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CONTEXTUAL VERBAL CREATIVITY TEST (CVCT): A NEW TOOL FOR UNDERSTANDING VERBAL CREATIVITY AMONG STUDENTS OF UNIVERSITY X

Renata V.Gunjaya[1], Cecilia Ang[2], Sania Sania[3], P.Tommy Y. S. Suyasa[4]
1,2,3,4, Fakultas Psikologi, Universitas Tarumanegara, Jakarta, Indonesia

Email : tommys@fpsi.untar.ac.id

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Abstract

Creativity is a human intellectual capacity to generate novel and useful ideas in everyday life. Creativity encompasses several domains, including verbal, figural, and kinesthetic creativity. Among these domains, verbal creativity is the type most frequently utilized in daily activities. Although several verbal creativity assessment tools have been developed in Indonesia, an instrument that specifically measures contextual verbal creativity has not yet been available. Therefore, this study aimed to develop the Contextual Verbal Creativity Test (CVCT) and to examine its psychometric properties as a newly designed instrument for assessing verbal creativity with a contextual nature, which can be administered within 10 minutes. During the development process, the researchers constructed a test comprising 20 items, which were administered to 100 undergraduate students from University X. These twenty indicators were evaluated based on four dimensions: fluency, flexibility, originality, and elaboration. Following data collection, reliability and validity analyses were conducted using internal consistency reliability, test–retest reliability, construct validity, and criterion validity. The findings of this research present four psychometric outcomes: (a) the internal consistency reliability; (b) the descriptive results of the measurements; (c) the criterion validity of the CVCT in relation to academic achievement; and (d) the construct validity of the CVCT measurements based on gender.

Keywords: measurement development, test, verbal creativity, contextual, quality education

Abstrak

Kreativitas merupakan kemampuan intelektual manusia untuk menghasilkan ide baru yang berguna dalam kehidupan sehari-hari. Kreativitas terdiri atas beberapa jenis, yakni kreativitas verbal, figural, dan kinestetik. Diantara beberapa jenis kreativitas tersebut, kreativitas verbal merupakan jenis kreativitas yang banyak digunakan dalam kehidupan sehari-hari. Meskipun beberapa alat ukur kreativitas verbal telah dikembangkan di Indonesia, instrumen yang secara khusus mengukur kreativitas verbal kontekstual belum tersedia. Oleh karena itu, penelitian dilakukan untuk mengembangkan Contextual Verbal Creativity Test (CVCT) dan memperoleh informasi psikometrisnya sebagai alat ukur kreativitas verbal baru yang bersifat kontekstual dan dapat dioperasikan dalam waktu 10 menit. Dalam proses pengembangannya, peneliti menyusun tes yang terdiri dari 20 butir kepada 100 mahasiswa dari Universitas X. Kedua puluh indikator ini diukur berdasarkan empat komponen yang meliputi fluency, flexibility, originality, dan elaboration. Setelah proses pengambilan data, peneliti akan melakukan uji reliabilitas dan validitas menggunakan internal consistency reliability, test-retest reliability, construct validity, dan criterion validity. Temuan dari penelitian meliputi empat informasi psikometris, yaitu: (a) reliabilitas konsistensi internal; (b) gambaran hasil pengukuran; (c) validitas kriteria CVCT terhadap prestasi akademik; dan (d) validitas konstruk pengukuran CVCT berdasarkan jenis kelamin.

Kata Kunci: pengembangan alat ukur, tes, kreativitas verbal, kontekstual, kualitas pendidikan

1. Introduction

Creativity is the capacity to generate or cultivate novel products, works, theories, procedures, or thoughts (American Psychology Association, 2023). Creativity refers to the ability to behave or produce a new and adaptive response which relevant and beneficial in everyday life (Peterson & Seligman, 2004). Additionally, a different

interpretation of creativity was formulated from a dynamic standpoint (Walia, 2019). Creativity is conceptualized as an activity responsive to the surrounding environment, instigating the development of productive actions that may deviate from societal conventions and norms, which subsequently generates a novel work. Drawing from these definitions, it can be concluded that the concept of creativity encompasses novelty, usefulness and relevance to everyday life, and reflects a productive activity that often diverges from common or conventional ways of thinking in society.

Building upon this general understanding of creativity, one specific form that plays a significant role in daily life is verbal creativity, as the capacity for flexible and innovative thinking, assessed through the manipulation of words to enhance divergent thinking abilities (Fink et al., 2020). As one of the most common forms of creativity utilized in various aspects of life, verbal creativity holds particular significance since verbal ability is crucial in many sectors, such as art, education, advertising, and business (Efrati et al., 2022; Ehrenreich et al., 2021; Fernández-Monroy et al., 2018; Kartana et al., 2018; Kozbelt, 2020; Lin, 2018; Osowiecka & Kolanczyk, 2018; Suyasa et al., 2025). First, in the arts sector, verbal abilities are utilized in the composition of songs and poems. Second, verbal skills play a crucial role in the teaching and learning process, as they enable teachers to deliver information effectively while helping students articulate their understanding and develop their capacity to produce scholarly works. Third, in the advertising industry, verbal abilities are utilized to produce consumer-attracting content. Fourth, in the business sector, verbal abilities are used to maintain effective cllaboration and foster long-term relationships with business partner.

Furthermore, verbal creativity is correlated with academic performance, such as Grade Point Average (GPA) (Scherbakova et al., 2024; Suyasa et al., 2025). Individuals who demonstrate greater fluency, flexibility, elaboration, and originality often perform better in academic tasks. These abilities allow them to demonstrate a high level of work effectivity, adaptability to various viewpoints, a deep level of understanding, and originality in completing academic assignments. Consequently, such qualities contribute to improved academic performance and positively influence students' GPA.

Given the significant role of verbal creativity in practical context, verbal creativity becomes an interesting topic for further exploration. Several instruments have been developed for this purpose, including: (a) the Arabic version of the Torrance Test of Creative Thinking-Verbal (Said-Metwaly et al., 2021); Tes Kreativitas Verbal developed by Munandar (1977); and (c) Alat Ukur Kreativitas Verbal "C" (Kartana et al., 2018). Firstly, the adapted version of the Torrance Test of Creative Thinking (TTCT) (Said-Metwaly et al., 2021) has a duration of 40 minutes and consists of six types of activities: (a) questioning activity involving generating questions about an image; (b) guessing the causes of an event; (c) guessing the effects of an event; (d) creating lists to develop products; (e) seeking new functions for products; (f) specifying possible outcomes for unlikely situations.

Secondly, Tes Kreativitas Verbal constructed by Munandar (1977) consists of six subtests that ask participants to: (a) name words that begin with a few pre-set alphabets (e.g., KA, A,); (b) rearrange letters to create new words; (c) make a sentence consisting of three words from given initials; (d) name an object based on the characteristics given; (e) name the use of an object given; and (f) state the outcome of a certain scenario. Each subtest contains four items and requires a total of 60 minutes to complete. Thirdly, Alat Ukur Kreativitas Verbal "C" constructed by Kartana et al. (2018) consists of 50 words that begin with the letter "C" as the items and requires a total of 10 minutes to complete. The participants are instructed to construct sentences using only words that start with the letter C.

Although the three measurement tools have been developed to assess verbal creativity, these instruments have not yet integrated relevant situational conditions or still lack contextual elements. Albeit participants use as many words as the object requires, their answer will not be contextual. Contextual is defined as the connectedness or connection of a concept in everyday life (Dewey, 1882, as cited in Kirby, 2005). Thus, although the existing measurement tools provide stimuli to prompt responses, these stimuli do not use adjectives as the basis for participants' answers, which made it tend to be less relevant or lack a direct connection to participants' experiences. Contextualized assessment tools, in contrast, yield results that tend to be more accurate in reflecting the experiences and realities encountered by subjects, thereby enhancing the usefulness and applicability of measurement outcomes in daily activities (Ambuehl & Inauen, 2022; Oppong et al., 2023; Schlotzhauer et al., 2025). Ideally, creativity can assist people in producing concepts or responses to problems encountered in everyday life (Cropley, 2020; Harms et al., 2017). It also helps people to view an issue from a different angle and come up with a solution (Weston, 2006). For example, individuals who wish to feel cool despite the extreme heat will use contextual reasoning abilities to operate as a response to existing concerns. Therefore, a contextual verbal creativity instrument was developed in this study to address the limitations of existing measures by incorporating adjective-based stimuli that better reflect participants' real-life experiences.

In contrast to established tools for assessing verbal creativity, the CVCT measurement instrument introduces two innovations: it incorporates a contextual dimension and can be completed within ten minutes. The CVCT consists of twenty items that assess four dimensions of creativity. The elements of creativity are originality, flexibility, fluency, and elaboration (Torrance in Said-Metwaly et al., 2021). The number of ideas that people

possess is related to the first factor, fluency. The second factor, flexibility, is associated with the quantity of a variety of ideas owned by individuals. The third element, originality, refers to a person's capacity to create fresh and creative goods or solutions. The fourth element, elaboration, refers to a person's capacity to add extra details that are pertinent to an idea. Additionally, this study aims to establish comprehensive psychometric information regarding the CVCT by examining: (a) the reliability of internal consistency; (b) the presentation of measurement results (mean and standard deviation); (c) criterion validity; and (d) construct validity, including discriminant evidence.

2. Research Method

The Research Method section will describe the number and characteristics of the participants, the design of the Contextual Verbal Creativity Test (CVCT) instrument, the data collection procedure, and the data analysis methods.

Participants

The research study involved 100 participants with the following characteristics: (a) a mean age of 20.37 years (SD = 1.618); (b) the majority (80%) were female; (c) all were undergraduate students at University X; and (d) they had no prior knowledge of the psychological construct of verbal creativity.

Instrument and Research Design

Measurement. The Contextual Verbal Creativity Test (CVCT) instrument consists of twenty items associated with adjectives. The twenty items are presented in the following Table 1.

Table 1. Contextual Verbal Creativity Test (CVCT)'s List Items

No.	Question
1.	*Panas*
2.	X
3.	X
4.	X
5.	X
6.	X
7.	X
8.	X
9.	X
10.	X
11.	X
12	X
13.	X
14.	X
15.	X
16.	X
17.	X
18.	X
19.	X
20.	*Lembut*

These twenty items are presented in the form of adjectives as prompts, accompanied by the following instructions: (1) The tester will read aloud 20 words (adjectives); (2) The testee writes their responses in the designated answer column; (3) In the answer column, the testee is instructed to write words they perceive as related to / associated with / or closely connected to the adjectives read by the tester; (4) The testee is given 30 seconds to respond to each word; (5) The testee may only begin writing when the tester gives the signal "Start" and must stop writing immediately when the tester gives the signal "Stop." These items are assessed based on four aspects: fluency, flexibility, originality, and elaboration.

In the first aspect (Table 2), fluency, the score is measured based on the quantity of responses provided by the testee. A high fluency score is indicated when the testee is able to generate a large number of words related to the test item. Conversely, a low fluency score is indicated when the testee provides only a limited number of related words.

Table 2. Example of Responses with High and Low Fluency Scores for the Item "*Panas*"

Item	Example of a Response with a High Fluency Score	Example of a Response with a Low Fluency Score
Panas	*Matahari, Terik, Teh, Kopi, Payung, Laptop, Termos, Api, Keringat, Gosong*	*Matahari, Terik, Teh*
	Total Score : 10	Total Score : 3

In the second aspect (Table 3), flexibility, the score is measured based on the variation in the testee's responses. A high flexibility score is indicated when the testee is able to express a diverse range of concepts associated with the test item. Conversely, a low flexibility score is indicated when the testee repeatedly uses similar or identical concepts in response to the test item.

Table 3. Example of Responses with High and Low Flexibility Scores for the Item "*Panas*"

Item	Example of a Response with a High Flexibility Score	Example of a Response with a Low Flexibility Score
Panas	*Matahari, Teh, Kopi, Laptop, Termos*	*Matahari, Matahari, Teh, Teh, Laptop, Laptop*
	Total Score : 5	Total Score : 3

In the third aspect (Table 4), originality, the score is measured based on the uniqueness of the testee's responses. A high originality score is indicated when the testee provides words associated with the test item that are unusual or rarely mentioned by other testees. Conversely, a low originality score is given when the testee provides common or frequently mentioned words associated with the test item.

Table 4. Example of Responses with High and Low Originality Scores for the Item "*Panas*"

Item	Example of a Response with a High Originality Score	Example of a Response with a Low Originality Score
Panas	UV Whitening	*Matahari*
	Total Score : 4 (the answer has less than 1% similarity with other testees' responses)	Total Score : 1 (the answer has more than 10% similarity with other testees' responses)

In the fourth aspect (Table 5), elaboration, the score is measured based on the inclusion of additional information relevant to the responses provided by the testee. A high elaboration score is indicated when the testee offers explanations or details related to the concepts they mentioned. Conversely, a low elaboration score is given when the testee provides only brief or single-word responses without further elaboration.

Table 5. Example of Responses with High and Low Elaboration Scores for the Item "*Panas*"

Item	Example of a Response with a High Elaboration Score	Example of a Response with a Low Elaboration Score
Panas	*Matahari yang bersinar cerah di pagi hari*	*Matahari*
	Total Score : 7	Total Score : 1

Data Collection Procedure

Data were collected using a non-probability sampling technique (convenience sampling) after obtaining ethical clearance with approval number 158-TIM/KEPTM/1577/FPsi-UNTAR/V/2023. During the data collection process, the paper-and-pencil method was employed in a classroom setting. Participants used their own writing instruments, while the answer sheets were provided by the researchers. Participants were instructed to follow a structured set of instructions: (i) completed personal information (name, age, and gender); (ii) read the test instructions carefully; (iii) completed a set of practice items; (iv) provided contextually relevant responses to each test item; (v) were given 30 seconds to respond to each of the 20 adjective prompts; and (vi) proceeded to the next item only after the 30-second time limit had elapsed.

Data Analysis Technique

The analysis was conducted to obtain psychometric information on the Contextual Verbal Creativity Test (CVCT) instrument, including internal consistency reliability, construct validity, and criterion validity. Internal consistency reliability was assessed using Cronbach's Alpha. Criterion validity—examining the relationship between verbal creativity and academic achievement—was analyzed using Spearman's correlation test. Construct validity—assessing differences in verbal creativity based on gender—was tested using the Mann-Whitney U test, as the data were not normally distributed.

3. Result and Discussion

Based on the four intended objectives, data processing was conducted to obtain the following information: (a) descriptive statistics (mean and standard deviation); (b) internal consistency reliability; (c) criterion validity with respect to academic achievement; and (d) construct validity (discriminant evidence). The results corresponding to these four aspects are presented in the following paragraphs.

Descriptive Analysis

Descriptive analysis was conducted to provide a comprehensive overview of the mean and standard deviation for each of the four aspects of verbal creativity. The descriptive analysis results are presented in Table 6 below.

Table 6. Descriptive Analysis of the CVCT Measurement Tool

No.	Variable	Mean	SD	Skewness	Kurtosis	Normality Status
1.	Fluency	7,96	1,865	0,625	-1,535	Normal
2.	Flexibility	6,63	1,470	1,016	-1,058	Normal
3.	Originality	12,45	3,736	2,166	-0,283	Non-normal
4.	Elaboration	8,89	2,593	4,729	6,821	Non-normal

Based on the descriptive analysis, an overview of the four aspects of creativity is presented in Table 6, as follows: (a) Fluency, M = 7.96 words, SD = 1.865 (indicating that individuals were able to generate an average of 7.96 ± 1.865 words within 30 seconds); (b) Flexibility, M = 6.63 words, SD = 1.470 (indicating that individuals produced an average of 6.63 ± 1.470 different categories of words in 30 seconds); (c) Originality, M = 12.45, SD = 3.736 (with an average fluency of 7.96 words, the originality score of 12.45 suggests a uniqueness level of approximately 1.56 per word—approaching a score of 2 on a 1–4 scale—which may be considered moderately unique); and (d) Elaboration, M = 8.89, SD = 2.593 (with an average fluency of 7.96, the elaboration score of 8.89 indicates that at least one response [8.89 – 7.96] was further elaborated).

Internal Consistency Reliability

Based on the analysis using Cronbach's Alpha method, the internal consistency reliability of the Contextual Verbal Creativity Test (CVCT) measurement tool was found to be satisfactory ($\alpha > 0.80$) (George & Mallery, 2003). This indicates that the twenty items in the CVCT demonstrate consistent measurement across the four aspects: fluency, flexibility, originality, and elaboration. Detailed coefficients of internal consistency reliability for each aspect are presented in Table 7 below.

Table 7. Internal Consistency Reliability of the CVCT Measurement Tool

No.	Aspect	Cronbach's Alpha Standardized
1.	Fluency	0,934
2.	Flexibility	0,898
3.	Originality	0,923
4.	Elaboration	0,951

The twenty items in the CVCT measurement tool consistently yielded high levels of fluency, flexibility, originality, and elaboration. Each aspect demonstrated an internal consistency reliability coefficient greater than 0.80, with elaboration showing the highest reliability, reaching a coefficient of 0.951.

Criterion Validity

Through a criterion validity study, the researchers evaluated the validity of the Contextual Verbal Creativity Test (CVCT) by examining its ability to predict a specific criterion. A correlation analysis was conducted between participants' academic achievement—measured by GPA (Grade Point Average)—as the criterion, and the four aspects of verbal creativity (fluency, flexibility, originality, and elaboration). The results of the criterion validity analysis are presented in Table 8 below.

Table 8. Criterion Validity of the CVCT Measurement Tool

No.	Variable	M	SD	r_s	*p*
1.	Fluency	7,96	1,865	0,26	0,009
2.	Flexibility	6,63	1,471	0,29	0,004
3.	Originality	12,45	3,737	0,27	0,006
4.	Elaboration	8,89	2,593	0,32	0,001

The data analysis using Spearman's correlation test at the 0.05 alpha level revealed significant relationships between CVCT scores and academic achievement (M = 3.16, SD = 0.036) across all four aspects of verbal creativity: fluency (M = 7.96, SD = 1.865), $r_s(98) = 0.26$, $p < 0.01$; flexibility (M = 6.63, SD = 1.471), $r_s(98) = 0.29$, $p < 0.01$; originality (M = 12.45, SD = 2.737), $r_s(98) = 0.27$, $p < 0.01$; and elaboration (M = 8.89, SD = 2.593), $r_s(98) = 0.32$, $p < 0.01$. These results indicate that the CVCT demonstrates criterion validity in relation to academic performance, meaning it has the capacity to predict participants' academic achievement.

Construct Validity

A construct validation study was conducted to assess how well the Contextual Verbal Creativity Test (CVCT) measurement tool represents the theoretical framework or construct of verbal creativity. According to de Cassia Nakano, Oliveira, and Zaia (2021), there are no significant differences in creativity levels between males and females. In this study, we employed the Mann-Whitney U test to compare the levels of verbal creativity between male (n = 20) and female (n = 80) participants. The results of this study align with the findings of de Cassia Nakano et al. (2021), indicating no significant differences in verbal creativity between genders. Therefore, the CVCT can be considered to have construct validity (discriminant evidence) based on gender. The test results are presented in Table 9 below.

Table 9. Construct Validity of the CVCT Measurement Tool

No.	Aspect	Male (*n* = 20)		Female (*n* = 80)		*U*	*p*
		MR	SR	MR	SR		
1.	Fluency	45,55	911	51,74	41,39	701	0,394
2.	Flexibility	44,33	887	52,04	4163	676	0,287
3.	Originality	45,95	919	51,64	4131	709	0,433
4.	Elaboration	44,73	895	51,94	41,56	685	0,320

Notes. MR = Average Rank; SR = Sum of Ranks

At a significance level of 0.05, no differences were found in the levels of verbal creativity between males and females across the four aspects: fluency [U = 701, $p > 0.05$], flexibility [U = 676, $p > 0.05$], originality [U = 709, $p > 0.05$], and elaboration [U = 685, $p > 0.05$]. Thus, there are no gender-based differences in any aspect of verbal creativity. These findings indicate that the CVCT measurement tool demonstrates discriminant evidence in construct validity.

4. Discussion

The Contextual Verbal Creativity Test (CVCT) is a verbal test consisting of 20 items designed to measure verbal creative ability as a skill that supports daily life. Unlike previous creativity tests, the CVCT is situational and contextual. The term situational refers to something that is about, related to, or appropriate to a situation (Merriam-Webster, n.d.) and to something that is suitable or relevant to a specific situation (Kamus Besar Bahasa Indonesia, n.d.). The inclusion of situational and contextual aspects allows the elaboration component of creativity to be more clearly represented and functional. The situational aspect refers to conditions that occur or are relevant to the present time, while the stimuli used in this test—adjectives—are linked to the current temporal context. For example, in a situational sense, a student feels "hot" when reprimanded by a lecturer, whereas contextually, *"Panas"* refers to the student's emotional reaction of being upset when corrected.

The Contextual Verbal Creativity Test (CVCT) demonstrated good internal consistency reliability. Based on the reliability analysis using the Cronbach's Alpha method, the obtained coefficient was $\alpha = 0.86$. This value indicates that the instrument's internal consistency reliability is considered good, as Pallant (2020) stated that an instrument can be regarded as reliable if it has a Cronbach's Alpha value of at least 0.80. Thus, the CVCT shows an adequate and trustworthy internal consistency in measuring contextual verbal creativity. For future research, to further support internal reliability, it is recommended to test the measurement model using confirmatory factor analysis (CFA) to examine and confirm the proposed factor structure.

For practical purposes, the Contextual Verbal Creativity Test (CVCT) is equipped with percentile norms. However, the development of these norms was limited by the number of participants, which was only 100. This sample size is considered insufficient to serve as a general reference; therefore, future research should expand the study by involving a larger number of participants, ideally exceeding 1,000 (Gregory, 2015). With a larger sample size, the score distribution across the four aspects is expected to approach normality. In the present study, the results of the CVCT measurement showed that two aspects—fluency and flexibility—were normally distributed, whereas the other two aspects were not.

The Contextual Verbal Creativity Test (CVCT) is also equipped with psychometric properties related to criterion validity and construct validity. In terms of criterion validity, this test can predict participants' academic performance. Previous research has shown a strong relationship between verbal creativity and academic achievement, indicating that individuals with higher verbal creativity tend to achieve better academic outcomes. This can be understood as academic success across various subjects—such as Civics, Religion, English, and Family Psychology, etc—often requires verbal processes (Komarudin, 2018). When individuals or students possess fluency, flexibility, elaboration, and originality, they tend to be more productive, adaptive to diverse perspectives, comprehensive, and unique in producing academic work, which ultimately contributes to achieving a higher GPA. To strengthen the criterion validity of the CVCT in future research, two relevant aspects are suggested: concurrent validity and predictive validity. Concurrent validity can be examined through correlations between CVCT scores and other verbal creativity tests with strong psychometric evidence, while predictive validity can be assessed through the ability of CVCT scores to predict individuals' performance in tasks requiring verbal and contextual creative thinking.

In terms of construct validity, this study employed the concept of discriminant evidence. According to de Cassia Nakano et al. (2021), the relationship between gender and creativity is inconsistent, meaning that in some cases males appear more creative, while in others females do, depending on the research methods and participant characteristics. This inconsistency indicates that gender and creativity are distinct or discriminant constructs. Consistent with this notion, the results of the CVCT showed no significant differences in the level of verbal creativity between male and female participants. These findings demonstrate that both genders exhibit comparable levels of creativity, aligning with the theoretical construct suggesting that there is no consistent evidence of gender differences in verbal creativity. Furthermore, from a biological perspective, there is no consistent evidence indicating structural or volumetric differences in the brain's language center (Broca's area) based on sex. The Broca's area, located in the cerebral hemisphere, is known to function as a center for both language production and comprehension (Binkofski & Buccino, 2004).

To further strengthen the construct validity of the CVCT beyond the evidence of discriminant validity discussed above, additional forms of construct validation can be considered. According to Harasty, Double, Halliday, Kril, and McRitchie (1997), proportionally, the Wernicke's area and Broca's area in females are larger than in males, which may explain why females tend to have better language abilities. However, Amunts et al. (1999) found no structural or volumetric differences in area 45 (Broca's area), suggesting that language abilities between males and females are essentially equivalent. Based on these findings, future studies are encouraged to examine other forms of construct validity, such as convergent validity. Convergent evidence refers to the extent to which a measure correlates positively with other instruments that theoretically assess similar constructs. Therefore, the CVCT could be compared or correlated with other established creativity assessments, such as the Torrance Test of Creative Thinking (TTCT), Munandar Verbal Creativity Test, or Verbal Creativity Test "C". Through these comparisons, researchers can obtain convergent evidence that further supports and enhances the construct validity of the CVCT.

5. Conclusion

Based on this study, it can be concluded that the CVCT instrument, which consists of 20 adjective items measuring the four aspects of verbal creativity (fluency, flexibility, originality, and elaboration), demonstrates adequate psychometric properties. The psychometric information obtained includes: (a) descriptive statistics (mean and standard deviation) of the CVCT scores from 100 participants; (b) good internal consistency reliability; (d) criterion validity of the CVCT instrument with academic achievement index as the criterion; and (e) construct validity, with gender serving as discriminant evidence.

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