



Didactic Strategies in Physical Education: Experiences and Analysis due to the Confinement of Covid-19

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Abstract

This study addresses the importance of using adequate educational strategies for physical education sessions during confinement due to Covid-19. The purpose of this is to explain the teaching-learning processes and the didactic strategies in Physical Education (PE) at home through the Didactic Unit (UD) "Ludic Practices" with 8th year students from the Liceo Naval Guayaquil Educational Unit. Therefore, the methodology applied is the Flipped Classroom, which allows to unite pedagogy with technology, allowing active student learning, encouraging cooperation, creativity and problem solving. Accordingly, among the main results, it is observed that the majority of students liked the recording of a tutorial video and that 83.6% of the students enjoyed the development of self-built implements for alternative games. Finally, as the main conclusions, it was possible to avoid the risk of educational exclusion in most of the teaching-learning process, besides, alternative games with self-constructed material strengthened the teaching-learning processes and promoted educational inclusion.

Keywords: Physical Education; ICT; Didactic Strategies; Flipped Classroom

Introduction

This study refers to the teaching-learning process of physical activities (PA), as well as some didactic strategies, to educate the educational community about the benefits of being active at home, in this time of quarantine plus the confinement due to the pandemic.

This unexpected health crisis caused by Covid-19 was classified as a pandemic by the World Health Organization since it has represented a challenge for global public health and has generated a crisis that affected different contexts in an unprecedented way: health, labor, economic, social and differentially different age groups at high risk of morbidity and mortality [1].

In Ecuador, on March 17, 2020, it forced the national government to decree the state of Health Emergency throughout the Ecuadorian territory. The objective was to protect the health of the population, in addition to reducing the increase of the disease, through contagion and strengthening the public health system [2,3].

The problem of this health crisis is that it changed the course of all societies, in our context it will go down in history due to the quarantine added to the general confinement at home. In addition,

a situation that affected the daily life of the human being negatively disturbed the customs, freedoms and multiple dimensions of our daily life, altering the development of social and educational relationships, stressing professional work with family life [4].

However, some studies recommend that all people be active regularly, PA can benefit the population, as it is an essential and effective part of preserving good health by improving immune function, reducing chronic conditions, stress and improving the effectiveness of eventual vaccines. This is how he describes it in his study. *Why keep this Covid-10 remedy secret?* [5].

In the same way, Peñafiel Dayse, an expert in auxiliary nursing, points out that the World Health Organization, UNICEF and some researchers prioritize the following points

- Stay active during the pandemic: regular physical activity is beneficial for the body as well as the mind, in older people it improves balance because it helps prevent falls and injuries. For children, regular practices promote healthy growth and development and reduce the risk of disease in adulthood. [1].
- The scheduled sessions will be online, but we will do it with an added value: crises test the resilience of the collective, they are not desirable, nor "good", but they can help us learn

things that will be worth us a lifetime and face other crises, large or small, with a “well-prepared toolbox” [6].

- Organizing daily routines not very strenuous or prolonged in a moderate way that can be a strategy to maintain the quality of life of ourselves, our families and communities manifests the Universidad de los Andes [7].
- Along the same lines, the study conducted by Chen., *et al*, states that part of the solution to avoid sedentary lifestyle should be physical exercises at home, using several safe and simple exercises and easy to apply them to maintain fitness levels [8].

Undoubtedly, the confinement and the unexpected situation caused an enormous impact on education with the closure of educational centers in almost all parts of the planet, in what represents the most important simultaneous crisis that all educational systems in the world have suffered in our time [9].

In compliance with the prioritized curriculum for the emergency, some skills with unavoidable performance criteria were selected for the confinement Covid-19 Educational Plan. Implemented by the Ministry of Education (MINEDUC) with active methodologies. The Ministry of Government urged its teachers to continue the teaching-learning process in a telematic way recommending the use of information and communication technologies (ICT) as indicated [10,11].

It should be noted with what Saltos, L., Morales, D., Rojas, R., and Murillo, M. expressed. that for some years in the Educational Unit Liceo Naval de Guayaquil is of vital importance the physical practices and even managed with projects, in addition the teacher Peña Sally who teaches the chair of Language and Literature at the Naval Lyceum, mentions that one of the most effective methods to teach virtual classes is the flipped classroom citing the various forms used by the Institute for the future of education of the Technological of Monterrey, in this sense ICT continues to be a trend

in physical activity due to the innovative pedagogical possibilities they represent for the teaching process in educational communities according to Burgueño, R., Lopez, I., Espejo, E., Gil, F. and this is also indicated by Rojas, R. León, L. Álava, G. Plaza, L and Saltos, L. EF teachers have had to adapt in this health crisis and in these circumstances through WhatsApp, YouTube, educational platforms: Edmodo, Google Classroom, the teacher’s blog, their students can be challenged for their PE classes [12-15].

However, from the perspective of the studies carried out by Rodríguez and Juanes, they state that ICT does not improve by itself in the teaching-learning process, due to the importance of interacting with traditional physical spaces to perform PA, but we can take advantage of its communicative potentialities by extending it to virtual spaces in these moments of confinement [16].

The objective of study is to expose the teaching-learning processes and the didactic strategies of Physical Education (PE) at home, with the Didactic Unit (UD) “Playful Practices” with students of 8th years of the EU Liceo Naval Guayaquil.

Methodology and didactic strategy applied in the sessions of the UD “Playful practices”

According to Torres and Velandia “To carry out the teaching-learning process, the teacher has a variety of tools, which allow him to interact with students to encourage their participation, motivation and interest in the subject treated”. Consequently, the methodology applied by the teacher in the educational process is proposed in the synchronous sessions of the Zoom or Google Meet platform with the application of the flipped classroom method, which allows to unite pedagogy with technology, allowing the active learning of the student, promoting cooperation, creativity and problem solving [17].

Teaching-learning process

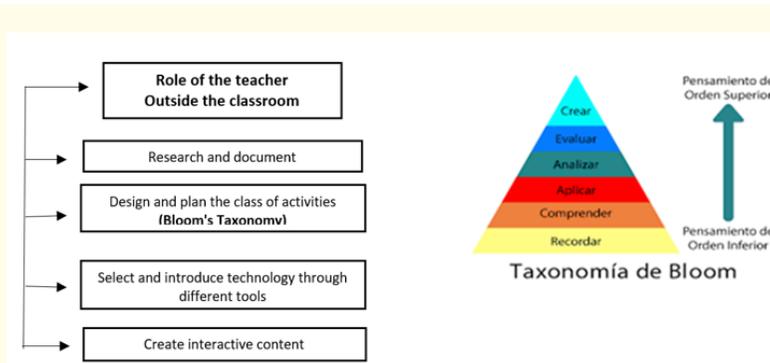


Figure 1: Teacher function diagram. **Elaborated:** own screenshot Eduteka.

In the EU, curricular adaptation is key, where students used their powerful imagination to perform PA. The EF area used in the teaching-learning process, audiovisual pedagogy, with videos created by the teacher or that are on platforms such as YouTube, in addition to the research that we must carry out. But García manifiesta that the video has multiplied the possibilities of the teacher, to use this medium for didactic purposes, its use has increased in

the different educational levels and significantly, now, through the videos we can present new contents, a more active participation among students can be encouraged, with innovative methodologies such as the flipped class, Students therefore receive instructions through indirect means (videos or others) for their visualization and analysis of the audiovisual material created and provided by the teacher [18].

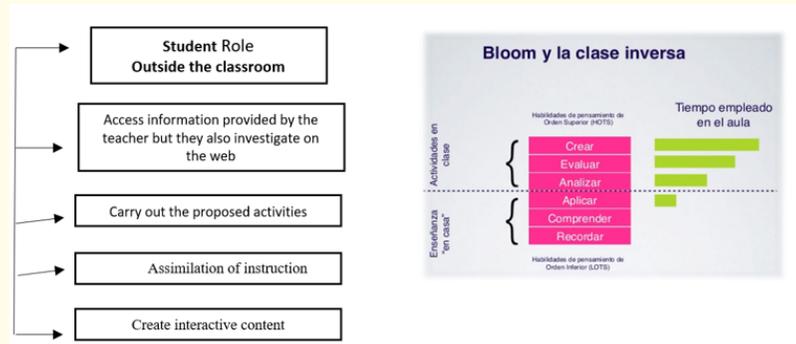


Figure 2: Student function diagram

Source: Edu Trends of Tecnológico de Monterrey (2021) [13]. Screenshot (jonzurutuza007) modified by Alberto Saltos.

Therefore, it is understood what is stated by Viciano, cited by Saltos Innovating in EF can be understood as the modification of processes that are novel, propose activities that interest students and the community, program alternatives by the teacher of PE, whether these in the context, of the didactic intervention, or in the contents, to optimize quality PE [19].

Giving continuity to the previous idea, it can also be said that the design and elaboration of tutorial videos were innovative resources that strengthened the teaching-learning process of students, because they can reinvent education through audiovisual technologies as Salman said. *Let's use video to reinvent education* [23] <https://youtu.be/6cjj4ik0dH0>.

The strategy to develop the PA, was carried out in the self-construction of materials, as explained by Mendez-Gimenez, in the *WEBINAR: The use of self-constructed materials in Physical Education class AIEF Argentina* <https://youtu.be/s6VDPmiEYg8>. Based on this approach, the PA was strengthened through the own elaboration of recycled materials that are at home, for games or alternative sports as a family. Therefore, starting from the premises of Mendez and Fernandez to firm that the construction process could have a psychological effect, the increase in self-esteem, change or build generates a feeling of usefulness and pleasure as the craftsman or cabinetmaker by transforming raw materials into works of art [20,21].

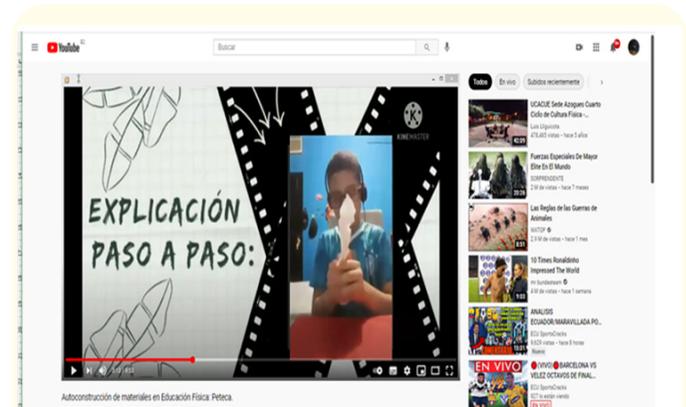


Figure a

In particular, the strategy of the EF, at home sessions is carried out with the development of unconventional materials and developing alternative games so that students are active regularly. In this regard, Manzaneda points out the following [22]

High S, *Build and Practice from Home: Games or Alternative Sports* <https://youtu.be/PM3c0f0Xi48> [24].

Material construction

Alternative games and sports could be defined as those physical-sports-recreational activities, which are carried out without of official rules, but flexible, with the use of unconventional materials. Thus, alternative games and sports become today, a useful educational tool that brings with it "fun" through "non-competition" (p.1)

Own elaboration of the flasks or indiacas for the alternative games, using the following materials: plastic covers, recycled paper, balloons, scissors to cut (Figure 3).

Own elaboration of cardboard rackets or blades.



Figure 3

The material used: pieces of cardboard, adhesive tapes, cord or elastics and fomix, for its elaboration: scissors, rubber, cutter or stylet. (Figure 4) [24].



Figure 4

Activity 1

What you have to do?

The task is to elaborate and design a video tutorial, as a class micro project: with cardboard rackets, plastic sleeve pouches and recycled paper; do not forget to involve a family member for the development of this AF.

The Indica or Peteca has its origin in South America specifically in Brazil, it consists of throwing the Peteca upwards, hitting it with your cardboard racket and passing it over a rope on the pitch (patio, terrace room), which falls to the ground within the limits of the opposing field before the partner of the other team can hit it and return it to our field [25].



Figure b

Jumps, *Physical Education Class with alternative material.* <https://youtu.be/CKfrntEByDE> [26].

Timing

Pedagogical record	Task and development	Materials and Resources
FP.7: How to make a Peteca or balls with recycled material.	Move at home Introduce hits with the Peteca Create balls or the flask to juggle	Paper, plastic sleeves, scissor balloons. Paper balls https://youtu.be/gyiWKcv1-Pw https://youtu.be/kAS-Ses8q5s http://saltosluisalberto.blogspot.com/
FP.8: Family challenges Routines should be fun and family friendly.	Make a choreography to exercise as a family Participate in a challenge with your family	Elaborated material Ropes Pelotas Broomsticks Plastic cups. https://youtu.be/ZMY0aex02Fw https://youtu.be/upIAYT2U-Cs
FP.9: Design and video processing Increase your physical activity.	To jump rope but first make yours (create) Aerobic practice as a family	Camera Cell phones https://youtu.be/ywvV037cKDC https://youtu.be/69IRVQdcI4Q
FP.10: Presentation of the micro project. Ready to strengthen my body	Show your skills by performing the maximum number of tricks with the flask or bal	Flasks Pallets Pans Notebooks
FP.11: Cardboard racket production At home we must build and practice.	View video elaboration. Introduce hits with the racket in front of a wall Peer work (family)	Cardboard rackets Water bottles Jumping ropes https://youtu.be/3PHFF4UIg5s https://youtu.be/XJ4o2DI9Bm4
FP.12 Racket games	Play racket-tennis Play racket - ecuavoli Fronton game.	Cardboard rackets https://youtu.be/qWJydJ_TYkg https://youtu.be/3PHFF4UIg5s https://youtu.be/CKfrntEByDE

Table 1: Contents of the sessions.

UD for the prioritized curriculum for the emergency. From week 7 the curricular approach begins according to the context of the educational center.

Source: authors.

Materials and Methods

The study was carried out at UE Liceo Naval Guayaquil, in the first Quimestre school period 2021 -2022, with the participation of 154 students, aged between 11 and 13 years of the 8th courses distributed in two groups, of which 58.4% are men and 42% are women. The methodology of the study is quantitative, explanatory, using as an instrument a questionnaire, carried out through digital platforms, which allowed to obtain information on the perception of the students of the UD.

Instruments

In the first instance, the instrument for data collection was designed. The questionnaire of the self-construction of materials and the elaboration of the video tutorial, through the *Google forms* application; [27].

In the second instance, the survey on the classroom micro-project was designed with the FA rating scale, through the practice of games or alternative sports with self-built materials, with the *Google forms* application between 02 and 06 August 2021, in the same way the link was sent to the 8th grade students. Courses [28].

As for sex 8th EGBS		
Males	Women	Total
92 = (57.5 %)	68 = (42.5 %)	160

Table 2: Characteristics of the 8th EGBS population.

Source: Authors.

Evaluation of the data obtained

Items	Total sample (N = 150)	Males (N = 92)	Women (N = 68)
	A LOT	LITTLE	THE NOTHING
Do you find it difficult to create self-built materials? (Peteca-racket)	5.8 %	50.6%	43.8%
Were you able to enjoy the process of making the self-built material?	83.8%	14.4%	1.9%
Was it easy to find materials for the elaboration of alternative implements (Peteca- racket)	43.1%	44.4%	12.5%
Have you done this type of work with self-built materials before?	18.8%	60.6%	20%
How long does it take you to make the self-built materials?	12.5%	82.5%	5%

Table 3: Rating scale on self-constructed material (Rackets-Pouches).

Source: Authors.

Data analysis

They enjoyed the elaboration of the material

The majority of students, 83.8% enjoyed the preparation of the material, 14.4% believe that little, while 1.9% nothing.

Time of elaboration of the self-constructed materials

82.5% of respondents mostly state that in a very SHORT time it took them to create the implements for alternative games, Much 12.5%, and nothing 5%.

Items	Total sample (N = 160)	Males (N = 92)	Women (N = 68)
	A lot	Little	The nothing
Was it your liking to have to record a video?	59.4%	35%	5.6%
Would you like to repeat this type of project in the future?	88.1%	8.1%	3.7%
Have you having trouble preparing the video?	12.3%	59.7%	27.9%
Do you consider this type of project has sparked your creativity and imagination?	79.4%	16.9%	3.7%

Table 4: Video tutorial rating scale.

Source: Authors.

Repeat project video tutorial

The majority opinion of the students is 88.1% would like to repeat the project a LOT, 8.1% would not like it, nothing 3.7%.

Creativity and imagination

79.4% answer affirmatively that A lot of creativity and imagination awakened, 16.9% say little and 3.7% nothing.

Items	Yes	No
Have you ever played with these self-built materials?	56.8%	43.2%
Have you found the alternative play with self-built materials motivating? (Racket and Peteca)	95.1%	5.9%

Table 5: Scale of assessment of physical activity with self-constructed materials.

Source: Authors.

It is motivating to play with self-built material

When asked if you find alternative games motivating, 95.1% answer yes for the Yes, only 5.9% are disenchanted by the NO.

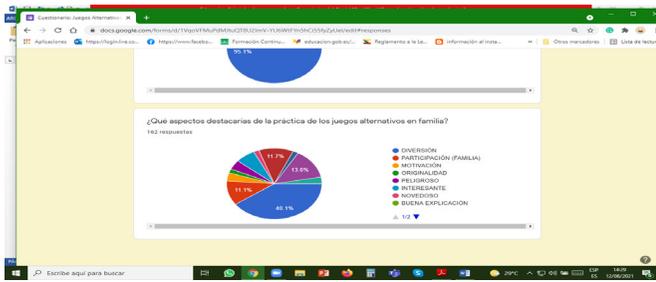


Table 6: Scale of assessment of the aspects to be highlighted of the practice.

Source: Manzaneda, (2008) [22].

Finally, respondents were asked what aspects they value and that would stand out from the practice of alternative sports.

Aspects that students highlight about practice

The respondents in these alternative games agree on several general aspects, the most prominent being in order of priority: Fun, creativity, dynamism and participation. In addition, others stand out, but to a lesser extent as they are: interesting, motivating, dangerous. etc.

Discussion

The objectives of this research were to know the teaching-learning processes and the didactic strategies of Physical Education (PE) at home, In relation to the first objective, the teacher used in the teaching-learning process, of audiovisual pedagogy, with videos created and facilitated from the web by the teacher for visualization and analysis of the students, likewise they elaborated and designed their tutorial videos and as evidence they send them by Edmodo and Educalinks to their teachers.

With the active participation of the students, after the analysis of the results it was possible to verify that the majority of the students are 88.1% would very much like to repeat the micro classroom project. Likewise, 79.3% of the students answered affirmatively that the realization of the video fostered a lot of creativity and imagination. Various authors Garcia,; Salman; Guijosa, , have highlighted that the content of the educational video enhances the feeling of satisfaction in the learning experience, develop creativity, help the integration process, new content can be presented, and more active participation can be encouraged. Similarly, at a high school in Beijing: they introduced a mini program on WeChat, providing videos for students to watch, and teachers demonstrate and give advice on how exercise routines are done, students film themselves doing exercises and as evidence send the videos to their teachers [18,23,29-31].

In relation to the second objective, the strategy to activate students in the EF sessions from home was the self-construction of materials for alternative games After the analysis of the results can be seen in a majority way, 83.8% of the students enjoyed the development of self-built implements for alternative games. In addition, 82.5% of respondents stated that it took them little time to create the implements.

Our article also coincides with studies by Mendez-Gimenez (2021) with his presentation at the webinar held in Argentina by the AIEF: “The use of self-constructed materials in Physical Education class” <https://youtu.be/s6VDPmiEYg8> shows that PA was strengthened through the development of implements for alternative games with recycled material that is at home. Therefore, based on the premises of the research professors Mendez and Fernandez, they affirm that the construction process has multiple psychological, social and educational advantages. In reference to alternative games with the Peteca and cardboard rackets, respondents were asked if you find alternative games with self-built materials motivating, 95.1% answer affirmatively for the Yes, only 5.9% are disenchanted by the NO [20,21].

Finally, respondents in these alternative games highlight several aspects in general, being the most prominent in order of priority: fun, creativity, dynamism and participation. In addition, others stand out, but to a lesser extent as they are: interesting, motivating, dangerous. etc. E studies such as Manzaneda’s (2008) indicate that alternative games become an educational instrument that brings fun through non-competition. We can suggest as researchers and advocates of PA that it is important to activate people with PE from home through playful educational strategies to prevent and help improve the immune system, reduce severe infections and the psychological and physiological stress of the pandemic [21].

Conclusion

Despite the confinement and closure of educational centers in almost all parts of the planet, the challenge of the teacher was to assume his functions with a lot of commitment, creativity and imagination, complying with the prioritized curriculum for this emergency and adapting to the audiovisual media in a telematic way making use of ICT. In this way, as indicated by UNESCO, it was able to avoid risks of educational exclusion in most of the teaching-learning process [32].

The strategy to develop the EF sessions at home was with the elaboration of self-constructed materials by the students and with the help of a family member enjoying the alternative games a lot. Likewise, this strategy was strengthened with the elaboration and design of tutorial videos through audiovisual technologies created by themselves, most of them were very pleased to record and promoted a lot of creativity and imagination [33].

In short, alternative games with self-constructed material and presented as a classroom micro-project through video tutorials, were predominant didactic strategies in the PE class in the form of a game that also strengthened the teaching-learning processes and avoided possible risks of educational exclusion. Finally, the alternative games awakened: Fun, creativity, dynamism and participation of the students of the educational center.

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