational and sport institutions. The support provided by the sports federations and clubs is also very important in the development of dual career programs for adolescent athletes. This would greatly assist the process of balance in the student period and their adaptation after they leave professional sport and find a different vocation in which to realize their acquired competences.

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