Project IMPACT

Developing Communities of Practice to Maximise the Usability and Impact of Clean Sport Education in Europe

Policy & Practice Recommendations Report

Preface

Project IMPACT (Developing Communities of Practice to Maximise the Usability and Impact of Clean Sport Education in Europe) was financially supported through the Erasmus+ Sport funding programme of the European Commission between January 2019 and December 2021. The main objective of the project was to utilise the concept of "Communities of Practice" to tackle clean sport education, an important aspect of anti-doping efforts globally. The present report draws on the experiences and findings of Project IMPACT, as well as on previous research on Communities of Practice. The project's findings reflect the work that was carried out by our consortium of partners in 6 European countries:

- Sheffield Hallam University, UK
- Cyprus Anti-Doping Authority (CyADA), Cyprus
- University of Nicosia Research Foundation, Cyprus
- Società Sportiva Lazio Ciclismo, Italy
- Aristotle University of Thessaloniki, Greece
- Dopinglinkki/A-Clinic Foundation, Finland
- Institute of National Anti-Doping Organisations, Germany

The present report presents practical recommendations and guidance for policy-makers and practitioners involved in anti-doping and the promotion of clean sport education about utilising Communities of Practice to promote, develop, and evaluate clean sport education more effectively. Our recommendations are discussed in the context of the 2021 World Anti-Doping Agency's International Standard for Education (WADA ISE), which currently represents a useful tool for harmonising clean sport education across different countries and cultures.

The present report was developed in partial fulfilment of the requirements for the successful completion and delivery of intellectual outputs for project IMPACT.

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The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

List of abbreviations

CoP = Community of Practice.

IPEDs = Image-and-Performance-Enhancement Drugs.

WADA = World Anti-Doping Agency.

NADO = National Anti-Doping Organisation.

WADC (or Code) = World Anti-Doping Code.

ADRV = Anti-Doping Rule Violation.

AAF = Adverse Analytical Findings.

ISE = International Standard for Education.

ASP = Athlete Support Personnel.

CPD = Continuing Professional Development.

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1. Understanding Communities of Practice

1.1. What are communities or practice?

Communities of Practice (or CoP) are formally defined as "groups of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly" (Wenger, McDermott, & Snyder, 2002). Although this definition was developed over the last two decades, the very concept of the communities of practice is much older and even traces back to the early stages of human civilization, when groups of people would gather to share knowledge and practices around topics of their concern, from hunting to preparing for battle.

In modern times, CoPs were initially used in education contexts to help educators identify barriers to effective learning of their students, and to share knowledge about improving education delivery and academic attainment. The application of CoPs in education further developed into enhancing the professional development of teachers, promoting inclusive education, and even addressing gender issues in education (Farnsworth, Kleanthous, & Wenger-Trayner, 2016). Importantly, since 2000 the concept of CoPs has been widely used to promote the use of new technologies, inspire innovation in technological and other business corporations, and to improve organisational practices and performance across the globe (Lee, Reinicke, Sarkar, & Anderson, 2015; Wenger et al., 2002). Indeed, research on CoPs has generated over 3500 articles and books in 20 years (Farnsworth et al., 2016).

In practical terms CoPs enable people with a common interest in a given area to:

- Form a group with a commonly agreed purpose and goals.
- Learn through sharing knowledge and best practices.
- Inspire innovative approaches and solutions to common problems.
- Improve current practices.

A key principle of CoPs is that learning is not necessarily a top-down process, with knowledge flows from an expert member to other community members without prior knowledge on the subject matter. Rather, learning is "situated" within the community, knowledge flows are bidirectional and involve all community members, and knowledge is shaped and used dynamically as the members of a learning community share ideas and practices relevant to the subject matter they're interested in (Wenger, 2011).

1.2. The Elements of a Community of Practice

A community of practice has three core elements or defining characteristics:

1. **Community:** This element reflects the sustained interactions of community members. Through mutual engagement, interpersonal relationships and the social capital of the community are developed. In turn, social capital facilitates communication, knowledge transfer, and mutual learning among community members

2. **Domain:** This element is what brings the group together in the first place and defines the purpose of a CoP. According to Akkerman, Petter, and de Laat (2008) the domain of a CoP "*reflects the context and focus of the joint enterprise that is continuously negotiated, and concerns the topics of interest, ideas and perspe ctives that a group shares*" (p.385).

3. **Practice:** This element is concerned with how things are done in a specific domain, and may reflect common approaches and shared standards and norms that guide action, communication, problem-solving, performance and accountability (Wenger et al., 2002, p. 38). Practice can reflect both tacit and explicit knowledge and can be traced in shared resources, such as rules, conceptual tools, and best practices.

It is noteworthy that CoPs are self-directed and self-governed entities. That is, the members of the community, and not outside forces, determine and regulate the learning needs of the CoP. This is the crucial difference between a CoP and an ordinary work-team or task force.

1.3. Communities of Practice, Knowledge Management, and Innovation

Living in a fast-pace world with large amounts of information being exchanged among millions (or even billions) of users on a daily basis makes it challenging to identify the practices and ideas that would be suitable and provide cost-effective solutions to different problems. Knowledge management is, therefore, highly important and allows practitioners and policy-makers in a given area to organise information effectively, identify the most relevant information that pertains to given challenges or problems, and identify new ideas and solutions to those challenges and problems. Communities of practice offer a very practical mechanism to effectuate and improve knowledge management strategies and, accordingly, lead to innovative ideas and solutions in a given area (Iverson & McPhee, 2002).

According to Wenger, McDermott, and Snyder (2002, pp. 8-10), the three key contentions of communities of practice that relate to effective knowledge management and innovation include:

1. **Knowledge exists in the "*act of knowing*"**: Expertise is the result of "static" knowledge, and of accumulated experience that has been gained through practice.

Communities of practice serve as a dynamic and living repository of accumulated knowledge.

2. **Knowledge is tacit and explicit:** In addition to formal and explicit knowledge that can be delivered through manuals and formal training, tacit (or implicit) knowledge represents the accumulated knowledge that is embodied in experiences, and represents a deep understanding of complex and context-specific problems. Tacit knowledge is valuable and irreplaceable and should be treated as equally (if not more) important to explicit knowledge.

3. **Social and dynamic knowledge:** Although the subjective experience of knowing a subject matter can be largely individual, knowledge itself is a social asset that is earned and built upon through social interactions with others with more knowledge, diverse expertise, and different practices. The involvement of people/actors with different perspectives, knowledge assets and practices is often used to stimulate innovative solutions. Knowledge is also changing at a fast pace and individual actors (e.g., individual employees, individual organizations) cannot follow the fast-pacing knowledge generation. Communities of practice provide the framework where knowledge can be captured, contextualized, and re-used in ways that serve the individual and collective learning needs of involved parties.

Furthermore, CoPs promote learning as a social collaborative process and not as an individual process or outcome. By this token, learning in a CoP reflects the collaborative negotiation of new concepts, ideas, and artefacts or tools that result from the interaction among community members, or the interaction of the CoP with the external environment. To put this into context, learning how to develop innovative clean sport education programs may result from the interaction between CoP members (e.g., NADOs and local sport governing bodies, or NADOs and athlete groups), as well as the introduction of change elements in the external environment (e.g., a new regulation or mandate about clean sport education programs by WADA). This process makes learning within a CoP an iterative process, whereby CoP members reflect on the new information (e.g., idea, tool, concept, practice) and then negotiate and decide to either incorporate it or not in their practice (Paavola, Lipponen, Hakkarainen, 2004). This process reflects what Lave and Wenger (1991) referred to as *situated learning*.

2. Clean Sport Education

2.1. Understanding doping in sport

According to the Council of Europe's Anti-Doping Convention (1989, p. 2; Article 2), doping is defined as "*the administration to sportsmen or sportswomen, or the use by them, of pharmacological classes of doping agents or doping methods*".

The 2021 World Anti-Doping Code (or the Code) further defines doping as the "*occurrence of one or more of the anti-doping rule violations set forth in article 2.1 through 2.11 of the Code*", and respectively presents in 11 anti-doping rule violations (ADRVs), from the use/administration of prohibited doping substances, to tampering doping control testing results and retaliating against those who report doping to the authorities.

Central to both definitions is the use and administration of prohibited substances, also known more widely as Image-and-Performance-Enhancement Drugs (IPEDs). The substances, the use and administration of which constitutes ADRVs, are specified in the List of Prohibited Substances that is issued yearly by the World Anti-doping Agency and, among others, include:

- Anabolic agents (e.g., anabolic androgenic steroids, designer steroids, SARMS).
- Peptide hormones and metabolic regulators (e.g., EPO, HGH).
- Diuretics.
- Cannabinoids.

Establishing the true prevalence of doping in sport is a challenging task. For instance, according to the World Anti-Doping Agency's international testing figures which are based on Adverse Analytical Findings from urine and/or blood samples of tested athletes, before the COVID-19 pandemic, doping prevalence was reduced from 1.05% in 2018 to 0.97% in 2019. On the other hand, research using anonymous self-reported doping surveys indicates that doping prevalence in elite/competitive sport is much higher, and can range between 14% and 49%, and even higher (>50%) when indirect questioning methods, such as the random response technique (RTT) are used (De Hon, Kuipers, & van Bottenburg, 2015; Ulrich et al., 2018).

Importantly, the use of IPEDs remains highly uncontrolled in recreational sport and exercise settings, such as in fitness sport. The 2019 report on IPEDs by UK Anti-Doping indicated that:

- There are more than 1 million users of IPEDs in British gyms.
- More than 5 million doses of anabolic steroids are seized at the British border every year.

- More than 1/3 of gym-goers in the UK believe that IPEDs use takes place in their gym.

Other evidence has suggested that at least 18% of young adults from 5 European countries self-reported that they used IPEDs at some point in their life (Lazuras et al., 2017), and IPEDs use can be initiated as early as adolescent and pre-adolescent years (Nicholls et al., 2017).

2.2. The importance of clean sport education

Since its establishment in 1999, the main remit of the World Anti-Doping Agency has been to monitor, control, and prevent the use of prohibited substances in sport. Primarily, this goal was achieved through the so-called "detect-and-punish" paradigm which involves the sanctioning of athletes (and relevant persons, such as coaches and the athlete's entourage) when they are found in use or possession of prohibited substances and/or committed any other ADRVs as specified in the Code. While this approach has been useful in tackling doping use in sport, still over the last decade increasing attention has been placed to alternative and complementary approaches, such as clean sport education (Backhouse, 2015). It should be noted, however, that the concept of clean sport education has been in place for more than 15 years as indicated in the Council of Europe's Anti-Doping Convention and the International Convention against Doping in Sport of UNESCO, and the original 2003 version of the WADC.

Unlike detection and punishment, clean sport education emphasises the role of social/contextual and individual risk factors for doping use, and aims to prevent the use of doping substances at different stages:

Primary prevention: Preventing "clean" athletes and sportsmen/women from using doping substances in the first place.

Secondary prevention, also known as harm reduction: Preventing the use of harmful doping use practices (e.g., needle exchange programs), and supporting current doping users users to reduce or stop their use.

WADA has increasingly supported clean sport education, as evidenced by the first-ever web-based clean sport education programme ADeL (Anti-Doping Education & Learning Platform) that was officially launched in 2018, and is already translated in different languages.

In January 2021, WADA published the first guidance report that aims to enable harmonised approaches in global clean sport education, the **International Standard for Education** or **ISE**. Effectively, the ISE mandates the implementation of clean sport education by NADOs and other sport governing bodies.

According to the WADA ISE the Athletes' first encounter with doping issues should be through education and not through doping control. In other words, the ISE strongly emphasises the role of primary prevention in the fight against doping. The specific objectives of WADA's ISE refer to Code signatories, such as national anti-doping organisations (NADOs) and other sport governing bodies (e.g. national and international sport federations, sport clubs), and include:

- Establish mandatory standards for the implementation, monitoring, and evaluation of effective clean sport education programs.
- Define terminologies and the roles and responsibilities of Code signatories with respect to delivering clean sport education, as stipulated by the ISE.
- Encourage and promote the cooperation of Code signatories with local sporting communities and other relevant stakeholders, such as expert academics, educational institutions, and governmental organisations (e.g., public health and education authorities).

Importantly, WADA's ISE emphasises four important components of clean sport education programs:

- **Values-based education**: To develop an individual's personal values and principles, and promote ethical decision-making.
- **Awareness-raising**: To highlight the different issues and aspects related to clean sport and ADRVs.
- **Information provision**: Ensuring that the education program includes accurate and state-of-the-art content.
- **Anti-doping education**: To improve the knowledge of athletes around clean sport issues and building their competencies in terms of resisting doping, and making informed choices about doping.

2.3. Clean sport education challenges

From the above discussion of the ISE context and mandate, it is understood that in order to be able to successfully fulfil the ISE criteria and expectations, NADOs and sport governing bodies should take immediate action in terms of developing (or adopting already existing), implementing, monitoring, and evaluating clean sport education programs.

Nevertheless, the following challenges surface:

- Very few NADOs and sport governing bodies, mostly residing in affluent and economically developed countries, have established collaborations with relevant

educational institutions and the resources to readily deliver clean sport education programs as per the ISE requirements.

- There is a plethora of research evidence on ways and methods to deliver, monitor, and evaluate clean sport education programs, but the majority of this research is not translated into practice or practical guidelines that can be readily used by NADOs and other sport governing bodies.

- There are several clean sport education programs, in addition to WADA's ADeL, that have been developed within the premises of the Erasmus+ Sport programme of the European Commission. Although these education programs could inform and further support NADO's efforts to develop and deliver clean sport education as per the ISE requirements, they remain largely unused and unknown to NADOs.

- More resourceful and affluent NADOs have access to better education resources and related empirical research, and they more readily able to fulfil the ISE requirements. This means that a lot of best practices in the field may remain hidden or largely unknown to NADOs from different countries and cultures.

- Clean sport education programs developed and delivered by NADOs should reflect the local needs of athletes and athlete needs may differ between sports. Therefore, a one-size-fits-all approach is not appropriate and a nuanced approach is needed.

- NADOs are expected to reach out to exercisers and amateur athletes outside organised and elite sport. This is particularly challenging in terms of resources and because the majority of NADOs had so far focused on elite high-performing athletes.

- NADOs may not have updated knowledge regarding the social/contextual and individual risk factors for IPEDs use in recreational and amateur sport settings, and the educational content tailored for elite, high-performing athletes cannot be readily used in non-athletes and exercisers.

Relatedly, a needs analysis survey that was implemented by the IMPACT consortium and was led by the Institute of National Anti-Doping Organisations (iNADO) in September 2021 revealed that NADOs from 27 different countries require support in the following areas.

- Accessing and using resources to monitor and evaluate clean sport education programs.
- Accessing and utilising evidence-based and science-informed educational content, available in different languages.
- Accessing and utilising a range of educational resources and means, including web-based games and online learning.

- Learning how to educate specific target groups, such as athletes with disabilities, athletes returning from doping-related sanctions, and coaches and other athlete support personnel (ASP).

The primary goal of this report is to explain in plain language how to use Communities of Practice to address the aforementioned challenges and needs of NADOs and other sport governing bodies in terms of clean sport education. To this end, four key domains are specified which collectively address the said challenges and needs, and these are listed as follows:

- Build and utilise effective synergies with external partners.
- Enable knowledge transfer and the exchange of good and best practices.
- Access resources for clean sport education, in line with the WADA's ISE.
- Innovate in clean sport education.

In essence, communities of practice help both NADOs and sport governing bodies to promote and widely disseminate the Spirit of Sport and Clean Sport values. The following sections of this report offer practical advice and recommendations about addressing each domain. This is expected to support NADOs and other sport governing bodies to fulfil WADA's ISE requirements and standards, and to improve their autonomy and competence in terms of delivering relevant, state-of-art, and impactful clean sport education programs.

3. Utilising Communities of Practice for Clean Sport Education

This section presents how NADOs and sport governing bodies involved in anti-doping education can benefit by using Communities of Practice. The information presented here is further supplemented by a practical guide on developing, monitoring, and evaluating a Clean Sport Education Community of Practice, which is schematically presented in Appendix 1, The Life-Cycle of a Clean Sport Community of Practice.

3.1. Building and utilising synergies with external partners

The WADA ISE clearly specifies that "*Where possible, Signatories should seek partnerships in the academic field or with other research institutions to provide support for evaluation and research purposes. Social science research can also be used to inform evaluation procedures*", and that Signatories "*cooperate with others and coordinate their Education activities to minimize duplication*" and "e*ngage and leverage the resources and expertise of others, including governments, researchers and educational institutions*".

Through Communities of Practice, NADO's and sport governing bodies can build new or strengthen existing synergies with external partners, because the very concept of CoP is based on synergy development and collaborative, situated learning. A CoP can yield the following benefits for NADOs and sport governing bodies interested in clean sport education:

- Scalability and cost-effectiveness of clean sport education efforts. Through synergies with external partners, NADOs and sport governing bodies may scale up their efforts to promote the Spirit of Sport, clean sport values, and clean sport education in general. This helps NADOs reach out to wider audiences and populations in the local sporting communities. Importantly, communities of practice can be highly cost-effective because they can operate virtually, through online communication tools and platforms. This is especially relevant to NADOs and sport governing bodies with limited resources.

- Learn more about the relevant training needs of athletes and their support personnel (e.g., coaches). This is important for tailoring clean sport education content accordingly, as athletes and ASP members in different sports may have different training needs.

- Gain significant knowledge capital in clean sport research and education by involving academics with relevant expertise, and with expertise in developing and evaluating educational programs for different age groups.

- Gain practical knowledge in continuous professional development (CPD) and in-work training. For instance, coaches associations or organisations (e.g., the International

Council for Coaching Excellence) already have in place training programs targeting coaches and also have extensive networks with coaches across different countries. Similarly, professional and vocational schools offer the opportunity to reach out to professionals in-training that will be employed in diverse sport settings, including amateur sport and exercise and fitness settings.

In this context, external partners that can serve as members of a CoP for Clean Sport Education may include, but are not limited to:

- Academic experts, such as known experts in the field of anti-doping research.

- Educational institutions, such as Universities and research centres.

- Sport governing bodies, such as national sport federations.

- National athlete associations, where relevant.

- National professional development and education bodies, such as coaches' associations.

- Vocational education and professional schools, such as schools for coaches and personal trainers, where relevant.

3.2. Enabling knowledge transfer and exchange of good practices

By definition, CoPs develop meaningful synergies between different partners/members in order to enable knowledge transfer and the exchange of good (or best) practices in a given area. Knowledge transfer and the exchange of good practices through a CoP can yield the following benefits for NADOs and sport governing bodies:

- Learn what practices are already in place in order to avoid unnecessary duplication. This is directly relevant to the stated objectives of the ISE as already mentioned previously. NADOs can learn which practices are used already by other NADOs, sport federations, and other sport stakeholders. This will allow them to "map out" existing resources and see where new intervention and change may be needed in accordance with local training needs analysis.

- Learn what works and what doesn't work in terms of clean sport education, and how culture and contextual factors influence the applicability of different clean sport education programs and initiatives. This is highly important especially if the CoP involves partners from different geographical areas and cultural and ethnic backgrounds.

- Reach out internationally to benefit local sporting communities. NADOs in countries that share the same language can share resources and best practices through a

CoP. For instance, Cyprus and Greece share the same language, and so can share resources readily available, and identify best practices in clean sport education. Similarly, different NADOs from Latin American countries may utilise their common language to share and co-develop clean sport education resources.

- Understand the different contexts of clean sport education. This is an important outcome of CoPs, especially when considered in the context of amateur sport and the fitness sector, where NADOs have had historically limited involvement. For instance, through synergies with partners in the fitness sector, NADOs can better understand the educational needs of gym goers may be involved in, or at-risk for using doping substances. Essentially, such synergies can help contextualise clean sport education more meaningfully and in relation to the lived experiences of both users and non-users of IPEDs in recreational sport and/or fitness that fall outside the scope of traditional anti-doping efforts.

3.3. Accessing knowledge and resources for clean sport education

One of the most important outcomes of a CoP is to gain access to relevant resources for clean sport education. This can be a sequential outcome of the synergies developed between NADOs, sport governing bodies and academic experts or organisations with such resources. WADA's ISE mandates that NADOs and Signatories implement clean sport education programs that fulfil certain criteria: "*Education* Programs should be evidence based, informed by *Education* theory, and where possible, informed by social science research." (p. 10).

Few NADOs can readily access such knowledge and resources, and even fewer can contextualise relevant resources in their national languages, and cultural and ethnic backgrounds. Therefore, accessing clean sport education knowledge and resources through a CoP becomes vital, but also necessitates that NADOS and sport governing bodies gradually gain greater autonomy by learning how to develop their own resources.

Therefore, the benefits of accessing clean sport education resources through a CoP include:

- Addressing effectively WADA's ISE requirements and mandates with respect to the implementation, monitoring, and evaluation of clean sport education programs.
- Building knowledge capital and gaining autonomy. By learning how to access and utilise clean sport education resources, NADOs and sport governing bodies can build their knowledge capital, improve their resources for clean sport education, develop in-house expertise in clean sport education, and gradually become more autonomous and independent. This pertains to all the aspects of clean sport education: implementation, monitoring, and outcome evaluation.

- Diversify resources to target local training needs. Lastly, by accessing clean sport education resources NADOs and sport governing bodies can diversify and adapt them in order to meet local training needs of athletes and the ASP, and of target groups in amateur sport and fitness.

3.4. Innovating in clean sport education

As research on doping progresses, our knowledge of doping behaviour also changes and this may further create new educational needs that may need to be reflected in WADA's ISE. For example, the 2021 WADC was revised and updated to incorporate recent advances in the anti-doping landscape, such as article 2.11 that addresses the issue of whistleblowing against doping in sport and the protection of informants/whistleblowers.

One way of staying "ahead of the game" in clean sport education is through innovation: the creation of new knowledge and solutions in doping prevention through education. Innovation can come in many types and forms, including the design of new pedagogical and educational features (e.g., video games for clean sport education), the incorporation of novel learning technologies (e.g., virtual reality), and the development of new models of learning about doping and clean sport values (e.g., autonomous learning by athletes and ASP members). In organisational settings, Communities of Practice are increasingly used as a mechanism that enables innovative thinking and solutions (Bertels, Kleinschmidt, & Koen, 2011; Choi, Ahn, Jung, & Kim, 2020; Meeuwesen & Berends, 2007), and there is no reason to believe that communities of practice cannot enable innovation in the context of clean sport education. More specifically, communities of practice with expert partners, NADOs and sport governing bodies can be directly involved in:

- Identifying the new frontiers in clean sport education and related research. This may pertain to an early detection of IPEDs use patterns, such as "blasting and cruising" and other harmful practices in AAS use (de Ronde & Smit, 2020; Underwood, van de Ven, & Dunn, 2021).
- Identifying new solutions and ideas for the development of state-of-art clean sport education programs, such as the incorporation of gaming technology, virtual reality, and other technology-assisted learning approaches and methods.
- Developing novel ways of monitoring and evaluating the outcomes of clean sport education programs (e.g., addressing psychological risk factors for doping, biochemical validation of doping use).

Although these are indicative areas of innovation in clean sport education, they illustrate that this area is still in an early developmental phase and has high innovative potential. The

contention of the present report is that Communities of Practice can enable such innovation for the benefit of the clean sport movement.

4. Recommendations for Policy-Makers and Anti-Doping Practitioners

Based on the information presented in the previous sections about the benefits of Communities of Practice for Clean Sport Education, the practical recommendations for policy-makers and anti-doping practitioners are detailed as follows.

Recommendation #1 *Establish communities of practice to enable meaningful synergies among relevant partners in clean sport education.*

Such synergies may indicatively include:

- Academic experts, higher education institutions, and research centres with resources and expertise in clean sport education and/or related anti-doping research.

- Sport governing bodies, athlete, and coaches' associations and federations.

- Vocational education institutions relevant to sport coaching, personal training, and related professions.

- Fitness industry and amateur/recreational sport associations.
- Local school authorities, including primary and secondary education.

Appendix 1 presents the practical steps involved in developing, monitoring, and evaluating communities of practice for clean sport education.

Recommendation #2 *Use communities of practice to enable knowledge exchange among NADOs and sport governing bodies.*

This is especially relevant to NADOs and sport governing bodies with fewer human and financial resources, who wish to further expand their knowledge capital in clean sport education so that they can effectively meet the requirements of the WADC and the ISE. It is essential that all partners/members of the community are actively engaged, and the community of practice allows bidirectional flows of information so that all partners/members of the community can have mutual benefits from their participation. Community of practice members can share knowledge about:

- Clean sport education and training needs in different sport disciplines and/or target groups (e.g., athletes with disabilities, coaches, athletes returning from doping sanctions).
- Effective ways to reach out to and involve the sporting community in clean sport education.
- Cost-efficient ways to implement, monitor, and evaluate clean sport education programs.

- The development of synergies and outsourcing models to share the resources needed to implement WADA's ISE (e.g., delivery of clean sport education in collaboration with local Universities or vocational training schools).
- Good or best practices in developing educational resources for clean sport education.
- Good or best practices in implementing, monitoring, and evaluating clean sport education programs.

Recommendation #3 *Use communities of practice to access knowledge and resources for clean sport education.*

In line with WADA's ISE requirements, NADOs and sport governing bodies that are Signatories to the Code should "*engage and leverage the resources and expertise of others, including governments, researchers and educational institutions*".

Developing a community of practice with partners that already have access to related education resources will help NADOs meet the ISE objectives and requirements. In order to facilitate access to clean sport education resources the consortium of project IMPACT has already developed a relevant open-access database (*IMPACT Clean Sport Education Repository*). This database can be freely accessed by NADOs, sport governing bodies, and other organisations interested in clean sport education, and includes a wide range of educational resources covering different topics and areas (e.g., from values-based education and making informed choices about doping, to promoting whistleblowing behaviour). The resources included in the *IMPACT Clean Sport Education Repository* have been developed through funding from WADA, the International Olympics Committee, or the European Commission's Erasmus+ Sport Programme, and are available in different languages. Importantly, all the education programs in the Repository are presented in relation to WADA's ISE specification of the key components and topics that should be covered in clean sport education. The *IMPACT Clean Sport Education Repository* and can be accessed here:

http://project-impact-eu.phed.auth.gr/anti-doping-education-repository/

Recommendation #4 *Use communities of practice to build knowledge capital and in-house expertise.*

Through knowledge transfer and the sharing of good and best practices, NADO's and sport governing bodies that are expected to implement WADA's ISE can gradually acquire the necessary knowledge capital and in-house expertise to become more autonomous in clean

sport education provision. This is especially relevant to NADOs and sport governing bodies that currently have limited resources to enable them meet the requirements of the WADC and the ISE. To achieve this goal, a knowledge management strategy should be in place to maximise the intellectual capital gains yielded through the community of practice. This strategy should be defined in line with the long-term goals and objectives of the community of practice.

Recommendation #5 *Use communities of practice to identify the new frontiers in clean sport education.*

The rapid changes in the anti-doping front require that NADOs and other sport governing bodies with a clean sport education remit remain vigilant and proactive for emerging challenges and threats to clean sport. This is especially relevant to areas where NADOs have historically had little involvement over the past decade, such as fitness and amateur sport. It is also relevant to identifying new trends in clean sport, such as the promotion of whistleblowing against ADRVs in organised and competitive sport. Communities of practice can provide a mechanism through which new challenges and trends in clean sport are early detected, rapid responses are discussed, and relevant action plans and policies are decided. To this end, it is recommended that clean sport communities of practice incorporate goals and objectives relevant to identifying and responding to emerging trends and challenges to clean sport.

5. Appendix 1 - Practical Steps in Developing a Clean Sport Education CoP

There are different ways to describe how CoPs are formed, developed, monitored, and evaluated. The following approach provides a simple, jargon-free, and practical guide that aims to help NADOs and sport governing bodies with a clean sport education remit to develop their own clean sport education CoPs. A schematic representation of the Life Cycle of a Clean Sport Education CoP is presented in Figure 1.

Step 1 - Forming the CoP

This is the first step in developing a CoP and involves identifying and recruiting relevant partners/community members. Although the specific objectives of the community are decided in the next step, still the initiator/leader of the community should have a clear direction in mind as to the main purpose of the CoP. For example, if your goal is to increase your organisation's knowledge about clean sport education in fitness sport, then it is essential that the partners/members of the community represent this population (e.g., personal trainers, fitness industry representatives, fitness industry associations etc.). Therefore, specifying the overall purpose of the CoP is crucial for determining the community members' characteristics.

Community size is another matter of concern at this step. Usually, larger groups are better than smaller groups, but if a community is too large then it is harder to monitor and coordinate. Ideally, the same principles that apply in other areas (e.g., task group or team formation) also apply here. Although there is no gold standard for a CoP size, usually a community with up to 10-12 members can function effectively.

After identification and recruitment of the community members, it is recommended that an early assessment is performed with respect to the expectations of the members: Why did they join the community? What do they want to achieve and a personal or organisational level? How do they envisage their participation? This process will allow you to better understand the motivations and aspirations of community members and, accordingly decide if you want to develop this community further.

The last step in the Forming process involves the community's first meeting. This meeting is essential because it allows all members of the community meet together for the first time as a group (either physically or online), and to openly discuss their goals, motivations, and aspirations for the community. Usually, this first meeting provides all members with an idea of where the community is headed and how a mutual collaboration can develop between community members.

Housekeeping of the CoP: It is important that all members understand the key rules for maintaining the CoP and for turning it into an enabler (and not a barrier) to clean sport education. This includes:

- *Accountability.* All members are accountable for their participation in the CoP meetings and operations.
- *Teamwork.* The CoP outcomes and results reflect the collective effort of its members, and not an individual's sole endeavours.
- *Mutual trust.* The CoP can operate more effectively when members trust each other and communicate in an honest and open way.
- *Bottom-up.* Instead of top-down hierarchies, CoPs operate as a bottom-up entity with a flat (or nearly flat) structure. Although some members may assume more leading/coordinating roles, the CoP is based on the equal and fair contribution of each members.
- *Dynamic learning.* Learning is not fixed, even more so in a dynamically evolving field, such as clean sport education. As such, CoP members should be open to new learning opportunities, ways of thinking, and alternative approaches.

Step 2 - Deciding the objectives of the CoP

Following the first meeting of the Community, members are "tasked" with reflecting upon what was discussed and, accordingly, consider the specific objectives of the CoP. The more SMART (Specific, Measurable, Attainable, Relevant, Time-based) the goals are, the more likely it is to have a clear direction for the CoP. Typically, this involves answering questions, such as "*what does this community want to achieve?*" or "*where would we like to be as a community in 12 months from now?*". The timeframe of the community will determine the SMART features of the goals, especially the Attainability, Relevance, and Timeliness of the set goals. So, if the CoP has a limited lifetime (e.g., 12 months) then the goals should be attainable within this timeframe. A useful and practical exercise for this stage is a SWOT analysis, where community members consider the goals and action plan of the CoP within the framework of Strengths, Weaknesses, Opportunities, and Threats. This will allow CoP members to have an early understanding of the potential threats and challenges that may lie ahead, so that they can develop relevant contingency plans. Lastly, at this stage the CoP members decide the action plan of the CoP and delegate roles and tasks to each member. Usually, this involves a discussion about what each member is expected to contribute to the community, and the quality standards that may apply.

Step 3 - Monitoring the progress of the CoP

This is an important step because it will determine the entire course of the CoP and also allows members to realise whether a change is needed in the way's the CoP operates. The monitoring of the CoP progress is relevant to the quantitative and qualitative aspects of the CoP operations.

The *quantitative* aspects reflect the number of meetings completed, the number of attendees in each meeting, as well as a monitoring of whether the set deadlines are met, and whether the short-term goals of the CoP are met within the those deadlines. In this respect, CoP monitoring does not differ so much from typical project management.

The *qualitative* aspects of the CoP progress refer to the quality and standards of the community's operation and related outcomes and results. For instance, do CoP members actively engage in the community operations and meetings, or are they simply present because they feel obliged to? Relatedly, are CoP members underperforming or does their contribution meet the minimum expected standards?

The monitoring of the CoP can be recorded through the completion of structured surveys by all CoP members, and/or one-to-one or group discussions about the community's progress.

Step 4 - Evaluating the CoP outcomes

Evaluating the outcomes of the CoP is an essential marker of the community's success. Tangible outcomes and results (e.g., a report on how to implement and evaluate a clean sport education program in certain sport disciplines, or the development of an education policy as per WADA's ISE) are usually easier to evaluate, compared to intangible ones (e.g., discussions about the next frontiers or challenges in clean sport education). However, the type of the result to be evaluated is determined by the set goals of the community. Essentially, the outcome evaluation processes reflects whether the community's goals were fulfilled as expected. If some (or all) of the goals are not met, then this presents an opportunity for reflection and learning how to improve the operation of a clean sport education CoP. One of the advantages of a CoP is that all outcomes (even apparent "failures") are beneficial for its members because theu present a learning opportunity.

With regards to the practical aspects of the outcome evaluation, the set goals, task, and expected outputs of the CoP will determine the evaluation methods to be used. For example, if the expectation was to develop an evaluation framework for clean sport education programs in secondary schools, then the final output can be evaluated in terms of its quality and high standards by the members of the CoP, as well as relevant external advisors - in

this case a small group (3-4) of educators with expertise in sport and physical activity, or health education.

Step 5 - Deciding future direction

Following the evaluation of the CoP's results and outcomes, members may decide whether they intent to extend the lifetime of their community to serve the same purpose or to diversify the goals and objectives and address a new area or topic in clean sport education. For example, if the initial goal of the CoP was to develop resources about values-based education and clean sport, after this goal is achieved the CoP members may decide to further extend their work, or switch to another area, such as promoting whistleblowing against ADRVs in sport. Of course, CoP members may as well decide that the CoP will be adjourned.

Figure 1. Schematic representation of the Life Cycle of Clean Sport Education CoP

6. References

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