Introduction of the olympic wrestling in physical education through e-learning teachers

Introducción de la lucha olímpica en la educación física a través de la formación e-learning del profesorado

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Abstract

Distance learning for teachers in Olympic combat sports (judo, wrestling, fencing, taekwondo and boxing) "Escuelaolimpica.com" is a e-learning project for Physical Education (PE) teachers of Aracati and Fortaleza (Ceará). The material designed by the group of methodology and didactics of physical education at the Faculty of Sciences of Physical Activity and Sport of the Catholic University of Valencia, is aimed at teachers of "Ensino Fundamental" and "Medio" in the area of PE, adapted to Brazilian Education Law and translated into Portuguese, it physical education teachers. The distance learning has been developed with the participation of five teachers from 6th to 9th of "Ensino Fundamental" and 1st to 3rd of "Ensino Medio", who were given a questionnaire of opinion on the contents of the Olympic Wrestling, before and after formation. In order to identify the degree of development of the dimensions of knowledge, know-how and being. After the intervention, teachers have improved in relation to the three dimensions. Being the learning of the dimension of the being, related to values and attitudes, the one that more punctuates the teachers that more time remain in the training web. in relating to the teaching of the PE, and incorporation of TIC resources in the teaching- learning contents.

Keywords

Wrestling, distance learning, physical education, e -learning.

Resumen

El proyecto "escuelaolimpica.com", es un proyecto para la formación *e-learning* enfocada a los docentes de Educación Física sin formación en deportes de combate olímpicos (judo, lucha olímpica, esgrima, taekwondo y boxeo). El material de la investigación, que ha sido diseñado por el Grupo de Investigación en Educación para una Actividad Física Saludable (GIEPAFS), de la Facultad de Ciencias de la Actividad Física y del Deporte de la Universidad Católica de Valencia, está orientado al profesorado de Educación Física de enseñanza fundamental y media (secundaria y bachillerato) de las poblaciones brasileñas de Aracati y Fortaleza. La formación se llevó a cabo con un total de cinco docentes de 6º a 9º de enseñanza fundamental (1º, 2º y 3º de la ESO) y de 1º a 3º de enseñanza media (4º de la ESO, 1º y 2º de Bachillerato), a los que se les suministró un cuestionario de opinión sobre los contenidos de la lucha olímpica, antes y después de la formación. Con el objetivo de identificar el grado de desarrollo de las dimensiones del saber, saber hacer y ser. Después de la intervención se han observado mejoras del profesorado en relación a las tres dimensiones. Siendo el aprendizaje de la dimensión del ser, relacionada con los valores y actitudes, el que mayor puntúan los docentes que mayor tiempo permanecen en la web de formación. De esta manera, resulta interesante la inclusión de propuestas de formación docente *e-learning*, que faciliten la introducción de deportes de combate en las aulas de Educación Física.

Palabras clave

Lucha olímpica; educación a distancia; formación; Educación Física; e-learning.

Introduction

The use of programms, applications and software dedicated to both teaching and learning Physical Education (PE) has been spreading over the last years (Gutterman, 1998). The connection between technology and teaching practices increases every day (Díaz, 2011; Trujillo, 2014).

The knowledge of methodological proposals that have been developed pedagogically for years is possible through the use of ICT in education (Gros, 2002). From a sociocultural perspective of learning, social interaction and speech are basic elements for the development of superior cognitive processes (Vygotsky, 1978).

The use of ICT is producing changes in how the teaching-learning process is tackled (Quiroz, 2010), in the way in which teachers and students relate to knowledge, and how involved

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agents in the educational process interact. As ICT are developed and introduced, teachers and schools incorporate them in the teaching-learning process (Barahona, 2015). The research carried out by Vernadakis, Avgerinos, Zetou, Giannousi, and Kioumourtzoglu (2006) was intended to know the educational opportunities that ICT contribute to PE, concluding the use of these technologies is an effective, interesting and attractive way of teaching that complements the conventional education process. In this way, an appropriate use of ICT in this subject stimulates the development of skills such as collaborative work, autonomy, critical ability, responsibility, and search and sellection of information (Capllonch, 2005). According to Prat, Camerino, and Coiduras (2013), the incorporation of ICT in PE to stimulate physical practice is still incipient.

Web 2.0 for PE

The increase of competence pedagogy, whose purpose is to educate citizens prepared to life in a Society of Information and Knowledge (SIK) framework, demands PE teachers to consantly update their knowledge and to acquire new abilities (Díaz, 2011).

Web 2.0 offers huge possibilities to create learning environments based on constructivist sociocultural models, thus making collaborative work possible and potentiating knowledge in a learning community (O'Reilly, 2005).

Educational experiences used by Virtual Learning Environment (VLE) in distance, classroom, or blended teaching, require a selection and definition of the organizational learning elements with regard to: involved agents (teachers and tutors), places where the learning activities are developed (schools), time, and learning sequences (Pérez, 2002). In order to ensure the proper functioning of the web, a tutor or "virtual teacher" who moderates the classes and favors social interactions and the building of knowledge inside the learning community is required (Quiroz, 2010).

Regarding the role of the tutor in VLE, new competences and abilities arise: the tutor must be ready to keep communicative spaces "alive", to provide access to content, and to create an effective dialogue with and amongst the participants in order to stimulate active learning, and the building of cooperative and/or collaborative knowledge. These tutors are essential for success of teaching and learning experiences, in which fora are used with collaboration purposes (Cabrero, 2002; Ryan Scott, Freeman, and Patel, 2000; Salmon, 2002).

Educational Technology Platforms

Amongst the possibilities technology provides to support educational action, online training in e-learning platforms and virtual communities where information is shared are fundamental (Calvo and Blázquez, 2002).

Educational platforms arise as one of the most useful technological innovations to the educational community (España, Luque, Pacheco, and Bracho, 2008). Its functioning based on group (courses) and user (teachers and students) structure, allows the organization of curricular content, planning of tasks, and testablishment of a communication system between students and teachers (Barahona, 2015).

Experiences of virtual teaching training allow teachers to access to online upgrades, often designed by qualified pedagogical teams. They also allow the acquisition of new competences and abilities to face future experiences in the PE area in better conditions. The study by Fernández, Hinojo, and Aznar (2002), shows that 64% of participants think ICT are applicable to the PE area, and the study by Cuéllar and Delgado (2010) shows that 60% of PE university professors know all the ICT tools analysed. This type of training might become one of the main sources of teaching training and update in the future. Several experiences reveal how the use of technologies can make the task of the teachers and their own training easier (Salmon, 2002; Fernández et al., 2002; Vernadakis, et al., 2006; Cuéllar et al., 2010; Monguillot, Guitert, and González, 2013).

ICT in the Brazilian education

In the mid-twentieth century started a revolution of electronic media and digitalization that still has not concluded. During this process of digitalization of knowledge, electronics enabled a fast development of analog applications (the telephone, the radio, the television, etc.) that nowadays are veering toward digitalization and reaching higher abilities (De Pablos, 2011).

ICT are a result of social, economic, and cultural conditions. Society acts as promoter of innovation and spreading of technology (Breton and Proulx, 1990). Also Castells (1995) states that technological transformation can only be understood inside the social structure in which it is developed. Given the great potential of ICT in education, the creation of knowledge and mechanisms capable of making their introduction into the classrooms easier, preventing usage errors, was necessary (Dorigoni and Da Silva, 2013).

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In Brazil, 95% of municipalities count with schools provided with computers and digital resources, and have educational contents provided by the National Program of Educational Technology (PROINFO) at their disposal, but this figure is not representative due to the fact that only 1,2 million teachers and 50% of students have access to this program (Ministério de Educação, 2014). Notably, teachers receive training enabling them to use the aforementioned tools.

When those new equipments started to be more accessible, the programs of the Federal and State Government of Brazil incorporated them in schools, but including a computer and internet without a substantial change in the teaching structure is not enough to change the current situation of dependence (Pedroso, 2002).

The current situation requires teachers experts in learning rather than experts in a specific subject (Carneiro, Toscano, and Díaz, 2011).

Teachers must overcome several barriers before the exchange of blackboards and chalks for new technologies becomes a reality. The barriers that prevent the incorporation of ICT in the classrooms are caused by the lack of confidence and anxiety (Bandura, 1986), the lack of ability (BECTA, 2003; Jones, 2004), as well as the limited access to resources (Carneiro, Toscano, and Díaz, 2011).

The current situation must change and optimize its training, increasing the quality of teaching in "Ensino Fundamental" and "Ensino Medio", and improving the students literacy. Teachers need to understand the benefits that ICT provide both in their teaching task and in the students learning (Newhouse, 2002).

Studies carried out to know the inclusion of ICT in the Brazilian education show that the initial teacher training in the use of ICT is still very low and ignored by the departments of education that sometimes seem to be against progress (Ramos, 2012).

The precedent of the current paper is the teaching training program supported with virtual implemented components in the study carried out in Valencia on fencing (Ruiz-Sanchis, 2010), similar to a project carried out by the Council of Andalusia through the net Averroes, which provides teachers with information about training as well as the possibility to exchange opinions about educational matters between teachers using a discussion forum (Hueros, 2000).

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The current paper is part of a major research, whose objective is to facilitate the training, the materials and the e-learning resources needed to introduce Olympic combat sports in the PE classrooms. The data referred to the introduction of the Olympic combat are presented here.

Method and/or design

Objetives

Identifying the degree of development of dimensions (*knowledge, know-how, and being*) during the Olympic combat learning process.

Relating the degree of learning acquired to the time spent in the website.

Materials and method

The development and implementation of the experience consisted on three phases:

1ª. Design and implementation of the *escuelaolimpica* website

2ª. Selection and short training of tutors

3ª. Obtaining and analysis of information

1. Design and implementation of the *escuelaolimpica* website

The application has been created under the content management system Joomla, version 3.2. The web language chosen was PHP 5.4, using a mysql database. The website is hosted on a server of its own with the Linux operating system whose URL access is http://www.escuelaolimpica.com (Ruiz-Sanchis and Martin, 2015).

Escuelaolimpica is a website design to allow teachers to acquire by themselves knowledge about Olympic combat sports starting from the four pillars of education by Delors (1996) and merging the last two pillars into one that covers both individual and social development. Three dimensions have been worked on: *Knowledge*, referred to the acquisition of knowledge of the basics of the four sports; *know-how*, referred to the acquisition of the specific driving ability of the four sports; and *being,* which stimulates the development of behaviours and values both at and individual and social level.

Sections of the web page:

- *Introduction:* it contains five 2-5 minute videos, explaining the features, history, contributions, adaptations, and competitions of the selected sport.

- *Tools for teachers:* it contains an introductory tutorial/teaching guide, a poster explaining the safety rules to be hung in the classroom, an attitudinal and driving ability evaluation

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sheet, and the teacher's diary, which contains items to check and closed and open questions to reflect on before and after the sessions.

- *Didactic sessions:* it contains six detailed sessions (activities, objectives, content, timing, attitudinal aspects, videos, etc.) about Olympic wrestling structured by colours depending on the progression:

  - The first two sessions (yellow), work with opposition games and have an average of 19 activities.
  - The 3rd and 4th sessions (green) work the driving abilities required in each combat mode, also with an average of 19 activities/games.
  - The 5th session (red) works the driving abilities of the game, with 9 games suggested for each modality, and the 6th session (the last one, also red), in which a team competition is organised, in base of 5 proposed activities.

Each session is focused on working on different didactic objectives and attitudinal aspects. All the activities are described regarding the timing, the group organisation, and the difficulty of the task. As a visual support, each activity has a demonstrative video explaining how to play each game.

- *Tactical technical fundamentals:* it contains a short explanation of the different techniques of the selected sport, along with keys and instructions to make the learning easier, frequent mistakes, and a video made by a professional sportsman of the selected sport.

- *Annexes:* each session has at least one supplementary annexe for the students. Annexes contain activities in which the students must search for information about sports, evaluate their own mates and themselves, and theoretic materials about the selected sport.

- *Forum:* it is the tool through which teachers and virtual tutors communicate with each other as a basis of the learning processs. In order to stimulate the communication between teachers and virtual tutors, the mobile application *WhatsApp*, another way of learning known as *Mobile Learning* and acknowledged by several authors (Martínez and Acosta, 2011; Padrón, 2013) has been added.

Development of content support resources:

The participant teachers, along with the access to the web contents to be able to do the Didactic Unit (DU), also received the Teaching Guide and the safety rules, which could also

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be found on the same website.

- *Teaching Guide:* a document with a justification of the Olympic wrestling in schools, an explanation of the primary and secondary driving units in combats (Torres, 1990), and also the theoretical and practical bases of the DU, the main basics of the sport, and several teaching resources.

- *Safety Rules:* an A3 poster to be hung on the PE classroom, where the minimum safety rules for an appropriate development of the sessions are detailed.

  2. Selection and short training of tutors

Selection:

- *The participants were chosen according to two criteria*: Teachers without previous knowledge of Olympic wrestling and imparting the Physical Education subject in one of the following courses: from 6th to 9th Ensino Fundamental and from 1st to 3rd Ensino medio.

Through these criteria 5 teachers (2 women and 3 men) were selected.

Training:

- *Teacher training*: The *e-Moderating* model, whose use by tutors /virtual moderators in guiding and helping the students through online courses has been widely acknowledged (Salmon, 2002), was used in teacher training.

This training was carried out with each of the teachers through a meeting a week before the beginning of the intervention, in which the project, the functioning and access to the website *escuelaolimpica,* and all the materials were explained. After the meeting, the teachers had a week to check all these materials on the website. Two tutors/virtual moderators were at their disposal to answer their questions.

  3. Obtaining and analysis of information

The information was obtained through a questionaire and the records of permanence on the website. The analysis was carried out with the SPSS statistical software 20.0 and the records of the estimated permanence time on the website *escuelaolimpica*.

Records of permanence of the teachers on the website *escuelaolimpic*a:

In the following illustration (Figure nº1), the permanence time in minutes on the website of each teacher is observed.
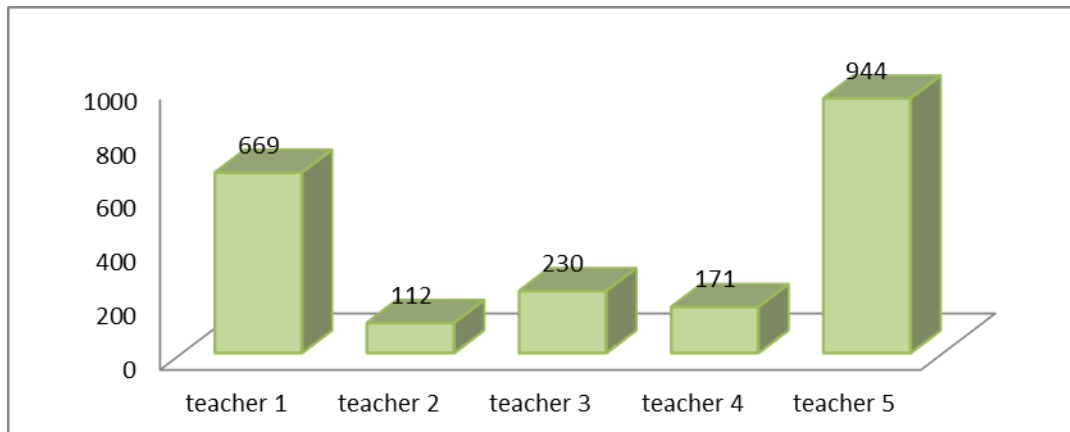
Figure nº1. Relation between the permanence time in minutes and the teacher

A questionnaire of opinion was provided before the teacher training (pre-test) and after the intervention (post-test). The questionnaire (Table nº1) is divided in three subscales corresponding to the dimensions of *Knowledge, Know-How,* and *Being*.

Table nº1. Correspondence of the items on the questionnaire with the dimensions.

Dimensions	Items
Knowledge	1, 3, 4, 6
Know-How	2, 9, 11, 12
Being	5, 7, 8, 10, 13, 14

Results

Quasi-experimental design, of an only group of 5 Physical Education teachers, with pre-test and post-test, non-probabilistic discretionary sampling was used.

In order to analyse the normality of the sample, the Levene test ($p>.05$) has been carried out, with which homogeneity is assumed. Two types of tests are carried out. A descriptive test in which average and typical deviation, both pre-test and post-test, are indicated, and comparative tests, such as the Test *T* for independent samples and the differences between sexes, and a Test *T* of related samples pre-test-post-test with each teacher and the Spearman bivariate correlation to determine the influence of the time spent on the website and the answers of each of the items. The descriptive test is explained in the table (Table 2) and the illustration (Figure nº2) bellow.

Table 2. Descriptives Pre-test and Post-test Average and Typical Deviation.

Item	Pre-test		Post-test	
	A.	*TD.*	*A.*	*TD.*
I1 Fundamentals wrestling	2.4	1.349	3.6	.547
I2 Abilities wrestling	2.6	1.429	3.8	.836
I3 Organize tournament wrestling	2.5	1.509	3.8	.836
I4 Referee combat wrestling	2.5	1.509	3.8	.836
I5 Dangerous sport wrestling	1.5	.527	1.2	.447
I6 Easy explain wrestling	3.3	1.159	3.8	.447
I7 Go sports centre wrestling	4.2	1.135	4.6	.894
I8 Parents fear wrestling	2.3	1.251	1.6	.547
I9 Activity motivator wrestling	4.3	.823	4.4	.894
I10 Respect mates wrestling	4.8	.632	5.0	.163
I11 Help students wrestling	3.9	1.286	4.8	.447
I12 Improvement abilities wrestling	4.2	1.229	4.8	.447
I13 Risky students wrestling	1.5	.527	1.4	.547
I14 Masculine sport wrestling	1.3	.948	1.0	.116

Note: The Average (*A*) and the Typical Deviation (*TD*) of the value of the answers of the teachers, where the minimum value is 1 and the maximum is 5, are introduced in this table

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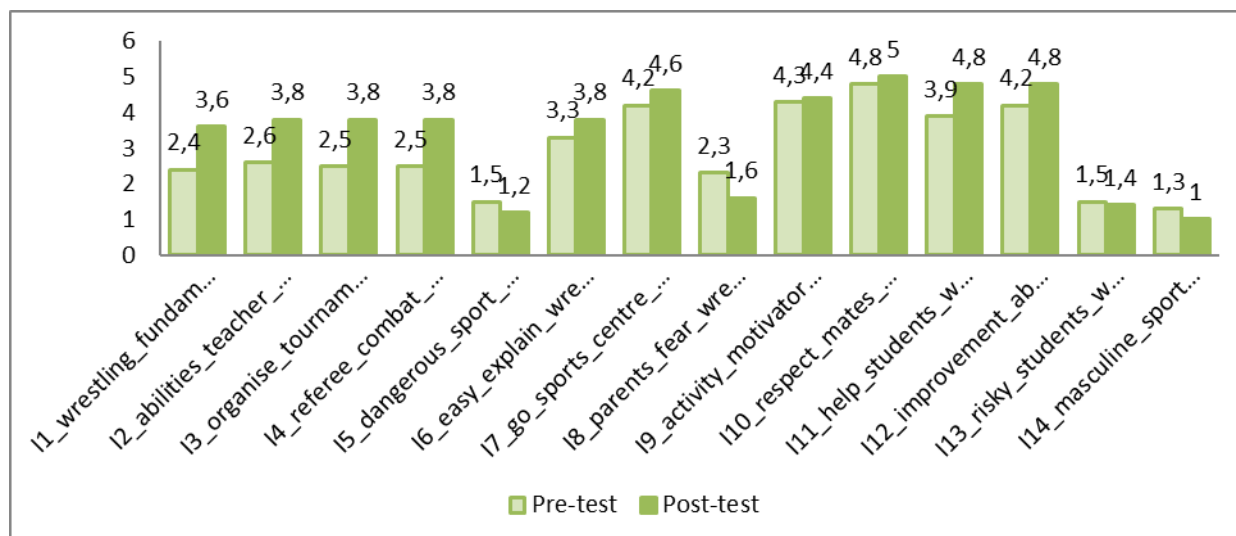Original Article. Introduction of the olympic wrestling in physical education through e-learning teachers

Figure 2. Descriptives of the results pre-test and post-test

- *Test T for independent samples,* for differences between sexes:

In the pre-test, there is not a significant difference between both sexes. Women score higher than men in the post-test results, in the items 1 and 9 (Table n.3).

Table nº 3. Differences between sexes.

Item	A	TD	Sig.
1. Wrestling fundamentals	3.90	0.34	.010
9. Wrestling is a motivating sport to my students	4.10	0.75	.030

 -*Test T of related samples,* for the differences between pre-test and post-test*:*

With regard to the differences in the group of teachers between the pre-test and the post-test, all of them scored higher afterwards, especially in the items 5 and 14, although significant differences are only shown in the items 1, 2, 3, 4, and 8 (Table n.4).

Table nº4. Differences in the group of teachers.

Item	A	TD	Sig.
1. Wrestling fundamentals	-1.20	0.447	.004
2. Wrestling abilities	-0.80	0.447	.016
3. Organise tournament wrestling	-0.45	0.678	.021
4. Referee combat wrestling	-1.33	0.345	.003
8. Parents fear wrestling	-1.87	0.234	.010

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- *Spearman bivariate correlation:*

Most of the answers in the items do not present a direct relation with the time the subjects invested in visiting the website, which implies their answers might be explained with other variables that were not contemplated. The items showing a relation with time are described below (Table n.5):

Table nº5. Relation between the time spent on the website and the items that improve.

Item	Correlation coefficient	Sig.
6. Easy explain wrestling	-.866*	.029
9. Activity motivating at school	0.707*	.021
10. Respect mates in wrestling	-0.709*	.031
13 Risky students wrestling	-0.702*	.023
14 Sport masculine wrestling	-.971*	.030

Nota: *. The correlation is significant in $p<.05$.

Conclussions and discussion

The intervention carried out in five schools in the municipalities of Aracatí and Fortaleza, has had the participation of teachers of both sexes, showing differences in the final test: women think Olympic wrestling is a motivating sport for their students, unlike men. The evolution in the knowledge that teachers build in their own practice is satisfactory and exciting. The focus in researches has moved from the teacher knowledge and training to the knowledge and professional development that teachers build by themselves (Angulo Rasco, 1999).

After the experience, the level of knowledge of Olympic wrestling fundamentals in the women group has increased, and so, also their mastery of the activity is higher than prior to the intervention, as well as the experience carried out focused on Olympic boxing (Ruiz Sanchis, Martin Ruiz, Grancha, and Dos Santos, 2016).

An improvement amongst all the teachers has been observed related to the three dimensions (*Knowledge, Know-How*, and *Being*), being significant the items of the *Knowledge* subscale, where the teachers claimed to know the technical-tactical basics, the classification, the

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modalities, etc…, of Olympic wrestling, aside of improving their ability to organise a tournament and even referee it. In the items of the scale *Know-How*, they acknowledge to master the specific abilities required to practice Olympic wresting in the Physical Education classroom. In the dimension *Being*, teachers think that after the experience, the parents of the students do not consider wrestling as a dangerous sport to be practiced in Physical Education.

The difference between the pre-test and the post-test is higher in the items 6 and 13 in the teachers that have spent more time on the website. They scored higher in the following items of the three dimensions. In *Knowledge*, teachers consider explaining to the students the basics of Olympic wrestling is easy. In *Know-How*, they consider Olympic wrestling is a motivating activity to be practiced in the Physical Education lessons. And finally, in *Being*, teachers think that Olympic wrestling can teach their students to be more respectful with their teammates, their opponents, and the referee. The preception of the teachers has changed as well, because after the experience they think wrestling is less risky and masculine.

Thereby, the more time spent on the website, the higher the score in the learning of the three dimensions, of which *Being* shows more changes.

According to Robles (2008) and Prat (1999), teachers barely have experience in combat sports and, as a consequence, contents of combat activities in the course syllabus are limited (Rodríguez-Amiguet, Ruiz Sanchis, and Grancha, 2015; Dos Santos, Rodríguez-Amiguet, Ruiz Sanchis, and Ros, 2014). The results obtained prove the inclusion of e-learning proposals adapted to the needs of the teachers to make the selection, introduction and use of the modalities of Olympic wresting in the PE class would be interesting. Bernal and Rodríguez (2007) agree with the results, pointing out that these proposals are very useful as a pedagogic resourse of constant teacher training. In order to do so, variables that differenciate the needs depending on the sex and level of knowledge must be taken into account, stimulating the constant teacher training through *e-learning* platforms adapted to the mastery of abilities, knowledge, and attitudes of *Ensino Fundamental* and *Medio* students in the Brazilian schools. The present research facilitates, as Gordon (2003) points out, that through the use of online training spaces, teachers have a chance of flexible, convenient and sustained training, that their predecessors never had. It also allows digital and printed publishing of the experiences carried out by teachers (Carneiro, Toscano, and Díaz, 2011), enabling the

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opportunity to interact with other teachers and researchers from different parts of the planet (Arufe-Giráldez, Soidán, Furelos, and Patón, 2016).

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