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PEDAGOGICAL CONCEPTS USED IN PHYSICAL EDUCATION AND SPORTS IN BELGIUM (WALLONIA-BRUSSELS FEDERATION)

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Abstract

Through the national and international investment of several scholars, the French speaking part of Belgium contributed to the development of the field of pedagogy and didactics applied to physical education (PE) and sports. However, on the same time, the definition of the pedagogical concepts did not necessary represent an important center of interest among the PE and sport community. Most of the time, the different concepts have been seen as relatively synonymous. Such pragmatism could be linked to the medical roots of the discipline and the secondary role initially given to the educational sciences in PE teacher education. Across the years, terminology changed along with the development of the human sciences and the influence of international inputs.

Successive reforms of the education system brought new objectives and updated teaching approaches. PE had to adapt itself to respect the general educational guidelines and the specific characteristics of PE and sports contexts fostered the development of specific scientific approaches based on the educational sciences. Research findings on PE teaching and on PE teacher education provided relevant resources to improve teacher training as well as the quality of teaching. The enactment of requirements for teacher training necessitated strengthening alignment between PE teaching, PE teacher education and research in these areas. Nowadays, such alignment can be considered under the umbrella of the 'intervention in sport' that covers the 'pedagogical encounter' in all contexts where one can physical and sports activities.

1. Introduction

As an introduction to this chapter, the description of the specific constitutional context of Belgium represents a necessity. Until 1970, Belgium was a unitary state structured on three levels: central (state), regional (province), and local (municipality). The educational system depended on the national level and was supervised by the national minister of education. In 1970, a constitutional reform changed that structure as the country became a federal state and created new authority levels based on the official languages spoken in three regions: Dutch, French and German speaking communities (Verhoeven & Elchardus, 2000). Their responsibilities were linked to all cultural aspects including sport (Van Mulders, 1992). In 1988, the responsibilities of the communities were extended to education (Verhoeven & Elchardus, 2000). That modification concerned naturally physical education (PE) as a subject matter and teacher education as a pillar of the educational system. Since then, the three communities propose their own curricula. According to the complexity of the national situation, this chapter will refer only to the French speaking community (about 40% of the population) under the authority of the Wallonia-Brussels Federation (formerly called French Community of Belgium). Two earlier publications would provide additional information on the other communities (De Knop, Theeboom, Huts, De Martelaer, & Cloes, 2005; De Martelaer, Seghers, Cardon, Haerens, De Boever, & Cloes, 2014).

2. Historical development of sports didactics

2.1 First period – Methodology

As recalled by Bonaventure (2007), in Belgium, PE appeared in school curricula in 1842 when a tiny minority of the population had an access to a catholic education. From 1876, the public services could also organize their education network. Jahn's German gymnastics was part of the curriculum but not often offered. In 1895, Ling's Swedish gymnastics began to take hold. A Higher School of Physical Education opened in Brussels in 1905. This private initiative aimed to support teachers convinced of the usefulness of a PE built on a scientific basis and wishing to go beyond empiricism prevailing at the time. Between 1908 and 1937, Belgian universities created specific programs integrated to their medicine faculties and taught Swedish gymnastic that was exclusively proposed in primary and secondary education. The other methods of PE

(Janh, Bukh, Hébert, etc.) were neglected, other bodily activities (sport, dance, etc.) being variously appreciated and, sometimes, rejected. Between 1946 and 1968, Ling's Swedish gymnastics became 'educational' and then 'formative-educational' gymnastics. In parallel, conceived with an educational perspective, sport was gradually introduced into schools, most often outside of school hours and carried by the dedication of volunteer teachers. Nonetheless, apart from swimming and certain athletic specialties, it remained excluded from physical education teacher education (PETE).

2.2 Births and development of sport pedagogy and didactics of physical education

Then came May 68 and the societal transformations that followed. For PE, it was a revolution because "renovated teaching" experimented from 1969 and launched two years later intended to make the pupil the subject and no longer the object of the teaching he received (Van Haecht, 2015). PE found its place in the timetables and was responsible for developing the overall personality of the students and not just their knowledge. Promoting a pedagogy of success and the introduction of the human sciences, the PE curriculum pointed out the importance of learning to learn. It focused on health (development of an ethics of active and hygienic life) and education (sucking sports vocations) by relying on activities anchored in society: sports, dance, circus techniques, etc. From the results of studies carried out in the field of motor learning and the advent of social constructivism, alternative approaches were developed: adaptation of the environment by using learning aids, learning by playing, and the integration of the learning task in a situation close to the real practice. In the school context, such approaches opposed the technical approaches applied in sports clubs. Mainly drawn from these, PE teachers often encountered difficulties to avoid reproducing in school the pedagogical model in force in benchmark social practices. The emphasis placed on developing their sports skills during their initial training contributed to reinforce that situation. While the PE curriculum pointed out non-directiveness as a central principle, the most common teaching style corresponded to the command style described by Mosston and Ashworth (1986).

In the second half of the 1970s, drawing inspiration from studies carried out in the sciences of education, researchers such as Maurice Piéron (University of Liège) and

Pierre Swalus (Catholic University of Louvain) launched systematic researches in French-speaking part of Belgium, aimed at describing what happens in PE lessons. Soon they were also interested in teacher training. Based on behaviorist concepts, the analysis of teaching thus focused on the observation of the behaviors of students and PE teachers, on their interactions and then on a growing number of variables related to the achievement of learners (pupils/students engagement time, teacher's feedback). The development of systematic observation systems specific to the field of PE quickly made it possible to provide a scientific database allowing offering training whose content was legitimized by objective findings. The two authors have published several books that have served as references for generations of teachers (Piéron, 1982, 1992; Swalus, Carlier, Florence, Renard, & Scheiff, 1988). Despite the diversity of teaching styles available for PE (Mosston & Ashworth, 1986), teaching practices respected mainly the traditional instructional model called 'Direct instruction' (Metzler, 2005). A limited number of researches were conducted in the sport context.

The studies then evolved in order to apply to the PE field the discoveries made by research in educational sciences and the evolution of the research paradigms (Carreiro da Costa, 2008): mediating role of pupils, growing share of "invisible" variables (perceptions, knowledge, representations, etc. motivations...), and identification of experts' characteristics. Prof. Piéron's involvement in the Association Internationale des Ecoles Supérieures d'Education Physique (AIESEP - International Association for Physical Education in Higher Education - www.aiesep.org) also allowed the dissemination in the French speaking community of Belgium of concepts developed under the banner of sport pedagogy, a young scientific discipline that has become the core business of this organization (Haag, 1989; Piéron, 1993). The many international exchanges then nourished reflections and influenced the conception of the teaching of PE. The researchers of the Catholic University of Louvain collaborated more with colleagues from Québec and France, integrating also their contributions into the PETE. Through publications (books, articles in professional journals, course notes) (Piéron, 1993) and inservice training camps (Lecomte, Carlier, & Renard, 2002), these researchers have thus contributed to translating concepts into teaching practices. Teaching analysis was integrated into the field of sports pedagogy (concept embodied in

research), a concept proposed at the international level and adopted in Wallonia-Brussels Federation. In parallel, during the last two decades of the 20th century, courses entitled 'Methodology of physical education' have evolved into courses called 'Didactics of physical education' (concept initially associated to teacher education). That evolution came from the fact that the principles of action proposed to teachers were progressively linked to research findings rather than on empiricism. This change of name can also be associated with the development, in France, of a current of research in the sciences of education, didactics, which radiated in French-speaking countries and influenced the designers of training programs. However, it is noteworthy that pragmatism of PE teachers and PE teacher educators contributed to limit the debate around the concepts.

In the 80s and 90s, in Belgium as in the other parts of the world, the society changed a lot. PE (as well as sport) faced several concerns: increase of sedentariness, appearance of new sport practices, and need of quick change in learning ... Therefore, the interest towards pupils/students' motivation increased. As an illustration, based on literature and good practices, Florence, Brunelle, & Carlier (1998) proposed some directions to help PE teachers to understand youths' motives and build a meaningful teaching.

2.3 Identification of the missions of the school system and development of intervention in sport

The educational system had to evolve. Following a worldwide movement, a major reform was implemented at the end of the 90s to define the missions of the school system (Ministère de l'Éducation, 1997). Following an international trend, for all school subjects in elementary and secondary school level, it stated new objectives and focused on the development of competencies (Romainville, 1996). In PE, three categories of competencies were introduced (physical fitness, motor skills, and socio-motor cooperation) while four final goals were defined (health, safety, expression, and sports culture)(Ministère de la Communauté Française, 1999, 2000a, 2000b). These competencies and goals modernized the former PE objectives with an input from the evolution of the curricula in other countries (France, Québec). That reform modified the priorities of the PE teachers: from teaching sports activities to teaching for pupils/students development. Moreover, the new curriculum focused on the involvement

of the learner and underlined the importance of social constructivist approaches. Such shift needed a deep modification of the teaching traditions and, despite the organization of in-service sessions, faced real resistance to change. Most PE teachers did not have a clear awareness of how they could introduce such teaching in their classes and a traditional technical approach remained predominant in PE and team sport coaching (Cloes, Berwart, & Frédéric, 2010; Frédéric, Gribomont, & Cloes, 2009).

In parallel, at the end of the 90s, French-speaking teacher-researchers interested in the teaching of PE and sports and/or the training of physical educators decided to come together in order to federate several streams of research, initially competing. Not responding to the theoretical foundations of French teacher-researchers, the concept of 'sport pedagogy' was abandoned in favor of the concept of 'intervention in sport'. The Association pour la Recherche sur l'Intervention en Sport (ARIS - Association for Research on Intervention in Sport) was created in 2000. The activities of this international association influenced teacher-researchers from the French community. It is noteworthy that representatives of both Catholic University of Louvain and University of Liège sit continuously on the board of directors of that organization, since its creation. A consequence of this proximity was the dissemination of the term 'intervention' in the discourse of PE teacher educators and its appearance in the titles of several courses offered in higher education. As a heritage of the teaching analysis and the influence of some international streams, the researchers involved in the intervention field enrolled in the integrated model of the teaching-learning process (Cloes & Roy, 2010).

2.4 Towards an inclusive quality physical education that change the real life

At the beginning of the 21st century, at the University of Liège, influenced by authors like Tappe and Burgeson (2004), Cloes began to claim the role of PE in the promotion of a physically active lifestyle in youths. He illustrated such vision by adding a complement to one of the main educational goals stated by the government: 'Preparing responsible citizens ... for their body, lifelong!' Moreover, he imported and shared new concepts like accountability and physical literacy and pointed out the need to propose, in PE, an authentic instruction promoting a connectedness between what is taught/assessed and

the out-of-school world (Newmann & Wehlage, 1993). That global vision of PE will be developed in the next section.

Recent Covid pandemic demonstrated that educating physical literate citizens able to find appropriate ways to adapt their behavior to unusual conditions should become a priority. It reinforces also the fact that the educational system needs PE that clearly integrate health requirements and students' autonomy.

2.5 A pending reform

Finally, in 2015, the French Community launched a fundamental reform of the school education called the Pact for Excellence in Teaching. It is the result of intense collective work based on the ambition to strengthen the quality of education for all students. That long-term systemic reform is gradually elaborated and implemented. For PE teachers, that reform will modify again the way to teach as one of the eight axes to be developed at school deals with 'Physical activity, wellness, and health' and underlines the central role of PE. PE becomes physical and health education. It means that PE teachers should move to a pedagogical model for health-based PE (Haerens et al., 2011).

2.6 A summary

To conclude this section, it seems necessary to propose some definitions of the concepts analyzed in the light of the cultural particularities of the Wallonia-Brussels Federation as well as summarizing the evolution of several variables that were considered (Figure 1).

	... - 1970	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020	2020- ...
Physical education	Swedish gymnastics	Physical education (and sport)			Physical education for competences		Physical & health education
Concepts	Methodology	Sport pedagogy Didactics of physical education			Sport pedagogy Didactics of physical education - Intervention in sport	Sport pedagogy - Didactics of physical education - Intervention in sport Physical literacy - Societal transfer Accountability - Quality Physical Education - PAMIA	
Instructional models for PE	Direct instruction				Direct instruction Teaching for personal and social responsibility		
Educational reforms	Traditional	Renovated teaching			Competences		Pact for Excellence in Teaching
Specific research	Comparison of methods	Teaching analysis		Integrated model of the teaching-learning process			

Figure 1 – Time-line of analyzed variables

Terms like 'methodology of physical education', 'sport pedagogy' and 'didactics of physical education' have been used through the years. 'Intervention in sport' is more recent. For most practitioners and teacher educators, these concepts were equivalent and linked to the best ways to reach the goals determined by the educational system. On the other hand, wishing to find their place among the sports sciences, researchers interested in educational questions have adopted definitions borrowed from the general educational sciences.

At the beginning, as it was the case for former gymnastics treatises, 'methodology of physical education' focused among other topics on description of the organization of a typical lesson, teacher's role, on equipment use or management techniques. The identification of the learning goals and explanation of the content to teach also belonged to what the student teachers had to learn.

The use of 'sport pedagogy' appeared when scholars began to analyze more systematically the teaching process. For Haag (1989), sport pedagogy is 'the description of the field of theoretical research or sub discipline of sport science which deals with the educational aspects of physical activity: sport, play, games, dance etc' (p. 6). Piéron (1993) stated that it is a discipline aiming to provide scientific data about education and professionals' preparation in the different contexts of the field of sport and physical activity (school, sport, active recreation). Using descriptive, correlational, or experimental approaches, it is focused as much on the actors (learners and educators) than on the content offered or the programs' organization, its main objectives being to contribute to the improvement of the effectiveness of the practitioners and their educators. More recently, AIESEP concluded that '... sport pedagogy focuses on synthesizing knowledge to inform the 'pedagogical encounter'. The pedagogical encounter is defined as that precise moment where a teacher, coach or instructor seeks to support a learner in sport, physical activity or exercise settings' (Armour, 2012).

Until the 80s, 'didactics of physical education' referred to the technical tools of teaching, close to 'methodology of sport'. Following the French development of the sciences of education, the meaning gradually changed in favor of the study of the transmission

processes of knowledge and know-how specific to the discipline and their acquisition by students (Amade-Escot, 2007).

Under the influence of ARIS (<http://www.aris-intervention-sport.org/>), the term 'Intervention' was quickly adopted in higher education institutions. It is defined as 'any professional act implementing competencies, experimental and theoretical knowledge to serve a purpose in different fields of human movement (school, sports club, active recreation, rehabilitation, infant motor learning ...) to the benefit of various people, across the lifespan (Carlier & Delens, 1999).

Since a decade, concepts like 'active school', 'physical literacy', 'societal transfer', 'accountability', 'quality physical education', 'PAMIA' have appeared in the discourse of teacher trainers. They will be discussed in the next section.

3. Current trends and concepts in PETE

Before the reform of the educational system implemented in 1997, the organization of the PE teacher education was almost freely organized in 12 higher education institutions: nine colleges and three universities. During two than three years, the colleges prepared teachers involved in school from kindergarden to grade 9 (pupils/students of 2.5-14 years-old). Universities proposed a four years curriculum (sport sciences) completed by/integrating one year dedicated to teachers preparation for grades 9-12 (14-18 years-old students). Colleges proposed a curriculum mainly focused on pedagogical developments while, based on their medical origin, universities programs provided an emphasis on sports sciences. In parallel to the reform of the educational system implemented at the end of the 20th century, several decrees defined the objectives of teachers' preparation by designing competencies that teachers should obtain (Ministère de la Communauté Française, 2001). Consequently, the curriculum of all 'institutes of physical education' evolved in a way to respect both the education missions and requirements for teacher education. They implemented different learning methods, individual and collective, actively involving the student teachers in their training. Preparing reflective practitioners and able to develop take into account the individual characteristics of their pupils/students took more importance. In 2004, higher education implemented the Bologna process. Even if it did not influence the goals of the

teacher education, the organization of the studies changed. In the universities, specific masters focused on 'Didactics of physical education' appeared, reinforcing the place of educational courses among the curriculum (increase of teaching practicum – not only in the school context).

After 2010, all higher education institutions integrated progressively courses focusing on health aspects. Such development has its origins in the awareness of program managers of the PE's role in the fight against the galloping sedentary lifestyle of the population. International (Quebec, France ...) and regional initiatives have clearly contributed to this new interest (De Martelaer et al., 2014).

For Cloes (2017, 2019), if PE teachers have to become effective agents of change to motivate their pupils/students to adopt an active and healthy lifestyle, they need to receive appropriate pre- and in-service education. The first step deals with the understanding of their potential coordinating action at the school level (in PE, extracurricular activities, active transportation, school environment, and physical activity in the classroom). It means that PE teachers should become project managers (analyze, plan, implement, coordinate, assess) and work with all educational actors (staff members, parents, pupils/students, community). As a second step, PE teachers should integrate the concept of 'Inclusive Quality Physical Education' (iQPE)(McLennan & Thompson, 2015) in an original concentric model. For that, the starting point consists to place the development of physical literacy at the center of the priorities of the PE course: developing motor competence, physical qualities, knowledge and attitudes that will allow someone enjoy the adoption of an active lifestyle. Ensuring that what is learned in the gym can be practically used by students in their everyday life represents the next challenge (societal transfer): autonomous active lifestyle, transversal aspects, health and safety, psychological aspects, social aspects, knowledge of the human body, motor and sports culture. PE teachers have then to work to produce concrete changes directly linked to the learning goals in their pupils/students (accountability).

Following Cloes (2017), applying the PAMIA principles (foster pleasure, achievement, movement, interaction, and autonomy) will support physical educators to implement an iQPE. They are based on well-known theories of motivation: priority of task-oriented

achievement goals and importance of individual fundamental needs evidenced by self-determination theory. They entered recently into the preparation of some pre- and in-service PE programs (Theunissen, Westenbohm & Cloes, 2020).

The latest news concerning teacher education in the Wallonia-Brussels Federation deals with its alignment to the elaboration of the Pact for Excellence in Teaching that started in 2015. In fact, teacher education organization and content have also been under deep questioning. It led to the publication of a new decree that had to be applied in September 2020 (Fédération Wallonie-Bruxelles, 2019). Following the new requirement, teachers education should now focus on 15 competencies (e.g.: ability to act as an educational, social, cultural actor within school and society; ability to invest in collaborative work of an educational team; mastery of disciplinary content; ability to act as a pedagogue within the class; ability to develop personal competencies ...). Both colleges (240 credits) and universities (300 credits) have to propose a program based on six axes: (1) disciplinary education which may include aspects of the didactics of physical education or applied to PE; (2) education to and through communication; (3) education to and through practice; (4) didactical and pedagogical preparation; (5) education in human and social sciences; (6) preparation in and through research in education and didactics. But the most revolutionary change of that reform will be the obligation of future teachers to follow courses in both colleges and universities, meaning that these institutions must find solutions to make shared teaching available to the students of their partners. Such requirement aims to increase the collaboration of the teachers graduated by both kinds of institutions. Nevertheless, in its general declaration (2019), the government of the Wallonia-Brussels Federation delayed the implementation of the reform to the 2021-2022 academic year. The Covid-19 crisis may have also impact the completion of such huge project that could be delayed again.

4. Examples of application in the areas of school and sports

Given the multitude of initiatives put in place within the 12 PE institutes to guarantee the efficiency of training, the choice of examples has proved difficult. Among all the existing activities, four will be responsible for illustrating the approaches implemented in initial and continuous professional development.

4.1 Integration of the new technologies: learning to teach

In terms of new information communication technologies in education, three major challenges are posed for PE and health: educating digital teachers so that they themselves possess digital skills; identify and analyze the practices of teachers, reference and disseminate them within the educational world; accompany and collaborate in order to support their innovations. This means that one must start by integrating digital technology into the initial training and develop it in continuing training. Referring to the SAMR (Substitution, Augmentation, Modification and Redefinition) model, the 'PE' team of the Haute Ecole Léonard de Vinci (one of the nine colleges) has embarked on a 'Digital School' project. Since 2012, the training of PE students can count on a technological approach to serve their sports training and their didactic experiences during their teaching practicum. The use of tablets and applications aiming at facilitating the acquisition of motor skills or the management of the classroom is now the subject of research-actions, the results of which being immediately injected into pre- and in-service education.

4.2 An ePortfolio designed to develop student teachers' reflection

The Haute Ecole Libre Mosane (HELMo – One of the nine colleges) developed an "innovative" training system integrating the reflection into the whole curriculum by turning to the analysis of practices and a clinical training approach. Based on the challenges identified in the training of reflective practitioners, the staff set up a tool to support students: an electronic portfolio (ePF) in which students share their training experience. It involved a modification of the contents, methods, values and institutional processes as well as the activities of the students. Throughout their training, the latter are involved in 'authentic' interventions (e.g.: writing a 'professional navigation map' based on the initial representations of the profession, the feelings at the end of the first experiences of teaching practicum; invention, animation and critical analysis of a game; various activities of digital creation such as website creation, infographics, video reports, interactive pictures; writing a professional project). Integrated seminars strengthen dynamics and nurture collective thinking, while the use of reflective writing methodology helps students adopting a systematic approach.

4.3 In-service training camp

Since 1982, the Centre universitaire pour la formation continuée en éducation physique (CUFOCEP – University Centre for continuous education in physical education - Catholic University of Louvain) organizes in-service training camps. During these activities, until >1000 PE teachers attended to formal activities stemming from an institutional obligation to update the teaching staff but also to many informal activities, some of which being squarely funny. The objectives of such yearly program were and still are to update the knowledge and contribute to the personal and professional development of the teachers. Referring to a large diversity of theoretical frameworks, numerous studies focused on CUFOCEP, analyzing trainers, trainees, workshops, pedagogical and didactic approaches. A specificity of CUFOCEP concerns the knowledge mobilized during the activities, which largely overlap with the professional knowledge of teachers.

4.4 Belgian adaptation of the Oblomov methodology – Move, play, create

Between 2017 and 2019, an Erasmus+ project called Oblomov (Obesity and Low Motility Victims) has been devised to tackle inactivity among preteens. Based on the motivational power of playful situations and the imaginary of the pre-adolescents, it proposes to integrate short periods of High Intensity Intermittent Training (HIIT) in theatre open scenarios (<https://www.oblomovproject.eu/>). The Belgian version elaborated at the University of Liège proposes seven scenarios inspired by popular TV shows, in which health messages are proposed to the participants. The latter are regularly requested to report how they are using the information shared during the activities (accountability). After a 2-day training session, five primary school PE teachers implemented the programme (10 lessons). Their pupils finished by creating mini-open scenarios that were videotaped. In a second implementation phase, PE student teachers followed two seminars preparing them to apply the dramatization principles. They taught six out of the seven scenarios during three Saturday afternoon to overweight children followed by specialized medical units of two hospitals. Considering the success of these activities, the Oblomov methodology is now integrated into the curriculum of the PE students.

5. Recent research interests and projects

As in the overall ARIS community (Musard, Robin, & Poggi, 2010), researches conducted on sport pedagogy or intervention in the Wallonia-Brussels Federation are mainly focused on the school context. Nevertheless, studies focusing on sport, leisure, and physical activity for health seem less confidential than in most other countries. Despite the existence of 12 institutes of physical education, very few researchers are active in the field of ‘intervention in sport’ on the territory of the Wallonia-Brussels Federation. In fact, that field of research is mainly developed in two out of the three universities (Liège and Louvain-la-Neuve) while sporadic studies are conducted in the colleges. In these institutions, teacher educators and their students are more involved as practitioners-researchers trying to build experiential knowledge rather than academic-researchers (Charlier, 2000). Findings of their investigations (mainly final works conducted during teaching practicum) remain confidential even if since 2016 a ‘Physical education seminar’ is organized every two years to encourage all PE student teachers and their educators to present their ‘field researches’.

Main academic research themes can be classified in seven categories (Table 1).

Table 1 – Themes and sub-themes of the studies in the field of ‘intervention in sport’

Analysis of the teaching of physical education
- Teaching-learning variables (motivation ...)
- Quality physical education (societal transfer, PAMIA principles ...)
- Content (Life saving ...)
- Teaching process (new technologies, Oblomov ...)
Physical literacy
Health education
Promotion of a physically active lifestyle at school
- Analysis of physical activity at school
- Intervention to increase physical activity at school
- Physical Activity Pauses at School (PAPS)
Physical education teacher education
- In-service education
- Continuous education
Pedagogical relation in the sport context
- Coaches, athletes, referees, and fans
- Student athletes dual careers
- Functioning of sport training centers
- Coaches education

Physical activity and sport for health and well-being

- Physical activity prescription
 - Senior citizens
 - Intergenerational physical activity
 - Intervention of health professionals
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As illustrated in Table 1, research on intervention in sport covers a large array of themes. In this section, we tried to select examples in PE, PETE, and in another context than PE.

Roure et al. (2019) conducted a study aiming to compare the effects of three conditions of video feedback use on students' Situational Interest (SI) during a 15 minutes learning task (executing technical skills in gymnastics). Three groups of students were assigned to different conditions (a group receiving only teacher feedback, $n = 92$; a group analyzing their video recording without any teacher intervention, $n = 139$; a group with teachers comments on students' video recording, $n=130$). The results underlined the central role PE teachers play when using video feedback to enhance SI in gymnastics lessons.

In a societal transfer perspective, teaching basic life support (BLS) to children and adolescents presents a concrete relevancy. In a co-construction process, PE teachers and PE teacher educators designed three units of six lessons to be implemented in primary and secondary education (Mouton et al., 2019). PE teachers ($n=22$) were trained to one of the three BLS cycles adapted to their teaching levels and taught it with one of their classes. Students (group 1: 10.7 ± 0.8 years, $n=186$; group 2: 14.5 ± 0.9 years, $n=112$; group 3: 17.1 ± 0.8 years, $n=307$) demonstrated significant improvements of knowledge of the cardiopulmonary resuscitation and automated external defibrillator protocols at the end of the unit ($p<.000$). They remained stable after three months. Group 2 and 3 students were able to perform chest compressions close to the international recommendations. After the unit, more than 80% of the students felt able to help a victim of cardiac arrest.

Analyzing the CUFOCEP in-service activities, Delens and Renard (2015) pointed out that knowledge transmission seems to take place through meetings, exchanges, discussions, and experiences between the different actors. The effectiveness in terms of

reinvestments in the workplace of the acquired training that teachers followed has been identified (Clerx, 2016). CUFOCEP had two impacts: 'production' (making the teacher more competent on the field) and 'creation' (helping the teacher to become an 'actor of change' by developing his/her practices, and thereby his profession).

Research focusing on physical activity in older people seems mainly developed in the biomedical sciences. However, creating positive and pleasurable interactions and a supportive environment, which would encourage elderly to participate more regularly in organized activities represents an interesting theme. Charles, Buckinx, Mouton, Reginster and Bruyère (2020) analyzed the motivational climate of group exercise sessions in nursing homes by interviewing participants (n= 102 ; 84.3 ± 7.7 years; 81.4% women). Subjects tended to perceive motivational climate as more task-involving than ego-involving. They regretted the absence of positive feedback on their efforts, the lack of new exercises as well as of encouragement for mutual aid.

Future research projects will depend on the resources that higher education institutions will affect to the intervention in sport domain. Nowadays, after the retirement of some professors who were fully invested in that field, it seems that the educational emphasis remains only at the University of Liège, the evolution of the recruitment in the sport science departments giving the priority to physical activity for health.

Nevertheless, some studies are planned in both local and international levels (e.g.: developing a physical literacy assessment tool to be used in different contexts of physical activity and sports practice; developing/validating intervention methods aimed at improving participation in the same contexts; provide quality education in physical health activities; supporting teachers in health education).

6. Discussion and outlook

In the Wallonia-Brussels Federation, due to the reduction of the positions dedicated to research in sports intervention in universities, there is a real risk of impoverishment of teacher training in physical education. In fact, no longer nourished by specific research, physical education didactic courses could gradually revert to simple methodological approaches that would no longer be supported by evidence. One element is likely to counter this phenomenon: the upcoming reform of teacher training, which should require

universities to devote a significant part of PE programs to teacher training activities. The future will tell whether the educational components will really receive the needed resources or whether alternative solutions will be implemented in order to conserve them for other disciplines of sports sciences.

Due to the current reform of the educational system that adds health education to PE, adaptations will be essential in teacher training. A didactic of PE integrating notions of health education will have to be developed, as it is already the case in several countries.

As underlined by the COVID-19 crisis, the use of digital technology will definitely have to become a habit, requiring a review of didactic approaches aiming to keep concrete physical activity even in online courses.

Moreover, the advent of new training approaches should modify the way the PE teachers and their educators see their work. Both kind of actors will have to increasingly adopt interactive teaching-learning approaches needing a real change in the responsibility of the learners (e.g.: inverted classes ...).

Current world shows how collaboration becomes a determining criterion in several parts of the society, underlining the interest of cross-border learning. For intervention in sports, it would mean an emphasis on interdisciplinary and transversality in schools but also in teacher education. In PETE, use of pedagogical cases (Armour, 2014) seems to be a promising approach. In the same vein, alignment and coherence should become an important preoccupation of program managers. It means that development of closer collaboration between the academic and school worlds is needed (Harris, Cloes, & Wilson, 2020). Practitioners should be more involved in the development of teaching innovations, reinforcing the role of action-research. Such approach should be fruitful helping them to become concrete changing agents who help their pupils/students to become physically educated citizen (societal transfer and accountability).

Finally, research in sport intervention should better promote its contribution in the Wallonia-Brussels Federation. It will be necessary to continue to focus on all contexts of the physical and sport activities. Indeed, as number self-taught professionals offer services nowadays, there is a crucial need to guarantee the quality of the intervention whatever the kind of practice.

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