PORTUGUESE ADAPTATION OF STUDENTS' ENGAGEMENT IN SCHOOLS INTERNATIONAL SCALE (SESIS)

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Abstract

Context: The importance of student's engagement has been recently pointed out in research. However, there has been a lack of engagement assessment instrument, pertaining psychometric qualities.

Objective: This paper presents the Portuguese adaptation of the "*Student's Engagement in School International Scale*" (SESIS), drawn up from a12 countries international study (Lam et al., 2012; Lam et al., in press).

Method: Psychometric properties of this scale were examined with data from 685 students from different grades (6th, 7th, 9th and 10th), from both sexes, and different regions of the country.

Results: Factorial analysis of the results, with *varimax* rotation, lead to three different factors which explain 50.88% of the variance. The scale integrates the original 33 items, and cognitive, affective and behavioural dimensions. For the external validity study, the relationship between student's engagement in school results and other school variables — academic performance, self-concept — was considered, and significant relations were observed, as expected. **Conclusion**: The data presented highlights the qualities of SESIS, as well as its usefulness for research purposes.

Suggestion: It is suggested the investigation of the extension of SESIS's three-dimensionality, in future studiesKeywords: Innovation, technology, research projects, etc.

Keywords: Students' engagement in schools, measurement, academic performance, school conduct.

1   INTRODUCTION

The concept of engagement has attracted great interest in research within psychology and education (Lam & Jimerson, 2008; Veiga, 2012) [1] [2]. Educators and Researchers view this concept as a solution to several problems affecting many schools, such as low academic achievement and high dropout rates (Fredrick, Blumenfeld, & Paris, 2004; Veiga, 2007) [3] [4]. Literature on intrinsic motivation indicates that satisfaction and interest in learning activities are predictive of higher academic performance (Ryan & Deci, 2000) [5]. Similarly, there is a consistent positive association between teachers and students' reports about engagement and performance. Literature on self-regulated learning, indicates that cognitive engagement is positively related with deep comprehension (Schunk & Zimmerman, 2007) [6] and several indicators of academic performance (Boekart, Pintrich, & Zeidner, 2000; Schunk & Zimmerman, 2007) [7] [6].

Students' engagement in school is a multidimensional construct that includes several dimensions, namely, emotional, behavioral and cognitive (Jimerson, Campos, & Greif, 2003) [8]. Emotional engagement refers to students' feelings towards learning (Skinner & Belmont, 1993) [9] and the school they attend to (Finn & Voelkl, 1993) [10]. Behavioral engagement concerns to persistence and effort in

learning (Birch & Ladd, 1997) [11]. Cognitive engagement relates to the quality of cognitive processing used by students use in school tasks (Walker, Greene, & Mansell, 2006) [12]. The concept of students' engagement allows an integrated perspective, for both research and intervention (Fredrick, Blumenfeld, & Paris 2004) [3].

A review of empirical studies on students' engagement in school assessment (Jimerson, Campos, & Greif, 2003) [8] suggests that there are variations both in the subjects used (students, teachers) and the assessment format (questionnaire, interview, document analysis). The items used in engagement research were classified in different contexts (Jimerson, Campos, & Greif, 2003) [8]: academic performance (Manlove, 1998; Johnson, *et al*., 2001) [13] [14]; behavior in the classroom (Greenwood, Horton, & Utley, 2002; Johnson *et al*. 2001) [15] [14]; extracurricular participation (Scales, Benson, Leffert & Blyth, 2000) [16]; interpersonal relationships in school (Hawkins *et al*., 2001) [17]; sense of belonging to school community (Battin-Pearson *et al*. 2000; Hawkins *et al*., 2001) [18] [17].

In search for the antecedents of students' engagement in school studies, we can place ourselves in the literature about motivation (Wolters, 2004) [19], sense of school belonging (Finn & Voelkl, 1993) [10], and self-regulated learning (Schunk & Zimmerman, 2007) [6]. From the analysis of literature, two types of engagement factors arise: contextual and personal. The positive outcomes of school engagement have impact on student's psychological engagement and general well-being (Fredrick, Blumenfeld, & Paris 2004; Veiga, 2007) [3] [4].

One of the difficulties in the study of students' engagement concerns the lack of assessment instruments. A determinant contribution in that direction was provided by Lam and Jimerson (2008) [1], and more recently, by Lam et al. (in press) [20]. There is a lack of assessment instruments amongst us, addressed to students' engagement, its incidence and explanation, with studied reliability and validity. In Portugal, it is highlighted a study by Pereira, Canavarro, Cardoso and Mendonça (2003) [21], although it focused on parental engagement in school. The present study aims to fill this gap. This paper presents the Portuguese adaptation of the *"Student's Engagement in School International Scale"* (SESIS), from an international study including 12 countries (Lam et al., 2012; Lam et al., in press) [22] [20].

2   METHOD

In this section we present the sample used, as well as the procedures carried out in the adaptation of the *"Student's Engagement in School International Scale"* (SESIS).

2.1.1   Subjects

The sample included male (291) and female (388) students, from different grades: 6th (138), 7th (170), 9th (197) and 10th (180) and attending schools from various regions of the country. Sample distribution according to age appears in Fig. 1.
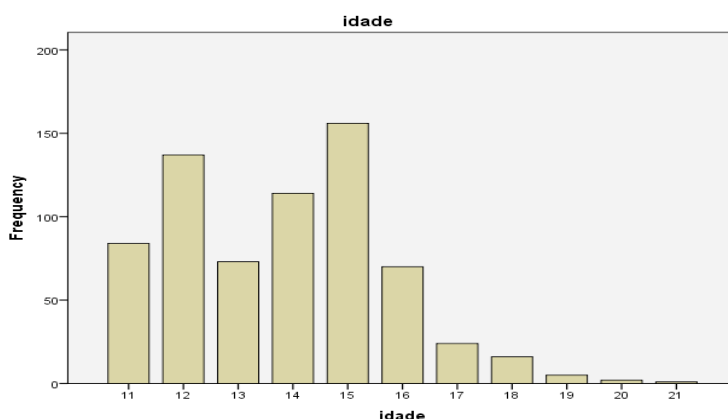

Fig. 1. Subjects' distribution according to age

2.1.2   Instruments

"Student's Engagement in School International Scale" (SESIS) was created and developed by Lam et al. (in press) in the context of an international project, and it is a multidimensional scale,

with self-report answers, using a likert scale. It encompasses 33 items distributed across three dimensions (cognitive, affective and behavioral), as shown in Appendix A. For the SESIS' external validity study purpose the number of school retentions were collected, and items from the Piers Harris Self-Concept Scale previously adapted (Veiga, 2006) [23] were used.

2.1.3 Procedures

Once obtained the necessary permissions from schools and Ministry of Education, the questionnaires were administered anonymously and under the involved class teacher's supervision. This task was carried out during regular class periods, and the students collaborated on a voluntary basis. No limits of time were established for the questionnaires completion.

3 RESULTS

The information about results' reliability, specifically, construct and external validity is presented.

3.1 Construct Validity

A factorial analysis of the main components was conducted, indicating three factors, which, together, explain 50,880% of the total variance. The first factor (which explained 36,631% of the variance) was designated affective; the second (7,213%), cognitive; the third (7,036%) behavioral (tab. 1). It was observed an items' saturation below 0,30 in items 13, 15, 16 and 17, which, nevertheless, were included in the behavioral factor, in order to maintain the consistency with the original version.

Table 1. Principal components factorial analysis, with varimax rotation.

Items	Factors		
	Affective	Cognitive	Behavioral
03	,652		
02	,641		
01	,624		
05	,585		
04	,583		
08	,443		
09	,390		
07	,336		
06	,313		
25		,745	
30		,740	
29		,724	
27		,718	
28		,715	
26		,711	
32		,658	
24		,640	
22		,603	
33		,595	
23		,521	
31		,465	
19			,596
21			,574
20			,573
12			,565

11	,308
14	,307
18	,305
10	,304
16	,263
13	,260
15	,258
17	,250

The Internal consistency (Cronbach *alpha*) in the total scale was 0.94 and, by factors, 0.92 in cognitive engagement, 0.86 in affective engagement, and 0.84 in behavioral engagement. Other results ate presented in tab. 2, considering the total sample and male and female subgroups. The 33 items scale average was 4,517, and the type of answer was altered from 1 to 5 (in the original) to 1 to 6 (totally disagree to totally agree), in the present study.

Table 2. Internal consistency coefficients, *alfa indexes*, of the dimensions, total sample, male and female subgroups.

Dimensions	Sample	Female	Male
Affective	86	85	87
Cognitive	92	92	91
Behavioral	84	85	84
Total	94	94	95

3.2   External Validity

In the external validity study, the relationship between SESIS' results and specific variables- self-concept and retention-was considered, arising significant correlations in the expected direction, as can be observed in table 3 (note that Sh, Satisfaction-happiness; Ba, Behavioral aspect; Is, Intellectual status; Po, Popularity, TOT, Total self-concept; Ret, Retentions). A higher school engagement was associated to a lower rate of school retention, as well as to a higher self-concept.

Table 3. Correlation Coefficients between SESIS' dimensions results and the variables self-concept and retentions.

Engagement	Sh	Ba	Is	Po	TOT	Ret
Affective	,302[**]	,267[**]	,320[**]	,243[**]	,338[**]	-,243[**]
Behavioral	,241[**]	,334[**]	,388[**]	,211[**]	,389[**]	-,252[**]
Cognitive	,205[**]	,187[**]	,351[**]	,214[**]	,301[**]	-,157[**]
TOTAL	,284[**]	,293[**]	,403[**]	,247[**]	,389[**]	-,249[**]

* Correlation is significant at the 0.05 level; ** Correlation is significant at the 0.01 level (2-tailed).

The correlation indexes are higher in the Intellectual status (Is) and Total self-concept (TOT). In all cases, the levels statistical significance are very high (p<0.05).

4 CONCLUSIONS

The present study highlights some elements from the *Student's Engagement in School International Scale"* (SESIS) adaptation, adding information about its psychometric qualities. The Portuguese version of SESIS presented a factorial structure identical to the original, with the same factors and items. In future studies, the analysis of the results in terms of specific variables, both scholar and personal, may extend the scale's external validity, as well as increase knowledge about engagement's factors and multidimensionality. In fact, some authors (Reeve & Tseng, 2011) [24] suggest a more complex multidimensionality of engagement, which goes beyond the three-dimensionality range (affective, cognitive and behavioral) found in the present scale.

To sum up, *"Student's Engagement in School International Scale"* (SESIS) is a students' engagement in school assessment instrument which, in addition to its use in international research (Lam et.al., 2012; Lam *et al*.in press) [22] [20], may be used in the Portuguese context. This scale presents good psychometric qualities, which make it useful for research and psycho-educational practice, to assess students' engagement in school, their development and differentiation.

REFERENCES

[1]   Lam, S., & Jimerson, S. (2008, July). Exploring Student Engagement in School Internationally. The International School Psychology Survey: Data from Austria, Romania, China, Portugal, and Canada. In *XXX ISPA Conference: School Psychology in a Changing Society,* Utrecht.

[2]   Veiga, F. H. (2012). *Autoconceito e disrupção escolar dos jovens: Investigação diferencial* (Rev. ed.). Lisboa: Editora Fim de Século.

[3]   Fredricks, J., Blumenfeld, P., & Paris, A. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research Spring, 74* (1), 59–109.

[4]   Veiga, F. H. (2007). *Indisciplina e Violência na Escola: Práticas Comunicacionais para Professores e Pais* (Rev. ed.). Coimbra: Almedina.

[5]   Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68-78.

[6]   Schunk, D. H., & Zimmermann, B. J.(Eds), (2007). *Motivation and self-regulated learning: Theory, research and applications.* New Jersey/London: Lawrence Erlbaum.

[7]   Boekarts, M., Pintrich, P. R. & Zeidner, M. (Eds.). (2000). *Handbook of self-regulation: Theory, research and applications.* San Diego, CA: Academic Press.

[8]   Jimerson, S., Campos, E., & Greif, J. (2003). Towards an understanding of definitions and measures of student engagement in schools and related terms. *The California School Psychologist, 8,* 7-28.

[9]   Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*, 571-581.

[10] Finn, J. D., & Voelkl, K. E. (1993). School characteristics related to student engagement. *Journal of Negro Education, 62*, 249-268.

[11] Birch, S. H., & Ladd, G. W. (1997). The student-teacher relationship and children's early school adjustment. *Journal of School Psychology, 35,* 61–79.

[12] Walker, C. O., Greene, B. A., & Mansell, R. A. (2006). Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and Individual Differences, 16,* 1-12.

[13] Manlove, J. (1998). The influence of high school dropout and school disengagement on the risk of school-age pregnancy. *Journal of Research on Adolescence, 8,* 187-220.

[14] Johnson, M. K., Crosnoe, R., & Elder, G. H. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education, 74,* 318-340.

[15] Greenwood, C. R., Horton, B. T., & Utley, C. A. (2002). Academic engagement: Current perspectives on research and practice. *School Psychology Review, 31*, 328-349.

[16] Scales, P. C., Benson, P. L., Leffert, N., & Blyth, D. A. (2000). Contribution of developmental assets to the prediction of thriving among adolescents. *Applied Developmental Science, 4,* 27-46.

[17] Hawkins, J. D., Guo, J., Hill, K. G., Battin-Pearson, S., & Abbott, R. D. (2001). Long-term effects of the Seattle Social Developmental Intervention on school bonding trajectories. *Applied Developmental Science, 5,* 225-236.

[18] Battin-Pearson, S., Newcomb, M. D., Abbott, R. D., Hill, K. G., Catalano, R. F., & Hawkins, J. D. (2000). Predictors of early high school dropout: A test of five theories. *Journal of Educational Psychology, 92*, 568-582.

[19] Wolters, C. A. (2004). Advancing Achievement Goal Theory: Using Goal Structures and Goal Orientations to Predict Students' Motivation, Cognition, and Achievement. *Journal of Educational Psychology, 96*, 236-250.

[20] Lam, S.-f., Jimerson, S., Wong, B., Kikas, E., Veiga, F. H., Hatzichristou, C., Polychroni, F., Shin, H., Cefai., Negovan, V., Stanculescu, E., Yang, H., Liu, Y., Basnett, J., Duck, R., Farrel, P., Nelson, B., & Zollneritsch, J. (in press). Understanding and Measuring Student Engagement in School: The Results of an International Study from 12 Countries. *Psychology in the School.*

[21] Pereira, A. I., Canavarro, J. M., Cardoso, M. F., & Mendonça, D. V. (2003). Desenvolvimento da versão para professores do Questionário de Envolvimento Parental na Escola (QEPE-VPr). *Revista Portuguesa de Pedagogia*, 2, 109-132.

[22] Lam, S. et al. (2012). Do girls and boys perceive themselves as equally engaged in school? The results of an international study from 12 countries. *Journal of School Psychology, 50*(1), 77-94.

[23] Veiga, F. H. (2006). Uma nova versão da escala de autoconceito: Piers-Harris Children's Self-Concept Scale (PHCSCS-2). *Revista de Educação e Psicologia, 2,* pp. 39-48.

[24] Reeve, J., & Tseng, C. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*. *36*(4), 257-267.

APPENDIX A

Affective Engagement

01. I am very interested in learning.
02. I think what we are learning in school is interesting.
03. I like what I am learning in school.
04. I enjoy learning new things in class.
05. I think learning is boring.(R)
06. I like my school.
07. I am proud to be at this school.
08. Most mornings, I look forward to going to school.
09 I am happy to be at this school.

Behavioral Engagement

10. I try hard to do well in school.
11. In class, I work as hard as I can.
12. When I'm in class, I participate in class activities.
13. I pay attention in class.
14. When I'm in class, I just act like I'm working. (R)
15. In school, I do just enough to get by. (R)
16. When I'm in class, my mind wanders. (R)
17. If I have trouble understanding a problem, I go over it again until I understand it.
18. When I run into a difficult homework problem, I keep working at it until I think I've solved it.
19. I am an active participant of school activities such as sport day and school picnic.
20. I volunteer to help with school activities such as sport day and parent day.
21. I take an active role in extra-curricular activities in my school.

Cognitive Engagement

22. When I study, I try to understand the material better by relating it to things I already know.
23. When I study, I figure out how the information might be useful in the real world.
24. When learning new information, I try to put the ideas in my own words.
25. When I study, I try to connect what I am learning with my own experiences.
26. I make up my own examples to help me understand the important concepts I learn from school.
27. When learning things for school, I try to see how they fit together with other things I already know.
28. When learning things for school, I often try to associate them with what I learnt in other classes about the same or similar things.
29. I try to see the similarities and differences between things I am learning for school and things I know already.
30. I try to understand how the things I learn in school fit together with each other.
31. I try to match what I already know with things I am trying to learn for school.
32. I try to think through topics and decide what I'm supposed to learn from them, rather than studying topics by just reading them over
33. When studying, I try to combine different pieces of information from course material in new ways.

Note: (R) indicates reverse item