# VALIDATION OF THE PORTUGUESE VERSION OF THE 'TEACHERS PERCEPTIONS ABOUT THE PROFESSION' QUESTIONNAIRE

**1. Given name: Paula**
**Family name: Batista**

**Affiliation:** Faculdade de Desporto da Universidade do Porto; Centro de Investigação, Formação, Inovação e Intervenção em Desporto (CIFI2D), Portugal
**Address:** Rua Dr. Plácido Costa. 91 4200-450 Porto, Portugal
**Electronic address:** paulabatista@fade.up.pt

**2. Given name: Tiago**
**Family name: Sousa**

**Affiliation:** Marítimo Sport Club, Madeira, Portugal
**Address:** Rua da Boa Nova , 74 - São Pedro 9500-296 Ponta Delgada, Portugal
**Electronic address:** tiago_sousa07@hotmail.com

**3. Given name: Mariana**
**Family name: Amaral-da-Cunha**

**Affiliation:** Faculdade de Desporto da Universidade do Porto; Centro de Investigação, Formação, Inovação e Intervenção em Desporto (CIFI2D), Portugal
**Address:** Rua Dr. Plácido Costa. 91 4200-450 Porto, Portugal
**Electronic address:** marianacunha@fade.up.pt

**4. Given name: Elisa**
**Family name: Marques**

**Affiliation:** Laboratory of epidemiology and Population Sciences. Intramural research program, National Institute on Aging, National Institute of Health, Bethesda
**Address:** Bethesda, 7201 Wisconsin Avenue, Gateway Building, Suite 2N300, Bethesda, MD 20892-9205, USA
**Electronic address:** elisa.marques@mih.gov.

**ABSTRACT**

The aim of this study is to validate the Portuguese version of the questionnaire developed by (Gilat, Kupferberg, & Sagee, 2006) and adapted by (Ezer, Gilat, & Sagee, 2010)), about the perceptions of preservice teachers in the training process experienced and its contribution to their professional life - *Teachers Perceptions about the Profession (TPP).* Two hundred and fourteen students completed the TPP questionnaire (98 females and 116 males, aged between 21 and 41). Feasibility of scale items was assessed by inspection of missing values (Dong & Peng, 2013). For exploration of factor structure, a principal component analysis (PCA) with varimax rotation was performed. Adequacy of the data for factor analysis was investigated with the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's test of sphericity (Field, 2009). Factors were extracted, using Kaiser's criterion of retaining factors with eigenvalues of >1, and inspection of the scree plot (Cattell, 1966). Internal consistency reliabilities of the scale and its subscales (extracted factors) were assessed with Cronbach's α. The results show that TPP questionnaire is a feasible, generally reliable, and valid instrument to assess perception of teacher education and professional identity among pre-service teachers.

**Key words:** Validity, Questionnaire, Student Teachers, Teacher Education

## INTRODUCTION

Teacher education is an important period that influence the way that the future teachers understand the profession. During this educational process student teachers construct ideals and beliefs about teaching and learning that will influence their professional identity as teachers (Bates, Swennen, & Jones, 2014; Snoek, Swennen, & Van der Klink, 2011). Teacher education practitioners agree that teacher education aims to educate high quality teachers who will successfully integrate into the educational system (Cochran-Smith, 2004, 2005). Forzani (2014) go further and state that within the teacher education programme, the practicum training allow the preservice teachers learning more directly on the work of teaching rather than on traditional academic or theoretical topics that may have only marginal relevance to the realities of the classroom. In fact, practicum training is viewed as a significant contributor due to the expected influence of pre-service teachers' training on what is considered to constitute a qualified teacher. In this vein, a renewed understanding has emerged about the complexities in the relationship among teaching practice, teacher education, quality and teacher professional identity (EC, 2013; ESRI, 2015; OECD, 2015).

In Portugal, the last years, due the implementation of Bologna process, were lived in a changing environment, namely in teacher training. This transformation coincides with a change in policies regarding the qualification requirements for teaching - Decree Law No. 43/2007 of 22 February. This new framework required changes in teacher education not only in their curriculum, but also in the way the intervention in training contexts were made. The educational process based in the acquisition of competencies return. - This perspective brings several risks, namely because have competencies is no guarantee of competence. The competence is situational, manifests itself in action and

had a relational nature (Batista, 2011). Another risk of this paradigm is the possibility of training can take place in a context wrapped in purely functionalist perspective, far from integrative models of competence. This possibility is against current competence perspectives, namely the structuralism, where competence is understood not as an acquired state, but rather as being created and built by the individual himself, through daily practices and activities (Hong & Stähle, 2005) and the interpretative, which considers that the jurisdiction is configured in the way people experience and give meaning to the world (e.g. Sandberg, 2001; Velve, 2000). In this understanding, one of the questions that arise in teacher education relates to how these perspectives can be operationalized in the training process and how they are perceived by students. The answer should be achieved by creating an articulated curriculum, integrative and both flexible so that training are an area where you get the requirements of competence and not mere competence. Thus, it is necessary to create conditions so that there is time and space to think, to analyze, to produce, to build and (re)build the thought, knowledge, beliefs and conceptions. It is also necessary that creativity, sensitivity, self-development, communication and meta-competencies are the subject of development, which is only feasible if there is investment in critical and reflective thinking, because the attribution of meaning and meaning to experiences is essential (Batista, Graça, & Matos, 2011).

Practicum, as educational context, must allow the preservice teachers acquire capacity to mobilize and produce its own resources through reflection, decision making, problem solving, negotiation, collaboration, creativity and innovation. The key is to allow the appropriation of the situational dimension of competence (Batista, 2011).

In this context, it seems to be important listening to those learning to teach can help to better know the influence of teacher education. As Martin and Russell (2012, p.5) states "listening is a process that moves beyond uncritical acceptance to carefully analyzing and interpreting in relation to program goals and values". In fact, the way that the preservice teachers thinks of learning to teach is most important than how teacher educators think of learning to teach. Brouwer and Korthagen (2005) support the approach advocating professionalism in teaching and using research results to improve teacher education. They believe in bridging the gap between practice and theory in educating teachers, a task which requires lifelong education and relies upon moving from the practical to the theoretical rather than the other way around. This belief in bridging the gap is based upon references indicating that theoretical learning does not transfer to practice, and that new teachers must learn survival skills that were not part of their teacher education programme.

In this way it is important to examine how student teachers perceive their teaching preparation and their identity as teachers, namely in Portuguese context marked by changes in teacher education programs resulting of the implementation of Bologna process.

## METHODS

### Participants

Two universities with master degree in Teaching of Physical Education in Middle and Secondary Education were selected for participation in this phase. Potential participants were identified by the graduate program coordinators. To be included

students had to be attending the 2nd year of a Physical Education Teacher Education (PETE) graduate course, after a three-year under-graduate program in Sport Sciences.

Two hundred and fourteen students of 280 eligible subjects completed the TPP questionnaire. The respondents were 98 females and 116 (54.2%) males, aged between 21 and 41 (mean 24.0, SD 2.7). The majority of the participants completed the undergraduate education at the Faculty of Sports of the University of Porto, 30.4% at the Higher Institute of Maia, and a small percentage at other institutions. Concerning to the PETE graduate program eighty-seven percent of the students were attending at the University of Porto and 13% at the Higher Institute of Maia.

**Procedure**

Data was collected from September 2015 to September 2016. Pre-service Teachers were invited by email to fill out the Internet-based questionnaire. If they did not respond, they automatically received a reminder by email after 2 or 3 weeks. No further contact was made with non-responders. The return of a completed questionnaire was considered as consent to take part on the study. Ethics committee approval was obtained for the study from the Ethics Committee of the Faculty of Sport, University of Porto.

The Portuguese version of the questionnaire developed by Ezer, Gilat, and Sagee (2010) was used to collect data - Teachers Perceptions about the Profession (TPP) (Sousa, Cunha, & Batista, 2015) The instrument contains five domains: i) agents of training; ii) components of teacher training; iii) roles of teachers; iv) motivation for teaching; and v) conceptions of the teaching and learning process. A rank system of 1 to 7 was used in the first 3 sections and a six-point Likert scale (1= strongly disagree, 2= disagree,

3=somewhat disagree, 4= somewhat agree, 5= agree, 6= strongly agree) in the following sections, which included 11 and 13 items, respectively. The last part is an open-ended question in which the participants were requested to freely describe the most important situation experienced during the PETE program.

The questionnaire also included questions on demographic data such as age and gender of respondents, educational status (graduation and post graduation institution), previous experience to PETE, and specialty status.

**Statistical Analysis**

Feasibility of scale items was assessed by inspection of missing values. Although no established cutoff from the literature exists regarding an acceptable percentage of missing data in a data set for valid statistical inferences (Dong & Peng, 2013). It may be assumed that statistical analysis is likely to be biased when more than 10% of data are missing (Bennett, 2001).

For exploration of factor structure, a principal component analysis (PCA) with varimax rotation was performed. Considering the study sample size (n=214) a loading of an absolute value of more than 0.364 was set as a minimum for interpretation of factor loadings (Field, 2009). Adequacy of the data for factor analysis was investigated with the Kaiser- Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's test of sphericity (Field, 2009). Factors were extracted, using Kaiser's criterion of retaining factors with eigenvalues of >1, and inspection of the scree plot (Cattell, 1966).

Internal consistency reliabilities of the scale and its subscales (extracted factors) were assessed with Cronbach's α. A Cronbach's α value of at least 0.70 was considered to be acceptable (Bland & Altman, 1997). All statistical analyses were conducted with IBM

SPSS 20 (IBM Corp., Armonk, NY).

## RESULTS

### Scale

#### *Feasibility*

The TPP questionnaire was evaluated with respect to missing values. The seven items included in each three components (i.e. agents of training, components of teacher training, and roles of teachers) had acceptable rates of missing values, ranging from 9.8% to 10.7%, only one item had missing values greater than 10% (12.1%). The 4 items measuring motivation for teaching had no missing values, and of the 15 items measuring conceptions of the teaching and learning process only 4 items had one missing value (0.5%). The missing data mechanism in our data was missing completely at random (MCAR) based on the results of Little's multivariate test ($p=0.264$). Thus, the missing data can be viewed as a random sample of the complete data. Consequently, ignoring missing data under MCAR will not introduce bias, but will increase the standard error of the sample estimates due to the reduced sample size, posing less threat to statistical inferences than the other missing mechanisms. Therefore, all items were considered valid and included in the subsequent analyses.

#### *Internal structure*

Both domains, (iv) motivation for teaching and (v) conceptions of the teaching and learning process were originally composed by four sub-categories. Motivation for teaching included: self-efficacy, commitment to the practice of teaching, intrinsic motivation, and extrinsic motivation, whereas conceptions of the teaching and learning

process included sub-categories: traditional approach to learning, constructivist approach to learning, traditional approach to teaching, and constructivist approach to teaching. However, information regarding the original statements that were associated with each sub-category was not available. Therefore, PCA was used to identify the factors represented coherently in the data (empirical factors) to inform the sub-scale structure of those two components of the TPP Questionnaire.

Regarding the motivation for teaching component, the sample size in the PCA was 214 (no missing data). Based on Kaiser's criterion and the scree plot, four factors were postulated (table 1). The KMO test for measuring sampling adequacy and Bartlett's test of sphericity display satisfactory results. The KMO value (0.719) is greater than 0.7, which means the data set is likely to factor well. Bartlett's test rejects the hypothesis (at $p<0.001$) that the correlation matrix is an identity matrix, without significant correlations between variables. Both diagnostic tests confirm that the data are suitable for factor analysis. The four factors accounted for 66.9% of the total variance (component 1: intrinsic motivation 22.5%; component 2: extrinsic motivation 18.6%; component 3: commitment to the practice of teaching 15.9%; and component 4: self-efficacy 9.9%, with varimax rotation) (Table 1).

Table 1 - Factor loadings based on PCA with varimax rotation of the motivation for teaching domain (n=214).

| **Item** | **Component** | | | |
|---|---|---|---|---|
| | **1** | **2** | **3** | **4** |
| Teaching promotes self-realization | 0.660 | | | |
| The teaching profession is interesting and varied | 0.733 | | | |

| | | | | |
|---|---|---|---|---|
| The teaching profession enables the love of teaching to be expressed | 0.780 | | | |
| The teaching profession enables a relationship with children to be established | 0.772 | | | |
| A teaching career ensures financial security | | 0.800 | | |
| In the teaching profession, promotion is possible | | 0.516 | | |
| The teaching profession offers convenient work conditions | | 0.687 | | |
| Teaching is a profession that grants employment security | | 0.749 | | |
| I see myself engaging in teaching in the near future | | | 0.891 | |
| Teaching promotes self-realization | | | 0.883 | |
| I regard myself as a successful teacher | | | | 0.883 |

Component 1: intrinsic motivation, component 2: extrinsic motivation, component 3: commitment to the practice of teaching, component 4: self-efficacy

Similarly, we conducted a PCA with varimax rotation using a slightly smaller sample size (n=210) due to listwise deletion to determine the underlying dimensions of the conceptions of the teaching and learning process items. The data was adequate for factor analysis; the KMO value was 0.788 and Bartlett's test of sphericity was statistically significant (at p <0.001). Based on Kaiser's criterion 5 factors should be extracted, however interpreting the scree plot retaining only two factors seemed to be more accurate because it begins to tail off after three factors. The items that cluster on the same components suggested that component 1 represents the constructivist approach to teaching and learning 24.8%, and component 2 the traditional approach to teaching and learning 13,7%. Table 2 presents the item loadings (Table 2).

Table 2 - Factor loadings based on PCA with varimax rotation of the conceptions of the teaching and learning process domain (n=210).

| **Item** | **Component** | |
|---|---|---|
| | **1** | **2** |
| I like to organize my learning processes by myself | 0.662 | |
| The role of the teacher is to enhance learning processes | 0.389 | |
| Learning means combining new knowledge with existing knowledge | 0.465 | |
| The teaching profession requires lifelong learning and development | 0.591 | |
| I feel comfortable in computer-based-environments | 0.432 | |
| I manage to find bibliographical sources on my own | 0.687 | |
| I manage to establish a link between theoretical knowledge and practical experience at work | 0.723 | |
| The quality of teaching is determined by the amount of time the teachers | | 0.671 |

| | |
|---|---|
| and students spend together | |
| Generally speaking, I rate my ability to function as a teacher as a high ability nowadays | 0.478 |
| Teaching is a profession that constitutes a vocation and a mission | 0.478 |
| Teaching is a profession that permits self-realization | 0.618 |
| Learning is mainly an accumulation of knowledge | 0.720 |
| I like to be given clear frameworks and defined objectives in learning | 0.460 |

Component 1: constructivist approach to teaching and learning, component 2: traditional approach to teaching and learning

***Reliability***

The motivation for teaching domain and conceptions of the teaching and learning process domain had good internal consistency (Cronbach's α = 0.754 and 0.770, respectively). The 4-item intrinsic motivation and the 2-item commitment to the practice of teaching subscales were internally consistent (α =0.749 and 0.779, respectively). The 4-item extrinsic motivation subscale did not reach the standards for good reliability (α =0.683). The self-efficacy subscale included only 1 item.

The 7-item constructivist approach to teaching and learning subscale was internally consistent (α =0.733), and the 6-item traditional approach to teaching and learning subscale did not reach the standards for good reliability (α =0.575). Table 3 presents the summary statistics and internal consistency coefficients of each subscale for both domains (Table 3).

Table 3 Summary data for the TPP 6 subscales (factors)

| Factor label | Mean (SD) | Median (IQR) | Cronbach (α) | No. of items |
|---|---|---|---|---|
| **Motivation for teaching** | | | | |
| 1 Intrinsic motivation | 5.20 (0.69) | 5.25 (4.75-5.75) | 0.749 | 4 |
| 2 Extrinsic motivation | 3.19 (0.91) | 3.25 (2.75-3.75) | 0.683 | 4 |
| 3 Commitment to the practice of teaching | 3.19 (1.48) | 3.00 (2.00-4.50) | 0.779 | 2 |
| **Conceptions of the teaching and learning process** | | | | |
| 1 Constructivist approach | 5.01 (0.56) | 5.14 (4.71-5.43) | 0.733 | 7 |
| 2 Traditional approach | 4.45 (0.65) | 4.50 (4.00-5.00) | 0.575 | 6 |

## DISCUSSION

In this preliminary study it was tested the Portuguese version of a new questionnaire that was designed to assess perceptions on teaching and professional identity in pre service teachers. The Portuguese TPP questionnaire is feasible in this population, as a low of missing responses were observed, which underlines its practicability. We also have a high response rate, which may be attributed to contribution of the graduation coordinator's relationship with his students.

In this study was used PCA on the two Likert-type domains, measuring motivation for teaching, and conceptions of the teaching and learning process. Concerning motivation for teaching component the exploratory PCA presented a clean 4-factor (11-item) structure in which convergent and discriminant validity were evident by the high loading values within factors, relatively high Cronbach's alphas and simple structure (no cross-loadings between factors).

The exploratory PCA presented a 2-factor structure (constructivist approach to teaching and learning and traditional approach to teaching and learning) for the conceptions of teaching–learning component. This domain appeared feasible, generally reliable (except for low Cronbach's α on the traditional approach to teaching and learning subscale). A low value of alpha could be due to a low number of questions, poor inter-relatedness between items or heterogeneous constructs (Tavakol & Dennick, 2011). This is not surprising, since these 6 items consist of questions fairly independent of each other, but all related with the traditional approach to teaching and learning. The original TPP version in Hebrew (Ezer et al., 2010) measures four dimensions of conceptions of teaching–learning component: traditional approach to learning, constructivist approach to learning, traditional approach to teaching, and constructivist approach to teaching. A different solution was suggested by PCA analysis, which aggregated the teaching and learning process and detached the traditional form the constructivist approach. This is an acceptable solution since it is assumed that the process of teaching and learning happens aggregately. In this sense, it becomes unessential analyze it unconnectedly as shown in the study of Wooley, Benjamin, and Wooley (2004 )

The look for the teachers' conceptions about their professional identity, strongly influenced by the teacher education programs, can be accessed through this TPP

questionnaire. Unravelling how pre-service and novice teachers perceive the teaching-learning process can inform teacher educators about the direction that the teacher education is submitted.

One of the major limitations of the study concerned psychometric problems with the 6-item traditional approach to teaching and learning subscale. Increasing the number of items with a homogeneous construction may be a solution to improve reliability. Therefore, it is suggested that an additional item measuring disclosure concerns is added in future studies using TPP questionnaire.

## CONCLUSION

This study has implications for practice and research in the field of training teachers. The TPP questionnaire is a feasible, generally reliable, and valid instrument to assess perception of teacher education and professional identity among pre-service teachers. However, further evaluation is suggested to improve reliability and to explore the pre-service teachers' professional identity construction through their own perceptions.

## REFERENCES

Banks, J., Conway, P., Darmody, M., Leavy, A., Smyth, E., & Watson, D. (2015). *Review of the droichead teacher induction pilot programme*. Dublin: ESRI Working Paper.

Bates, T., Swennen, A., & Jones, K. (2014). *The professional development of teacher educators*: Routledge.

Batista, P. (2011). Modelação da competência: desafios que se colocam ao estágio profissional. In A. Albuquerque, C. Pinheiro, L. Santiago, & N. Fumes (Eds.),

*Educação Física, Desporto e Lazer. Perspectivas Luso-Brasileiras, 3º encontro* (pp. 429-442). Maia: Edições ISMAI.

Batista, P., Graça, A., & Matos, Z. (2011). The place of knowledge in the representation of professional competence held by PE teachers. *e Journal de la Recherche sur l'Intervention en Éducation Physique et Sport - eJRIEPS, 24*, 96-117.

Bennett, D. A. (2001). How can I deal with missing data in my study? . *N Z J Public Health, 25*, 464-469.

Bland, J., & Altman, D. (1997). Statistics notes: Cronbach's alpha. *BMJ, 314*, 275.

Brouwer, N., & Korthagen, F. (2005). Can Teacher Education Make a Difference? *American Educational Research Journal, 42, No.* (1), 153-224.

Castañeda Valle, R., Normandeau, S., & González, G. R. (2015). Education at a glance interim report: Update of employment and educational attainment indicators from http://www.oecd.org/edu/eag.htm

Cattell, R. (1966). The scree test for the number of factors. *Multivariate Behavioral Research Journal, 1*(2), 245-276.

Cochran-Smith, M. (2004). The Problem of Teacher Education *Journal of Teacher Education, 55*( 4).

Cochran-Smith, M. (2005). Teacher educators as researchers: multiple perspectives. *Teaching and Teacher Education, 21*, 219-225.

Comission, E. (2013). *Supporting teacher educators: For better learning outcomes*. Luxembourg: European Comission

Dong, Y., & Peng, C. Y. (2013). Principled missing data methods for researchers. *Springerplus, 2*(222).

Ezer, H., Gilat, I., & Sagee, R. (2010). Perception of teacher education and professional identity among novice teachers. *European Journal of Teacher Education, 33*(4), 391-404. doi: Pii 92872344010.1080/02619768.2010.504949

Field, A. (2009). Discovering statistics using SPSS. *3 rev ed. London, 85*.

Forzani, F. M. (2014). Understanding "Core Practices" and "Practice-Based" Teacher Education: Learning From the Past. *Journal of Teacher Education, 1*(12).

Gilat, I., Kupferberg, I., & Sagee, R. (2006). Cholelut azmit utfisot mikzoa ha'oraah bekerev studentiyot lehoraah: Nekudot mabat kamutit ve'eichutit [Self-efficacy and perception of the teaching profession of student teachers in training: A quantitative and qualitative perspective]. *Mahalakhim Lehinukh: lehevra uletarbut, 35*(8).

Hong, J., & Stähle, P. (2005). The coevolution of knowledge and competence management. *Int. J. of Knowledge and Competence Management, 1*(2), 129-145.

Sandberg, J. (2001). Understanding the basis for competence development In C. Velde (Ed.), *International perspectives on competence in the workplace*: Dordrecht: Kluwer Academic Press.

Snoek, M., Swennen, A., & Van der Klink, M. (2011). The quality of teacher educators in the European policy debate: actions and measures to improve the professionalism of teacher educators. *Professional Development in Education, 37*(5), 651-664.

Sousa, T., Cunha, M., & Batista, P. (2015). Tradução e adaptação linguística e cultural para a língua protuguesa do "A questionnaire for student teachers" *Conexões: revista da Faculdade de Educação Física da UNICAMP, Campinas, 13*(1), 20-35.

Tavakol, M., & Dennick, R. ( 2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*, 53-55.

Velve, C. (2000). *An alternate conception of competence: implications for vocational education and practice.* Paper presented at the UTS research Centre Vocational Education & Trainning Working Knowledge: Productive learning at work. .

Wooley, S., Benjamin, W., & Wooley, A. (2004 ). Construct validity of a self-report measure of teacher beliefs related to constructivism and traditional approaches to teaching and learning. *Educational and Psychological Measurement, 64*(2), 319-331.