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Academic motivation and professional competence of physical education students

Motivação acadêmica e competência profissional de estudantes de educação física

Motivación académica y competencia profesional de estudiantes de educación física

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Abstract: A cross-sectional study aimed to analyze 117 physical education students' perceptions of academic motivation and professional competence. The Academic Motivation Scale and the Perceived Professional Competence Scale in Physical Education were used. Data analysis was conducted using descriptive and inferential statistics. Students in the first two years are more identified with their studies and perceive themselves as having more professional competence. Students already working in the field showed higher intrinsic motivation and perception of professional quality. Course duration and work in the field appear to be intervening factors in identification with studies and perception of professional competence, respectively.

Keywords: motivation; university students; higher education.

Resumo: Estudo transversal que teve o objetivo de analisar a percepção 117 de estudantes de educação física acerca da motivação acadêmica e competência profissional. Foram utilizadas a Escala de Motivação Acadêmica e a Escala de Autopercepção de Competência Profissional em Educação Física e Desporto. A análise dos dados foi conduzida por meio da estatística descritiva e inferencial. Os estudantes dos dois primeiros anos são mais identificados com os estudos e se percebem com mais competências profissionais. Os estudantes que já trabalham na área apresentaram maior motivação intrínseca e percepção de qualidade profissional. O tempo de curso e o trabalho na área parecem ser fatores intervenientes na identificação com os estudos e na percepção de competência profissional, respectivamente.

Palavras-chave: motivação; estudantes universitários; ensino superior.

Resumen: Un estudio transversal que tuvo como objetivo analizar la percepción de 117 estudiantes de educación física sobre la motivación académica y la competencia profesional. Se utilizaron la Escala de Motivación Académica y la Escala de Competencia Profesional Percibida en Educación Física. El análisis de datos se realizó mediante estadísticas descriptivas e inferenciales. Los estudiantes de los dos primeros años se identifican más con sus estudios y se perciben a sí mismos como poseedores de más competencias profesionales. Los estudiantes que ya trabajan en el campo mostraron una mayor motivación intrínseca y percepción de calidad profesional. La duración del curso y el trabajo en el campo parecen ser factores intervenientes en la identificación con los estudios y la percepción de competencia profesional, respectivamente.

Palavras clave: Motivación; estudiantes universitarios; educación superior.

1 Introduction

Higher education has become increasingly accessible to the population, including being a cornerstone of public policy programs aimed at democratizing what the Constitution guarantees: the right to education. This theme entails multiple ramifications, such as power relations, issues regarding funding, investment, student debt, and institutional assessments. However, the world is experiencing globalized development. Under the influence of such an international environment, all countries will face the problem of effectively improving the educational outcomes of university students (XU et al., 2021).

Given the vastness of the topic, this article focuses on the following issue: despite the expanded access people have to higher education, there is a high dropout rate. It is worth emphasizing that obtaining a higher education degree has become increasingly valuable in the job market (SANTOS et al., 2011). According to information from the Ministry of Education (2012), the increase in enrollment rates in higher education peaked starting in 1998, consistently rising, especially within the private sector. However, another challenge emerged: as the number of access to Higher Education Institutions (HEIs) grew, so did the dropout rate among these students. Kipnis (2000) mentions that concern about the issue of student non-retention in HEIs arose in 1995, when the Ministry of Education (MEC) and the Unified Selection System (SISU) organized a seminar on dropout rates in Brazilian universities, seeking to understand the causes of this phenomenon.

It is known that the reasons leading to study abandonment are multifactorial and involve numerous complex variables. One of the current problems that education often faces is student demotivation, disinterest, lack of effort to acquire new knowledge and skills, and lack of initiative to achieve them (RUANO et al., 2021).

Oliveira et al. (2007) investigated 655 students from various courses in an attempt to identify contextual variables such as social, cultural, and economic issues and motivational factors. To do this, the researchers administered a closed questionnaire on student costs, family income, expectations, and educational motivations. The results highlighted the importance of understanding how students interpret and give meaning to their life experiences during this university period as a form of motivation.

Todorov and Moreira (2005) mention that motivation is used in different circumstances and has various meanings, sometimes being contradictory. For example, there is Maslow's theory of human needs, which ranks human motives in a pyramid; McClelland's motivational theory, which exposes acquired needs; and the Self-Determination Theory (DECI; RYAN, 1985; DECI; RYAN, 2000), a contemporary framework often used to study and understand human motivation, applied in various distinct contexts. It distinguishes between optimal behaviors (e.g., autonomy support)

and non-optimal ones (e.g., controlling behaviors) of those in positions of authority (e.g., parents, teachers, etc.) (VAN DEN BERGHE et al., 2013; RAPOSO et al., 2020).

The various theories seem to agree on the orientation of motivation: it can be intrinsic or extrinsic. While the former can be understood as the force that drives the individual to engage in the task itself, that is, out of satisfaction in performing it, the latter refers to what is expected as a consequence of the action (DECI; RYAN, 2012).

In other words, from birth, individuals constantly undergo changes that generate action, whether driven by internal or external reasons. Intrinsic or internal reasons are related to the inner strength of sustaining personal projects, goals, and objectives. This type of motivation is present in all individuals because it strengthens them to keep moving forward and achieve their purposes. External or extrinsic reasons pertain to behavior developed to obtain results beyond the activity. This type of motivation helps the individual remain involved and is a complementary factor. An example is the corporate environment, where bonuses are offered upon achieving company goals.

Many university students work and study, which can lead to a buildup of responsibilities, activities, and duties. This can occasionally result in symptoms such as fatigue, discouragement, and anxiety-related fatigue, among other factors that influence academic demotivation. This set of symptoms is referred to as a morbid mental condition (CAPONI, 2011).

As mentioned earlier, motivation is a construct that encompasses various elements and theories. When considering academic motivation, attention must be paid to multiple factors that can influence it, such as the educational system, social and family environment, economic factors, and elements of intrinsic motivation. Thus, for this study, the conception of academic motivation based on Wilkesmann, Fischer, and Virgillito (2012) was employed, who affirm that it can be understood as the motivation to choose university studies and, above all, to persist in them, that is, to continue studies in higher education.

From the perspective of educational psychology, motivation is the internal driving force that directly promotes an individual's activities. Learning motivation is the internal driving force that encourages students' participation in learning activities. The prerequisite for the effective development of learning activities is motivation for learning, which supports students' learning and thereby improves their behaviors. If teachers and schools can help students develop a strong motivation for learning, they can fundamentally improve students' learning outcomes and professional competence (XU et al., 2021).

Professional competence can be defined as a set of knowledge, skills, and attitudes necessary for adequate professional performance (LE BOTERF, 2013). It is an ability that involves the culture in which the individual is immersed and the knowledge needed to perform their actions in the best possible way. Success in professional

performance depends on the best use of knowledge and the perception of mastery related to that knowledge and skills. Individuals draw on theories and implicit knowledge to assess, understand, or predict the results and consequences of their actions and to guide, organize, and implement these actions based on their experiences (TESSITORE; FISCHETTI, 2014).

Thus, this article analyzed physical education students' perceptions of academic motivation and professional competence, aiming to discuss and contribute to motivation studies and their intersection with educational practice through the collected data and their correlation.

2 Materials and Methods

The present study is characterized by a quantitative cross-sectional approach, where evaluations were conducted simultaneously with undergraduate students enrolled in the Physical Education program at the University of Paraná in Cianorte - PR. As Gil (2002) emphasizes, this type of research has the advantage of direct access to the reality of the researched subjects, who provide their opinions, ideas, and values, thereby avoiding the researcher's subjective assumptions. Moreover, quantifying the obtained data allows for the correlation of variables and statistical procedures, which, through analysis, lead to conclusions corresponding to the collected data.

This research was submitted and approved by the University's Ethics Committee above, with approval number 2,291,582. It commenced once participants signed the Informed Consent Form.

To assess academic motivation, the Academic Motivation Scale (AMS) questionnaire was administered, consisting of 31 questions with responses ranging on a Likert scale from 1 (no correspondence) to 7 (complete correspondence) with the statements presented in the questionnaire. This psychometric scale was adapted for Brazil by Sobral (2003) and validated by Guimarães and Bzuneck (2008). The AMS analyzes the following subscales: demotivation, Extrinsic Motivation by external regulation, Introjected Extrinsic Motivation, Identified Extrinsic Motivation, Integrated Extrinsic Motivation, and Intrinsic Motivation.

For the evaluation of self-perceived professional competence, a two-dimensional measurement scale was used, with acceptable internal consistency and a high coefficient of score stability, developed by Nascimento (1999) for the field of Physical Education and Sports, called the "Self-Perception Scale of Professional Competence in Physical Education and Sports." It includes 30 items related to professional competence, with some words or expressions adapted for the current study. In the questionnaire used, 5 out of the original 30 items underwent adaptations to suit the students of the studied course - Bachelor of Physical Education. In item 10,

the phrase "from the teaching subject in Physical Education" was replaced with "for teaching physical activity programs"; in items 12 and 16, the term "Physical Education" was replaced with "physical activity"; in item 26, the term "pedagogical" was excluded; and in item 29, "school and extra-school contexts" were replaced with "different environments of physical practices." Each change was made by current literature terms consulted during the studies (LEMOS, LEE; ROSE JÚNIOR, 2010).

According to the measurement instrument, to define competencies, the term "master" was used to denote specific knowledge, and the term "be able to" was used to denote skills. For self-assessment of competencies, individuals define their perception of their mastery level by assigning a numerical value, where 0 corresponds to no mastery, 1 to very insufficient mastery, to insufficient mastery, three to sufficient mastery, four to nearly complete mastery, and five to complete mastery. A score is obtained by summing the values of all selected items, attributing the individual's perception of their mastery level (NASCIMENTO, 1999).

The instruments were administered in the classroom during class hours from October 20, 2017, to October 27, 2017. The same procedure was conducted with absent students to obtain the most significant sample. Data were collected from 23 first-year students, 27 second-year students, 42 third-year students, and 25 fourth-year students, totaling 117 students, including 63 men and 54 women aged 19 to 31 years, enrolled in the Bachelor of Physical Education program at the University of Paraná in Cianorte.

The obtained data were statistically processed using Excel software with the SPSS 20.0 statistical package. Normality was tested using the Kolmogorov-Smirnov test to compare the equality of probability distributions among groups. A comparison between the two groups was conducted using the Mann-Whitney U test. In contrast, a comparison among four groups (students from the four academic years) was performed using the non-parametric Kruskal-Wallis test to assess whether the samples resulted from the same distribution. Lastly, the Spearman correlation was used to evaluate the strength of relationships between variables, with a significance level set at $p < 0.05$.

3 Results

As shown in Table 1, statistically significant differences ($p < 0.05$) were observed based on the academic year in the dimension of Identified Extrinsic Motivation. Pairwise comparisons indicated differences between second-year students, with a median (Md) = 2.0, and fourth-year students, with a median (Md) = 1.2, where the former group exhibited higher values for identified regulation.

Table 1 - Comparison of Motivation and Professional Qualification among Physical Education Students at Universidade Paranaense de Cianorte Across Academic Years.

Variables	1st Year (n=23)	2nd Year (n=27)	3st year (n=42)	4st Year (n=25)	p
	Md (Q1-Q3)	Md (Q1-Q3)	Md (Q1-Q3)	Md (Q1-Q3)	
Motivation					
Demotivation	1.5 (1.0-2.0)	2.0 (1.0-3.2)	1.3 (1.0-2.9)	1.0 (1.0-1.8)	0.102
External Motivation	4.6 (2.7-5.4)	4.0 (2.6-4.9)	4.1 (2.9-4.7)	4.1 (2.4-4.5)	0.881
Intr. Motivation	5.4 (5.1-6.0)	5.0 (4.1-5.6)	5.0 (4.2-5.9)	4.9 (4.3-5.6)	0.887
Id. Motivation	1.2 (1.0-2.0)	2.0(1.5-2.5) ^a	1.6 (1.0-2.5)	1.2(1.0-1.7) ^a	0.025*
Int. Motivation	2.7 (1.3-3.7)	4.0 (2.0-6.0)	3.2 (4.0-5.7)	2.7 (2.0-4.5)	0.505
Intrinsic Motivation	6.0 (5.0-6.7)	5.0 (3.3-6.3)	5.0 (4.0-5.7)	5.0 (3.5-6.5)	0.129
Qualification					
Knowledge	3.1 (2.7-3.4)	2.9 (2.5-3.4)	2.6 (2.1-3.2)	2.8 (2.2-3.3)	0.092
Skill	3.3(2.9-3.6) ^b	3.1 (2.8-3.6)	2.7(2.3-3.3) ^b	3.0 (2.5-3.3)	0.008*

*Statistically significant differences at $p < 0.05$ between: a) 2nd and 4th year; b) 1st and 3rd year. Md: median. Q: quartile. Intr.: introjected. Id.: Identified. Int.: Integrated. Source: own elaboration.

When analyzing the professional qualification of the students, statistically significant differences ($p < 0.05$) were observed for the dimension of professional skills, where first-year students ($Md = 3.3$) showed higher values compared to third-year students ($Md = 2.7$). Differences were observed among the groups from all four academic years studied for professional knowledge.

Table 2 compares motivation and professional qualification among students in the Physical Education program according to gender. The results indicated statistically significant differences ($p < 0.05$) in identified regulation, with higher values being reported by male students ($Md = 1.7$). For the other dimensions of motivation and professional qualification, values were similar between genders ($p > 0.05$).

Table 2 - *Comparison of motivation and professional qualification among Physical Education students at Universidade Paranaense de Cianorte by gender.

Variables	Male (n=63)	Female (n=54)	P
	Md (Q1-Q3)	Md (Q1-Q3)	
Motivation			
Demotivation	1.7 (1.0-2.8)	1.3 (1.0-2.0)	0.306
External Motivation	4.3 (2.9-5.3)	4.0 (2.7-5.1)	0.492
Intr. Motivation	5.1 (4.3-6.0)	5.0 (4.4-5.7)	0.501
Id. Motivation	1.7 (1.2-2.5)	1.2 (1.0-2.0)	0.043*
Int. Motivation	3.0 (2.0-4.7)	3.0 (1.5-4.7)	0.998
Intrinsic Motivation	5.3 (4.0-6.3)	5.0 (4.2-6.3)	0.893
Qualification			
Knowledge	2.8 (2.2-3.2)	2.9 (2.5-3.4)	0.139

Skill	3.0 (2.5-3.5)	3.0 (2.7-3.6)	0.349
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*Statistically significant differences at $p < 0.05$. Md: median. Q: quartile. Intr.: introjected. Id.: Identified. Int.: Integrated. Source: own elaboration.

Regarding the comparisons of motivation and professional qualification among students who work in the field and those who do not, the results are presented in Table 3. Statistically significant differences ($p < 0.05$) were identified for the group of students working in the field in the dimensions of introjected regulation (Md = 5.3) and intrinsic motivation (Md = 5.3), indicating that these students are more motivated for their activities. In Table 3, "no" corresponds to those who do not work in the field, and "yes" corresponds to those who are already engaged (internship) in the field of Physical Education.

Table 3 - Comparison of motivation and professional qualification among Physical Education students at Universidade Paranaense de Cianorte based on whether they work in the field.

Variables	Not working in the field. (n=56)	Works in the field (n=61)	P
	Md (Q1-Q3)	Md (Q1-Q3)	
Motivation			
Demotivation	1.7 (1.0-3.2)	1.3 (1.0-2.0)	0.164
External Motivation	4.3 (2.7-5.2)	4.0 (2.8-5.1)	0.808
Intr. Motivation	4.9 (4.1-5.6)	5.3 (4.6-6.0)	0.023*
Id. Motivation	1.6 (1.0-2.4)	1.7 (1.0-2.2)	0.998
Int. Motivation	2.8 (1.7-4.7)	3.0 (2.0-4.7)	0.778
Intrinsic Motivation	4.8 (3.4-5.3)	5.3 (4.3-6.7)	0.011*
Qualification			
Knowledge	2.6 (2.2-3.1)	3.1 (2.5-3.5)	0.001*
Skill	2.8 (2.4-3.3)	3.1 (2.7-3.6)	0.001*

*Statistically significant differences at $p < 0.05$. Md: median. Q: quartile. Intr.: introjected. Id.: Identified. Int.: Integrated. Source: own elaboration.

For the item of professional qualification, the results showed statistically significant higher scores ($p < 0.05$) in the dimensions of knowledge (Md = 3.1) and professional skills (Md = 3.1) for students working in the field. However, as observed in Table 5, no statistically significant correlations ($p > 0.05$) were found between the dimensions of motivation and professional qualification among students in the Physical Education program.

Table 4 - Correlations between motivation and professional qualification of Physical Education students.

Motivation	Knowledge	Skill
Demotivation	-0.113	-0.196
External Motivation	-0.106	-0.064
Introjected Motivation	0.184	0.065
Identified Motivation	-0.108	-0.135
Integrated Motivation	0.054	0.027
Intrinsic Motivation	0.090	0.075

*Statistically significant correlations at $p < 0.05$. Source: own elaboration.

4 Discussion

The factor of demotivation indicates that fourth-year students, likely due to nearing the end of their higher education journey, are more motivated compared to second-year students, who show more demotivation towards attending Higher Education Institutions (HEIs), as shown in Table 1 regarding motivation and professional qualification by academic year.

Teixeira et al. (2008) elucidate that students undergo a significant process of academic transition and adaptation upon entering higher education. The university environment demands autonomy and greater responsibility compared to school. The early years require various skills for individuals to develop without becoming overly frustrated; otherwise, adversities could lead to thoughts of dropping out of the course. In this regard, Azevedo and Faria (2006) assert the need to create means to confront challenges and adversities. Understanding the motivational characteristics of young people, which promote adaptation to higher education and academic success, emerges as crucial for developing strategies to promote the overall psychosocial well-being of adolescents and young adults.

Regarding professional competence, the data analyzed from Table 1 pertain to factors such as professional skills and professional competence. The study indicates that the first-year students had the highest average, which may be justified by their limited exposure to the specific subjects offered by the university. The third-year students had the lowest average, possibly due to their initial contact with the subjects offered in the course and the realities encountered within the HEI in question.

Antunes (2007) states that supervised internships contribute to professional success and transition by implementing learned skills. Silva and Silva (2015) understand professional success as a multidimensional concept encompassing skills development and creative and practical analytical thinking.

Analyzing Table 2, it can be observed that the identified motivation mentioned earlier was more relevant for male students. It is worth noting that a student oriented towards learning and seeking new knowledge and challenges—a motivated student—will have superior performance compared to a demotivated student, and this can also reflect in future professional endeavors (Ribeiro, Saraiva, Pereira, & Ribeiro, 2019).

Kusnierz, Rogowska, & Pavlova (2020) found that women are more motivated towards academic achievements than men. In addition to intrinsic motivation, factors such as personality traits, gender, and cultural differences are crucial for academic performance.

Table 3 depicts motivation and professional qualifications among those already working in the field and those who are not. The data indicate that the majority of students, approximately 61 individuals, already work in the field. Melo and Borges (2007) mention that the entry phase into the job market is crucial as it marks the transition to preparation and professional development.

Regarding introjected regulation, which relates to personal ego, and intrinsic regulation, which is self-determined, most respondents who answered the questionnaire work as interns in their field of study. Salles et al. (2015) conducted a study using the same EMA instrument and the Higher Education Self-Efficacy Scale (EAFS), applied to around 490 physical education students at the Federal University of Santa Catarina. Their work indicated that approximately 70% of the volunteers involved in the study were already connected to the job market. Regarding professional competence factors, the results showed that both skill and professional qualification were more relevant for those engaged in work. Additionally, Costa, Lettnin, and Souza (2004), in their study on professional potential in physical education using the same professional competence questionnaire, found that professionals perceived themselves as more competent in skills than in the knowledge domain.

Despite the significant findings, this study has limitations that should be noted: 1) the cross-sectional design prevents causal inference; 2) the sample size and the inclusion of university students from only one locality limit the generalizability of the results.

5 Conclusion

It can be concluded that the duration of the course and working in the field appear to be intervening factors in the identification with studies and perception of professional quality, respectively. Notably, students in the first years (1st and 2nd) are

more identified with their studies and perceive themselves as having more excellent professional skills, while students already working in the field show higher intrinsic motivation and perception of professional quality. Additionally, men demonstrate greater identification with studies than women.

As practical implications, the importance of creating strategies to maintain students' intrinsic academic motivation throughout the course is emphasized, such as encouraging internships in the field, as such experiences can provide greater identification and professional knowledge.

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Authors' Contribution

Fabio Ricardo Acencio - Project coordinator, active participation in data analysis, and revision of the final writing.

Daniel Vicentini de Oliveira - Data collection, data analysis, and writing of the text.

Vivian Rafaella Prestes - Active participation in data analysis and revision of the final writing.

José Roberto Andrade do Nascimento Júnior - Active participation in data analysis and revision of the final writing.