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Communicative Profile of Physical Education Teachers in Secondary Education

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A boat with eight rowers and a coxswain moves with precision and synchrony during a training session on calm waters. Adobestock ®Smuki

Abstract

Instructional communication by physical education teachers has been a topic of study and specialized literature on physical education teaching due to its notable impact on school-based learning. The objective of this research was as follows: i) determine which dimensions of communication are most valued by students; ii) evaluate the presence of statistically significant differences between the three dimensions of communication strategies; iii) analyze whether there are any significant differences between the communication strategies perceived by the teachers and the students. We carried out a quantitative and comparative research project with the participation of 162 physical education students aged 13 to 18 years and two teachers. The research used a validated questionnaire to determine the degree of use of the teachers' discursive strategies through three dimensions: (1) activation of prior knowledge, (2) positive association with the learning process, and (3) progressive development toward more expert forms of learning. The results showed that the trainees considered the strategies from the first and third dimensions to be the most used, while the second dimension was less used. In terms of grade year, the students indicated more significant differences in the second dimension. There are discrepancies between teachers and students in terms of using praise and recognition. The findings indicate that secondary school physical education teachers focus their attention on strategies for positive association with the learning process. Likewise, it is recommended to foster balanced use of communication strategies that can maximize their impact on learning.

Keywords: instructional communication, learning outcomes, physical education, secondary education, teaching strategies

Introduction

Teachers' instructional communication, particularly in physical education, and the use of communication strategies in the learning environment, are topics of considerable importance (López-Ros, 2003). Many research projects have studied effective verbal communication (Charlina et al., 2024), as well as kinesthetic and proxemic communication (Castañer et al., 2013) and the communication strategies used by physical education teachers in order to understand their impact on the teaching-learning process (Krahe et al., 2021; Giraldo et al., 2009). Specifically, some have analyzed how the strategies that more experienced teachers use can impact student motivation (Webster et al., 2011, 2012). Likewise, one complementary line of research has explored the question-response pattern as a dominant strategy for delving into students' prior knowledge (Benoit-Ríos, 2020; Díaz and Castejón, 2011; Díaz-del-Cueto et al., 2012).

These studies highlight the importance of language and communication as essential tools for constructing shared meanings between teachers and students in physical education (García-Fariña et al., 2016; MacPhail et al., 2013; Webster, 2010). Thus, the development of pedagogical communication skills is key to teachers being able to effectively manage different classroom situations (Guerrero-Sánchez, 2022). Cultivation of those skills must start during initial training, thereby ensuring a solid foundation in communication skills (Hinojosa-Torres et al., 2023).

Within this framework, instructional communication plays an essential role in physical education pedagogical models. One of the most representative approaches is the TGfU (Teaching Games for Understanding) model from Bunker and Thorpe (1982) based on constructivist principles. This model emphasizes reflection and decision-making within the context of games, which requires effective communication between teachers and students to guide the learning process. In that sense, the communication strategies that teachers use facilitate the development of student autonomy, in line with teaching styles such as problem-solving or guided discovery (Mosston and Ashworth, 1993).

From a socioconstructivist perspective, Vygotsky's theory (1978) reinforces the idea that social interaction and language play a central role in learning. Coll and Onrubia (2001) emphasize that "the dual function of language, representative and communicative, is what transforms it into a privileged instrument for thinking and learning from others and with others, for sharing with others our knowledge, experience, desires, expectations…" (p. 22), in addition to facilitating the building of shared meanings. These authors have identified three primary pedagogical objectives of discursive strategies: (1) explore and activate students' prior knowledge, (2) foster a positive attitude towards learning, and (3) contribute to the progressive construction of more complex representations of the academic content.

The first objective, to explore prior knowledge, can be achieved through extra-linguistic resources such as the use of videos or outlines (Buendía Surroca, 1988), which help contextualize new learning. This strategy is particularly relevant in methodologies like TGfU, in which decision-making in games requires a prior conceptual foundation.

The second objective, to foster a positive attitude towards learning, is associated with strategies such as the verbal acknowledgement of student contributions, the creation of a positive classroom environment, and the use of motivational feedback (Viciana et al., 2003; Fierro-Suero et al., 2021; Moreno-Murcia et al., 2024). These actions contribute to strengthening students' self-esteem and commitment to learning.

Lastly, the third objective, related to progressive construction of more complex representations, is achieved through strategies like recapping and evaluative feedback (Jiménez-Díaz, 2023). These strategies allow teachers to supplement and clarify students' responses, facilitating knowledge integration and consolidation.

In this context, interest in improving teacher training and efficacy has promoted the adoption of collaborative research and action as a methodological alternative to dive deep into the use of communication strategies in physical education (García-Fariña et al.,2018; 2022). Implementing these strategies not only contributes to more effective teaching, but also strengthens teachers' professional development (Fraile Aranda, 1995), fostering higher quality physical education based on reflection and collaborative learning (Leão Pereira and Lorente-Catalán, 2023).

In view of the above, instructional communication and the use of discursive strategies in physical education classes have a bearing on key factors such as student motivation, conceptual adaptation, affective learning, and transfer of knowledge to other contexts (Vázquez-Manrique and García-Fariña, 2024).

Therefore, the objectives of this research were: (i) determine which dimensions of communication are most valued by students, (ii) evaluate the presence of statistically significant differences between the three dimensions of communication strategies, and (iii) analyze whether there are any significant differences between the discursive strategies perceived by the teachers and the students.

Methodology

A quantitative and comparative study was conducted with a cross-sectional design, as the data were collected jointly and simultaneously. Moreover, the sample was selected through intentional non-probability sampling.

Participants

A total of 162 physical education students aged between 13 and 18 years old participated in this study (M = 15.01; SD = 1.192), corresponding to the 2nd (8th grade) (n = 31), 3rd (9th grade) (n = 59), and 4th (10th grade) (n = 51) years of Spanish Secondary Education (ESO, by its Spanish acronym) and 1st year Baccalaureate (11th grade) (n = 21), in addition to two secondary school teachers. The sample was 58.6% female (n = 95), 38.3% male (n = 62), and 3.1% individuals who preferred not to respond (n = 5). All the participants at the secondary schools were from their attendance area boundaries and affiliated schools, located in a medium-low socio-economic setting with an abundance of single-parent families, 73.4% of whom reported not needing any aid in accessing technology or the internet. The sample was selected via intentional non-probability sampling.

Materials and Instruments

To collect the information, an *ad hoc* questionnaire was used to gather the opinion of the students and teachers regarding the teacher's dicourses (García-Fariña et al., 2016). The questionnaire was modified for secondary school use and included 22 items divided among three response dimensions: (1) Activation of prior knowledge, (2) Positive association with the learning process, and (3) Progressive development towards more expert forms of learning. The questions were closed-ended and used a 4-point Likert scale ranging from 1 (always) to 4 (never) (Table 1). Both questionnaires were validated for their content by three experts in behavioural research methodology. They analyzed the items based on the following validation criteria: degree of terminological suitability of item, suitability to the research objectives, and suitability to the construct or dimension section. Additionally, a pilot study was conducted to check the level of comprehension and acceptance of the items by the questionnaire recipients in terms of how the questions were drafted and its specific terminology. It was also subjected to a reliability test (internal consistency) using the SPSS 21 program, and obtained an internal consistency score based on Cronbach's Alpha of 0.86 for the teachers and .92 for the students.

Table 1
Questionnaire items divided by dimension

Dimension 1. Explore and activate students' prior knowledge
1.- Before starting class, the teacher plays a video so we can better understand what we are going to learn
2.- In physical education class, the teacher makes connections between general things in life and the games we play
3.- When explaining a game, the teacher relates it to other games we played in the past
7.- Before starting class, the teacher asks us if we know anything about what we're going to learn that day
12.- The teacher shows us drawings to explain what we are going to learn
13.- The teacher provides examples from television to help us better understand what we are going to learn in physical education class
17.- At the start of class, the teacher makes connections between what we are going to learn and what we did in previous classes
20.- Before starting class, the teacher asks us if we have performed the movements we are going to learn in class
Dimension 2. Attibute a positive attitude toward learning the content
4.- The teacher reminds us of what we did right and wrong in class and relates it to future situations
6.- When we perform a movement correctly the teacher says good, well done, perfect, that's right, okay...
10.- When we are playing they remind us of what to focus on to improve
11.- If a classmate says something correctly, the teacher acknowledges it and repeats it for everyone else to hear
16.- When a classmate performs a movement correctly, the teacher says their name and tells everyone else that they did it well
21.- When the group learns something, the teacher acknowledges everyone
22.- The teacher verbally acknowledges our actions by offering praise and acknowledging the learning achieved
Dimension 3. Progressive construction of increasingly complex and specialized representations
5.- When we are learning a movement, the teacher tells us how to do it, when to do it, and why we are doing it
8.- When explaining the games, the teacher tells us what we should focus on to improve
9.- When class ends, the teacher asks our opinion of what we have learned
14.- When talking about something we are doing in class, the teacher fills in and clarifies what we said
15.- The teacher tells us the specific names of the movements we are learning in class
18.- When class ends, the teacher summarizes what we have learned
19.- the teacher says the correct names of the movements so we can learn them

Procedures

The study received a favorable evaluation from the La Laguna University Animal Well-being and Research Ethics Committee (CEIBA2024-3510). The study data was collected in May 2023 with express authorization from all the participants. After obtaining informed consent, signed by the tutors for each groups, the students completed the questionnaires via a Google Form on their cellphones during the initial 15 minutes of class. The students were informed that their participation in the study was entirely voluntary, optional, and anonymous and exclusively for scientific purposes. To guarantee the honesty and veracity of the responses, the students were informed that the teachers would not have access to the email addresses used nor their personal information.

Data Analysis

The Kolmogórov-Smirnov test was used and it was confirmed that the sample did not have a normal data distribution. To address the first objective, the descriptive variables (frequency and percentage) of the sample were presented (Table 2). For the second objective, which involved assessing the existence of statistically significant differences among the three dimensions of discursive strategies, a non-parametric statistic was performed using the Mann-Whitney U test for related samples with a significance level of $p < .05$. Much like the third objective, which simultaneously compared the responses to multiple items between the two groups (teachers and students), taking into consideration all the responses. The statistical analysis was performed using the IBM-SPSS® program, version 29 for Windows.

Results

Table 2 shows the descriptive statistics for the variables analyzed. The most frequently occurring items in Physical Education classes, according to the students, were items from the first and third dimension. In the exploration and activation of prior knowledge dimension, the most common items were those in which the teacher asks students before class starts if they know anything about what they are going to learn (7), or if they have previously performed the movements they are going to learn (20). In the positive attitude towards learning dimension, the strategies that stood out where those in which the teacher verbally reinforced student's correct answers or successes with motivating comments (6) and publicly acknowledged classmates' correct answers (11). Lastly, in the dimension of the progressive construction of more complex representations there was an emphasis on the use of detailed explanations of how, when, and why to perform movements (5), and progressive teaching of specific terminology (15) to encourage comprehension and assimilation of the content.

The least frequent items belonged to the first and third dimensions. In the first, there was limited use of visual resources such as videos (1), drawings (12), or television examples to introduce content (13). In the third dimension, closing strategies such as asking for the students' opinions (9) or summarising learnings at the end of class (18) were uncommon.

Table 2
Descriptive statistics for each item

Dimension	Category/ items	Response levels *n* (%)			
		Always	Almost always	Sometimes	Never
1	1	25 (15.4%)	17 (10.5%)	60 (37%)	60 (37%)
1	2	28 (17.3%)	63 (38.9%)	65 (40.1%)	6 (3.7%)
1	3	35 (21.6%)	70 (43.2%)	51 (31.5%)	6 (3.7%)
1	7	95 (58.6%)	38 (23.5%)	28 (17.3%)	1 (0.6%)
1	12	29 (17.9%)	32 (19.8%)	58 (35.8%)	43 (26.5%)
1	13	20 (12.3%)	45 (27.8%)	66 (40.7%)	31 (19.1%)
1	17	50 (30.9%)	62 (38.3%)	43 (26.5%)	7 (4.3%)
1	20	77 (47.5%)	59 (36.4%)	25 (15.4%)	1 (0.6%)
2	4	59 (36.4%)	46 (28.4%)	42 (25.9%)	15 (9.3%)
2	6	86 (53.1%)	50 (30.9%)	22 (13.6%)	4 (2.5%)
2	10	68 (42%)	58 (35.8%)	32 (19.8%)	4 (2.5%)
2	11	80 (49.4%)	46 (28.4%)	32 (19.8%)	4 (2.5%)
2	16	47 (29%)	50 (30.9%)	53 (32.7%)	12 (7.4%)
2	21	61 (37.7%)	56 (34.6%)	41 (25.3%)	4 (2.5%)

Note. Data presented as percentages.

Table 2 *(continued)*
Descriptive statistics for each item

Dimension	Category/ items	Response levels *n* (%)			
		Always	Almost always	Sometimes	Never
2	22	56 (34.6%)	57 (35.2%)	40 (24.7%)	9 (5.6%)
3	5	110 (67.9%)	36 (22.2%)	15 (9.3%)	1 (0.6%)
3	8	61 (37.7%)	65 (40.1%)	33 (20.4%)	3 (1.9%)
3	9	35 (21.6%)	42 (25.9%)	59 (36.4%)	26 (16%)
3	14	58 (35.8%)	60 (37%)	40 (24.7%)	4 (2.5%)
3	15	91 (56.2%)	40 (24.7%)	31 (19.1%)	0 (0%)
3	18	42 (25.9%)	46 (28.4%)	55 (34%)	19 (11.7%)
3	19	90 (55.6%)	39 (24.1%)	31 (19.1%)	2 (1.2%)

Note. Data presented as percentages.

Table 3 shows the differences between grades, grouped according to the discursive strategy dimensions. Of the 22 items analyzed, 7 presented statistically significant differences between the grade years, most notably those from the positive association dimension, which had the highest mean values. They included: (6) verbal acknowledgement by the teacher when a movement is performed correctly ($p = .11$; 1.65 ± 0.806), (11) reiteration of correct answers given by classmates ($p = .008$; 1.75 ± 0.857), (21) group-level acknowledgement of the learning gained ($p < .001$; 1.93 ± 0.853) and (22) verbal expression of praise and achievement by the teacher ($p < .001$; 2.01 ± 0.905). In the progressive building towards more complex and specialized representations, the items with the most significant differences included: (5) detailed explanation by the teacher of how, when and why to perform a movement ($p = .46$; 1.43 ± 0.685), (18) asking for the students' opinion at the end of class ($p = .15$; 2.47 ± 1.004) and (14) the teacher reformulates and clarifies student interventions ($p < .001$; 1.94 ± 0.839).

Table 3
Effects of the use of communication strategies grouped into dimensions, by grade

Dimension	Category/items	*M*	*SD*	*Z*	*p*
1	1	2.96	1.048	-1.357	.175
1	2	2.30	0.797	-0.091	.928
1	3	2.17	0.808	-1.114	.265
1	7	1.60	0.792	-1.349	.177
1	12	2.71	1.050	-1.747	.081
1	13	2.67	0.926	-0.195	.845
1	17	2.04	0.866	-0.039	.969
1	20	1.69	0.750	-1.863	.062
2	4	2.08	0.997	-1.144	.253
2	6	1.65	0.806	-2.528	**.011***
2	10	1.83	0.831	-1.246	.213
2	11	1.75	0.857	-2.645	**.008***
2	16	2.19	0.941	-1.791	.073
2	21	1.93	0.853	-3.661	**<.001****
2	22	2.01	0.905	-3.205	**.001****
3	5	1.43	0.685	-1.992	**.046***
3	8	1.86	0.800	-0.789	.430
3	9	2.47	1.004	-2.432	**.015***
3	14	1.94	0.839	-3.332	**<.001****
3	15	1.63	0.787	-1.213	.225
3	18	2.31	0.987	-0.462	.644
3	19	1.66	0.828	-0.460	.646

Note. M = Mean; *SD* = Standard deviation; *Z* = Z-value; $p < .05$

Table 4
Comparison between teacher and student responses.

Dimension	Category/items	*M*	*SD*	*Z*	*p*
1	1	2.96	1.044	-0.666	.505
1	2	2.30	0.792	-0.690	.490
1	3	2.18	0.806	-0.616	.538
1	7	1.61	0.795	-1.672	.094
1	12	2.71	1.044	-0.281	.779
1	13	2.66	0.922	-0.339	.734
1	17	2.05	0.867	-1.661	.097
1	20	1.71	0.767	-1.729	.084
2	4	2.07	0.994	-0.793	.428
2	6	1.66	0.809	-1.585	.113
2	10	1.83	0.826	-0.513	.608
2	11	1.76	0.857	-1.347	.178
2	16	2.20	0.939	-1.335	.182
2	21	1.93	0.852	-1.024	.306
2	22	2.03	0.916	-2.027	**.043***
3	5	1.44	0.693	-2.162	**.031***
3	8	1.87	0.800	-1.186	.236
3	9	2.48	1.006	-0.671	.502
3	14	1.93	0.837	-0.716	.474
3	15	1.63	0.784	-0.092	.927
3	18	2.32	0.983	-0.289	.772
3	19	1.67	0.844	-0.733	.464

Note. M = Mean; *SD* = Standard deviation; *Z* = Z-value; $p < .05$

Table 4 shows the differences between the teachers' and students' responses. Of the 22 items analyzed, only two presented statistically significant differences. In the positive association dimension, item 22 stood out, concerning verbal acknowledgement by the teacher via praise and recognition of the learning achieved ($p = .043$; 2.03 ± 0.916). In the dimension of the progressive construction of more specialized representations, item 5, concerning detailed explanation by the teacher of how, when and why to perform a movement presented significant differences ($p = .031$; 1.44 ± 0.693).

Discussion

This research set out three main objectives: i) determine which dimensions of communication are most valued by students; ii) evaluate the presence of statistically significant differences between the three dimensions of discursive strategies; iii) analyze whether there are any significant differences between the discursive strategies perceived by the teachers and the students.

In terms of the first objective, the results indicate that the elements with the highest mean values belong to the dimension of attributing a positive meaning to the teaching process, while the least valued dimension was that of exploration and activation of prior knowledge. This shows that value is still assigned to aspects that are traditionally considered to be important in teaching, such as recognition and praise, which were identified as important elements in communication patters (García-Fariña et al., 2018, 2022), in addition to positive feedback (Viciana et al., 2003). The findings suggest that teachers place particular importance on offering motivational comments during the teaching-learning process to the detriment of furthering the evolution and complexity of the concepts, such as recapping or summarizing the content covered in Physical Education classes (Vázquez-Manrique and García-Fariña, 2024).

In terms of exploration and activation of prior knowledge, the use of videos at the beginning of class was one of the least valued items. While this resource may potentially arouse interest (Buendía Surroca, 1988) and

foster a positive attitude towards learning (Palao Andrés et al., 2011), its application seems to be under-appreciated in its contribution to students' cognitive learning.

In terms of the second objective, we observed that the discursive strategies related to the positive attribution dimension were more frequently valued across the different educational stages. This finding is in line with studies that emphasize the importance of fostering a positive environment through comments that reinforce Physical Education learning. This trend can be attributed to early teacher training, which frequently stresses motivational indicators and the ongoing recognition of students' learning progress (Fierro-Suero et al., 2021; Flores Piñero et al., 2023; González Valero et al., 2022), with a particular focus on improving motivation. According to Moreno-Murcia et al. (2024), the adaptive motivation approach in Physical Education promotes more student autonomy during tasks and contributes to creating positive learning situations, which simultaneously encourage adherence to the practice.

On the other hand, in the dimension of progressive elaboration towards more advanced forms of learning, we observed an increase in the use of strategies like recapping and summarizing, which serve as final reflective processes (Alonso-Cayuelas and Arias-Estero, 2023), as well as provide clarification and modifications to the perspective of the content taught (how, when, and why). This trend indicates a growing concern among teachers to explain content from multiple perspectives, providing essential details to ensure deep, comprehensive understanding of the content.

Within the context of instructional communication in physical education, this trend is of particular relevance. Clear and effective verbal communication (Charlina, et al, 2024), accompanied by proper use of kinesthetic and proxemic communication (Castañer et al., 2013) is fundamental for learners to understand and properly apply instruction and techniques. Teachers who use a variety of communication strategies such as reformulating concepts,providing practical examples, and adapting language to different comprehension levels, facilitate more effective and motivating learning. What's more, this positive and constructive communication contributes to fostering a classroom environment in which students feel supported and motivated to actively participate, something which is essential to their physical and emotional development.

Recapping and offering time for reflection among students, particularly in constructivist approaches like TGfU, are also common in this context. This approach integrates periods for reflection and questions targeted at students to delve deeper into the technical and tactical aspects studied during classes (Alonso-Cayuelas and Arias-Estero, 2023).

In terms of the third objective, we observed discrepancies in the perception of evaluative feedback-type comments regarding the teaching content, suggesting that learners do not value uniformly all types of feedback. Jiménez-Díaz (2020) argues that the effectiveness of feedback depends on factors such as age, sex, participant ability, and type of skill. While positive feedback tends to have a positive effect on motor learning and performance, its impact is not always consistent, as it must be balanced with the provided information in order to achieve positive results (Jiménez-Díaz, 2020).

Conclusion

Physical Education teachers tend to mainly value communication strategies associated with positive attribution, while exploration and activation of prior knowledge are perceived as less important. This trend suggests there is a preference for traditional approaches based on positive reinforcement, to the detriment of strategies that promote deeper understanding and conceptual development in learning learning.

To encourage the progressive construction of towards more expert and complex forms of the educational content, adding communication strategies like recapping during moments of reflection, particularly in constructivist models like TGfU, can be beneficial to players' tactical and technical comprehension. These approaches not only facilitate a deeper assimilation of the content, but also foster active participation in the learning process.

Communication strategies that use recapping and that promote a positive classroom climate may be effective for both learning and student motivation. Clear communication adapted to different levels of understanding not only optimizes teaching, but also contributes to creating a classroom environment where students feel supported and motivated.

However, the results show discrepancies between how teachers and students perceive communication strategies. While praise and verbal recognition tend to be beneficial, their effectiveness varies based on factors like age, sex, and the individual abilities of the learners. Therefore, it is essential to find a balance between the information provided to maximize its positive impact on performance and motor skills learning.

This research has limitations that are inherent to quantitative studies, such as the inability to delve into the underlying causes of certain teaching behaviors or specific aspects of instructional communication not addressed here. What's more, the sample was chosen via intentional non-probability sampling, which limits our ability to generalize the results. Future research should expand the scope of the study to a broader Spanish or international context, and study the factors that impact the assessment and application by teachers of specific discursive strategies. This would offer a more comprehensive and nuanced analysis of instructional communication practices in Physical Education.

Practical Applications

The following proposals are offered as recommendations for professionals on how to improve teachers' communication and the quality of instruction. While teachers tend to focus on the use of positive reinforcement, it is essential to diverisify communication strategies, for example, by incorporating approaches that explore students' prior knowledge and connect it with new content to develop a deeper understanding. This can be done through questioning or guided discussion, preferably implemented prior to starting a new activity. Strategic recapping in class and taking time for reflection may also be useful for consolidating learned content and building increasingly complex and elaborate concept representations.

Throughout the entire teaching process, teachers should foster a positive and motivating environment in which learners feel safe to participate and collaborate. This can be achieved by giving praise and recognizing achievements in a specific way to ensure they are perceived as authentic and true. Communication strategies aimed at associating a positive attitude towards learning may vary in their effectiveness based on the students' individual characteristics. Therefore, general reinforcement and praise should be avoided in favor of constructive and personalized feedback.

It is also very important that teachers continuously reflect on and review their own communication during classes, in addition to the various communication strategies they use and how these impact their students. This reflection enables teachers to receive feedback that can help maximize their positive impact on students, optimize the teaching-learning process, and thereby optimize teaching quality.

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