

STUDENTS' SELF-EFFICACY IN PHYSICAL EDUCATION STUDENTS' INITIAL COLLEGE EDUCATION

*AUTOEFICÁCIA DISCENTE NA FORMAÇÃO INICIAL DE ESTUDANTES
UNIVERSITÁRIOS DE EDUCAÇÃO FÍSICA*

*AUTOEFICACIA DISCENTE EN LA FORMACIÓN INICIAL DE ESTUDIANTES
UNIVERSITARIOS DE EDUCACIÓN FÍSICA*

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Keywords:
Efficacy.
Students.
Universities.
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Competence.

Abstract: Students' self-efficacy relations were analyzed, together with aspects of initial training of 385 Physical Education university students. The Higher Education Self-Efficacy Scale and the Academic Motivation Scale were applied to students, and results showed statistically significant differences between students' self-efficacy, considering the variables of gender, major, participation in research and extension activities, Academic Achievement Index, and Self-Determination Index. Evidence shows the importance of thorough investigation of SE in Higher Education, which may contribute to students' academic and professional development and to improving the quality of undergraduate courses offered.

Palavras chave:
Eficácia.
Estudantes.
Universidades.
Competência
profissional.

Resumo: Analisaram-se as relações da autoeficácia (AE) discente com aspectos da formação inicial de 385 estudantes universitários de Educação Física. Foram aplicadas a Escala de Autoeficácia na Formação Superior e a Escala de Motivação Acadêmica aos estudantes, e os resultados revelaram diferenças significativas na AE discente, considerando-se as variáveis sexo, curso realizado, participação em atividades de pesquisa e extensão, Índice de Aproveitamento Acumulado e Índice de Autodeterminação. As evidências ressaltam a importância da investigação aprofundada da AE no ensino superior, que pode contribuir para o desenvolvimento acadêmico-profissional do estudante e para a melhoria da qualidade dos cursos de graduação ofertados.

Palabras clave:
Eficacia.
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profesional.

Resumen: Se analizaron las relaciones de la autoeficacia (AE) discente con aspectos de la formación inicial de 385 estudiantes universitarios de Educación Física. Se aplicaron la Escala de Autoeficacia en la Educación Superior y la Escala de Motivación Académica a los estudiantes, y los resultados revelaron diferencias significativas en la AE discente considerando sexo, curso, participación en actividades de investigación y extensión, Índice de Rendimiento Académico e Índice de Autodeterminación. Las evidencias demuestran la importancia de investigar la AE discente en la Educación Superior, que puede contribuir para el desarrollo académico profesional del estudiante y para mejorar la calidad de los cursos de graduación ofrecidos.

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1 INTRODUCTION

The initial period of college education is very rich and challenging to students, due to the complexity, dynamics and peculiarities inherent to the academic environment as well as the dynamic personal attributes of each individual.

One of the main objectives of initial education is to promote the development of students' professional skill. That process, in turn, is influenced by the profile desired by the higher education institution for its graduates, which ends up being reflected in the definition of courses' syllabus, methodological approaches to teaching and evaluation, and creation of specific experience times and spaces for students (VIEIRA; COIMBRA, 2006).

The ways students take advantage of the course and the consequent development of their academic and professional skills, however, are not influenced only by the objective characteristics of the university environment, but also by subjective perceptions of that environment and of oneself, which is why personal judgments on those aspects play an important role along the career path (MASCARENHAS, 2010).

Aspects that can be objects of self-reflection include self-efficacy (SE), i. e., the set of personal beliefs about one's ability to act towards certain achievements (BANDURA, 1977). Perceptions on SE have important influence on the way individuals relate to their environment, since they may determine individual options and attitudes as well as influence the amount of energy, time and perseverance to be spent on reaching a certain goal (BANDURA, 1977; 2008). In addition, the perception on SE results from complex interactions that occur between individuals' personal and behavioral characteristics and external factors present in the different environments in which they are present, so that the explanation for their actions can also be found on the interrelationships between personal circumstances and past and present environments (BANDURA, 1997).

In the academic realm, studying and evaluating SE beliefs are important because they allow expanding knowledge on characteristics involved in the teaching-learning process (SILVA; IAOCHITE; AZZI, 2010), as well as coordinating educational guidance actions that strengthen behaviors predictive of efficiency and learning quality (MASCARENHAS, 2010). Student's SE comprises a set of beliefs in their ability to organize and execute courses of action required to produce certain achievements in the field of higher education. According to Polydoro and Guerreiro-Casanova (2010), students' SE includes five dimensions – Academic SE; SE in the Education Regulation; SE in Social Interaction; SE in Proactive Actions; SE in Academic Management – whose assessment helps to better understand students' behavior towards their respective initial education course.

Investigations have shown that students' SE beliefs influence how they feel, think, motivate themselves and behave, so that they play a key role in individual action (POLYDORO; GUERREIRO-CASANOVA, 2010). Indeed, students' perception on their SE influences choices (FOLTZ; LUZZO, 1998), goal setting (ELIAS; LOOMIS, 2002), effort expended on college tasks (KOMARRAJU; NADLER, 2013), perseverance in the face of adversity (LI; NISHIKAWA, 2012), faith on success (LOPES; TEIXEIRA, 2012), and finally academic performance (AL KHATIB, 2010).

Even though international and national studies have been conducted on students' SE within college initial education, important research gaps are still seen in the area of Physical Education, especially after the most recent curricular changes that resulted in the offer of different bachelor and

teachers' degrees. Therefore, we chose to look into the following question: What are the relations of students' SE with aspects of initial education of Physical Education college students?

2 METHODS

This descriptive-correlational and empirical research is an applied study using the quantitative research approach (THOMAS; NELSON; SILVERMAN, 2007). The target population included 490 Physical Education students from the Federal University of Santa Catarina (UFSC) whose enrollment were registered at the coordinating office of their courses in the first half of 2014.

Initial education in PE has been offered by that institution since 1974. As of 2006, due to Resolutions by Brazil's National Education Council No. 01 (BRASIL, 2002a), No. 02 (BRASIL, 2002b) and No. 07 (BRASIL, 2004), two degrees (teacher's and bachelor's) started to be offered in Physical Education, with separate admissions and equal timeframes for curriculum completion (minimum of eight and maximum of 14 semesters). While the teacher's degree (3,480 class/hours) aims at training teachers to intervene in Physical Education curricular component of Basic and Professional Education, the bachelor's degree (3,840 class/hours) is aimed at training professionals to intervene in the areas of evaluation and exercise prescription, physical activity in health promotion, and sports management and training.

Exchange students from other institutions, students under 18, and students who had not regularly attended classes after mid-semester were not invited to participate. Considering the criteria established, 412 students were eligible to participate in the study. Of those, 385 agreed to participate and comprised the sample.

After the institution authorized and the Ethics Committee on Human Research (Opinion No. 507,318/2014) approved the project, information was requested to the courses' coordinating bodies on curriculum hours completed by each student until the semester previous to data collection, to establish the level of individual progression of those individuals in initial education.

Following that process, we established direct contact (in class) with students to explain the nature and objectives of the study as well as to stress the voluntary nature of participation and obtain proper consent. Students who agreed to participate responded the Self-efficacy Scale in Higher Education (EAFS) (POLYDORO; GUERREIRO-CASANOVA, 2010), the Academic Motivation Scale (AMS) (SOBRAL, 2003) and a sociodemographic questionnaire, which were completed in class. Students who were not in the classroom at the time of collection received e-mails with online versions of the instruments created through Google Docs.

The EAFS seeks to identify Students' perceptions on SE and includes 34 items distributed in five dimensions: Academic SE (ability to learn and apply knowledge); SE in Education Regulation (ability to self-regulate one's actions); SE in Social Interaction (skills for relating with peers and professors); SE in Proactive Actions (ability to take advantage of and promote training opportunities); SE in the Academic Management (ability to get involved and meeting deadlines). In each of the items and considering a scale of 0 (worst perception) to 10 (best perception), respondents should mark the concept that best suits their perceptions on SE.

The AMS (VALLERAND *et al.*, 1993) was translated into Portuguese and applied in Brazil for the first time by Sobral (2003), with medical school students. That instrument includes 28 items, divided into seven dimensions: Amotivation (lack of perceived contingencies between actions

and their outcomes/lack of intrinsic or extrinsic motives); External regulation (doing something because one feels pressured by others); introjected regulation (doing something because one pressures oneself to do so); Identified regulation (doing something because one decided to do so); Intrinsic motivation to experience stimulation (doing something in order to experience stimulating sensations of sensory or aesthetic nature); Intrinsic motivation to achieve things (doing something for the pleasure and satisfaction resulting from the search for achieving or creating things); Intrinsic motivation to learn (doing something for the pleasure and satisfaction that result from learning, exploring or understanding) (SOBRAL, 2008). Responses to AMS follow the degree of correspondence that respondents find in each item with their personal perception, taking into account a scale ranging from 1 (no correspondence) to 7 (full correspondence).

Data were analyzed with SPSS Statistics software (version 21.0), through descriptive statistical resources (absolute and percentage frequency, mean and standard deviation), and inferential resources (hypothesis testing). To analyze the level of association between students' SE perceptions and personal variables (sex, marital status, age group, Self-Determination Index), academic variables (course, participation in research activities, participation in community outreach activities; progression in the course; Accumulated Achievement Index), and professional variables (employment), the Chi-square test was applied, considering the significance level of 5%.

The Accumulated Achievement Index (AAI) is calculated cumulatively each semester, represented by the ratio between the sum of points obtained (i. e., students' grades multiplied by the class hours of each course taken) and class hours in which they enrolled (UNIVERSIDADE FEDERAL DE SANTA CATARINA, 1997).

Changing the original categorization of the SE variable (POLYDORO; GUERREIRO-CASANOVA, 2010) was necessary given the low values found in this study in the categories "low" and "high". Therefore, we chose to group "low and very low" and "high and very high" to facilitate the application of the chi-square test (as indicated by MARÔCO, 2010, p. 104). The categories adopted in this study were "very low or low" (up to 6.9), "medium" (7-8.9) and "high or very high" (9 or over).

The Self-Determination Index or SDI, in turn, includes the different dimensions of motivation evaluated by the EMA. In this study, the SDI was calculated using the following formula: $[(3 * (\text{MI for knowing}) + 2 * (\text{MI for achieving things}) + 1 * (\text{IM for experiencing stimulation} + \text{identified regulation}) - (1 * (\text{external regulation}) + 2 * (\text{introjected regulation}) + 3 * (\text{amotivation}))]$. The resulting SDI, which can range along a continuum from -48 to +48, was later categorized as follows: negative (-48 to 0), which corresponds to the predominance of extrinsic motivation in the individual; positive (1-48), corresponding to the predominance of intrinsic motivation in the individual. The procedures described for assigning weights and calculating the SDI are discrepant in literature. Therefore, we chose to carry out a little adaptation in the original formula described in Guay, Megeau and Vallerand (2003), considering the presence of the author of the original scale in that proposed calculation.

3 RESULTS

Table 1 shows characterization information for 385 college students investigated. In general, we found predominance of 20-24-year-old unmarried and employed males. Most of them were in the teachers' degree and had not participated in outreach or research activities until data collection, having predominantly regular or good AAI and negative SDI. The largest proportion of students investigated was in their initial stages of education, whereas the smallest group was close to graduation.

Table 1 – Personal, academic and professional characteristics of students investigated

Variables	Categories	n (%)
Sex	Male	223 (57.9)
	Female	162 (42.1)
Age group	Up to 20	47 (12.2)
	20-24	199 (51.7)
	25-29	95 (24.7)
	30 or over	44 (11.4)
Marital status	Single	363 (94.3)
	Others	22 (5.7)
Employment	No	104 (27.0)
	Yes	281 (73.0)
Course	Bachelors' degree	183 (47.5)
	Teacher's degree	202 (52.5)
Participation in research	No	291 (75.6)
	Yes	94 (24.4)
Participation in outreach activities	No	198 (51.4)
	Yes	187 (48.6)
Accumulated Achievement Index	Regular or good (up to 8.5)	343 (89.1)
	Very good or excellent (>8.5)	42 (10.9)
Progression in the course	Up to 25%	120 (31.2)
	25.01-50%	91 (23.6)
	50.01-75%	99 (25.7)
	Over 75%	75 (19.5)
Self-determination Index	Negative	209 (54.3)
	Positive	176 (45.7)

Source: Author.

The descriptive analysis of students' general and specific SE levels by dimension (Table 2) showed that married/divorced and employed (whether in the area of Physical Education or in other areas) female subjects up to 24 years old had higher scores in both general and in specific dimensions. When academic characteristics are considered, Bachelor's degree students with better levels of academic achievement and self-determination as well as previous experience in outreach and research activities had the highest levels of Student SE.

Table 2 – Students' general and specific SE levels considering personal, academic and professional variables.

Variables and categories	Students' SE					
	Academic	Regulation	Proactive actions	Social interaction	Academic management	General
Sex						
Male	7.72 (1.29)	7.60 (1.57)	6.85 (1.74)	8.23 (1.26)	7.58 (1.66)	7.60 (1.31)
Female	8.21 (1.21)	8.07 (1.38)	7.50 (1.48)	8.68 (1.16)	8.43 (1.31)	8.16 (1.15)

Table 2 continued..

Variables and categories	Students' SE					
	Academic	Regulation	Proactive actions	Social interaction	Academic management	General
Age group						
Up to 24	7.96 (1.12)	7.78 (1.38)	7.09 (1.60)	8.50 (1.09)	8.01 (1.50)	7.86 (1.13)
25 or over	7.86 (1.53)	7.82 (1.71)	7.17 (1.79)	8.28 (1.45)	7.82 (1.70)	7.79 (1.50)
Marital status						
Single	7.92 (1.23)	7.78 (1.49)	7.11 (1.66)	8.43 (1.18)	7.93 (1.54)	7.83 (1.24)
Others	7.93 (1.98)	8.06 (1.73)	7.41 (1.89)	8.27 (2.01)	8.09 (2.10)	7.94 (1.84)
Employment						
No	7.85 (1.12)	7.48 (1.54)	6.99 (1.63)	8.32 (1.15)	7.79 (1.47)	7.69 (1.18)
Yes	7.95 (1.34)	7.91 (1.48)	7.17 (1.68)	8.46 (1.27)	8.00 (1.61)	7.89 (1.31)
Course						
Bachelor's degree	8.17 (1.20)	8.05 (1.47)	7.26 (1.70)	8.48 (1.18)	8.08 (1.62)	8.01 (1.23)
Teacher's degree	7.71 (1.32)	7.57 (1.51)	7.00 (1.64)	8.36 (1.29)	7.81 (1.52)	7.67 (1.30)
Participation in research						
No	7.77 (1.25)	7.68 (1.52)	6.91 (1.68)	8.30 (1.23)	7.72 (1.62)	7.68 (1.27)
Yes	8.39 (1.27)	8.14 (1.42)	7.78 (1.46)	8.78 (1.20)	8.61 (1.22)	8.32 (1.18)
Participation in outreach activities						
No	7.79 (1.30)	7.68 (1.56)	6.82 (1.78)	8.25 (1.26)	7.77 (1.68)	7.65 (1.33)
Yes	8.07 (1.24)	7.92 (1.45)	7.44 (1.57)	8.60 (1.18)	8.12 (1.44)	8.03 (1.20)
Accumulated Achievement Index						
Regular or good (up to 8.5)	7.82 (1.28)	7.73 (1.53)	7.04 (1.67)	8.34 (1.24)	7.79 (1.57)	7.75 (1.27)
Very good or excellent (> 8.5)	8.78 (0.97)	8.29 (1.24)	7.78 (1.49)	9.05 (1.02)	9.14 (1.01)	8.55 (1.11)
Progression in the course						
Up to 25%	7.86 (1.33)	7.69 (1.63)	6.98 (1.80)	8.36 (1.35)	7.98 (1.65)	7.75 (1.38)
25.01-50%	7.91 (1.19)	7.82 (1.42)	7.14 (1.64)	8.49 (1.12)	8.13 (1.51)	7.88 (1.20)
50.01-75%	7.87 (1.23)	7.70 (1.52)	7.06 (1.56)	8.32 (1.07)	7.70 (1.50)	7.74 (1.20)
Over 75%	8.12 (1.37)	8.05 (1.39)	7.41 (1.62)	8.57 (1.38)	7.97 (1.62)	8.04 (1.30)
Self-determination Index						
Negative	7.54 (1.37)	7.35 (1.67)	6.54 (1.77)	8.07 (1.39)	7.39 (1.64)	7.38 (1.37)
Positive	8.38 (0.99)	8.33 (1.07)	7.82 (1.23)	8.83 (0.87)	8.60 (1.20)	8.37 (0.90)

Source: Author.

Note: Values expressed as average and (standard deviation).

In order to find the level of association between students' SE and personal, academic and professional variables (Table 3), SE was analyzed considering the proposed categorization mentioned in methodological procedures. Inferential analysis confirmed the existence of statistically significant associations of SE with sex (female>male), course (Bachelor's>Teacher's), participation in research (yes>no) and outreach activities (yes>no), AAI (excellent>regular), and SDI (positive>negative) of students investigated.

Table 3 – Level of association between students' general SE and personal, academic and professional variables

Variable and categories	Students' SE			p-value
	Very low or low (%)	Medium (%)	High or very high (%)	
Sex				
Male	49 (22.0)	145 (65.0)	29 (13.0)	<0.001
Female	16 (9.9)	96 (59.3)	50 (30.9)	
Age group				
Up to 24	38 (15.4)	158 (64.2)	50 (20.3)	0.57
25 or over	27 (19.4)	83 (59.7)	29 (20.9)	
Marital status				
Single	62 (17.1)	228 (62.8)	73 (20.1)	0.70
Others	3 (13.6)	13 (59.1)	6 (27.3)	
Employment				
No	20 (19.2)	69 (66.3)	15 (14.4)	0.18
Yes	45 (16.0)	172 (61.2)	64 (22.8)	
Course				
Bachelor's degree	30 (16.4)	101 (55.2)	52 (28.4)	<0.001
Teacher's degree	35 (17.3)	140 (69.3)	27 (13.4)	
Participation in research				
No	57 (19.6)	188 (64.6)	46 (15.8)	<0.001
Yes	8 (8.5)	53 (56.4)	33 (35.1)	
Participation in outreach activities				
No	46 (23.2)	110 (55.6)	42 (21.2)	<0.001
Yes	19 (10.2)	131 (70.1)	37 (19.8)	
Accumulated Achievement Index				
Regular or good (up to 8.5)	64 (18.7)	218 (63.6)	61 (17.8)	<0.001
Very good or excellent (over 8.5)	1 (2.4)	23 (54.8)	18 (42.9)	
Progression in the course				
Up to 25%	23 (19.2)	72 (60.0)	25 (20.8)	0.64
25.01-50%	13 (14.3)	58 (63.7)	20 (22.0)	
50.01-75%	19 (19.2)	65 (65.7)	15 (15.1)	
Over 75%	10 (13.3)	46 (61.4)	19 (25.3)	
Self-determination index				
Negative	54 (25.8)	133 (63.6)	22 (10.5)	<0.001
Positive	11 (6.3)	108 (61.4)	57 (32.4)	

Source: Author.

4 DISCUSSION

Before discussing the results, it is important to point out the limits of this study. It did not carry out effective monitoring (systematic observation) of students' behavior inside and outside the university or the level of individual self-demand, which could help to further understand both the pedagogical relationships established between members of the social body of the course and

students' academic behavior. Moreover, considering that the data were collected after the middle of the school semester, students who dropped out were not included in the sample and their perceptions on SE could reveal important aspects about the initial education offered by the institution.

The evidence found in this study indicated that female students had higher SE levels than male ones. In the literature consulted, there seems to be no consensus in comparisons of students' SE levels between sexes. While some studies have found no association (VELIZ-BURGOS; URQUIJO, 2012, CELIK, 2013), others indicate higher SE for male students (CENDALES; VARGAS-TRUJILLO; BARBOSA, 2013; SÁNCHEZ ROSAS, 2013) and yet others found association with females (OZAN *et al.*, 2012, VEGA *et al.*, 2012). However, the literature consulted presents research indicating that women have higher levels of self-regulation (OZAN *et al.*, 2012), attention to teachers' speech in the classroom, and planning for assignments and tests (VEGA *et al.*, 2012) than men. Higher self-regulatory ability as well as higher level of attention to teachers might increase women's perception of control over complex environments such as initial education, thus contributing to better adjustment to the course (CAZAN, 2012) and thus increase the chances of academic achievement and better performance.

Another important aspect to be highlighted is the distinct ways in which students of both sexes process information from four SE sources (direct experiences; vicarious experiences; physiological and emotional states; verbal/social persuasion), with direct implications for the level of significance of a particular event or experience on later academic behavior (VEGA *et al.*, 2012). In research conducted with 352 Physics college students at a university in the US, Sawtelle, Brewe and Kramer (2012) examined Students' SE from the perspective of gender theory in order to understand how SE sources provide mechanisms to understand the process of retention in Physics. The results indicated that SE was a good predictor of students' academic success and, considering specifically women, that prediction of the probability of their passing in Physics depended first on vicarious experiences, without significant contribution by verbal/social persuasion. Thus, in addition to higher levels of self-regulation in education, female students investigated in this study may benefit more from vicarious experiences to build their students' SE, considering that they observe and pay more attention to relevant aspects of education – such as teachers' explanations.

Participation in outreach and research activities as well as the course taken (bachelor's or teacher's degrees) was associated to students' SE levels. As stressed by Igue, Bariani and Milanese (2008), students need to be made aware of the importance of early engagement in activities offered by the university, since professional development depends not only on the institution's influence on them, but fundamentally on the intensity of their involvement with the resources offered by the academic environment and the several external educational experiences that are facilitated during that period.

Community outreach activities can be seen as an educational, cultural and scientific process and an essential link between the university and the several sectors of society, so that teaching and research can be inseparably connected (BIONDI; ALVES, 2011). Those activities are very important for professional training, since approximating academic knowledge to popular culture creates an environment conducive to the emergence of new knowledge and skills, which promotes more confidence and maturity in students to deal with the several situations experienced on professionals' daily life (NOZAKI; HUNGER; FERREIRA, 2011) and creates opportunities for closer links between theory and practice.

The Sports Centre (CDS/UFSC) offers a considerable number of community outreach projects (UNIVERSIDADE FEDERAL DE SANTA CATARINA, 2015), providing students with the opportunity for internships in different areas of intervention (such as dance, collective and individual

sports, gymnastics, swimming, yoga) and meets the interests of a large portion of students. In research conducted with graduates and students of the former teacher's degree in Physical Education at UFSC, Mendes *et al.* (2006) found that the professional experience gained from the involvement in outreach and research activities elucidated their contribution to improving the quality of academic education and satisfactory development of academic and professional skills.

One aspect to note is that most existing projects at CDS/UFSC offer activities focused on the specificities of the bachelor's program (e. g., cardiac rehabilitation groups, training of university sports teams, initiation and improvement in sports) (UNIVERSIDADE FEDERAL DE SANTA CATARINA, 2015). Even if teacher's degree students participate in some of those projects, their difficulties for working may be higher than those faced by bachelor's degree students, who take mandatory subjects such as Physical Activity for Special Groups, Physical Conditioning, and Sports Training.

The benefits of participating in outreach projects for professional growth are also mentioned by students investigated in other studies. They include better students' perception of their confidence when developing several types of actions in daily practice (NOZAKI; HUNGER; FERREIRA, 2011); adoption of more humanized professional behavior and decisions that are thoughtful, autonomous and more concerned about community's needs; development of qualities such as team spirit, initiative and creativity (BIONDI; ALVES, 2011).

Research activity – increasingly demanded both in the academic environment and in society itself – has been finding increasing space in Brazilian universities, specially after the consolidation of short and regular graduate studies programs and the emergence of laboratories and research groups in several areas of knowledge (FREIRE; VERENGUER; REIS, 2002). Conducting research in initial education is crucial for students' development of investigative and proactive attitudes since it enables critical intervention in academic and professional realities. Therefore, considering that observing and questioning situations are common to daily practice, they can be improved by students' inclusion in research groups and projects from the early stages of the course (MENDES *et al.*, 2006).

The offer of outreach and research activities is therefore able to enhance the development of academic and professional skills that can contribute to improve, among other aspects, students' self-concept, exploratory behavior, and academic engagement, with direct implications for increasing SE in initial education. Proactive attitudes on the part of students are also necessary for their successful inclusion in research groups. The current curriculum proposal provides, in the first stage of both courses, disciplines that deal with introductory content of Physical Education – which seek, among other things, to explain research projects and groups existing at CDS/UFSC. Therefore, it is up to students to find research topics of their interest and seek information from researchers and environments that are closer to those interests.

Students' SE was associated to students' IAA and SDI in this study. With regard to academic performance (AAI), the evidence finds high support in international scientific literature (BOUFFARD *et al.*, 2005, BEMBENUTTY, 2007, ELIAS, 2008, AL KHATIB, 2010, CENDALES; VARGAS-TRUJILLO; BARBOSA, 2013), while at the national level there are still few studies on the issue. With respect to SDI, the evidence of this study also found support in literature. Investigations suggest that the higher one's SE level, the higher the stress and persistence levels mobilized to reach the previously stated goal or accomplishment (BANDURA, 1977, 1997). Such features are usually found in individuals who are more intrinsically motivated (BOUFFARD *et al.*, 2005, AL KHATIB, 2010).

Students with higher SE usually show better regulation of their conditions and study strategies (BEMBENUTTY, 2007), better adjustment to academic-personal and professional demands (CAZAN, 2012) and, where necessary, they seek help more often than those with low SE (WILLIAMS; TAKAKU, 2011). As a result of higher academic adjustment, students with higher SE perception tend to feel more self-confident (WANG; CASTAÑEDA-SOUND, 2008) and more intrinsically motivated or self-determined (AL KHATIB, 2010) to strive towards specific academic goals that are meaningful to themselves (BOUFFARD *et al.*, 2005). Considering also that the goals of students with the higher SE are usually higher and involve learning or mastery of particular content or situation (HSIEH; SULLIVAN; GUERRA, 2007), it is possible to understand the evidence in this study regarding the association between students' SEs, SDI and academic performance (AAI).

No association was found between progression in the course and SE for students investigated. In a study with 169 freshman college students from different courses, Guerreiro-Casanova and Polydoro (2011) sought to compare college students' SE between the first and second school terms. The evidence pointed to a decrease in the SE level in the period studied, which might demonstrate that, after academic experiences during the school year, students' perceptions became more adjusted to the environmental context as well as to individual skills. Thus, it is believed that the finding of this study may be related to the adjustment of students' perceptions to the university context and their own skills along their studies. Furthermore, the simultaneous influences of personal, academic, family and professional body should be considered, since they can contribute to the construction of students' SE perceptions, but were not the object of this study.

Although assumptions can be made to justify the lack of association between students' SE and their progression in the courses, the evidence in this study indicates the need to reflect on the organizational proposal of courses offered so that the presentation of contents contributes to make them more meaningful and impactful to students. When investigating the formative processes used in the bachelor's program in Physical Education of the institution analyzed in this study, Milistetd *et al.* (2014) found that theoretical-practical classes represented more frequent learning situations. In this sense, the excess of theoretical classes, the abstraction of contents in relation to practice, and superficiality of contents covered, at the expense of promoting experiences that allowed situations of experiential learning, were considered the main weaknesses of the course investigated (MILISTETD *et al.*, 2014). Recognizing the importance of direct experience and vicarious experiences for the development of positive SE perceptions (BANDURA, 1997), we can understand more clearly that the initial education courses investigated in this study still need didactic and pedagogical strategies that make them more meaningful and impactful for their students.

5 FINAL REMARKS

This study made it possible to analyze the relationship between the students' SE and certain aspects of initial education conducted by Physical Education college students, specially the associations of students' perceptions with certain personal, academic and professional characteristics.

The evidence revealed statistically significant differences in the students' SE level when considering the variables sex, course, participation in research and outreach activities, Accumulated Achievement Index and Self-Determination Index, which highlight the importance and influence that personal and academic variables can have on students' individual perceptions of SE and their behavior towards education.

The complexity of relations between students and their education, as well as the influence of numerous personal and professional factors that go beyond the college space-time, helps finding possible explanations for the fact that no difference was found in students' SE levels when considering the progression in initial education. However, the need to stimulate reflection by the academic community on the current organizational proposal of the courses is also clear, as an attempt to overcome the limits resulting from the current model that, by excessively focusing on learning situations mediated in the form of lectures, does not seem to ascribe a lot of sense and meaning to students' learning. Therefore, it is necessary to promote greater appreciation of students' previous experiences as well as to increase the frequency of experiential learning situations in order to have higher impact on students' self-confidence, safety and consequently SE levels.

We suggest continuity of research and monitoring of students' SE levels in initial education in Physical Education as well as expansion of studies that seek to understand in greater depth the complex relationships between students' SE, motivation, and college initial education. It is believed that future research could go beyond cross-sectional design by using retrospective and longitudinal approaches that take into account the constant personal (internal) and contextual (external) changes that contribute to the construction of individual perceptions of students' SEs.

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