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Factor Structure of the Torrance Tests of Creative Thinking Verbal Form B in a Spanish-speaking Population

ABSTRACT

The objective of this study was to compare, through a Confirmatory Factor Analysis, two different theoretical models that explain the operationalized creativity construct with the Verbal Torrance Tests of Creative Thinking (TTCT), Form B. Model 1 is represented by six factors which correspond to each activity and its respective indicators while Model 2 is integrated by three factors which correspond to each TTCT ability (i.e., Fluency, Originality, and Flexibility) and the corresponding indicators for each variable. The study was carried out with a sample consisting of 432 Spanish-speaking youngsters of both sexes aged 15–26. According to the research findings, the model which showed the most satisfactory fit identifies six correlated factors that correspond to each of the activities proposed ($\chi^2 = 414.48$; $df = 116$; $\chi^2/df = 3.57$; GFI = .90; NFI = .95; CFI = .96 and RMSEA = .077). These results are discussed according to its psychometric implications for the construct assessment in different fields.

Keywords: creativity, assessment, Confirmatory Factor Analysis, Torrance tests of creative thinking, TTCT verbal.

Creativity is a complex and multifaceted construct manifested in different shapes and levels of expression (Romo, 1997), involving perceptual, cognitive, and emotional processes (Montañés, 2009) and being considered essential for the understanding of human development (Kerr & Gagliardi, 2003). From its onset (Guilford, 1950), the study of creativity has met the challenge of designing or obtaining valid instruments for its assessment. In this sense, there exists several approaches to assess creativity: (a) attitudes and interest inventories, (b) personality inventories, (c) biographical inventories, and (d) test of divergent thinking (Clapham, 2004), being the latter the most commonly used technique for its measurement (Oliveira et al., 2009). Along this line, Guilford (1950) and Torrance's (1966) works stand out, mainly regarding the psychometric and factorial views. These tests focus on the study of the person and their cognitive processes (Garaigordobil, 2006) and seek to assess people's ability to produce a number of different and original ideas from a particular situation (Guilford, 1950; Torrance, 1966).

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The Torrance (1974) Tests of Creative Thinking (TTCT) is the most internationally used instrument for the assessment of creativity (e.g., Cramond, Matthews-Morgan, Bandalos & Zuo, 2005; Ferrando et al., 2007; Kaufman, Plucker & Baer, 2008; Kim, Cramond & Bandalos, 2006; Krumm & Lemos, 2010, 2011; Krumm, Lemos & Arán Filippetti, 2014; Oliveira et al., 2009; Prieto et al., 2006; Wechsler, 2006). Torrance (1966) defined creativity as a process that involves being sensitive to problems, deficiencies, and gaps in knowledge. According to the author, creativity requires the ability to identify problems and find solutions, make questions, and formulate hypothesis in order to give answers to these aspects, test them, and probably modify them to eventually inform the results obtained. The TTCT comprises two subtests—a verbal and a figural one. Each test has two parallel forms, A and B (Kim, 2006a,b; Kim et al., 2006; Torrance, 1966, 1974). Particularly, the TTCT Verbal, Form A consists of six activities: *Asking*, *Guessing Causes*, *Guessing Consequences*, *Product Improvement* based on a toy elephant, *Unusual Uses of Cardboard Boxes* and *Just Suppose* (Torrance, 1990a,b). Form B also consists of six activities: *Asking*, *Guessing Causes*, *Guessing Consequences* (the visual stimulus changes in relation to Form B), *Product Improvement* based on a toy monkey, *Unusual Uses of Tin Cans*, and *Just Suppose* with a different situation given in Form A (Torrance, 1990b). The original test included one more activity known as Unusual Questions, but it was later removed because it did not provide any significant information for its inclusion (Cramond et al., 2005).

As regards scoring criteria, the TTCT Verbal has suffered some modifications. At a first stage, its punctuation and response validity were performed considering four abilities: (a) *fluency*—the number of relevant responses according to the task requirements, (b) *originality*—the number of statistically infrequent responses, (c) *flexibility*—amount of categories used in the activity which represents different kinds of approach to the problem or task, and (d) *elaboration*—the ability to add ideas which can enrich the initial response (Torrance, 1966, 1974, 1990a). In time, the elaboration dimension was eliminated by the author due to its difficulty in obtaining acceptable evidence in the inter-judge reliability (Cramond et al., 2005).

TTCT VALIDITY

Although the Torrance tests is one of the most widely used instruments to assess creativity, the evidence about its accuracy and validity has been a current controversial issue among different researchers (Baer, 2011a,b; Kim, 2011a,b).

In general, most validity studies have focused on the TTCT Figural (Heausler & Thompson, 1988; Kim, 2006a,b; Kim et al., 2006; Krumm & Lemos, 2011; Krumm et al., 2014; Prieto Sánchez, López Martínez, Ferrándiz García & Bermejo García, 2003) being scarce those studies regarding the TTCT Verbal. Regarding the predictive validity, the monitoring studies conducted by Torrance have shown that the TTCT (Verbal and Figural) functions as an adequate predictor of creative work, creative motivation and creative quality (Torrance, 1972, 1981a,b, 2002). In this line, Howieson (1981), by means of TTCT verbal and figures tasks, confirmed the predictive validity. Plucker (1999) reanalyzed Torrance's data and found that the TTCT was a good indicator of creative achievements in adulthood. Wechsler (2006) also found, in a Brazilian population, an association between the scores achieved in the TTCT (Verbal and Figural) and the creative achievements obtained. Recently, Runco, Millar, Acar and Cramond (2010) reported

a 50-year follow-up to the Torrance longitudinal study. The authors found that the TTCT measures are moderately associated with personal achievement rather than with public achievement.

In relation to the construct validity of the TTCT, in both the Verbal and Figural tests, studies have focused on assessing whether the theoretical skills proposed by Torrance (e.g., fluency, flexibility, originality and elaboration) are actually found in the tests (e.g., Almeida, Prieto, Ferrando, Oliveira & Ferrándiz, 2008; Antunes & Almeida, 2007; Chase, 1985; Clapham, 1998; Cramond et al., 2005; Heausler & Thompson, 1988; Hocevar, 1979; Hocevar & Michael, 1979; Kim, 2006a,b; Krumm, Arán Filippetti, Lemos, Aranguren & Vargas Rubilar, 2013; Krumm & Lemos, 2007, 2010, 2011; Krumm et al., 2014; Oliveira et al., 2009; Treffinger, 1985). Some studies have shown that the TTCT Verbal could be assessing a single construct rather than multiple abilities (Dixon, 1979; Hocevar, 1979; Hocevar & Michael, 1979).

Other studies carried out with the Verbal and Figural TTCT have found more than one factor. For instance, Plass, Michael and Michael (1974), when working with both TTCT tests (Verbal and Figural) in an Exploratory Factor Analysis (EFA), concluded that the factors found described the tasks rather than the proposed skill. Likewise, by means of EFA, which included several instruments besides the two TTCT tests, Clapham (2004) found that the dimensions or abilities of the verbal test loaded in a separate factor and the abilities of the figural test in another factor. Furthermore, Almeida et al. (2008) analyzed the construct validity of the TTCT (Verbal and Figural) by means of EFA in three empirical studies carried out in Spain and Portugal, concluding that the factors found did not express the assessed cognitive processes but the specificity of each activity; each task proposed by the test formed a different factor, saturating within each factor/activity the dimensions: fluency, flexibility, and originality. In line with these results, Oliveira et al. (2009) using a Confirmatory Factor Analysis (CFA) found that the model that best fit the data was formed by latent variables representing each of the activities proposed by the TTCT. In this sense, the authors noted that the specificity of each task is more decisive to the performance than the features or dimensions that have often defined the divergent thinking and creativity, being the above mentioned specificity more important than the verbal or figurative content of the TTCT.

Studies about factor validity, specifically those related to the TTCT Verbal, Form B, are limited and almost nonexistent in the Hispanic context. By means of EFA, Krumm and Lemos (2007, 2010) found similar results to those of Almeida et al. (2008), that is, every activity defined a separate factor, loading on each of the former the dimensions fluency, flexibility and originality. This result was later replicated in a bigger and representative Argentinean sample.

THE PRESENT STUDY

This work aims at analyzing the factor validity of the TTCT Verbal, Form B by means of CFA, as up to now, just EFA has been used to study this specific test. Although EFA is a useful instrument to produce theoretical models and hypothesis (Gorsuch, 1983), its aim is not to test these models, but to conjecture possible factors that explain the covariance between variables. In turn, the CFA is more advantageous in order to make and test a model based on previous information or a fundamental theory (Jöreskog & Sörbom, 1989; Pedhazur & Schmelkin, 1991). In other words, it allows to formulate hypotheses

and test them based on the specified theoretical fit model. Therefore, as the EFA technique has been applied to analyze the structure of the TTCT Verbal in an exploratory way (see e.g., Krumm & Lemos, 2007), in the present study CFA was used to test the fit model based on the previous exploratory studies.

In this way, considering that the TTCT Verbal evaluates three skills, namely fluency, flexibility, and originality (Torrance, 1990a), and based on the results obtained by Krumm and Lemos (2007, 2010) in terms of EFA, two models were proposed. The first theoretical model was composed by six latent variables that represented each of the test activities. This model was called Creativity Construct integrated by six factors which correspond to each activity and its respective indicators. The second model consisted of the three latent variables that actually assess the verbal test—fluency, flexibility, and originality—and the corresponding indicators for each variable (e.g., to the fluency variable corresponds the fluency indicator of each activity). This model was named Creativity Construct integrated by three factors which correspond to each TTCT Verbal ability: Fluency, Originality, and Flexibility (See Figure 1).

Given the previous empirical evidence, the following hypotheses were proposed:

H1: Creativity measured by the Verbal TTCT is a multidimensional construct.

H2: Creativity measured by the Verbal TTCT consists of six factors corresponding to the activities of the test and their respective indicators.

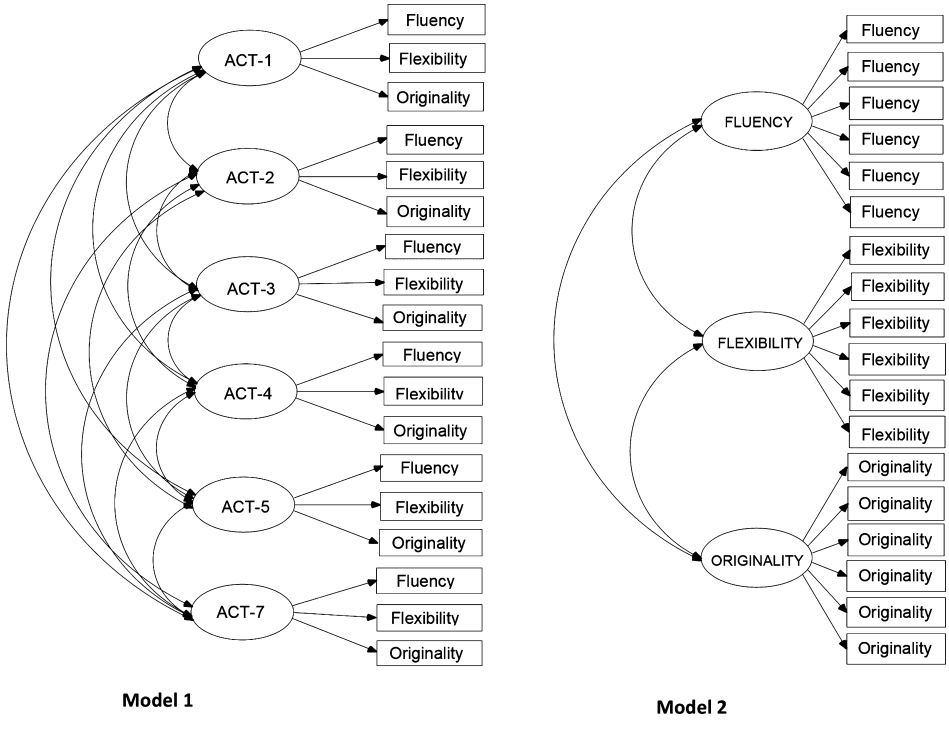


FIGURE 1. Hypothesized models of creativity construct measured by the TCTT Verbal. *Note.* ACT-1 = activity 1, ACT-2 = activity 2, ACT-3 = activity 3, ACT-4 = activity 4, ACT-5 = activity 5, ACT-6 = activity 6, ACT-7 = activity 7.

METHOD

PARTICIPANTS

A non-probability intentional sampling consisting of 432 youngsters between the ages of 15 and 26 ($M = 19.19$; $SD = 2.43$) was used, being 236 (54.6%) females and 196 (45.4%) males. The youngsters belonged to different middle-class institutions and universities from Entre Ríos, Argentina.

ETHICAL ASPECTS

In order to work with the subjects, permission to the institutions and universities' principals was requested and to whom the research characteristics were described. An informed consent was provided to the minors' parents for them to sign in, so as to allow their children to participate in the study. Parents expressed their consent with their signature on the form. It was made clear that the participation was voluntary and anonymous. Once parental informed consent was obtained, the TTCT Verbal test was administered collectively, during school time with teachers' prior consent. The implementation process was monitored by researchers in this study.

INSTRUMENT

As it was previously mentioned, the TTCT Verbal, Form B consists of six activities, in which the first three last 5 minutes each, the following two 10 minutes each, and the last one 5 minutes. The total test time is 40 minutes. The first three activities include a picture as stimulus to which examinees would respond. Particularly, in the first one, the examinee has to answer questions; those questions that can be answered just by looking back at the picture are not considered. The second task encourages the participant to presume causes which might be occurring in the picture. The third task proposes making guesses about possible consequences of situations based on the picture. In the fourth activity, the participant has to list ways to change a product so that it will be more interesting or unusual. Those answers, which do not involve uses related to the product, are considered irrelevant. In the fifth activity, the participant has to list different unusual uses of a particular product. Finally, in the sixth activity, the participant is asked to list facts and events that could happen in case an improbable situation comes true (Torrance, 1990a,b). Each proposed activity measures three abilities of creative thinking: fluency, flexibility, and originality.

As regards the scoring procedure, fluency represents the total number of relevant ideas depending on the requirements of the activity. In some cases, the answers involve compound phrases which contain one or more central ideas; in this case the answers must be evaluated as different ones. Originality scores depend on fluency scores and vary between 0 and 1; 1 point granted to those answers which are not in the list of "zero-score answers" already provided. Flexibility scores are obtained considering the categories given for every activity; in this case, the scores obtained depend on the quantity of categories the examinees used; redundancies are not scored (Torrance, 1990a).

DATA ANALYSIS

Confirmatory Factor Analysis was applied using the AMOS Graphics 16.0 program (Arbuckle, 2007) to test the different models of the creativity construct. The goodness of fit level of the models was estimated using the χ^2 test and the following fit indices: GFI

(Goodness of Fit Index), NFI (Bentler–Bonett Normed Fit Index), CFI (Comparative Fit Index), and Incremental Fit Index (IFI). Because the χ^2 obtained for both models was significant, the χ^2/df ratio was used. Usually, values for GFI, NFI, and CFI range between 0 and 1, with values greater than .90 demonstrating acceptable fit (Hu & Bentler, 1995, 1999). IFI values can be greater than 1.0. As regards the χ^2/df ratio, a ratio of 5 or less is considered adequate (Wheaton, Muthén, Alwin & Summers, 1977). In addition, the root mean square error of approximation (RMSEA) was calculated for each model to determine the degree of error. This index is considered acceptable when its value is lower than .08.

RESULTS

Table 1 shows a descriptive analysis of participant characteristics, according to their middle-level guidance and career at university level.

CONFIRMATORY FACTOR ANALYSIS

With the aim of analyzing the TTCT Verbal latent structure, CFA was used. Two models were assessed: (a) Model 1: Creativity Construct integrated by six factors which correspond to each activity and its respective indicators; (b) Model 2: Creativity Construct integrated by three factors which correspond to each TTCT Verbal ability: Fluency, Originality, and Flexibility (See Figure 1). The descriptive statistical data as well as the correlation matrix with the TTCT indicators are shown in Tables 2 and 3 respectively.

As shown in Table 4, Model 1(i.e., six-factor model) fits better than Model 2 as the GFI, the NFI, and the CFI indices show values greater than .90 and the RMSEA is lower than .08 (See Table 4; Figure 2).

After analyzing which model best explains the Creativity Construct (i.e., Model 1), different models were compared to determine whether the TTCT Verbal structure is better explained by a unidimensional construct or by a non-correlated factor construct. To test the one-factor model (unidimensional construct), the correlations among the latent variables were set to 1. As there was no significant improvement of fit of the unidimensional model over the six-factor model, the latter was retained as the best fit. Subsequently, a model of non-correlated factors was tested in which the correlations among the latent variables were set to 0. This model could not be identified. These data suggest that a correlated six-factor model best explains the Creativity Construct assessed from the TTCT Verbal (See Table 5).

DISCUSSION

Due to the scarcity of studies on the construct validity of the TTCT Verbal, Form B, this work aimed at testing two theoretical models by means of CFA in order to explain the creativity construct in Spanish-speaking youngsters. To this end, two theoretical models were proposed following the theory underlying the TTCT Verbal and the empirical evidence provided by previous studies conducted by Krumm and Lemos (2007, 2010). The first theoretical model based on the second-order EFA results was composed of each activity which, in turn, comprised the three abilities that evaluate fluency, flexibility, and originality. The second model consisted of the three latent variables which assess the TTCT Verbal test, namely fluency, flexibility, and originality, and the

TABLE 1. Education Level, Middle-level Guidance, Degree at University Level

Education level	***n***	**Percent**
Tertiary level, university level	273	63.2
Secondary school	159	36.8
Total	432	100
Middle-level guidance		
Natural science	24	15.1
Economics and management	20	12.6
Literature	2	1.3
Humanities	13	8.2
Health	9	5.7
Laboratory and production	5	3.1
Accounting and economy	9	5.7
Secondary school	3	1.9
Trade	15	9.4
Construction engineering	11	6.9
Without information	48	30.2
Total	159	100
Degrees at university level		
Initial and primary level training course	34	12.5
Bachelor's degree in Education	5	1.8
Bachelor's degree in Psychology	18	6.6
Bachelor's degree in Psychopedagogy	9	3.3
Physical education training course	20	7.3
English translator	13	4.7
Secretarial course	24	8.8
Accountant	29	10.6
Systems Analysts	22	8.1
Bachelor's degree in Nutrition	33	12.1
Nursing	12	4.4
Theology	5	1.8
Art teacher training course	10	3.7
Social communication	1	.4
Bachelor's degree in Information Systems	38	13.9
Total	273	100

corresponding indicators for each variable (e.g., to the fluency variable corresponds the fluency indicator of each activity).

By means of CFA, it could be observed that out of the two compared models, Model 1: Creativity Construct integrated by six factors that correspond to each activity and its respective indicators fitted best to data. Findings from this study note that each test activity would represent a separate but correlated factor and each factor would group the three abilities proposed by Torrance for the TTCT Verbal assessment. Apparently, each

TABLE 2. Descriptive Statistics for Creativity Indicators

Activity	Dimension	*n*	Minimum	Maximum	Mean	*SD*
ACT-1	Fluency	432	0	27	8.72	4.48
	Flexibility	432	0	12	5.30	2.25
	Originality	432	0	24	5.06	3.57
ACT-2	Fluency	432	0	21	5.91	3.49
	Flexibility	432	0	9	3.29	1.69
	Originality	432	0	18	4.71	3.10
ACT-3	Fluency	432	0	24	6.40	4.27
	Flexibility	432	0	10	3.16	1.80
	Originality	432	0	22	5.34	3.88
ACT-4	Fluency	432	0	32	12.57	5.68
	Flexibility	432	0	17	6.87	2.53
	Originality	432	0	24	7.31	4.48
ACT-5	Fluency	432	0	41	13.77	8.15
	Flexibility	432	0	17	7.56	3.36
	Originality	432	0	33	8.80	6.60
ACT-7	Fluency	432	0	20	6.81	3.90
	Flexibility	432	0	12	3.50	2.47
	Originality	432	0	16	4.87	3.33
Total	Fluency	432	10	128	54.19	22.93
	Flexibility	432	7	57	29.68	9.57
	Originality	432	6	98	36.08	17.45

indicator does not reflect in the same way the skills proposed by the TTCT as outlined in Model 2. In this sense, the instrument would seem to measure the dimensions proposed by Torrance (1990a,b), though these abilities would not form a latent factor by themselves. Seemingly, each activity would evaluate the dimensions of the TTCT Verbal (e.g., fluency, flexibility, and originality) with differences according to the demand and the specificity of each task. As every activity suggests a different task (i.e., Asking, Guessing Causes, Guessing Consequences, Product Improvement, Unusual use of tins, Just Suppose), it might be hypothesized that each activity would demand specific cognitive processes. Thus, the first three activities encourage the participant to raise issues, imagine reasons, and possible consequences. This type of activities promotes the curiosity and the formulation of hypothesis (Prieto Sánchez et al., 2003). The fourth activity suggests improving a product, particularly a toy, so as to create the expectation that the examinee would enjoy the activity; thus, the former is stimulated to propose as much improvements as possible. Activity five aims at finding new uses to tins. Therefore, as Prieto Sánchez et al. (2003) claim, the task would offer a proper measure of the subject's flexibility. The last activity expects the participant to suggest consequences from an improbable situation, leading once again to the formulation of hypothesis (Torrance, 1990a). These data suggest that it would be possible to use each activity of the TTCT Verbal separately given that they offer a measure for the three traits (e.g., fluency, flexibility, and

TABLE 3. Intercorrelations Between Creativity Indicators

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. FLU1	–																	
2. FLE1	.820**	–																
3. OR1	.848**	.654**	–															
4. FLU2	.472**	.437**	.371**	–														
5. FLE2	.421**	.419**	.295**	.799**	–													
6. OR2	.404**	.383**	.329**	.895**	.714**	–												
7. FLU3	.362**	.344**	.220**	.577**	.562**	.503**	–											
8. FLE3	.323**	.317**	.193**	.494**	.532**	.422**	.777**	–										
9. OR3	.351**	.324**	.236**	.536**	.520**	.521**	.953**	.710**	–									
10. FLU4	.340**	.363**	.191**	.420**	.413**	.368**	.451**	.382**	.433**	–								
11. FLE4	.299**	.336**	.173**	.345**	.344**	.302**	.305**	.349**	.276**	.712**	–							
12. OR4	.294**	.302**	.206**	.360**	.363**	.350**	.425**	.318**	.449**	.825**	.503**	–						
13. FLU5	.362**	.347**	.232**	.375**	.385**	.354**	.460**	.371**	.453**	.541**	.377**	.487**	–					
14. FLE5	.298**	.327**	.180**	.367**	.369**	.352**	.388**	.313**	.373**	.473**	.350**	.416**	.845**	–				
15. OR5	.367**	.346**	.300**	.309**	.311**	.315**	.409**	.305**	.427**	.485**	.308**	.533**	.862**	.778**	–			
16. FLU7	.397**	.355**	.293**	.427**	.396**	.392**	.423**	.347**	.401**	.466**	.335**	.421**	.461**	.433**	.433**	–		
17. FLE7	.327**	.299**	.221**	.392**	.372**	.342**	.349**	.340**	.323**	.381**	.301**	.300**	.335**	.337**	.289**	.815**	–	
18. OR7	.348**	.321**	.265**	.401**	.389**	.375**	.386**	.288**	.384**	.417**	.262**	.403**	.403**	.360**	.403**	.900**	.723**	–

Note. FLU, Fluency; FLE, Flexibility; OR, Originality.

**$p < .01$

TABLE 4. Fit Indices of Models

Models	Chi-squared test			Fit indices			
	χ^2	*df*	χ^2/df	GFI	NFI	CFI	RMSEA
Model 1 (six-factor model)	**414.48*****	**116**	**3.57**	**.90**	**.95**	**.96**	**.077**
Model 2 (three-factor model)	4492.02***	132	34.03	.51	.44	.44	.277

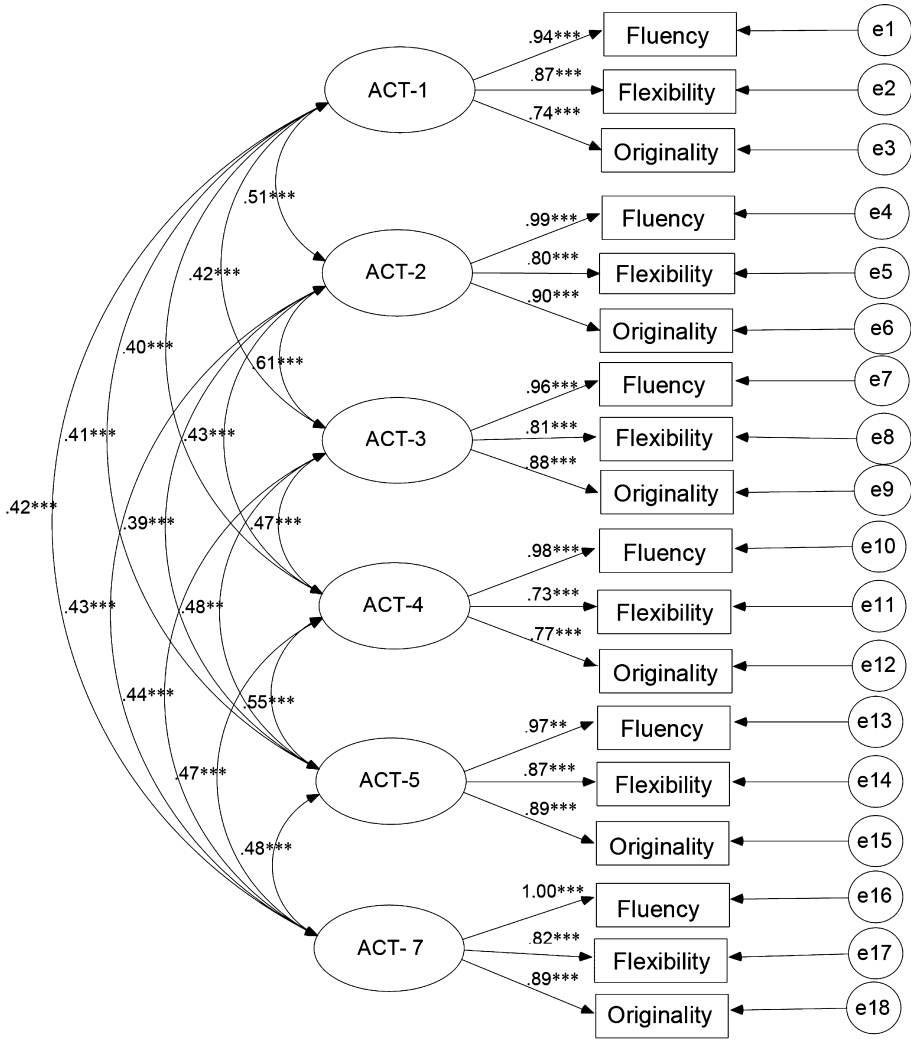
Note. The "best fit model" values are presented in bold type.

***$p = .001$

originality); however, it would be also necessary to use the six activities to obtain an integral vision of every process.

To further analyze if the creativity construct would be better explained by means of a unidimensional structure, Model 1 was compared with a one-factor model. Our findings do not support the existence of a general factor and contradict the results of previous studies that suggest a TTCT unidimensional structure (Hocevar, 1979; Hocevar & Michael, 1979). Most arguments that support the unidimensional nature are based on the high correlations found among the assessed abilities: fluency, originality, and flexibility (Abernathy Tannehill, 1998; Chase, 1985; Heausler & Thompson, 1988) indicating that creativity could be evaluated by means of a single punctuation. Accordingly, it is important to highlight that this study has also found high correlations among the different abilities assessed in each activity. In all cases, correlations between the originality and the fluency abilities are higher than those found among originality and flexibility or flexibility and fluency. Besides, for every activity, the fluency and originality scores were higher than those of flexibility. Apparently, and according to the sample analyzed, people with higher imagination or ability to generate original ideas would produce larger number of ideas. Hence, the amount of answers given in the TTCT Verbal would seem to rest mainly on the ability to be original than on the flexibility or ability to make mental leaps.

Gaining insight into the dimensional nature of the creativity construct involves clinical and educational implications. Firstly, provided that every activity represents a separated factor, there is a glimpse of the possibility of using just one activity as measure of screening in order to value the three dimensions of the TTCT Verbal; while at the same time, and due to the adjusted model, it becomes essential to use every activity of the TTCT Verbal so as to obtain a more complete and precise assessment of the whole creative process. From these results, future research should examine possible associations between the performance in each TTCT Verbal activity and other cognitive processes like executive functions—namely working memory, inhibition, and flexibility—and intelligence, to achieve a greater understanding of the processes that occur during the performance of every task. As regards the clinical area, many current investigations have noted the importance of creativity in everyday lives (Richards, 2009; Schmid, 2005) and the positive impact of using this resource in working with psychiatric patients or people going through a life crisis (Rogers, 1993, 2011). In addition, clinical interventions undertaken to stimulate creativity in children, youth and older adults are aimed at promoting personal resources that enable the individual: (a) to confront the paradoxes and false dichotomies presented in everyday life; (b) to promote the integration and synthesis of affective



*** $p < .001$

FIGURE 2. Factor structure of the TTCT-Verbal.

and cognitive processes; (c) to favor a holistic view of the person (Richards, 2007). Being able to assess creativity in a valid and reliable way will enable to analyze what clinical interventions can be more beneficial to encourage and promote creativity, and how the latter is involved in a healthy individual development. On the other hand, the multi-dimensional nature of the construct expresses the importance to promote, in the school setting, the development of the different sub-processes associated with the creative potential, namely (a) the ability to generate relevant ideas (i.e., fluency), (b) the ability to innovate answers (i.e., originality) and (c) the ability to alternate between different ideas

TABLE 5. Fit Indices for the Six-factor CFA Model and Reduced Models

Models	χ^2	*df*	χ^2/df	CFI	IFI	AIC	RMSEA	$\Delta\chi^{2a}$	Δdf	*p*-Value
1. Six-factor model	**414.48**	**116**	**3.57**	**.96**	**.96**	**524.48**	**.07**			
2. One-factor model	953.32	131	7.27	.90	.90	1033.32	.12	538.84	15	<.001

Note. Values higher than .95 for CFI and IFI, lower values of AIC, and RMSEA below .08 indicate god fit.

χ^2 difference tests indicated that the reduced model provided significantly worse fit than the six-factor model.

The non-correlated-factor model could not be identified. Best fit model is in bold.

[a]Indicates comparisons are with the six-factor model.

(i.e., flexibility); in this way, motivating an analysis of the reality from diverse perspectives (Krumm et al., 2013). In this regard, it must be mentioned that in recent years there has been an increase in the number of educational programs designed to promote creativity. Furthermore, many of these programs are aimed at analyzing the effect of interventions that promote creativity on students' academic performance, self-concept, play, and prosocial attitudes, among others (Franco Justo, 2006; Garaigordobil, 1999; Garaigordobil & Pérez, 2004; Russ, 1998). Hence, as well as in the clinical and educational field, it is necessary to use instruments that could demonstrate validity and reliability characteristics.

In conclusion, this work's findings contribute to clarify the creativity construct operationalized from the TTCT Verbal Form B, providing some psychometric evidence supporting previous research findings conducted by means of EFA (Krumm & Lemos, 2007, 2010). The understanding of the construct allows identifying the different skills of creativity as an important psychological resource. In addition, it offers the possibility of evaluating the efficiency of intervention programs aimed at promoting creativity. Thus, creativity would be stimulated in a comprehensive manner, attending to the different sub-processes that clearly ease creative output.

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