

Inquiring Sport and Physical Activity students' perceptions using metaphors as research tools **Investigar las percepciones de los estudiantes de Deporte y Actividad Física utilizando metáforas como instrumento de investigación**

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Abstract. The aim of this research is to analyse the metaphorical expressions designed by Science of Sport and Physical Activity university students of first academic year, as a tool of inquiring two research questions: on the one hand, their perceptions of their physical education teachers, and the other hand, the meaning physical activity has in students' personal life. 51 students from the University of Alicante have participated in the study. Qualitative data analysis software AQUAD 7 was used for data processing. The results obtained from the analysis of the metaphors designed by students showed that their view of physical education teachers was very positive. The findings also indicate that sport and physical activity were considered to be essential and a source of emotional and physical health. The conclusions also highlighted that students don't strengthen the social dimension of physical activity, and that it could be imperative to foster a more collaborative learning.

Keywords. Metaphors, teaching and learning, university students, sport and physical activity, qualitative research.

Resumen. El objetivo de este investigación es analizar las expresiones metafóricas construidas por los estudiantes universitarios del primer curso académico de Ciencias de la Actividad Física y del Deporte como herramienta para indagar dos cuestiones de investigación: por un lado, su percepción sobre sus profesores de educación física y por otro lado, el significado que tiene la actividad física y deportiva en su vida personal. En el estudio han participado 51 estudiantes de la Universidad de Alicante. Para el procesamiento de los datos se utiliza el software de cualitativo AQUAD 7. Los resultados obtenidos del análisis de las metáforas diseñadas por los estudiantes muestran que su punto de vista sobre los profesores de educación física y sobre la actividad física es muy positivo. Los resultados además indican que el deporte y la actividad física se consideran una fuente esencial de salud física y emocional para los participantes en el estudio. Del estudio también se concluye que los estudiantes no fortalecen la dimensión social de la actividad física, imprescindible para fomentar un ambiente de aprendizaje más colaborativo.

Palabras clave. Metáforas, enseñanza y aprendizaje, estudiantes universitarios, actividad física y deportiva, investigación cualitativa.

Introduction

The National Association of Sport and Physical Education (NASPE) (2004) considered that satisfactory experiences of physical education, among other variables, improve students' attitudes towards exercise, promote greater knowledge, improve motor skills and increase physical activity confidence. If sport and physical education teachers were able to provide appropriate programmes, with a wide range of activities that meet the student's needs, they would contribute to greater motivation (NASPE & American Heart Association, 2006). Perceptions and attitudes are generated at an early age and influence the dispositions and participation patterns throughout an individual's life (Martin & Kulinna, 2005). Therefore, sport and physical activity (SPA) carried out in primary school can help lay the groundwork for its continued practice into adulthood, promoting healthy living (Gutiérrez, Tomás, & Calatayud, 2017; Morgan, Beighle, & Pangrazi, 2007). Similarly, Graham (2008), and Subramaniam and Silverman (2007) considered a priority to investigate the perceptions of physical education students because there are aspects that can encourage or discourage students not only in their intention to practice SPA in the present but as well in the future.

Rikard and Banville (2006), and Cañabate, Torralba, Cachón, and Zagalaz (2014) also highlighted the teacher's role in developing a positive attitude towards exercise. A highly qualified, dedicated physical education teacher has the potential to broaden student's opportunities to participate both in and outside the classroom (Arar & Rigbi, 2009). If teachers are role models for their students, their passion for SPA will have a positive impact on them. This has been demonstrated by various studies, such as that conducted by Wallhead and Ntoumanis (2004), where students considered their physical education teachers were good role models and noted their enthusiasm and passion as the most valued and influential factors in their academic performance. Meanwhile, Ayvazo, Ward, and Stuhr (2010) argued that the teacher's mastery of their subject and their skills positively influence the attitudes of students. Other studies, such as that carried out by Whittle, Telford and Benson (2015) stressed that students respond positively to teachers who show openness and availability, and delegate responsibility to them. In the same vein, Cothran et al. (2005), and Morgan, Kingston, and Sproule

(2005) showed that what works best in Physical Education are those classes where the teacher gives students a choice of tasks and knows how to use the rules of play for creating a democratic atmosphere in the classroom. From all of the above it follows that both the teacher and the methodology used in the physical education settings are relevant factors; those methodologies fostering autonomy and decision-making by students can provide greater satisfaction, interest and even higher levels of formal physical activity outside the educational setting.

Research suggests that teachers can also be demotivated. In this sense, the study by Ryan, Fleming, and Maina (2003) argued that students held that they disliked physical education classes because they did not like the teacher; for their part, Hohepa, Schofield, and Kolt (2006) highlighted aspects such as the barriers perceived by students, lack of purpose and poor and monotonous activities. It is therefore the responsibility of physical education teachers to design curriculum using the most up-to-date information, organising activities to meet the needs of all students (Chen & Hypnar, 2015) and engaging them in learning, but above all creating a suitable environment for learning.

In addition are other variables such as the curricula (Pastor, Gil, Prieto, & González, 2015; Wang, Wang, & Liu, 2008) and the cultural context of each society that affect students. In some countries such as Spain, even though physical activity is recognised as being essential for health purposes, the time allocated in school timetables for SPA, both in Primary Education (53 hours per year on average) and in Secondary Education (35 hours per year on average) is short, leaving it far behind other countries such as France and Austria, whose average, respectively, exceeds 100 hours per year.

Metaphors as educational research tools

A prolific number of researchers have chosen metaphorical narratives as a research tool. The choice of metaphors as a tool to research students' perceptions was based on the consideration that we learn from our experiences and inquiries, as well as learn from others and with others. Damasio (1994), Lakoff and Johnson (1980, 1999), and Slepian and Ambady (2014), among others, established that concepts are embodied in the sensory-motor system. The embodied cognition concept explains that through our senses learn from environment and we tend to turn our sensorial experiences into metaphorical narratives that give meaning and expression to our life, emotions and feelings. Metaphors help us to structure our concepts and thoughts through the interplay between experience, context and mind (Jensen, 2006). Metaphors not only keep

the footprint of our past history, also aimed us to taking action (Saban, 2010), for example, Gopnik, Meltzoff, and Kuhl (2000), to express the learning of babies, so rich in curiosity and explorations used the metaphor *the scientist in the crib*.

It must not be forgotten that we are social beings and our life experiences are social experiences. The metaphors of our life are constructed through a social and cognitive dialectic (Carreira, 2001). Processes of enculturation determine metaphors, as they are reflections of a particular culture (Paavola, Lipponen, & Hakkarainen, 2004). Identity is certainly trapped and reflected in this complex interplay of personal and social life, and constitutes a particular metaphorical construction (Thomas & Beauchamp, 2011). It is through these lenses that we observe and mentally reprocess our environment (Saban, Kocbeker, & Saban, 2007).

In educational research, an effective way of discussing students' way of thinking is through metaphors. Students are not blank slates; they have a personal and social schooling history that has left an indelible imprint on the brain by building personal life stories (Pérez, Devís, Brett, & Sparkes, 2011). Several authors such as Blay and Ireson (2009) and Ng, Nicholas, and Williams (2010) highlighted how the conceptions and beliefs of student teachers mark certain behaviours and actions in their future professional practice. The construction of educational metaphors is an intuitive act that intersects the lived, socialised and conceptualised aspects of their school life history. In this line, Gillis and Johnson (2002), and Mahlios, Massengill, and Barry (2010) consistently emphasised that one way to examine the beliefs of students in pre-service teacher education is to identify the conceptual tools they use to make sense of their lives, being metaphor one of most powerful resource. As Rosaen and Florio-Ruane (2008) pointed out, metaphors are influential in teaching and learning because of the conglomerate beliefs, knowledge, feelings and actions that guide practice. Jensen (2006) referred to them as bridges that help to understand social and educational contexts. Therefore, metaphorical stories allow us to glimpse the roots of these perceptions in their minds, and the epistemological orientations that support and initiate a dialogical exchange (Patchen & Crawford, 2011).

Metaphorical narratives could help us become aware of these otherwise diluted conceptions held by students because metaphors emerge from all experiences that students have had in their relations with teachers. Questioning and analysing students' metaphors, as pointed out by Pérez, Fuentes, and Devís (2011) can contribute to a deeper understanding of the phenomenon under study. Then it seems relevant to use metaphors as a source of inquiry into the views and perspectives that underlie physical education learning.

All in all, a better understanding of the beliefs of students towards teachers could influence the approach to be adopted in teachers' physical education. Based on these assumptions, the objectives of this study were analysing the students' thinking and beliefs of their physical education teachers and how students value the practice of physical activity in their personal life. Metaphors were chosen as an analytical tool to explore the conceptions held by students in this regard.

To this end, two research questions were proposed:

- 1) What perceptions do SPA university students have of physical education teachers?
- 2) How students value the practice of physical activity in their personal life?

Methods

The study was conducted from a qualitative design, carried out in the students' natural environment as is reclaimed in qualitative methodology, researchers must analyse and interpret the responses within a specific social context (Charmaz, 2011).

Participants

This explorative study has been carried out using the intentional sampling. Physical education students from the University of Alicante (Spain) enrolled in the first-year subject Gymnastic and Artistic Skills,

in 1st Grade in Physical Activity and Sports Science in the 2015-2016 academic year were invited for the selection process. 51 of these students voluntarily agreed to take part in the research. Of these, 19.60% were women and 80.39% men. The highest proportions of participants (61%) were aged between 18 and 20, followed by 22% between 21 and 25.

Process

Data collection

The data collection comprised the metaphors described by students, as this narrative tool hosts the richness and variety of participants' stories (Huber, Caine, Huber, & Steeves, 2013) and have been validated as a rigorous educational research tool (Martínez, Sauleda, & Huber, 2001; Stylianou, Kulinna, Cothran, & Kwon, 2013).

The process of collecting information was undertaken in two phases during a theory class of the subject Gymnastic and Artistic Skills. First, a brief presentation of the proposal was delivered, including the objective of the research and the way to do it. Secondly, we distributed a blank page with the prompts on top of the page and asked them to complete the two metaphors: «A physical education teacher is like...because...» and «Physical activity for you is like...because...».

All of the metaphors were recorded with the participants' consent. They were informed of the voluntary nature of their participation in the study, and confidentiality was guaranteed. The meet took place in the classrooms of the students and was carried out by a single researcher. The average duration was approximately thirty minutes.

Data coding

After the transcription and reading of the metaphors, an initial map of categories and codes was designed and later validated by a discussion group of three educational research experts.

A process of inductive analysis was employed to interpret the metaphors. This methodological strategy is based on identifying, interpreting and codifying the metaphorical narratives of the participants. Iterative readings of metaphors were carried out, which enabled us to establish a definitive coding system. In this recursive process between the emerged meaning from metaphors, research questions and researchers' conceptual framework, the initial analytical codes were reformulated.

First research question: Perception about the physical education teacher

Three code categories emerged from the interpretative process:

Transmitter/directive teacher metaphors express the teaching function as a transmitter of knowledge, mainly conceptual contents. This metaphor reflects a perception of the learner as a *tabula rasa*, who acquires the knowledge that the teacher transmits. The metaphorical perception magnifies the figure of the teacher as the only source of knowledge. This represents an individualised approach to learning in which the hierarchical teacher-student relationship is underlined.

Teacher as guide metaphors are closer to a constructivist perspective. The student was not considered a *tabula rasa*, but an individualised learning approach can still be identified. The teacher is seen as a guide, counsellor, and facilitator of learning. Diversity and customisation of learning is accepted. Words such as experiment, investigate, discover, and the like often appeared. The teacher's role is perceived to be that of a guide in the construction of learning, adapting it to each individual's pace and characteristics.

Paternalistic teacher metaphors showed an idealised view of the teacher, often somewhat paternalistic and even magical. The metaphor seemed to be out of context and rose to unrealistic and unattainable heights. The classroom was identified as a magical place, or a refuge and home where children are protected and safe.

Second research question: Value of physical activity in their personal life

In this theme, interpreting the meaning of metaphors, emerged codes that value SPA as a vital need, as a relevant means for physical and

emotional health, as a source of personal enjoyment, as a way to becoming a professional and as socialization.

Data analysis

The information was coded with the help of the AQUAD 7- software package (Huber & Gürtler, 2013). The choice of the AQUAD 7 qualitative data analysis software was based on its potential to enable the interpretation process, as it made it possible to add the emerging categories that arose from participants' metaphors within the code process. This computer programme has allowed us to organise and categorize the data in frequencies codes to visualised the findings in table or graphics offering the absolute frequency (AF) and the percentage of absolute frequency (%AF), where AF is the total number of occurrences of the concept, found in each narrative, and the % AF is related to the absolute frequency total (AF.100/total AF).

Results

Regarding physical education teachers, three amalgamations have reflected the perceptions of students about the physical education teacher and six clusters reflected their visions of sport and physical activity. Two tables were developed to include the percentage of absolute frequency (%AF) of occurrence of each code (Table 1 and 2) and examples of the same metaphor with different codes were also reflected.

Metaphors about the physical education teacher

Code 1.1. The teacher as a transmitter of knowledge

Metaphors that considered the teacher to be the main key player in the act of learning, the agent that tries to instil a body of knowledge into the learners, very directive in methodology, were not overly present. Two fundamental aspects were identified in the construction of these metaphors. Metaphors represent teachers as an authoritative source of information and knowledge:

He is a user manual full of knowledge that gives you all of the instructions necessities to build your body and construct yourself as an individual (student 38).

Also, in this kind of metaphors students associate the teacher with the master artist image who creates from nothing, drawing on a blank canvas, sculpting out of mud:

A physical education teacher is like an artist, because their profession is a way of expressing art, the art of being able to perform activities with our own body (student 05).

Code 1.2. Teacher as a guide. The construction of learning

Numerous metaphors were used that considered the teacher to play a role of support and guidance in the construction of knowledge. Others stress more the act of learning, experiencing and discovering. The teacher provides students with the necessary tools for the individual construction of strategic learning. The student is seen as the centre of the teaching-learning process, and the process of teaching and learning involves the exploration and construction of the individual:

Like help with an acrobatic element, because we think that we can do it without it [him/her/the teacher], but in fact it we learn more and better with it [him/her] (student 14).

Like a pair of trainers, because I discover many paths with them; without them I wouldn't be able to run towards my goals (student 32).

Code 1.3. An idealised view of teachers

In this case, the majority of the participants built metaphorical stories that emphasised that the figure of the teacher was related to a star, a light, the sun, and other metaphors that saw the teacher as a patriarchal or matriarchal figure that loves and cares for their children:

Like a grandfather, because he has already taken many steps in life, which I will also soon take, and he knows exactly the advice that is needed at all times. In the world of physical activity a teacher is everything, like grandparents are everything (student 07).

A teacher is like a good angel, a light that is a part of a man (the other

one is the devil). He/she is the good angel who teaches you things and corrects when you do something wrong, who always makes sure that you stay on track (student 42).

Table 1.

Metaphors applied to physical education teachers

Codes	AF	%AF
1.1. Transmitter/Directive role	28	36.36%
1.2. Guide	19	24.67%
1.3. Paternalistic/Idealised	30	38.97%
	77	

Table 2.

Role of sport and physical activity in personal life

Codes	AF	%AF
2.1. Vital need	28	27.45%
2.2. Emotional health	31	30.39%
2.3. Physical health	10	9.80%
2.4. Personal satisfaction	14	13.72%
2.5. Professionalization/Competition	13	12.74%
2.6. Socialization /Entertainment	6	5.88%
	102	

It needs to be emphasised here that don't appear metaphors emphasizing the teacher role as creator of learning environments. There were no narratives describing an environment for situated learning where everyone works together to achieve a common goal. Is missing metaphors that stress collaboration, cooperation, teamwork and learning together.

Metaphors about of value of physical activity in their personal life

Six codes, namely vital need, emotional health, physical health, personal satisfaction, professional/competition, socialization/entertainment (Table 2) shaped the analysis of the metaphors concerning SPA in the personal life of the participants. Most students describe metaphors in which SPA is a vital need to be covered (Code 2.1.):

For me, SPA is like water. I could not live without it; I see it as an essential part of my life (student 02).

Like the sun is to flowers. It is essential to lead a calm, stress-free life. Photosynthesis is necessary for flowers, and [SPA] is necessary for me to live (student 16).

In this concern, some even go as far as compare the strong need of physical activity to the addiction to a drug:

Like a drug, when I take it I am completely happy, I forget my problems and worries. And if that were not enough, when I train I eat better and better; I admit it, I'm a sports junkie (students 22).

Students' metaphors also establish very close positive links between physical activity and cognitive activity:

I also learn to value many things as positive, it helps me to learn and to study better, eliminate my negative thinking (student 29).

Code 2.2./2.3. Quite metaphors point out the effect that SPA practice has on their emotional and physical health, which generates personal satisfaction (Code 2.4.):

Physical activity is like giving a hug to a friend that you haven't seen for a long time, and that makes you happy. After spending time doing sport and training the results are reflected in a stronger and healthier body, and it also helps to reduce anxiety and gets you in a better mood. This makes you happy (student 51).

Like a car engine, if it is without oil, it goes rusty (student 36).

Like a bird flying free, because I switch off from everything else and I feel I have no worries or problems; it makes me feel happy and free (student 19).

Code 2.5. A taste for professionalization and competition are also evident from the participants' metaphors):

Physical activity is like a field where you sow and harvest fruit for subsistence. By sowing and harvesting fruit I mean training and educating children through physical activity, which is very important. I hope this profession allows me to earn a living and 'survive' financially (student 01).

Like a war, with the little battles that we have to face, such as injuries and defeat, but in the end we can achieve great things, such as promotion to the 1st division this year (student 40).

Code 2.6. While only a few metaphors were used that emphasised socialization and entertainment:

In my life, physical activity is like the schoolyard where you can enjoy yourself and have some fun; it reminds me of school playtime, when we all had a great time (student 02).

Like a storm of light air that keeps me cool as I walk along, because without exercise I would have a lot of free time with nothing to do (student 20).

Discussion and conclusions

Can be concluded that the analysis of metaphorical narratives have served the purpose of unveiling the thinking and beliefs of university students, making meaningful their expressed emotions and feelings (Saban, 2010; Slepian & Ambady, 2014). Metaphors have shown how students perceive the role of physical education teacher, as well as the value they attached to SPA in their personal life.

The results of the metaphor analysis regarding the two research questions show both the good image students have of their teachers and the participants' positive attitudes towards physical activity, attitudes that includes emotional, affective and cognitive components. Positive attitudes could influence intentions and actions and would undoubtedly be a hallmark in a successful educational programme (Martin & Kulinna, 2005; Morgan, Beighle, & Pangrazi, 2007; Pérez, Iborra, Peiró, & Beltrán, 2010).

First research question

The results allowed us to draw some conclusions about the participants' beliefs. Regarding the first research question, while there is still a conception of the figure of the teacher based on the traditional model, a directive transmission of knowledge, the metaphorical approach based on the cognitive-constructivist model was also significant, in line with Stylianou et al. (2013), whose study identified teacher-centred and student-centred metaphors. The idealised visions presented a sweetened view of teachers. In part, their views tend to rely mainly on their vocation and magnify and idealise their profession. The most empathetic approach to learning was emphasised: The teacher creates an atmosphere of parental support, this students' thinking is in accordance with the results of other similar studies (Hilland, Don Vinson, & Fairclough, 2009).

The expressions typically identified in the traditional model emphasised that the purpose of teaching is that students acquire the knowledge transmitted by teachers but students' metaphors mostly referred to teachers being guides in the construction of learning (Cheng, Chan, Tang, & Cheng, 2009). We believe that constructivist perceptions were the result of their academic experiences, as most of the students have done their schooling during the last two Spanish educational reforms, where the constructivist model predominates.

We also observed that there was an absence of metaphors oriented towards the perspective of a community of learning. The idea of school as a space where knowledge and practice are shared was not present in the narratives collected (Hadar & Brody, 2012; Paavola, Lipponen, & Hakkarainen, 2004).

The second research question

The results show that SPA was highly valued, and plays a significant role in the students' life. Most participants considered SPA as a vital need to be covered, without which they could not live. In addition, for students SPA was a source of emotional and physical health, which led them to engage better in their studies. These factors were also decisive in the studies by Adams, Higgins, Adams, and Graves (2004), who investigated the attitudes of university students toward physical activity in the American context and the results showed that the increment of students knowledge and skills related to health and exercise habits, had a significant influence on their attitudes and practice. Lauritsalo, Saakslahki, and Rasku-Puttonen (2012), and Mohammed and Mohammad (2012), meanwhile, examined a sample of secondary school students and found that their attitudes towards Physical Education

were linked to personal satisfaction for the health benefits arising from it. Similarly, Rikard and Banville (2006) and Zeng, Wang, and Wang (2016) studied students' attitudes towards Physical Education and showed that, among other variables, the research participants appreciated the health benefits of practising physical activity.

The findings also show that the prospect of a professional future was not the main factor that led them to choose these studies, nor was competition a priority for them. This leads to consider that they value participation more than winning. In this sense, Moreno, Sicilia, Cervelló, Huéscar, and Dumitru (2011) argued that teacher intervention should be aimed at reducing the ego and promoting the strengthening of a climate that allow more adaptive behaviour, this may affect the present and future practice of SPA both inside and outside the classroom.

Implications for SPA Teachers Education

If the results of both research questions are brought together, it must be concluded that, as Graham (2008) has emphasised, it is essential to help students to appreciate SPA in their present schooling, if we like influence in their future participation in SPA. Our findings are consistent with Koca, Asci, and Demirhan (2005), Rikard and Banville (2006), and Subramaniam and Silverman (2007) in that the good image and perception of physical education teacher contributes to developing positive attitudes towards SPA. Students appreciate that teachers display their passion for Physical Education through words and actions, thus corroborating the approach taken by Day (2004) that to be an effective teacher, passion is not a luxury but an essential element of any good teaching.

The findings shown that when students had positive perceptions about teachers, value SPA in their personal life, and leads us to conclude that the perceptions and conceptions that students have of their teachers is relevant factor. Conversely, one of the most worrying findings was the low value that students give to socialising in the practice of SPA. This cannot be ignored, especially since self-regulation in SPA practice is also a result of interpersonal interactions (Corno, 2011). In other studies conducted with adolescents (for example, Palou, Ponseti, Gili, & Borrás, 2005; Ullrich-French & Smith, 2006; Velázquez, 2015) the socialising role and the entertainment role of sport was much more present. This may lead to the conclusion that the value of team and collaboration for attaining goals must be increased. It seems that the participants were unaware of the socialisation that sports practice produces. Perhaps too much individualistic learning has influenced their outlook; therefore, it seems to be necessary to work further on collaborative methodologies and underline the need to develop social skills in initial studies of Sports and Physical Activity.

Li, Chen, and Baker (2014) argued that research into visions of pre-service teachers in physical education could provide a holistic understanding of this field of knowledge and can give support for decision-making in primary schools (Graham, Holt-Hale, & Parker, 2007), secondary schools (Rikard & Banville, 2006) and in particular, to introduce curriculum changes in teaching (Zeng, Hipscher, & Leung, 2011); our desire is to have made a contribution to this task.

Additionally, since narrative studies using metaphors in the field of research into Physical Education and Sport do not abound, except for the valuable precedent set by Stylianou et al. (2013), we hope that this small contribution could be useful in the development of qualitative research methodologies into this field of knowledge.

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