Dematerializing physical education in public schools: an indication of permanence

Cássia Maria Hess¹*, Evando Carlos Moreira², Eliana de Toledo³
¹Universidade Estadual de Campinas, UNICAMP, Faculdade de Educação Física, Campinas, SP, Brazil; ²Universidade Federal do Mato Grosso, UFMT, Faculdade de Educação Física, Cuiabá, MT, Brazil; ³Universidade Estadual de Campinas, UNICAMP, Faculdade de Ciências Aplicadas, Limeira, SP, Brazil

Abstract — Aims: The objective of this study was to identify and analyze the most recurrent difficulties reported by Physical Education teachers of state and municipalized schools of the state of São Paulo, Brazil. Methods: The sample involved 13 cities (12 - Mogi-Mirim Region and 1 - São Paulo city), totaling 73 Physical Education teachers. Its research used a descriptive and exploratory methods and a questionnaire by instrument. The answers were analyzed using content analysis (Bardin, 2011). Results: As a result, the most reported difficulty, from both samples, was the lack, in quantity and in quality, of materials. Other difficulties were reported, like: inadequate physical space, indiscipline and demotivation of students. Conclusion: We conclude that the material problem is a permanent difficulty in this discipline at school.

Keywords: physical education at school, materials, teachers, difficulties.

Introduction

The trajectory of Physical Education in Brazilian schools is permeated by constant changes, continuities and ruptures. From the time of the Brazilian Empire until today, decrees, resolutions, opinions, laws and most recently Provisional Measure No. 746⁴, regulate and legitimate its place in the curricular structure.

Given this context and other national and international studies, such as in Hess², Maldonado and Silva³, and Gallahue and Donnelly⁴, we observe a challenging and complex day-to-day scenario for school teachers. These teachers are either licentiates in Physical Education (in Brazil) or undergraduates in other areas (in many countries, there is no need for a degree in this area to teach in schools).

Studies since the 1990s, such as those of Soares, Taffarel, Varjal, Castellani Filho, Escobar, Bracht⁵, argue that Physical Education in schools should go beyond the legal aspects of its requirement as a discipline at school, since this often restricts and limits the area in the search for legitimacy in society.

This legitimacy seems to have advanced over the past three decades. However, the fragmented (non-collective) nature of the process among academics, public administrators of the area, teachers, coordinators, principals and even students, still makes the advances seem frail.

According to Correia (p.698)⁶, the advances derive from the “recognition of the evolutionary developments of the area as a process inherent to the historicity of Brazilian education”, such as:

1) Implementation of principles such as inclusion and the right to education and learning; 2) The respect for differences and the recognition of human diversity; 3) Conceptual and epistemological pluralism within the pedagogical theories (developmental, constructivist, critical-overcome, critical-emancipatory, phenomenological, systemic, renewed health, multiculturalist etc.); 4) Plurality of themes on body and movement culture (sports, dance, martial arts, gymnastics, games, knowledge, body care, etc.) […]

Various states in Brazil are promoting these advances, including São Paulo, Rio Grande do Sul, Pernambuco, Minas Gerais, Rondônia, Mato Grosso do Sul, among others, and implementing the National Common Basic Curriculum (BNCC)⁷ from the Brazilian Ministry of Education and Science (MEC).

However, research from the last decade shows that, despite the curricular and legislative changes, the everyday life at the school of many teachers is still permeated by several difficulties, as some authors note:

- Aguiar, Rotelli, Petroni, Terra⁸ on the greatest challenges of Physical Education teachers during their first years of teaching;
- Caparroz and Bracht⁹ on the difficulties that former licensure students in Physical Education had when teaching, linked to methods of teaching Physical Education;
- Canestraro, Zuali and Kogut¹⁰ on the main teaching difficulties during the learning process in Middle School and its influence on school work;
- Claro Júnior and Filgueiras¹¹ report the difficulties of beginner teachers of Physical Education in managing classes;
- and the general theme of the difficulties faced by teachers of the area, also pointed out by Hess¹².

Given this context, the objective of this study was to identify and analyze the most recurrent difficulties reported by Physical Education teachers of state and municipalized schools of the state of São Paulo, Brazil.

The importance of this study is found in the linkages of information created, which regard the intervention of Physical Education teachers at school and may promote reflections on the continuities that still need to be broken in schools by the
University, through the work of scholars, by the school, teachers and public administrators, tied to public policies that consider future solutions, advances and reflections.

Methods

This research approved by the Research Ethics Committee protocol No. 086/2010, is characterized as descriptive and exploratory, with a qualitative approach\(^2\), in which we used a questionnaire (open and closed questions) as the research instrument.

Physical Education teachers from municipalized schools of the Mogi Mirim Local Educational Agency and from state schools of the Central – SP Local Educational Agency were the subjects of the research. For the first part of the study, we listed only municipalized schools\(^3\) of the early years of education, for the second we listed the state schools\(^5\) that went from the early years to high school.

Samples were chosen, primarily, due to the research performed by Hess\(^2\), whose objective was to identify different characteristics of teaching Physical education at the schools under the Mogi Mirim Local Educational Agency. The researcher chose to identify these characteristics at the schools of the Central – SP Local Educational Agency due to the results obtained in this region. The data were obtained through an online questionnaire for re-registration at the start of 2014, which was mandatory for teachers of this Local Agency.

Therefore, we deliberately chose to use both municipalized and state schools from different regions of São Paulo, as well as different school levels (Elementary/Middle and High School). Thus, our objective was precisely to identify the shared difficulties of teachers in these contexts (municipalized or state schools), regardless of the level of education (elementary/middle or high school) and the region of the state.

The methodological procedures used in this study will now be detailed. The research conducted at the Mogi Mirim Local Educational Agency started from a list of the municipalized schools under this Local Educational Agency\(^5\) available on the website of the São Paulo state Department of Education. The region is comprised of 13 cities, 12 of which participated in the research. We performed a raffle to reach 50% of the schools in every city of this region (proportional-stratified sampling). We then defined the teachers for the sample. We identified 34 physical education teachers; however, two teachers did not want to participate in the research.

Thus, from these 32 teachers, all of those who fit the inclusion criteria were chosen: teaching Physical Education to Elementary school students at the raffled school; if there was more than one teacher for the criterion, we would perform a raffle, since we only allowed one teacher per school.

The second research was conducted in 2014 by the coordination of the Central – SP Local Educational Agency in collaboration with the main author\(^4\) of this study. We offered a re-registration questionnaire on the website of this Educational Agency\(^5-6\) for the 62 state schools in this region, and 97 teachers responded. This questionnaire was composed of questions involving the re-registration and questions aligned with those from the questionnaire applied by Hess (2012)\(^2\). However, when the informed consent forms were sent to the teachers, so the responses in the questionnaire (the same as in the original research) could be used in this study, only 41 chose to participate. The inclusion criterion was: teach Physical Education at the school under the Central – SP Local Educational Agency.

Therefore, the total sample of this study consists of 13 cities from São Paulo (12 from the Mogi Mirim region and the capital São Paulo), 32 teachers from municipalized schools of the Mogi Mirim region and 41 teachers from state schools of the Central – São Paulo Local Educational Agency, a total of 73 Physical Education teachers of public schools of the state of São Paulo\(^7\).

We use the method of Content Analysis proposed by Bardin to analyze the responses (p.38, emphasis added by the author)\(^13\), which is defined as:

\[
\ldots\, a \text{ set of methods of analysis of communication that uses systematic and objective procedures (sic.) of description of the contents of messages and} \ldots \text{ the interest does not lie in the description of the content, but what these contents can teach us after being treated} \ldots.
\]

The author suggests the encoding be done through the identification of two types of units. Recording Units “cut” the ideas that emanate meaning to the researcher and that detach from the text, considering the criteria and intentions of the research; and Context Units comprise the recording units more broadly, allowing meanings from them to be identified. Finally, after identifying the recording and context units, Categories are defined, which designate elements that go unnoticed in a simple reading of the text. Thus, the Recording Units were identified using the responses from the teachers of both types of schools, from Hess’s (2012)\(^2\) studies and from the re-registration questionnaire, respectively. After this process, we identified the lack of materials as the most reported unit. The Context Units were then organized and the Categories subsequently defined for greater comprehension and understanding of what the lack of materials in schools means.

Identification, Analysis and Discussion of the Results

We identified the lack of material for Physical Education classes as one of the difficulties, reported in 8 Recording Units.

\[^2\] These schools are under the Central Local Educational Agency, São Paulo – SP, of the city of São Paulo (capital of the state of São Paulo).

\[^3\] Composed of 13 municipalities: Águas de Lindóia, Amparo, Conchal, Estiva Gerbi, Holarumã, Itapira, Londrina, Mogi-Guaçu, Mogi Mirim, Monte Alegre do Sul, Pedreira, Santo Antonio de Posse, Serra Negra (Serra Negra did not have a municipalized school).

\[^4\] She was the Coordinator and Professor of Physical Education of the Pedagogical Core (PCNP – Professora Coordenadora de Educação Física do Núcleo Pedagógico) of the Central – SP Local Educational Agency.

\[^5\] https://decentro.educacao.sp.gov.br/escolas/

\[^6\] This agency covers 62 public schools.

\[^7\] To preserve the identity of the teachers, we will use the abbreviations MT for teachers of municipalized schools and ST for teachers of state schools.
by the municipal teachers (MT1, MT2, MT5, MT8, MT11, MT14, MT26, MT28). Other 8 Recording Units (MT8, MT5, MT11, MT12, MT14, MT18, MT19, MT21) were identified as presenting difficulties regarding a lack and/or inadequacy of physical space for the classes. The other difficulties are related to the indiscipline of the students, difficulty with teaching, lack of human resources, difficulty in including the students in the classes, lack of training, lack of family support, students being prohibited from participating in the class by other teachers. Additionally, three teachers (MT7, MT29, MT30) did not respond the question, four (MT4, MT23, MT24, MT32) only reported advantages, and three (MT15, MT22, MT27) reported no difficulties.

The greatest difficulty reported by the state school teachers was the lack of materials, with 24 Recording Units (ST1, ST2, ST3, ST5, ST7, ST9, ST11, ST8, ST13, ST15, ST16, ST18, ST22, ST23, ST24, ST25, ST26, ST27, ST28, ST30, ST34, ST35, ST40, ST4). The second main difficulty was the lack and/or inadequacy of physical space for the classes, with 9 Recording Units (ST1, ST5, ST9, ST13, ST20, ST21, ST34, ST36, ST39). All other difficulties reported by the participants had 3 or less Recording Units, which were: students who are unmotivated, undisciplined, uncommitted and lacking previous knowledge; the high number of students per class; having to share the sports court with other classes; students using inadequate clothing; noise; lack of training for the teachers. We emphasize that five teachers in the sample (ST4, ST10, ST14, ST17, ST19) did not answer the question and three teachers (ST33, ST37, ST38) responded as not having any problems.

From the sample, we concluded that the most reported difficulty is the lack of materials, for both categories of teachers. Tokuyochi et al. found the same problem in a study in which they sought to identify the profile of teachers in the state of São Paulo. Sebastião and Freire (p.1) note this difficulty as a “great problem faced by Physical Education teachers of public schools”.

Nevertheless, the literature notes that the Physical Education teacher must develop the materials with the students. Soares, Taffarel, Varjai, Castellani Filho, Escobar and Bracht provide a basis for this, in suggesting multiple game thematizations for Elementary school students, such as creating toys for individual or collective use.

According to Freire (p. 49), “any learning material will be richer if it is varied”, which expands the experiences and possibilities of games, especially when addressing an “integral education”. Claiming that, “What is lacking in schools, often, are not materials, but creativity. Or rather, the most important material is lacking. This creativity is never taught in universities” (p. 61).

There are suggestions for the adaptation of materials in the “Teacher’s Notebook” (Caderno do Professor) of the state of São Paulo for Middle and High School. These suggestions consider the experience of the study through several practices of the body culture, as well as the creation of materials. This is an example of an evaluation activity from the “Teacher’s Notebook” (7th grade) for Physical Education:

At the end of the related experiences, note the involvement of students in the development of other activities related to the theme, adapting them to the alternative spaces of the school. The creativity of the students preparing and producing alternative materials and implements, to be used in throws, may also be evaluated. Make sure that the students can adapt everyday objects and create or recreate the implements for the throws and pitches. Suggest adapted materials: sand bags tied up with rope (hammer), broomsticks and rolled sheets of paper (javelin), round plastic lids (disk). (p. 21).

Freire also suggests the use of disposable materials such as tires, bottle caps, sock balls, among others, so they can be rebuilt, even by the children. During this process the children would use their skills, manipulating objects with different weights, sizes, shapes and colors, stimulating and developing logical thought of classification, seriation, conservation, quantity, etc. The author also describes some activities to make use of various materials.

Soler (2003 apud) claims that many teachers remove some activities from the teaching program if they lack materials, due to having no conditions to prepare and apply these activities in classes.

Other studies in the area, such as those by Nista-Piccolo and Moreira and Venâncio and Carreiro, present activities in which the use of materials is essential for them to be performed.

Neira and Nunes consider that “deepening” and “widening” the knowledge of the students during the pedagogical practice of the cultural curriculum of Physical Education can be done through several ways. Visiting spaces of cultural manifestation, analyzing and interpreting videos and books, demonstrations from practicing, among other things, allow a greater understanding of the meanings of the body practice. Thus, we consider that the students need to know, manipulate, use and experience materials and equipment that closer resemble the official ones.

Douglas and Isherwood (2008 apud p. 719-720) claim that: “Culture is achieved and stabilized through objects. They make it consistent, visible and convincing. At the same time the objects appear as “markers”, defining the identity of individuals that have an immediate moral dimension, showing through them what they want and how they need to be treated.

Garnier and Mello argue that “the object can be understood as something that supports the activity of children and their possible actions on the object, as Gibson (1986) claims, at the same time, the object is influencing the children”.

The method of the Three Moments is a significant example of the importance of suitable materials for Physical Education classes. Initially proposed by Nista-Piccolo from her experience teaching Gymnastics, the method was then grounded on the study by Velardi for teaching any content related to Physical Education. According to Nista-Piccolo (p.118), the Third Moment “[...] is the moment when all activities that were not studied on the first and the second moments (exploration and educational tips – emphasis added by the authors) are now offered [...] thus, we understand that the use of official materials related to what is being taught from body culture is part of this Moment.”

We established five context units after identifying the Context Units presented on Chart 1 (1. Lack of materials, 2. Lack of materials in quantity, 3. Lack of adequate materials, 4. Lack of necessary materials, 5. Difficulty of materials adapted to the deficiencies). These Context Units represent the difficulties regarding the materials of the municipalized schools. To better understand them for the discussion, we elaborated the categories.

We note that the concern regarding the lack of materials for Physical Education classes also appears in Garnier and Mello\(^3\) (p.719), when noting that “[…] the sports world of children and their material culture lacks recognition and visibility as a field of research”. To better understand this difficulty at physical education classes, we show the charts, the identification, analysis and discussion of the Context Units and Categories.

**CHART 1 – Context Units related to the difficulties regarding the materials presented by Physical Education teachers at municipalized schools.**

<table>
<thead>
<tr>
<th>CONTEXT UNITS</th>
<th>TEACHERS (Recording Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of materials</td>
<td>MT8, MT14, MT28</td>
</tr>
<tr>
<td>2. Lack of materials in quantity</td>
<td>MT1, MT2</td>
</tr>
<tr>
<td>3. Lack of adequate materials</td>
<td>MT11</td>
</tr>
<tr>
<td>4. Lack of necessary materials</td>
<td>MT26</td>
</tr>
<tr>
<td>5. Difficulty of materials adapted to deficiencies</td>
<td>MT5</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.

We established five context units after identifying the Context Units presented on Chart 1 (1. Lack of materials, 2. Lack of materials in quantity, 3. Lack of adequate materials, 4. Lack of necessary materials, 5. Difficulty of materials adapted to the deficiencies). These Context Units represent the difficulties regarding the materials of the municipalized schools. To better understand them for the discussion, we elaborated the categories.

**CHART 2 – Categories related to the difficulties regarding the materials presented by Physical Education teachers at municipalized schools.**

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>CONTEXT UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of materials in quantity</td>
<td>1, 2</td>
</tr>
<tr>
<td>2. Lack of materials in quality</td>
<td>3, 4, 5</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.

We elaborated two categories, the first regarding the lack of materials in quantity and the second in quality. In the first category, comprised of two context units (1, 2), and of the teachers (MT1, MT2, MT8, MT14, MT28) who did not explicitly explain which materials were lacking, we interpreted and categorized these for quantity. The teachers (MT5, MT11, MT26) who belong to this same Context Unit specified the lack as quantity, and thus, we integrated all into a single category called “lack of materials in quantity”. Some responses from them are presented below:

*I can develop the classes differently, but with some difficulties since the materials are few and precarious (MT2).*

*The great difficulty is the materials (lack) (MT8).*

In regard to the second category, that is the lack of materials in quality from the context units (3, 4, 5), we understand it as when the teachers (MT11, MT26 and MT5) reference adequate materials for the physical education classes for a given practice and to a specific group, as exemplified below:

*Difficulties: Students with different deficiencies (visual deficiency, intellectual deficiency and mobility deficiency) and little (almost none) accessibility and adapted materials for each of the deficiencies (MT5).*

Regarding this difficulty, we support that:

*The body is in the world as the heart is in the body: it maintains a visible spectacle continuously in life, it inspires and nourishes from the inside, forming a system. (ERIKSON, 1971). The things that surround us are carried by our affectivity and they bind us as if by invisible wires that are extensions of our body (GONÇALVES p.104)*\(^26\).

**CHART 3 – Context Units related to the difficulties regarding the materials presented by Physical Education teachers at state schools.**

<table>
<thead>
<tr>
<th>CONTEXT UNITS</th>
<th>TEACHERS (Recording Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of materials</td>
<td>ST1, ST5, ST7, ST8, ST9,</td>
</tr>
<tr>
<td></td>
<td>ST11, ST13, ST16, ST22, ST30,</td>
</tr>
<tr>
<td></td>
<td>ST40, ST41</td>
</tr>
<tr>
<td>2. Lack of materials in quantity</td>
<td>ST15, ST25</td>
</tr>
<tr>
<td>3. Lack of adequate materials</td>
<td>ST2, ST15, ST18, ST24, ST26,</td>
</tr>
<tr>
<td></td>
<td>ST35, ST33</td>
</tr>
<tr>
<td>4. Lack of sports materials</td>
<td>ST26, ST27, ST28, ST35</td>
</tr>
<tr>
<td>5. Lack of materials to meet the</td>
<td></td>
</tr>
<tr>
<td>Student’s Notebook</td>
<td></td>
</tr>
<tr>
<td>6. Lack of alternative materials</td>
<td>ST26</td>
</tr>
<tr>
<td>7. Lack of materials for the</td>
<td></td>
</tr>
<tr>
<td>gymnastics class</td>
<td>ST23</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.
We established seven context units after identifying the Context Units presented in Chart 4 (1. Lack of materials, 2. Lack of materials in quantity, 3. Lack of adequate materials, 4. Lack of sports materials, 5. Lack of materials to meet the Student’s Notebook, 6. Lack of alternative materials, 7. Lack of materials for gymnastics classes). These Context Units represent the difficulties regarding the materials of the state schools. We elaborated categories to better understand them for the discussion.

CHART 4 – Categories related to the difficulties regarding the materials presented by Physical Education teachers at state schools.

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>CONTEXT UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of materials in quantity</td>
<td>1, 2</td>
</tr>
<tr>
<td>2. Lack of materials in quality</td>
<td>3, 4, 5, 6, 7</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors.

The categories presented in Chart 4 are organized into two, also from the municipalized schools. The first regards the lack of materials in quantity and the second, in quality. In the first category, comprised of two context units (1, 2) and of the teachers (ST1, ST5, ST7, ST8, ST9, ST11, ST13, ST16, ST22, ST30, ST40, ST41), it is not clear to what lack of material they refer. However, due to the generalization, we interpreted and categorized this lack within the quantity aspects. The teachers (ST15, ST25) specified the lack as quantity and were, thus, all integrated into a single category called “lack of materials in quantity”.

Some responses from them are presented below:

*Materials are lacking, the budget is never used for Physical Education (ST14).*

*We have little material, since the school has a low budget (ST13).*

We understand that this type of difficulty can be handled by the principal, who is responsible for administering the finances and, preferably, with the school council/Parent-Teacher Organization. Every state school receives financial resources to buy pedagogical material and part of these resources must be for Physical Education materials.

However, the teacher must engage in dialogue with the administrators, discuss the importance of those materials for the classes and for the students, and know how the resources are transferred, representing, therefore, a conscious action, being a “non-naive critic”[9] and having educational intent. We acknowledge, however, how this process is constant and often exhausting.

The second category consists of the lack of materials in quality, from the context units (3, 4, 5, 6, 7, 8). We understood that when some teachers (ST26, ST27, ST28, ST35) claim that there is a lack of adequate materials and the others (ST3, ST23, ST26) referred to the lack of a specific material, such as materials for gymnastics classes (ST23), we underscore and elucidate that these materials received “a quality”, i.e., that “just any material” would not be adequate for the Physical Education classes. For this reason we assembled all into a single category called “lack of materials in quality”.

Some responses from the teachers are presented below:

*We lack sports and alternative materials at the school (ST26).*

*Sports materials are lacking, especially for the first years, to explore their handling skills (ST35).*

Santini and Molina Neto (2005), Gaspari et al. (2006) and Tokuyoshi et al. (2008), cited by Maldonado and Silva[3] (p. 106), report that “the lack of materials is a constant difficulty for the Physical Education teacher, especially when he/she needs to work some specific body practices”.

Teacher ST3 reported another example of the need for specific materials, for the guidelines of the Notebooks of the state of São Paulo to be met:

*We lack adequate material, mainly to meet all propositions of the Student’s Notebook (ST3).*

Maldonado and Silva[3] support this claim, by pointing to the lack of materials as one of the factors hindering the implementation of the curriculum of Physical Education proposed by the municipality of São Paulo.

Thus, possessing or not possessing materials, whether they are adequate or not—among these we can also bring up the supplementary materials, is one way to establish a meaning and a significance to the Physical Education classes at school with the students and vice versa. Therefore, having quality materials, according to the age, sport, body practice of the lessons, whether original or unoriginal, as well as the quantity and variety of these materials, is indispensable for the student to see it, touch it, handle it, play it, enjoy it, recreate it, compare it, among other forms of use.

**Final Considerations**

In this study we identified that the most evident difficulty on both samples studied (state schools and municipalized schools, both in elementary/middle and high school), is related to the lack of materials for the Physical Education classes in quantity and in quality. This result is also evidenced in other research presented here.

Thus, having varied materials, official and unofficial, made or not by the students, in sufficient quantity and quality at school for Physical Education classes, is an urgent demand to be resolved. We aim to improve the teaching-learning process far beyond simply prescribing these materials in planning and in lesson plans, but also for this discipline and us, teachers, to be more material in the school spaces, to become more present and to stop considering the lack of materials as something natural.

Therefore, we believe that seeking to solve the lack of specific materials for Physical Education with the production of alternative or unconventional materials by teachers and/or students should not be the only solution, despite being very rich.
and important to be lived. This is one of several possibilities for solving this problem, not attempting to meet the enduring inefficiency of public education policies, which treat public education in general with a certain disregard. At times, we have seen a disregard for Physical Education within the actual school spaces.

Thus, we are attempting to open a field for reflection and study with this research, seeking more integrated and effective actions between the university, the school and public authorities, so they can establish greater networks of dialogue to break the resistance and transform this permanence.

References


*Corresponding author

Cássia Maria Hess
Universidade Estadual de Campinas, Faculdade de Educação Física. Rua Eugênio de Freitas 371. Email: cassiahess@gmail.com

Manuscript received on February 18, 2018
Manuscript accepted on February 27, 2018

Motriz. The Journal of Physical Education. UNESP. Rio Claro, SP, Brazil - eISSN: 1980-6574 – under a license Creative Commons - Version 4.0