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Paper

THE COMPETENCIES OF LEADERSHIP OF SENIOR STUDENTS IN PORTUGAL

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1. INTRODUCTION

Pupils of secondary education develop during their schooling path diverse leadership abilities. However, this area of investigational study has attracted little attention on the part of Portuguese researchers.

Thus, this research study intends to analyze the characteristics of leadership of the pupils of secondary education in two schools (one urban and another rural) of the Autonomous Region of Madeira (Portugal) and looks for determining the existing differences concerning the type of school and the gender of the students in eight distinct domains: 1) self management; 2) interpersonal relations; 3) problem solving/decision making; 4) cognitive development/critical analysis; 5) organization and planning; 6) self-confidence; 7) diversity awareness; and, 8) technology.

It was used, to collect data, the *Student Leadership Outcomes Inventory* (SLOI) (Vann, 2000) an instrument with 60 items which was constructed to measure the results of the experiences of leadership of the pupils in eight distinct areas. The respondents classify items in a *Likert* type scale with answers that vary between "I agree completely" to "I disagree completely".

A total of 158 senior students participated in this study, proceeding from the student senior population of secondary education in the school year of 2008/2009 in one Mediterranean country (Portugal).

The participants of this study had indicated moderate levels of abilities and techniques of leadership in the eight sub-scales; however, differences had not been found significant concerning the gender, the age and the type of school. In general, we can affirm that the Portuguese pupils finish secondary education with several characteristics and leadership abilities well developed.

2. LITERATURE REVIEW

Literature about the abilities of leadership in students has been focused, essentially, on the students of higher education due to the fact of believing that it is the responsibility of this level of education to provide these competencies. However, there is a set of studies that focused on the capacities of the students of secondary education and this literature is clear about the importance and acquisition of these capacities in this educational level. As a result, there is a need to study, in more dept, the leadership capacities with which the pupils arrive at the university and/or at the labour market.

In general, the employers look for candidates who possess transversal abilities to several disciplines such as reading, writing, creative thought, personal organization, easy integration in working groups, organizational efficiency and leadership capacities (Kerka, 1990; Attinasi, 1992; Groger & Eide, 1994; Aksoy & Mittelhauser, 1998).

In fact, the employers look for candidates who possess well developed capacities of leadership (Linden & Fertman, 1998; Gale, 2002; Saints, 2003). On this sense, the abilities developed and acquired in secondary education can, thus, be categorized as follows: a) **Technical competencies** that reflect the specialized knowledge, tools and techniques that leaders possess and use (Stronge, 1998); b) C**onceptual competencies** that are constituted by intelligence, decision making, capacity to see the whole, and the capacity to foresee the change (Stronge, 1998) e, c) **Human capacities** which encompass the capacity to work with and for the others (Stronge, 1998).

On the other hand, and according to Kouzes and Posner, the four main characteristics looked for by the employers are: 1. Honesty (to measure one's behaviour by high standards and to demonstrate the behaviour that one expects of others); 2. The capacity to inspire the others (to have a dream, vision and capacity of inspiring a joint vision);

3. The capacity to inspire the others to act (capacity to take the others to a joint work, of a true team); and, 4. The capacity to encourage the will (capacity of awaking and keeping the will in order to achieve the delineated objectives) (Kouzes and Posner, 1995, 2009).

In relation to the leadership capacities on gender, the studies are not congruent. In certain circumstances, there is little support for any relation between gender and leadership (Powell, 1989; Bass, 1991; Komives, 1991; Posner & Brodsky, 1994). However, some studies conclude that leadership abilities are more developed in women. The ability to take others to act was identified as very well developed in women, even on those with little experience of leadership (Komives, 1994). The women value more the interpersonal relationships, learn more by trying and error, by observation as well as with the practice in the acquisition of the leadership abilities, conflict resolution and capacity of problem solving (Roman, 1996).

2. METHODOLOGY

The main objective of this research study was to analyze the characteristics and competencies of leadership of the senior students in two schools of the Autonomous Region of Madeira (Portugal). Thus, to reach this objective, it was used a questionnaire developed for Vann (2000) consisting by 60 items which allow to analyze the leadership abilities, classified in 8 domains of the senior students (see table 1). Each statement has a punctuation of 4 points in a *Likert* type scale (1 - Disagree completely; 2 - Disagree; 3 - Agree; and, 4 - Agree completely). With this scale, the subjects indicated their level of agreement with the content contained in each statement.

The first sub-scale, constituted of nine items, evaluates the abilities of self management of the subjects, asking them which abilities had acquired in diverse areas of self-organization. The interpersonal abilities are the target of the second sub-scale which is constituted of 13 items; this set of questions asks subjects to indicate the extension in which their experiences of leadership (in the secondary school) affected diverse

abilities. The third sub-scale, called problem solving/decision making includes four items. This section congregates information from the subjects on the abilities of resolution of problems and taking of decisions within the experiences of leadership in the secondary school. In the fourth subscale of the SLOI are examined the abilities of the cognitive development and critical analysis. Seven items of this section are centred in how the experiences of leadership of the subjects affected their cognitive development and techniques of critical analysis. The fifth sub-scale examines the organization and the planning in the subjects. This section is constituted by 16 items and each item is related with organization and planning. The sixth sub-scale of SLOI deals with the self-confidence of the participants. Five items of this section approaches the self-confidence in social abilities as well as the ability to be assertive. Other items of this section examine the degree with which the experiences of leadership in the secondary education had helped to clarify the values and contribute to establish a personal code of ethics. Sensitivity for the diversity is the focus of the seventh sub-scale. To get this information, four items ask the participants about their sensitivity, respect and appreciation of the others. The eighth sub-scale inquires about the knowledge of the participants on the technology. The two items of this section are focused on the capacity to use software programs and the capacity of searching for diverse resources in the Internet.

Table 1 - Domains of the abilities of leadership defined by Vann (2000)

Dimensions	Description	Items of the questionnaire	Number of itens
Factor 1	Self management	1-9	9
Factor 2	Interpersonal relations	10-22	13
Factor 3	Problem solving/decision making	23-26	4
Factor 4	Cognitive development/critical analysis	27-33	7
Factor 5	Organization and planning	34-49	16
Factor 6	Self-confidence	50-54	5
Factor 7	Diversity	55-58	4
Factor 8	Technology	59-60	2

Three hypothesis were formulated for this study:

H_{01}: There are no significant differences in the abilities of leadership concerning the gender of the participants.

H_{02} There are no significant differences in the leadership abilities concerning the age of the participants.

$H_{03:}$ There are no significant differences in the abilities of leadership of the subjects concerning the type of school attended (public or private).

All senior students of the two schools of the Autonomous Region of Madeira had participated in this study. One of the schools was public and was located in the rural area of the Island, while the other was private, located in the urban area. The questionnaires were applied in the context of classroom in the month of June of 2008/2009.

It was used the SPSS (*Statistical Package for the Social Sciences*), version 16.0 to store and transform the data. It was used the descriptive statistics to characterize the sample, the analysis of the trustworthiness of the questionnaire, and to the application of the test t-*Student* to compare the averages of two independent groups. The decision rule consisted of rejecting the null hypothesis for p-*value* inferior to the significance level of 95%.

3. RESULTS

158 students had participated in this study: about 45% (72) were masculine and 53,8% (85) were feminine. More than 70% (113) of the subjects attended a private school, located in an urban area and the remaining subjects attended a public school located in the rural area: 28, 5% (45) (see table 2).

Relatively to the age, the sample of this study was constituted by students with ages between 17 and 26 years. The calculated average (M) of ages was of 18,04 years (DP=1,246). In regards to the median (Me), 50% of the subjects inquired have more than 18 years of age and 50% have less than 18 years of age. The sample, in general, is constituted by students with 18 years of age.

Table 2 - Variables of the sample

Variable	Group	Sample (N=158)	
		N	%
Sex	1: Masculine 2: Feminine NR	72 85 1	45,6 53,8 0,6
Age group	1: 17-18 years 2: = 19 years NR	142 14 2	89,9 8,9 1,3
Type of school	1: Private 2: Public	113 45	71,5 28,5

In the 60 itens that measured the leadership abilities, the answers varied between 1 (I disagree completely) to 4 (I agree completely), meaning that the average point of interval of the answer was 2,5. That is, below of 2,5 the subjects have a level of leadership abilities low, equal the 2,5 the ability level is moderate and above of 2,5 the ability level is high. As it is shown on table 3, the level of ability registered in all the domains is high. The levels of ability of the students are, by decreasing order of priority, 3,36 for the domain of the technology, 3,27 for the domain of the self-confidence, 3,18 for the domain of the cognitive development, 3,16 for the domain of problem solving/decision making, 3,15 for the domain of self management, 3,14 for the domain of organization and planning, 3,13 for the domain of interpersonal relations and, finally, 3,12 for the domain of cognitive development /critical analysis.

The internal consistency of the factors is defined as the ratio of the variability in the answers which results from the differences in the subjects. That is, the answers differ not because the *Inventory* is confused but because the subjects have diverse opinions (Pestana & Gageiro, 2005). According to these authors one of the measures most used to verify the internal consistency of a group of variables it is the *Alpha Cronbach* (*). Taking into account this parameter, it was verified that the internal consistency of the 60 items grouped in 8 abilities of leadership is equal to 0,809. For the 8 abilities of leadership the *Alpha Cronbach* varies between 0,63 and 0,87. The leadership abilities "Diversity", "Problem solving/decision making", have weak internal consistency and all the others have an internal consistency reasonable, good or very good (see table 3).

Table 3 - Measures of central tendency and dispersion for the domains of the leadership abilities

Abilities of leadership	N	M	DP	Priority	Me	*Alpha-Cronbach* (*)
1.Self-management	149	3,15	0,34	5	3,31	0,7 [2]
2. Interpersonal relations	146	3,13	0,37	8	3,08	0,8 [3]
3.Problem solving/ decision making	155	3,16	0,45	4	3,25	0,6 [1]
4. Cognitive development/Critical analysis	152	3,18	0,35	3	3,14	0,7 [2]
5.Organization and planning	147	3,12	0,38	7	3	0,9 [4]
6.Self-confidence	154	3,14	0,43	6	3	0,8 [3]
7.Diversity	155	3,27	0,41	2	3,25	0,6 [1]
8.Technology	156	3,36	0,61	1	3,5	0,7 [2]
TOTAL	158	-	-	-	-	0,809 [3]

(*) Legend: [1] **Weak internal consistency;** [2] **Reasonable internal consistency** [3] **Good internal consistency;** [4] **Very good internal consistency**

Testing the hypothesis H_{01} of the averages obtained in the 8 abilities of leadership are equal for both genders; the results (see table 4) of the test *t Student* **prove** that there are no statistical significative differences between the genders.

Table 4 - Results of the test *t-Student for* comparison of gender regarding leadership abilities

Abilities of leadership	**Sex**	**N**	**Average**	**DP**	***p-value***
1. Self management	1: Masculine 2: Feminine	66 83	3,16 3,15	0,37 0,33	0,797
2. Interpersonal relations	1: Masculine 2: Feminine	68 78	3,12 3,15	0,42 0,33	0,652
3. Problem solving/decision making	1: Masculine 2: Feminine	70 85	3,16 3,16	0,51 0,40	0,951
4. Cognitive development /critical Analysis	1: Masculine 2: Feminine	68 84	3,17 3,19	0,38 0,33	0,703
5. Organization and planning	1: Masculine 2: Feminine	65 82	3,11 3,13	0,43 0,35	0,785
6. Self-confidence	1: Masculine 2: Feminine	69 85	3,20 3,10	0,41 0,45	0,119
7. Diversity	1: Masculine 2: Feminine	70 85	3,25 3,29	0,44 0,38	0,595
8. Technology	1: Masculine 2: Feminine	71 85	3,40 3,32	0,64 0,60	0,398

Testing the null hypotheses H_{02}, H_{03}, the data did not allowed to reject these hypotheses (*p-value* > 5%) for that we conclude that the leadership abilities are the same ones independently of the age (see table 5), type of school (private or public) that the students attend (See table 6).

Table 5 - Results of the test *t-Student* for comparison of the age groups regarding leadership abilities

Abilities of leadership	Age groups	N	Average	DP	*p-value*
1. Self management	1: 17-18 years 2: ≥19 years	119 30	3,13 3,21	0,33 0,41	0,334
2. Interpersonal relations	1: 17-18 years 2:≥19 years	115 30	3,14 3,13	0,36 0,42	0,892
3. Problem solving/decision making	1: 17-18 years 2: ≥19 years	119 35	3,17 3,16	0,43 0,45	0,837
4. Cognitive development /Critical analysis	1: 17-18 years 2: ≥19 years	117 34	3,18 3,21	0,35 0,35	0,644
5. Organization and planning	1: 17-18 years 2: ≥19 years	115 31	3,11 3,20	0,80 0,36	0,231
6. Self-confidence	1: 17-18 years 2: ≥ 19 years	120 33	3,11 3,24	0,43 0,46	0,197
7. Diversity	1: 17-18 years 2: ≥19 years	120 34	3,26 3,34	0,40 0,43	0,300
8. Technology	1: 17-18 years 2: ≥19 years	120 35	3,34 3,39	0,61 0,63	0,710

Table 6 - Results of the test *t-Student* for comparison of the type school relating to the leadership abilities

Abilities of leadership	Type school	N	Average	DP	*p-value*
1. Self management	1: Private 2: Public	107 43	3,17 3,11	0,36 0,29	0,310
2. Interpersonal relations	1: Private 2: Public	106 41	3,14 3,11	0,37 0,37	0,698
3. Problem solving/ decision making	1: Private 2: Public	111 44	3,18 3,11	0,47 0,40	0,372
4. Cognitive development/Citical analysis	1: Private 2: Public	110 43	3,18 3,18	0,37 0,31	0,979
5. Organization and planning	1: Private 2: Public	103 44	3,13 3,11	0,39 0,36	0,695
6. Self-confidence	1: Private 2: Public	111 44	3,13 3,16	0,45 0,39	0,646
7. Diversity	1: Private 2: Public	112 44	3,30 3,21	0,42 0,39	0,236
8. Technology	1: Private 2: Public	113 44	3,36 3,34	0,65 0,50	0,823

4. DISCUSSION AND CONCLUSIONS

The present study results from a research inquiry carried out in two secondary schools of the Autonomous Region of Madeira: one private, located in an urban area; another public located in the rural area. The main goal of this study consisted of analyzing the abilities of leadership of the pupils of secondary education and determining the existing differences relating to gender, age and type of school in eight distinct domains, namely: 1) self management; 2) interpersonal relations; 3) problem solving/decision making; 4) cognitive development/critical analysis; 5) organization and planning; 6) self-confidence; 7) sensitivity for the diversity; and, 8) technology.

In the collection of data it was used the *Student Leadership Outcomes Inventory* (SLOI), an instrument with 60 items, developed by Vann (2000). In the 60 items, which intended to measure the abilities of leadership of the students, the answers varied between 1 (I disagree completely) and 4 (I agree completely), being the average point of all answers equal to 2,5. The senior students of the secondary education of the Autonomous Region of Madeira registered levels of abilities of leadership above of the average, not having great dispersion among the students, once the standard varied from 0,34 (self management) to 0.61 (technology). These results are similar to the ones found by Al-Omari *et al*. (2008) and Foley (2005a; 2005b).

The ability domain that registered the highest average was the "technology" (3,36). The ability less developed was the "organization and planning" (3,12). However, about 5,2% of the subjects demonstrated, in this domain, low levels, but, 92,9% registered levels that varied between moderate and high levels and 1,9% did not answered to the items that constituted this domain.

Another goal of this study was to find out if there were differences regarding gender, age and type of school (public or private) relating to the abilities of leadership in the 8 domains.

In general terms, the women present superior levels of ability than men in the following domains "interpersonal relations" (F=3,15 and M=3,12), "cognitive development/critical analysis" (F=3,19 and M=3,17), "organization and planning" (F=3,13 and M = 3,11) and "diversity" (F=3,29 and M=3,25). However, the differences are not statically significant in any domain. This study concluded that the abilities of the students are the same ones independently of the sex. Results are similar to the ones obtained by other

authors (Bass, 1991; Posner & Brodsky, 1994). However, they are opposed to the results of some studies that concluded that there is a great difference between women and men on the ability level of "technologies" (Lichman, 1998; Bauer, 2000; Sax *et al*., 2003; Foley, 2005a and 2005b; Al-Omari *et al.*, 2008). On the other hand, several authors stress the fact that the men have more opportunities for becoming leaders. There are, also, authors who advance that the leadership is a characteristic that normally is associated with individual of the masculine gender (Foley, 2005).

Having into account the age, we verified that are the students with the age of 19 years or older who possess better abilities of leadership in the following domains: "self management" (3.21 against 3,11), "cognitive development/decision making" (3,21 against 3,18), "organization and planning" (3,20 against 3,11), "self-confidence" (3,24 against 3,11), "diversity" (3,34 against 3,26) and "technology" (3,39 against 3,34). However, these differences are not, in statistical terms, significant. Given the fact that Kouzes and Posner (1987, 2009), defend that the leadership results from a set of observed practices and are prone to learning and improvement; it is natural that with the age and experience one acquires better levels of abilities in the diverse domains.

Finally, it was verified existence of differences, in the 8 domains of the leadership abilities, in terms of localization of the school; it was concluded that, in general, are the students who attend the private school, located in the urban area, that register higher levels of competencies in the following domains: “self-management” (3,17 against 3,11), “interpersonal relations” (3,14 against 3,11), "problem solving/decision making (3,18 against 3,11)," organization and planning " (3,13 against 3,11)," diversity "(3,30 against 3,21) and "technology ". Despite these results the differences are not significant; identical results had been found by Foley (2005).

In a final conclusion, the results of this research study allow to affirm that the senior pupils (secondary education) finish this cycle of studies with well developed capacities of leadership. Either the pupils of the masculine gender either the feminine finish the secondary studies with equivalent levels and well developed abilities of leadership. The pupils of the rural school (public) acquire the same degree of development of leadership abilities that the pupils of the school of the urban area (private).

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