

Physical Education: a Multifaceted Research Field

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Introduction

Physical education is maybe one of the oldest human activities. The systematization of physical education knowledge was primarily based on information from medicine, natural sciences, especially biological sciences and also on pedagogical principles (Park, 1989; Mechikoff & Estes, 1998). As a consequence, different systems of gymnastics were created in Europe in the 1800's and, eventually, three models of school on physical education emerged: the German (emphasis in pedagogical aspects), the Swedish (in anatomical and physiological aspects) and the English (in games and sports) schools (Naul, 2003). Nowadays, all these concepts live together conferring a multidisciplinary identity to the field. As for the context of research, many questions may arise, such as: what is the epistemological identity of publications on the field? In the present paper, our main interest resides in understanding in what extension international research on physical education reproduces the field's scenario.

Methods and Procedure

Data were retrieved from MEDLINE with a series of bibliographic metadata, including major and

secondary topics, which characterize the paper's main thematic, field and discipline.

Once there is not a concept named *physical education*, we have opted to retrieve publications containing *physical education and training* as the major topic and we have gotten 5,726 publications, for 1966-2008 period. The analysis on the core disciplines was based on 210 secondary topics linked to those publications.

Results

Publications on physical education increased from 521 to 1064, a 104% of growth, while the total number of publications in MEDLINE database increased from 1,004,187 to 3,003,066 (199% of growth). As for the journal dispersion, we observed not only a steadiness on the total number of journals but also a reduction on the total number of core journals on the field (Table 1).

A detailed analysis on the core journals – those that concentrate 1/3 of papers published in the period (Bradford, 1934) – reveals a strong presence of journals devoted to medical and physiological issues, that is with a biological approach. Most of them are found in more than one period, suggesting a great interest of researchers to publish their works in these journals.

Table 1: Number of Journals on Physical Education research in different periods.

Period	Total Journals		Core Journals		Detail #
	Nº. of journals	Nº. of Papers	Nº. of journals	Nº. of Papers	
1971-75	185	521	7	173	Res Q (52)*; J Sports Med Phys Fitness (34); Med Sci Sports (31); Am Correct Ther J (25); Scand J Clin Lab Invest (11); J Appl Physiol (10); Schweiz Z Sportmed (10)
1981-85	214	645	6	201	J Sports Med Phys Fitness (48); Eur J Appl Physiol Occup Physiol (41); J Appl Physiol (39); Int J Sports Med (32); Med Sci Sports Exerc (22); Am Correct Ther J (19)
1991-95	199	722	4	188	J Appl Physiol (78); Res Q Exerc Sport (58); Eur J Appl Physiol Occup Physiol (52); Int J Sports Med (37)
2001-05	209	1064	3	328	J Strength Cond Res (199); Med Sci Sports Exerc (71); Res Q Exerc Sport (56)

Number of publications in the period are shown in parenthesis.

* Res Q has changed to Res Q Exerc Sport

We have already found that Brazilian research on Physical Education is mostly driven by concepts related to physiology (not yet published). Similar trend was observed with international publications published in journals indexed in MEDLINE (Figure 1). Publications related to physiology account for more than 50% in recent years. If we consider the

presence of other disciplines like medicine, biochemistry, anatomy, we find a higher share of papers with biological approach. Meanwhile those papers related to psychology, education and sociology, which might reveal the influence of the most recent concepts of physical education, are also found among these publications but are in a lower fraction.

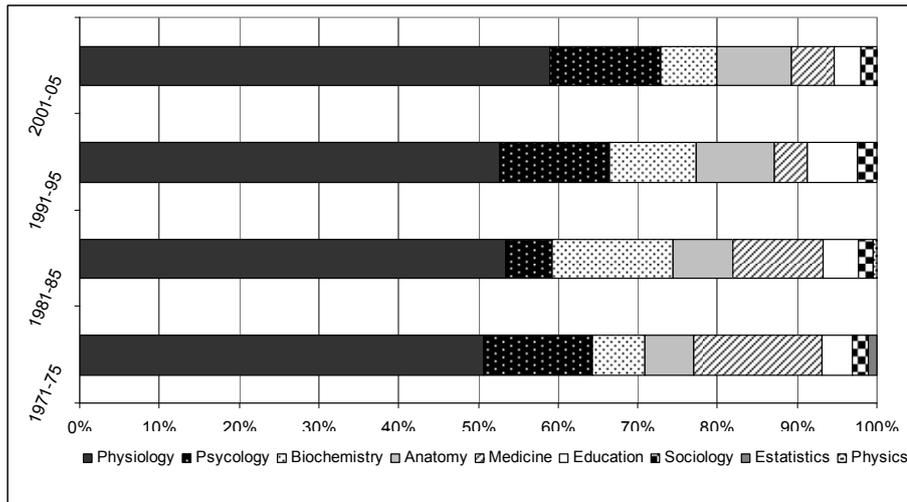


Figure 1: Core disciplines among publications on Physical Education in different periods.

Discussion

Our preliminary findings suggest that the current research on physical education is been concentrated in a few number of journals, mostly related to physiology. We have found that the majority (n=8) of the core journals published more than 80% of papers with a biological approach. Among this set of journals, only two— Res Q and Am Correct Ther J – presented a low share of papers with biological approach that was around 30%.

The present scenario suggests a multifaceted research field that corroborates to the multiple identity of the field. This is a recurrent and intense debate in the field.

An important remark has to do with the limitations of the methodological approach. For example, the journal coverage of MEDLINE database, which is primary related to medicine and health sciences. Therefore, complementary approaches are needed to get a better understanding of the identity of this field. This may include the search of Physical Education publications indexed on Web Of Science database.

Acknowledgments

Authors thank Adalberto O. Tardelli for the data retrieving, carried out in October 2008.

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