

## **NORMATIVE VALUES FOR THE TEST FOR CREATIVE THINKING-DRAWING PRODUCTION (TCT-DP), OVER THE SCHOOL YEARS IN PORTUGUESE PRIVATE SCHOOLS**

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### **Abstract**

The Test for Creative Thinking-Drawing Production (TCT-DP) has been widely used for the creative potential assessment. However, there are no tables of normative values for the different years of schooling and gender in the Portuguese private schools. This is our contribution in this work.

Take part in this study 294 individuals from Portugal, with age range from 15 to 22 years ( $M = 17.7$ ,  $SD = 1.64$ ), most of them were women (55%) and was enrolled in the 10<sup>th</sup> (60.6%) and 12<sup>th</sup> school year (39.4%).

The t-tests performed indicate that there are no statistically significant differences between the school years for the two factors of the TCT-DP and for a total factor. Regarding gender, statistically significant differences were observed only for the conventional factor, with women having a higher mean than men.

The present study is the first phase of a larger research project that aims to characterize the levels of creativity and elaboration of normative tables of students of private schools.

**Keywords:** *Creativity, TCT-DP, assessment, private schools.*

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### **1. Introduction**

Considering the distinction between private and public education, we are currently developing some studies to characterize the levels of creativity in private education, given that we have already done it for students in public education (Ibérico Nogueira, Almeida, & Lima, 2018). In particular, these are students of private education and, simultaneously, attending the professional branch at the 10<sup>th</sup> and 12<sup>th</sup> years of schooling.

Private education in Portugal (with the exception of higher education) has in quantitative terms and in frequency matters little expression. Portugal follows most European Union (Ministry of Education, 2015) countries.

We can characterize Portuguese educational establishments (compulsory education) as follows: a) Religious Schools where the schools held by religious congregations stand out. Their main objective is to educate their students based on humanistic and religious values. This type of institution gives priority to high-quality academic discipline and performance; b) Other Private Schools are distinguished from public schools in that they preserve excellent teaching, individual and individual attendance of the student, as well as great flexibility in the treatment of problem situations. Here too, great importance is given to the technological means used and the quality of teaching resources and facilities; c) Public schools, they emphasize the formation of the individual taking into account their participation in the social demands.

The sample collected for our study focuses on Private Schools and we intend to make a characterization of these students regarding their levels of creativity and to present its the normative values. It is also intended to carry out the comparative study of differences between gender and years of schooling in what concerns their creativity level.

## 2. Method

### 2.1. Participants

Take part in this study 294 individuals from private schools, of the region of Lisbon and Porto with age range from 15 to 22 years ( $M = 17.7$ ,  $SD = 1.64$ ), most of them were women (55%) and was enrolled in the 10<sup>th</sup> (60.6%) and 12th school year (39.4%).

### 2.2. Instruments

The TCT-DP was developed in 1985 by Urban and Jellen (1986,1996) to assess the creative potential of individuals. It has a figurative pattern and its characteristics, evaluation criteria and its advantages are broadly presented by the authors and collaborators (Dollinger, Urban, & James, 2004, Urban, 1991). Several studies of validation carried out in the Portuguese population reveal that the instrument has good psychometric qualities (e.g. Ibérico Nogueira, Almeida, & Lima, 2017). It was also applied a sociodemographic questionnaire.

### 2.3. Procedure

The authors of this study contacted, via e-mail, the directors of several private schools in Lisboa and Porto to obtain permission to evaluate students in their institutional context. After permission was granted, we visited the schools and explained the study objectives to the teachers, psychologists and students, who were then asked to participate. All students and the charge of the student's education were informed regarding the instruments, the confidentiality of their answers and the permission to withdraw the study at any time. The students who agreed received the research protocol in the classroom setting.

## 3. Results

T-tests were performed to evaluate differences in averages for the factors of the TCT-DP according to gender and school year. In addition, for the construction of normative tables, descriptive statistics of mean and percentile were performed.

The results of t-tests performed indicate that there are no statistically significant differences between the school years for the two factors of the TCT-DP and for the total of TCT-DP. Regarding gender, statistically significant differences were observed only for the conventional factor  $t(246) = -2,33$ ,  $p < 0.05$ , with women having a higher mean ( $M = 11,7$ ,  $SD = 3,10$ ) than men ( $M = 10,8$ ,  $SD = 3,01$ ).

Based on the results of the tests t, a table with the normative values (Table 1) was constructed for the total sample.

*Table 1. Normative values.*

	Conventional	Non-conventional	TCT - total
Mean	11.29	6.56	17.84
Standard deviation	3.09	4.43	5.97
Minimum	3.00	0.00	3.00
Maximum	22.00	26.00	38.00
10	8.00	2.00	11.00
20	9.00	3.00	12.00
30	10.00	4.00	14.00
40	10.00	5.00	16.00
50	11.00	6.00	17.00
60	12.00	7.00	19.00
70	13.00	8.00	20.30
80	14.00	10.00	23.00
90	15.00	13.00	25.00

In addition, a second normative table was constructed for the conventional factor, with percentile values separate for male and females, since these groups presented statistically different means in that factor (Table 2).

Table 2. Normative values for conventional factor.

	Male	Female
Mean	10.78	11.69
Standard deviation	3.01	3.10
Minimum	3.00	6.00
Maximum	18.00	22.00
10	7.00	8.00
20	8.00	9.00
30	10.00	9.40
40	10.00	10.00
50	10.00	11.00
60	12.00	12.00
70	12.00	13.00
80	13.00	15.00
90	15.00	16.00

#### 4. Discussion /conclusions

In this study we developed a characterization of Private Schools students regarding their levels of creativity and we presented its the normative values. It is also carried out the comparative study of differences between gender and years of schooling in what concerns their creativity level. The results are consistent with those obtained by Ibérico Nogueira, Almeida and Lima (2018).

The present study is the first phase of a larger research project that aims to characterize the levels of creativity and the elaboration of normative tables for students of private schools. In the future, we will present their results as well as the comparisons between the averages obtained by public and private education.

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