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ARTICLE

Spanish University Students' Experiences and Perceptions of the Spectrum of Teaching Styles and Application of the Model Based on the Self-Determination Theory

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Purpose: To test the application of the four-group model of teaching styles based on the self-determination theory in a population of Spanish university students and to analyze the Spanish university students' experiences and perceptions of the teaching styles according to this model. ***Method:*** This research followed a descriptive quantitative methodology using a survey. A questionnaire on students' experiences and perceptions of teaching styles was administered to a total of 667 Spanish university students of physical education (77.8% men and 22.2% women, aged between 18 and 30 years). ***Results:*** All the factors presented an acceptable–good reliability index ($\alpha \geq .7$), and the multivariate analysis was significant for the variables year and ownership ($p \leq .05$). ***Conclusion:*** The four-factor model was applicable to the Spanish university population, and the directive cluster was given higher scores by students in the first year, whereas students in the last year preferred the discovery cluster.

Keywords: methodology, SDT, higher education

The Spectrum of Teaching Styles in Physical Education

One of the most important contributions to the field of physical education (PE) in the last third of the 20th century was the spectrum of teaching styles (Mosston, 1966). This proposal is based on the premise that the teaching–learning process requires a series of decisions that can be made by the teacher and/or the student and can be divided into three categories (Mosston & Ashworth, 2008): The first has to do with decisions that are made prior to the interaction between teacher and student (e.g., decisions on design and planning), which are called preimpact decisions. The second category includes those decisions that are made during the impact set, at the moment of teacher–student interaction, when the decisions made in the preimpact set are being put into practice. Finally, there is a set of postinteraction decisions, mainly those related to evaluation processes, called post-impact decisions (Byra et al., 2014; Pill et al., 2024).

Eleven teaching styles can be identified when the who, what, and where of decision making are considered. Teacher and learner decision making unifies the 11 landmark teaching styles that represent two cognitive capacities of learners: the capacity for reproduction thinking and for production thinking (Pill et al., 2024, p. 145). According to the spectrum theory, no one style is better than any other whatever the context (Byra et al., 2014); as the teacher goes through the 11 styles of the spectrum, the decision making capacity varies, starting from reproduction styles where the teacher is the main protagonist, a position that they will lose as they progress through the different styles (A: command, B: practice, C: reciprocal, D: self-check, and E: inclusion), until reaching the production styles, where the learner makes most of the decisions and produces their own knowledge (F: guided discovery, G: convergent, H: divergent, I: learner-designed individual program, J: learner initiated, and K: self-teaching) (Mosston & Ashworth, 2008). Consequently, the learners will acquire more decision-making responsibilities as they progress through the styles (Mosston & Ashworth, 2008). For example, in the command style (A), the teacher makes all the decisions in all three phases. In contrast, in the self-teaching style (K), the learner is the one who makes all the decisions (Suesee et al., 2016).

To meet the wide range of objectives in education, the teacher must meet students' needs and create learning conditions that allow for a comprehensive education in a myriad of creative ways and across developmental channels (Brunsdon, 2024; Mosston, 1966). Each of the spectrum teaching styles will have a greater impact on certain channels of learner development, such as physical, cognitive, emotional, social, and ethical/moral (Mosston & Ashworth, 2008). For example, Styles C, D, and E have a greater influence on the cognitive and emotional channel than Styles A and B as, in the former, the students begin to make more decisions regarding their and their peers' motor performance as well as giving and receiving feedback. Thus, decision making associated with Styles A and B may affect learners' social perspective (Mosston & Ashworth, 2008; Syrmpas et al., 2021). Thus, there are studies that affirm that teaching styles that favor students' decision making in the teaching and learning process foster their motivation and commitment to physical activities according to their basic psychological needs (BPNs) of the self-determination theory (SDT; Gil-Arias et al., 2020; Mouratidou et al., 2022).

The Self-Determination Theory in Spain

Since Deci and Ryan (1985) proposed the SDT almost four decades ago, numerous investigations have assumed it as a theoretical

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construct for its ideation and development. The meta-analysis conducted by Vasconcellos et al. (2020) analyzed 265 studies connecting PE with the SDT, which evidences the great impact that this theory has had in this field. The SDT describes the process of motivation development and how it impacts human behavior (Deci & Ryan, 1985; Ryan & Deci, 2000, 2017). The theory suggests that motivation moves on a continuum from no motivation to intrinsic motivation, through two major types of extrinsic motivation, controlled and autonomous, which include, from lesser to greater degrees of self-determination, external regulation, introjected regulation, identified regulation, and integrated regulation (Litalien et al., 2017; Ryan & Deci, 2000; Vasconcellos et al., 2020). First, in demotivation, there is no intention or willingness to carry out an activity. Continuing along the continuum, external regulation is the motivation that leads to the performance of an activity with the sole aim of obtaining an external reward or avoiding a possible punishment. Introjected regulation, on the other hand, is associated with performing activities to avoid guilt or to feel better about oneself. In terms of autonomous motivation, identified regulation refers to participation in an activity because of the positive value attached to it, integrated regulation promotes participation because it is part of the individual's personal identity, and finally, intrinsic regulation, which represents the highest levels of self-determination, moves the individual to voluntary participation in an activity because of the interest, satisfaction, and pleasure gained from doing it (Sánchez-Oliva, Viladrich, et al., 2014).

The SDT is widely accepted and extensively investigated in PE by authors from dozens of countries worldwide. Specifically in Spain, in recent years, a large part of the research body has been conducted on enhancing adolescents' physical activity levels (Fernández-Espínola et al., 2020; Sánchez-Oliva et al., 2020; Sánchez-Oliva, Sanchez-Miguel, et al., 2014), on self-concept in primary and secondary students (Valero-Valenzuela et al., 2021), on teacher behavior (Fin et al., 2019; Huéscar-Hernández et al., 2019), on cognitive and emotional processes in students (Trigueros et al., 2019), or on the promotion of physical activity (González-Cutre et al., 2016), among others. All these investigations have had SDT as a theoretical basis, with the aim of analyzing and identifying the elements that can contribute to the increase of intrinsic motivation in students, whether for physical activity, for the improvement of self-concept, or for the development of the affective domain, among others.

The Autonomy of PE Students

Within the SDT can be found the subtheory of BPNs, which indicates that for an individual to develop optimally and their motivation to be as high as possible, three BPNs must be met: the need for competence, the need for relatedness, and the need for autonomy (Deci & Ryan, 2000; Taylor & Lonsdale, 2010; van Aart et al., 2015). The latter, the need for autonomy, is satisfied when students perceive that they are responsible for their own actions and can make decisions (Sevil-Serrano et al., 2017). Therefore, the teacher's performance in the classroom will have a major influence on the satisfaction of the need for autonomy (Amado et al., 2014), and the teaching style may go on a continuum from total control when the teacher makes all the decisions to maximum support for autonomy when the learner makes all the decisions (Reeve et al., 2013).

These two theories, the spectrum of teaching styles and the self-determination theory, have been of great interest to the scientific community, which has led them to be investigated in the field of PE from their origins to the present. However, hardly any research has been found that relates both theories, only the one recently elaborated by Syrmpas et al. (2021), who analyzed the perception of teaching styles of university students in Greece and Turkey, classifying these styles as proposed by Mosston and Ashworth (2008), according to the SDT, from less to more student autonomy and grouping them into (Syrmpas et al.,2021) (Table 1): (1) directive, (2) student evaluation, (3) discovery, and (4) initiated learners. Therefore, the purpose of this study was twofold: on the one hand, (a) to test the application of the four-group model of teaching styles based on the SDT in a population of Spanish university students and, on the other hand (b) to analyze the Spanish university students' experiences and perceptions of teaching styles based on this model.

Method

This research follows a descriptive and cross-sectional quantitative methodology. The technique used for data collection was the survey (Cea D'Ancona, 2001).

Participants

Random, incidental, and nonprobabilistic sampling was carried out, and a total of 667 university students of PE in Spain (77.8% men and 22.2% women, aged between 18 and 30 years) were selected to complete the questionnaire. The participants (20.5% studying in the first year, 34.2% in the second year, 27.1% in the third year, 11.5% in the fourth year, and 6.6% in the master's degree) belonged to eight different universities, of which 69.4% were public and 30.6% private.

Instrument

The questionnaire on students' experiences and perceptions of teaching styles (Cothran et al., 2000) was used to collect the information. This questionnaire was adapted and validated for the Spanish version to be used in the Spanish educational context (Espada et al., 2021). A Cronbach's α coefficient of .89 was obtained for the instrument. The questionnaire consisted of a brief

Table 1 The Spectrum of Teaching Styles According to the SDT

Directive (1)	Student evaluation (2)	Discovery (3)	Initiated learners (4)
A. Command	C. Reciprocal	F. Guided discovery	I. Learner designed individual program
B. Practice	D. Self-check	G. Convergent	J. Learner initiated
	E. Inclusion	H. Divergent	K. Self-teaching

Note. Modified from "Higher-Order Factors and Measurement Equivalence of the Spectrum of Teaching Styles' Questionnaire Across Two Cultures," by I. Syrmpas, A. Papaioannou, N. Digelidis, G. Erturan, and M. Byra, 2021, *Journal of Teaching in Physical Education*, *40*(2), pp. 245–255. https://doi.org/10.1123/jtpe.2019-0128.

description of each of the 11 teaching styles that make up the spectrum (Mosston & Ashworth, 2002) followed by five statements answered on a 5-point Likert scale: (a) I have had a PE teacher who used this teaching style in PE lessons (1 = *never* to 5 = *always*), (b) I will try to use this teaching style when I practice as a PE teacher (1 = *never* to 5 = *always*), (c) I think this teaching style would make classes fun for students (1 = *strongly disagree* to 5 = *totally agree*), (d) I think this teaching style would help students learn skills and concepts (1 = *strongly disagree* to 5 = *totally agree*), and (e) I think this teaching style would motivate students to learn (1 = *strongly disagree* to 5 = *totally agree*).

Procedure

Authorization to administer the questionnaires was obtained from university and teachers in charge of the lessons. Face-to-face appointments were scheduled at the end of one of the lessons so that the students present who had volunteered to participate in the study could fill out the questionnaire anonymously. All the participants were informed of the objectives of the study and signed the consent form before the questionnaire was administered. During the completion of the questionnaires, a researcher was present to clarify possible doubts and to verify their independent completion by the participants. All participants were treated in accordance with the ethical procedures of the American Psychological Association regarding consent, confidentiality, and anonymity.

Statistical Analysis

SPSS software (version 25.0) was used for the statistical analysis. The internal consistency of the four-factor model was analyzed with Cronbach's alpha coefficient (α), the KMO, and Barlett's test of sphericity. To analyze the differences in the perception of the different groups of teaching styles, a multivariate analysis of variance was performed according to sex, year, and university ownership as independent factors or variables and the factors of the different groups of styles as dependent variables.

Results

The main psychometric properties of the questionnaire were analyzed, such as the reliability and validity test, using Cronbach's alpha coefficient, KMO sample appropriateness measure, and Barlett's test of sphericity. Internal consistency of the four-factor model corresponding to the four groups of teaching styles, from less to more student autonomy (directive, student evaluation, discovery, and initiated learners), is shown in Table 2. The scores for the teaching styles with respect to previous experience, future applicability, and related enjoyment, learning, and motivation are shown in Table 3.

The perception of the different groups of teaching styles according to sex, university ownership, and academic year is shown, respectively, in Tables 4, 5, and 6. The multivariate analysis was significant for the variables year ($F = 6.291$; $p = .001$; $\eta_p^2 = .037$) and university ownership ($F = 4.512$; $p = .001$; $\eta_p^2 = .027$) but not significant for the sex variable ($F = 1.234$; $p = .295$; $\eta_p^2 = .007$).

The directive cluster scored higher on the perception scale in private universities ($p = .001$), whereas the initiated learner cluster scored higher in publicly owned universities ($p = .040$).

On the basis of the academic level, directive cluster was given higher scores in the first year in comparison with all the following ones of the degree ($p < .001$) and in the second and third years and master's with respect to the fourth year ($p < .05$). In contrast, first-year students attributed lower scores to the discovery cluster in comparison with the rest of years ($p < .001$), including the master's degree ($p < .05$), whereas the score in the fourth year was greater in comparison with the third and second years as well ($p < .001$). Finally, the styles of the student evaluation cluster scored higher at the master's level than in the first year ($p < .05$).

Discussion

The objectives of this study were to test the application of the four-group model of teaching styles based on the SDT in a population of Spanish university students and to analyze the experiences and perceptions of the teaching styles of Spanish university students according to this model. All the factors presented an acceptable–good reliability index, above $\alpha \geq .7$ (Oviedo & Campo-Arias, 2005), being very similar to the values in the Greek and Turkish version (Syrmpas et al., 2021), with a Cronbach's alpha of between .77 and .87. Likewise, in Bartlett's test of sphericity, a high and significant value was obtained for all factors ($p \leq .05$), also presenting an explanation of the total variance in each factor higher than 60%, which is considered as a satisfactory value (Hair et al., 1999).

First, regarding the descriptive analysis carried out to discover the previous experience of participants with the spectrum of teaching styles, the application of the styles in their future work as PE teachers, and the perceived benefits of the style in relation to fun, learning, and motivation, a clear prevalence was observed in relation to experience of the directive cluster (1), specifically of the command style (A). On the contrary, students showed less experience with those styles that are more flexible and allow the student more freedom, such as the discovery cluster (3) and initiated student cluster (4). Along these lines, numerous studies affirm that directive teaching styles (1), such as the command (A) and practice (B) styles, are the styles more used by PE teachers, which could justify students' greater experience with these styles (Jaakkola & Watt, 2011; Parsak & Saraç, 2020; Pill et al., 2024; Syrmpas et al., 2017). In contrast, the study by Cañadas and Espada (2023) shows that teachers have preferences toward creative styles, such as the divergent discovery style (H) included in the discovery group (3), although this does not necessarily imply frequent use. Authors such as Pill et al. (2024) encourage teachers to apply a variety of teaching styles in their classrooms beyond the

Table 2 Barlett's Sphericity Test and Internal Consistency of the Factors

Factors	Cronbach's alpha	Sig.	KMO	Ji²	*df*	Sig.	% accumulated variance
Directive (1)	.79	.00	0.83	2,963.63	45	.00	69.35
Student evaluation (2)	.78	.00	0.81	4,306.27	105	.00	68.00
Discovery (3)	.83	.00	0.85	4,637.02	105	.00	70.22
Initiated learners (4)	.85	.00	0.83	5,381.97	105	.00	72.68

Table 3 Teaching Styles Scoring

Style	Experience		Applicability		Enjoyment		Learning		Motivation	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Command (A)	3.44	0.95	3.07	0.94	2.86	0.99	3.42	0.93	3.01	1.04
Practice (B)	3.10	0.90	3.51	0.81	3.45	0.83	3.54	0.81	3.41	0.90
Reciprocal (C)	2.45	0.94	3.45	0.83	3.35	0.85	3.76	0.83	3.56	0.89
Self-check(D)	2.05	0.95	2.84	0.93	3.05	0.90	3.15	0.98	3.08	0.99
Inclusion (E)	2.42	1.00	3.38	0.91	3.52	0.89	3.61	0.96	3.63	0.99
Guided discovery (F)	2.50	0.86	3.62	0.81	3.58	0.83	3.87	0.82	3.74	0.85
Convergent (G)	2.40	0.97	3.41	0.85	3.49	0.84	3.68	0.85	3.64	0.89
Divergent (H)	2.45	0.90	3.56	0.83	3.75	0.79	3.84	0.81	3.85	0.83
Learner designed individual program (I)	1.73	0.85	2.95	0.93	3.33	0.88	3.34	0.95	3.41	0.96
Learner initiated (J)	1.51	0.77	2.60	0.99	3.18	0.99	2.99	1.06	3.15	1.06
Self-teaching (K)	1.49	0.76	2.48	0.95	3.38	1.05	2.79	1.04	3.10	1.14

Table 4 Results According to Sex

	Sex						
	Women		Men		Main effects		
	M	*SD*	*M*	*SD*	*F*	*p*	η_p^2
Directive (1)	3.309	0.047	3.292	0.027	0.018	.731	.000
Student evaluation (2)	3.063	0.042	3.111	0.024	1.187	.276	.002
Discovery (3)	3.482	0.041	3.441	0.023	0.898	.344	.001
Initiated learners (4)	2.783	0.049	2.85	0.028	1.703	.192	.003

Table 5 Results According to Ownership

	Ownership						
	Public		Private		Main effects		
	M	*SD*	*M*	*SD*	*F*	*p*	η_p^2
Directive (1)	3.213	0.033	3.388	0.045*	10.548	**.001**	.016
Student evaluation (2)	3.087	0.029	3.086	0.041	0.001	.983	.000
Discovery (3)	3.479	0.029	3.443	0.040	0.578	.447	.001
Initiated learners (4)	2.875	0.034	2.758	0.048**	4.247	**.040**	.006

*Different from public ($p < .001$). **Different from public ($p < .05$).

Table 6 Results According to Academic Year

	First year		Second year		Third year		Fourth year		Master's		Main effects		
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*p*	η_p^2
Directive (1)	3.456	0.047	3.291	0.042*	3.349	0.047*	3.040	0.064*·**	3.366	0.08***	7,334	**.001**	.043
Student evaluation (2)	3.009	0.043	3.097	0.038	3.1	0.042	2.993	0.058	3.234	0.072#	2,768	**.027**	.017
Discovery (3)	3.245	0.041	3.416	0.036*	3.464	0.041*	3.672	0.056*·**	3.51	0.07#	10,031	**.001**	.057
Initiated learners (4)	2.744	0.05	2.73	0.044	2.8	0.049	2.869	0.068	2.94	0.084	2,159	.072	.013

*Different from 1 ($p < .001$). **Different from 2 and 3 ($p < .001$). ***Different from 4 ($p < .05$). #Different from 1 ($p < .05$).

most popular (command and practice) to cover a wider range of educational purposes and to provide students with more balanced learning possibilities instead of constraining the teaching–learning process.

Regarding the teaching style and its application to improve students' enjoyment and motivation, the results indicate that the lowest rated style was the command (A) as a directive style (1) compared with styles that allow students to make decisions and

participate in their teaching and learning process, such as the discovery cluster (3); specifically, the divergent discovery style (H) was the most valued style in these aspects. This is confirmed by Kirby et al. (2015), who indicate that the application of models, styles, or strategies used in PE classes can influence student motivation. In fact, numerous studies indicate that students' intrinsic motivation is related to the level of active participation (Van den Berghe et al., 2014). In this line of thought, the styles encompassed within the discovery group (3) of Syrmpas et al. (2021) provide greater autonomy to the learner, which will result in an improvement of intrinsic motivation according to the SDT in relation to the three psychological measures: autonomy, competence, and relatedness (Deci & Ryan, 2000). Therefore, styles such as divergent discovery (H), centered on the learner, will have a positive effect on motivation (Mahmoodi et al., 2021; Salvara et al., 2006).

Regarding the teaching style and its application to improve students' learning to a greater extent than the other teaching styles, results show similar means in all styles, with the divergent discovery style (H) prevailing. The least valued styles with respect to learning are the learner-initiated style (J) and the self-teaching style (K), which belong to the initiated learner group (4) based on the classification of Syrmpas et al. (2021). Following the results of the study by Kirby et al. (2015), students who carried out activities through production styles, such as those included in the discovery style group (3) and initiated learners group (4), perceive a higher motor competence than those who worked with reproduction styles (directive style group [1] and learner evaluation style group [2]). This observation seems due to high practice time, feedback on task execution, and demonstrations (Kirby et al., 2015). Along these lines, numerous studies affirm that self-perception and enjoyment will have a direct impact on motor development and learning (Malone & Lepper, 2021; Morgan et al., 2005; Mosston & Ashworth, 2008; Simonton & Layne, 2023; Zheng et al., 2023). However, depending on the teaching style used, it may affect student developmental channels (physical, cognitive, emotional, social, and ethical/moral). For example, the application of discovery cluster styles (3), such as guided discovery (F), allows favoring cognitive and affective aspects (Morgan et al., 2005). In addition, this style allows a greater retention of learning than other more directive groups (1), such as the command style (El Khouri et al., 2020); the styles of reciprocal teaching (C) and self-check style (D) within the student assessment group (2); and the divergent discovery style (H) within the discovery group (3), which favor affective and emotional aspects (Rivera-Pérez et al., 2020). Moreover, the learner evaluation cluster (2), such as the reciprocal style (C) and self-check style (D), have a positive influence on the development of physical and sport skills (Digelidis et al., 2018; Pitsi et al. 2023). In relation to this type of teaching pedagogy, it is important to apply varied styles for meeting desired outcomes or objectives, taking into account who makes the decisions (whether the teacher or the student) about where, what, and when. The right combination of teaching styles and, therefore, decision making by the teacher and the student will allow comprehensive learning by the student at the affective, social, cognitive, and physical levels (Cothran et al., 2005; Diloy-Peña et al., 2021; Moy et al., 2016).

Second, with respect to the multivariate variance analysis, significant results were observed in the perception of university students regarding teaching styles with respect to the ownership of the university and their year of studies. Thus, students belonging to private universities prefer directive cluster (1), such as the command style (A) and the practice style (B). However, students belonging to public universities prefer the styles included in the group of initiated students (4), that is, the learner-designed individual program (I), learner-initiated (J), and self-teaching (K) styles. Although there is no previous significant evidence about the preference of styles considering the ownership of the university center, generally speaking, numerous studies suggest that the most used teaching styles of PE teachers are the reproduction styles, such as the command style (A) and practice style (B), considered to be in the directive cluster (1) (Parsak & Saraç, 2020; Pill et al., 2024; Syrmpas & Digelidis, 2014).

Finally, with respect to the students' perception of teaching styles that give more benefits in terms of fun, learning, and motivation, according to their academic year, students selected the directive cluster in all years of the degree and in the master's degree, except in the fourth year of the degree. On the other hand, the results showed that first-year students did not favor the discovery cluster (3), in which students acquire a greater responsibility in the decision making of the teaching and learning process, and therefore, there is greater student autonomy and freedom, whereas master's students prefer the student evaluation cluster (2) compared with students of lower years. In this line of thought, Syrmpas and Digelidis (2014) suggested that, although there is a prevalence in the preference for reproduction styles, mainly directive (1), second- and fourth-year students are interested in implementing the discovery teaching cluster (3), such as guided discovery (F); learner initiated, such as individualized program (I); and learner assessment, such as the self-check style (D). This may suggest that the more advanced the students' training, the greater their knowledge is to manage and apply resources in their PE classes. However, PE teachers tend to apply teaching styles they have previously experienced as students, which, indeed, generate beliefs difficult to modify despite both initial and continuous training (Curtner-Smith, 1999; Syrmpas & Digelidis, 2014). As a general rule, the implementation of innovative methodologies seems scarce in the practical experience of students, reducing their initial experiences with related styles, such as discovery (3) and initiated learner clusters (4) (Entwistle & Peterson, 2004).

One of the limitations of this study is that as it is a cross-sectional or sectional study, it does not allow us to see the evolution of the perception of the teaching styles of the same students throughout their academic training. In addition, participants' immediate response to the questionnaire may lead to recall bias, that is, their response probably reflects the most recent episode at that time. Likewise, when participants reflect a "preference" for a particular style, more information to justify their style selection would be missing. According to the perspective of Mosston and Ashworth (2008), the spectrum offers teachers an expanded view of pedagogy. It is a teaching repertoire that offers learners opportunities to develop a broad range of educational objectives; no teaching style is better than another style but will depend on the teaching goal to meet the needs of the learner and the objective. In this regard, it would be interesting to carry out a longitudinal study to analyze in depth how the training acquired throughout the years can modify students' perception toward the preference of some teaching styles or others, if possible, through a qualitative methodology with interviews to deepen our understanding of the choice of some teaching styles over others. Another future line of research could be to apply the model in different countries to carry out a cross-cultural study and generalize the results as well as to make a comparison between the different countries.

Finally, building on the work of Brunsdon (2024), it might be interesting to further explore the possible relationship between the spectrum (Mosston & Ashworth, 2008) and other pedagogical

models, such as sport education, teaching games for understanding, teaching for personal and social responsibility, and cooperative learning, which is widely known as model-based approach (e.g., singular approach; Brunsdon & Walker, 2022; Casey & Kirk, 2021; Metzler & Colquitt, 2021).

Implications and Conclusions

The four-factor model based on the SDT shows adequate psychometric characteristics when applied to a population of Spanish university students. These results corroborate that this model, in which the spectrum of teaching styles and the four factors (directive, student evaluation, discovery, and initiated learners) are related, is applicable in several countries where different PE curricula and training exist, reinforcing the theory of Ryan and Deci (2017) in which the need for autonomy is determined to be a BPN recognizable in all cultures (Syrmpas et al., 2021). In addition, the results of this study allow us to confirm that first-year students have had greater experience with the use of the directive cluster, such as the command style (A) and practice (B), and, therefore, prefer these styles. In spite of this, they consider that the styles included in the discovery group (3) are the ones that generate more fun, learning, and motivation in the students. On the contrary, students in higher years, and, therefore, with more training, prefer other types of styles, such as those included in the group of discovery or evaluation of students.

The findings of this study provide us with a simplified model of the spectrum of teaching styles for Spanish university students and reveal information about their preferences in terms of teaching style according to their study year. These findings, hence, may allow us to design proposals not only to meet students' needs but also to encourage them or increase their contact with teaching styles more focused on the student in the first year of study.

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