

Predictive model of creativity based on emotional intelligence and collaborative learning in university students of Arequipa, Peru

Modelo predictivo de la autoeficacia creativa a partir de la inteligencia emocional y el aprendizaje colaborativo en estudiantes universitarios de Arequipa, Perú

  Joel Elvys Alanya-Beltran¹

  Jeidy Gisell Panduro-Ramirez²

  Tania Quiroz-Quesada³

¹ Universidad San Ignacio de Loyola, Perú

² Universidad Autónoma del Perú, Perú

  Consuelo Del Pilar Clemente-Castillo³

  Jesús Yolanda Mori-Holguín³

  Gina Mori-Rojas⁴

³ Investigador independiente

⁴ Universidad Tecnológica del Perú, Perú

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Author for Correspondence: Jeidy Gisell Panduro-Ramirez

Abstract

The present study aimed to determine the predictive capacity of emotional intelligence and collaborative learning about creative self-efficacy in university students of a private university in Arequipa, Peru. The sample consisted of 273 undergraduate students from a private university in Arequipa, aged between 18 and 25 years. The research was of quantitative approach, non-experimental, cross-sectional design and explanatory scope. The WLEIS-S scale for emotional intelligence, the Cooperative Learning Scale (CLS) for collaborative learning and the Creative Self-Efficacy Scale for creative self-efficacy were used. The statistical analysis was performed using SPSS version 26, applying descriptive statistics, Kolmogorov-Smirnov normality test and logistic regression, considering a significance level of .05. The results show that emotional intelligence explains global creative self-efficacy with R² values of .318 (Cox and Snell) and .438 (Nagelkerke), while collaborative learning reaches .292 and .404; however, combining both (IE + AC) increases the explanation to .372 and .521. In the generation of ideas, emotional intelligence presents .241 and .332, collaborative learning .218 and .304, and together .289 and .401. For creative performance, emotional intelligence reaches .265 and .364, collaborative learning .246 and .343, and the combined model .316 and .447. Finally, in self-assessment, emotional intelligence explains .229 and .318, collaborative learning .207 and .292, and the combination of the two .278 and .389, confirming that the joint model offers greater explanatory power in all dimensions.

Keywords: Emotional intelligence, learning, university.

Resumen

El presente estudio tuvo como objetivo determinar la capacidad predictiva de la inteligencia emocional y el aprendizaje colaborativo sobre la autoeficacia creativa en estudiantes universitarios de una universidad privada de Arequipa, Perú. La muestra estuvo conformada por 273 estudiantes de pregrado de una universidad privada de Arequipa, con edades entre 18 y 25 años. La investigación fue de enfoque cuantitativo, diseño no experimental, transversal y de alcance explicativo. Se utilizaron la escala WLEIS-S para inteligencia emocional, la Cooperative Learning Scale (CLS) para aprendizaje colaborativo y la Creative Self-Efficacy Scale para la autoeficacia creativa. El análisis estadístico se realizó mediante SPSS versión 26, aplicando estadísticos descriptivos, prueba de normalidad Kolmogorov-Smirnov y regresión logística, considerando un nivel de significancia de .05. Los resultados evidencian que la inteligencia emocional explica la autoeficacia creativa global con valores de R² de .318 (Cox y Snell) y .438 (Nagelkerke), mientras que el aprendizaje colaborativo alcanza .292 y .404; sin embargo, al combinar ambas (IE + AC) se incrementa la explicación a .372 y .521. En la generación de ideas, la inteligencia emocional presenta .241 y .332, el aprendizaje colaborativo .218 y .304, y juntos .289 y .401. Para el desempeño creativo, la inteligencia emocional alcanza .265 y .364, el aprendizaje colaborativo .246 y .343, y el modelo combinado .316 y .447. Finalmente, en la autoevaluación, la inteligencia emocional explica .229 y .318, el aprendizaje colaborativo .207 y .292, y la combinación de ambas .278 y .389, confirmando que el modelo conjunto ofrece mayor poder explicativo en todas las dimensiones.

Palabras clave: Inteligencia emocional, aprendizaje, universidad.

INTRODUCCIÓN

At present, higher education is undergoing an accelerated digital transformation process that has established virtual and hybrid modalities as permanent academic training environments. This shift has modified not only pedagogical dynamics but also student interactions, emotional regulation, and creative production. In this context, emotional intelligence has emerged as a key competency for coping with the socio-emotional challenges arising from virtual learning, such as isolation, academic overload, and autonomous learning management (Mayer *et al.*, 2016). Furthermore, recent studies indicate that university students in digital environments report higher levels of academic stress and emotional demands, which impact their performance and well-being (Aristovnik *et al.*, 2020).

Likewise, collaborative learning has acquired special relevance in virtual and hybrid environments, as it promotes the joint construction of knowledge and strengthens interpersonal skills. International evidence indicates that technology-mediated collaborative strategies foster motivation, academic engagement, and self-regulated learning (Dillenbourg, 1999; Hernández-Sellés *et al.*, 2019). Nonetheless, its effectiveness largely depends on the socio-emotional competencies of the participants, particularly their capacity to recognize, understand, and regulate emotions during group interactions.

On the other hand, creative self-efficacy is one of the most sought-after competencies in contemporary higher education, as it is linked to innovation, problem-solving, and critical thinking. According to Runco and Acar (2012), creative self-efficacy involves generating original and useful ideas within a specific context. In virtual environments, creative self-efficacy can be enhanced through active and collaborative methodologies. However, it can also be limited by emotional and communicative barriers if not properly managed (Henriksen *et al.*, 2020).

In the Latin American context, recent research has shown that emotional competencies are positively associated with collaborative work and creative production in university students, especially in virtual modalities implemented after the pandemic (Extremera *et al.*, 2018).

Despite the theoretical and empirical advances reported in the literature, a significant limitation remains regarding the integration of emotional intelligence, collaborative learning, and creative self-efficacy within a single explanatory model. Most reviewed studies address these variables in isolation or through correlational approaches, making it difficult to understand their joint interaction in contemporary educational contexts, particularly in virtual and hybrid environments where cognitive, social, and emotional demands converge simultaneously.

In this regard, although it is recognized that emotional intelligence favors emotional regulation and that collaborative learning promotes the social construction of knowledge, further insight is needed on how both variables may act jointly as predictive factors of creative self-efficacy. This lack of integrated models limits the understanding of the current educational phenomenon, given that creative self-efficacy depends not only on cognitive processes but also on the quality of social interactions and emotional management in digital environments.

In summary, the consolidation of virtual and hybrid university environments requires understanding the interaction between socio-emotional and pedagogical variables that influence learning. Emotional intelligence can act as a facilitating factor for collaborative learning, which, in turn, could enhance creative self-efficacy. However, empirical evidence analyzing these three variables jointly in the contemporary university context remains limited. For this reason, the purpose of this study is to determine the predictive capacity of emotional intelligence and collaborative learning on creativity in undergraduate students of a private university in Arequipa, Peru. Consequently, the following hypotheses were proposed:

- 1) H1: Emotional intelligence positively predicts creative self-efficacy.
- 2) H2: Collaborative learning positively predicts creative self-efficacy.
- 3) H3: The combined model improves explanatory capacity compared to individual models.

THEORETICAL FRAMEWORK

Emotional Intelligence

Emotional intelligence is defined as the capacity to perceive, understand, regulate, and effectively use one's own emotions and those of others to face academic and social challenges within educational contexts. This competency facilitates adaptation, interpersonal communication, and student well-being in university environments (Silva, 2025).

Collaborative Learning

Collaborative learning is an active pedagogical methodology in which students work together in

group activities toward common goals, share responsibilities, and support one another, thereby strengthening social, cognitive, and communicative skills in the process of jointly constructing knowledge (Álvarez *et al.*, 2026).

Creative Self-Efficacy

Creative self-efficacy in higher education is the ability to generate novel and useful ideas, solutions, or products that address academic or social problems, integrating divergent thinking, imagination, and critical reasoning within the teaching-learning process (Flores & Rodríguez, 2025).

State of the art

Table 1

State of the art / State of the field

Nº	Author(s) / Year	Country	Objective	Methodology	Main findings
1	Mayer, Caruso & Salovey (2016)	U.S.A.	Updating the Emotional Intelligence Competency Model	Theoretical Review	EI is a measurable cognitive skill that influences academic and social performance
2	Extremera et al. (2018)	Spain	Analyzing Emotional Intelligence and Academic Well-Being	Quantitative Correlational	EI Predicts Greater Engagement and Better Academic Performance
3	Aristovnik et al. (2020)	Bulgaria	Examining the Impact of Online Learning on College Students	Global Survey (30 Countries)	Stress and emotional demands increased in the virtual modality
4	Hernández-Sellés et al. (2019)	Spain	Analyzing Interaction and Emotional Support in Online Collaborative Learning	Quantitative	Emotional support improves collaborative outcomes
5	Henriksen et al. (2020)	U.S.A.	Exploring Creativity and Thinking in Digital Education	Conceptual review	Creativity is enhanced through active and collaborative methodologies
6	Beghetto (2023)	U.S.A.	Analyzing Creativity in Educational Settings	Theoretical-empirical	Creativity Depends on the Socio-Emotional Climate of the Classroom
7	OECD (2023)	Philippines	Analyzing Social-Emotional Competencies in Higher Education	International report	EI and Collaboration Predict Innovation and Academic Creativity

METHOD

The present study was conducted under a quantitative approach aimed at objectively measuring the variables of emotional intelligence, collaborative learning, and creative self-efficacy, as well as analyzing their relationships through inferential statistical techniques (Sánchez & Murillo, 2022). Furthermore, the research is classified as applied (Castro et al., 2023), as it seeks to generate empirical evidence that contributes to the understanding of factors influencing the development of creativity in contemporary educational settings.

Regarding the methodological design, this study corresponds to a non-experimental design, since the variables were not deliberately manipulated but rather observed in their natural context (Vega & Barrantes, 2022). Additionally, it is cross-sectional, as data collection was conducted at a single point in time, allowing for the analysis of variable behaviors within a specific context.

In terms of level and scope, the study is categorized at an explanatory-predictive level, since it seeks not only to identify relationships among variables but also to determine the predictive capacity of emotional intelligence and collaborative learning on creative self-efficacy in university students (Herrero-Corona, 2021). Accordingly, regression models were employed as the primary statistical technique, allowing for the estimation of the degree to which the independent variables explain the variance of the dependent variable.

Sample

The sample consisted of 273 undergraduate university students enrolled in academic programs under virtual and hybrid modalities at a private university in Arequipa, Peru. Participants were between 18 and 25 years old and were enrolled between the first and tenth academic semesters at the time of the instrument administration. The sample selection process was carried out using non-probability convenience sampling, considering the accessibility of the participants and their availability to respond to the digital questionnaire.

For sample size determination, an a priori statistical power estimation was performed using GPower 3.1 software, considering a

significance level of $\alpha = .05$, statistical power ($1-\beta$) = .80 and a medium effect size ($f^2 = .15$), which is recommended for studies in the social sciences. The results indicated a minimum required sample size of $N = 107$ participants for regression models with two predictors. Consequently, the obtained sample size ($N = 273$) substantially exceeds the required minimum, ensuring sufficient statistical power to detect significant effects and estimate predictive models with adequate precision. The sample met the following inclusion and exclusion criteria:

Inclusion Criteria

- Students enrolled in undergraduate programs under virtual or hybrid modalities during the second academic semester of the year 2025.
- Being 18 years of age or older at the time of participation.
- Voluntarily agreeing to participate via digital informed consent.
- Having access to technological devices and the internet to complete the online questionnaire.
- Having actively participated in virtual or collaborative academic activities during the study period.

Exclusion Criteria

- Failure to grant informed consent to participate in the research.
- Submitting incomplete questionnaires or missing key items.
- Showing inconsistent, random, or biased response patterns according to the quality control indicators of the instruments.
- Not meeting the established age range or not belonging to the defined study modality.

Instruments

Wong and Law Emotional Intelligence Scale (WLEIS-S)

To measure emotional intelligence, the short version of the Wong and Law Emotional Intelligence Scale (WLEIS-S) was used. This instrument was designed by Wong and Law (2002) and subsequently adapted into Spanish by Moreyra and Lincol (2023). This self-report scale consists of 16 items distributed across four dimensions: assessment of one's own emotions,

perception of the emotions of others, functional use of emotions, and emotional regulation, corresponding to four items each. Responses are recorded on a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7). Regarding its psychometric properties, the adapted version by Moreyra and Lincol (2023) showed adequate fit indices in the confirmatory factor analysis ($\chi^2 = 610.303$; NNFI = .947; CFI = .954; RMSEA = .068), as well as high levels of internal consistency, evidenced by Cronbach's alpha ($\alpha = .91$) and omega ($\omega = .94$) coefficients, supporting its validity and reliability in the university population.

Collaborative Learning Scale (CLS)

This is a self-report instrument designed to measure students' perceptions of their collaborative work experiences in academic contexts. The scale consists of 15 items grouped into five factors reflecting essential elements of collaborative learning: positive interdependence, interpersonal skills, promotive interaction, individual accountability, group processing, group evaluation, and roles within the group. Participants respond to each item on a Likert scale ranging from *strongly disagree* to *strongly agree*. In validation studies with university students established by Atxurra *et al.* (2015), the instrument demonstrated good model fit and robust evidence of validity and reliability (SRMR = 0.08, SD = 0.45, AVE = 0.50, CR = 0.70) and a Cronbach's alpha of 0.810, supporting its use to evaluate how students perceive and participate in collaborative processes within their academic subjects (Santos *et al.*, 2024).

Creative Self-Efficacy Scale for Undergraduates

Developed and validated by Abulela (2024), this scale was designed specifically for higher education students. This self-report instrument assesses students' perceptions of their ability to generate original ideas, propose innovative solutions, and perform creatively in academic tasks. The scale consists of a set of items organized into a multidimensional structure, evaluated through a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*. In the validation study, a categorical confirmatory factor analysis and an analysis based on multidimensional item response theory were performed, demonstrating adequate model fit and solid indicators of structural validity; validation values of O = 0.88 and 0.81, $\chi^2 = 5.98$, CFI = 0.99, SRMR = 0.06, and AIC = 178 were observed through the judgment of 10 experts.

Furthermore, satisfactory internal consistency coefficients were reported, supporting its reliability for assessing creative self-efficacy in the university population, particularly in contemporary educational contexts.

Procedure

In developing this study, institutional authorization was initially obtained from the university's academic authorities through a formal project presentation letter. Additionally, evaluation and approval were granted by the corresponding Ethics Committee, ensuring compliance with ethical research principles. Subsequently, university students enrolled in virtual and hybrid modalities were invited to participate voluntarily and anonymously via a digital form (Google Forms). This instrument included the electronic informed consent form and the scales corresponding to emotional intelligence, collaborative learning, and creative self-efficacy, as well as attention-check indicators for honesty and consistency to ensure response quality. Finally, a database was consolidated with the collected information, which was then processed and statistically analyzed based on the research objectives and hypotheses.

Data Analysis

The Statistical software SPSS version 26 was used for data processing and analysis. In the first stage, descriptive statistics (mean, median, mode, and standard deviation) were calculated to characterize the behavior of the emotional intelligence, collaborative learning, and creative self-efficacy variables. Subsequently, the data distribution was evaluated using the Kolmogorov-Smirnov normality test with Lilliefors correction, which determined the selection of appropriate inferential statistical techniques. Additionally, a significance level of $\alpha = .05$ and a statistical power of .80 were established, in accordance with methodological criteria in quantitative research (Cohen, 1992; Hernández *et al.*, 2014).

Regarding inferential analysis, a logistic regression model was applied, considering the categorical nature of the dependent variable (creative self-efficacy categorized into levels). Prior to model estimation, the statistical assumptions required for its application were verified. First, the absence of multicollinearity among predictor variables was evaluated through Variance Inflation Factor (VIF) analysis, yielding values below 5, which indicates independence among predictors.

Likewise, linearity in the logit was examined for continuous variables, verifying the linear relationship between the predictors and the logarithm of the dependent variable. In addition, the goodness-of-fit of the model was evaluated using the Hosmer–Lemeshow statistic, which was non-significant ($p > .05$), indicating an adequate fit of the model to the observed data. Finally, regression coefficients (B), Wald statistics, significance levels ($p < .05$), and Odds Ratios [Exp(B)], were estimated, allowing for the interpretation of the predictive capacity of emotional intelligence and collaborative learning

on creative self-efficacy. Furthermore, Cox & Snell and Nagelkerke pseudo coefficients were reported in order to evaluate the proportion of variance explained by the model, matching the explanatory-predictive objectives of the study.

This research was developed within the framework of academic activities of a private university. The study received no external funding; however, ethical research principles were respected, guaranteeing the voluntary participation of students through informed consent.

RESULTS

Table 2

Levels of Emotional Intelligence by Gender

Level of emotional intelligence		Female	Male	Total
Low	f	28	32	60
	%	20.1%	23.9%	22.0%
Medium	f	64	58	122
	%	46.0%	43.3%	44.7%
High	f	47	44	91
		33.9%	32.8%	33.3%
Total	f	139	134	273
	%	100.0%	100.0%	100.0%

The percentage distribution shows that the average level of emotional intelligence predominates in both genders (44.7% of the

total), with relatively similar proportions among women (46.0%) and men (43.3%).

Table 3
Levels of collaborative learning by gender

Level of emotional intelligence		Female	Male	Total
Bajo	f	25	30	55
	%	18.0%	22.4%	20.1%
Medio	f	70	63	133
	%	50.4%	47.0%	48.7%
Alto	f	44	41	85
	%	31.6%	30.6%	31.1%
Total	f	139	134	273
	%	100.0%	100.0%	100.0%

In descriptive terms, the average level of distribution between women (50.4%) and men collaborative learning is the most common in (47.0%). both groups (48.7%), with a balanced percentage

Table 4
Levels of creative self-efficacy by gender

Level of creative self-efficacy		Female	Male	Total
Low	f	22	28	50
	%	15.8%	20.9%	18.3%
Medium	f	68	65	133
	%	48.9%	48.5%	48.7%
High	f	49	41	90
		35.3%	30.6%	33.0%
Total	f	139	134	273
	%	100.0%	100.0%	100.0%

The creative self-efficacy variable shows a predominant concentration at the medium level (48.7%), with a comparable distribution among women (48.9%) and men (48.5%). Although the percentage at the high level is slightly higher in the female group (35.3% versus 30.6%), the difference does not represent a significant gap in descriptive terms.

Table 5*Predictor variables for creative self-efficacy*

Predictor dimension	Equation	95% IC				
		B	Wald	gl	Sig.	Exp(B)
Assessing One's Own Emotions	Creative Self-Efficacy	.284	14.762	1	.000	1.329
Assessing Others' Emotions	Creative Self-Efficacy	.198	9.845	1	.002	1.219
Using Emotions	Creative Self-Efficacy	.356	21.437	1	.000	1.428
Emotional Regulation	Creative Self-Efficacy	.412	27.903	1	.000	1.510
Positive Interdependence	Creative Self-Efficacy	.267	12.684	1	.000	1.306
Supportive Interaction	Creative Self-Efficacy	.315	16.552	1	.000	1.370
Individual Responsibility	Creative Self-Efficacy	.174	6.917	1	.009	1.190
Interpersonal Skills	Creative Self-Efficacy	.229	10.103	1	.001	1.258
Group Processing	Creative Self-Efficacy	.148	4.782	1	.029	1.160

The results show that all dimensions of emotional intelligence present positive and statistically significant coefficients ($p < .05$), with emotional regulation being the predictor with the greatest explanatory power ($OR = 1.510$), indicating that an increase in this dimension raises the probability

of exhibiting high levels of creative self-efficacy by 51%. Likewise, the dimensions of collaborative learning also show significant positive effects, with supportive interaction standing out ($OR = 1.370$).

Table 6*Summary of the model showing the influence of the predictor variables on the criterion variable*

Criterion variable (creative self-efficacy)	Predictive variable	Cox & Snell	Nagelkerke
Overall creative self-efficacy	Emotional Intelligence	.318	.438
	Collaborative Learning	.292	.404
	EI + CL	.372	.521
Beliefs about idea generation	Emotional Intelligence	.241	.332
	Collaborative Learning	.218	.304
	EI + CL	.289	.401
Beliefs about creative performance	Emotional Intelligence	.265	.364
	Collaborative Learning	.246	.343
	EI + CL	.316	.447
Beliefs about self-evaluation	Emotional Intelligence	.229	.318
	Collaborative Learning	.207	.292
	EI + CL	.278	.389

In terms of pseudo- R^2 , the results show that both emotional intelligence and collaborative learning have explanatory power regarding creative self-efficacy. However, the combined model (EI + CL) consistently increases the explained variance (Nagelkerke between .389 and .521), indicating a complementary effect of

both predictors. Furthermore, predictive power is maintained when analyzing creative self-efficacy by dimensions, with the combined influence of EI and CL providing the best fit in all cases, which supports the relevance of modeling creative self-efficacy both as a global construct and by components.

Table 7
Estimation of model parameters for the impact of emotional intelligence and collaborative learning on creative self-efficacy

Creative	Inteligencia emocional	Aprendizaje colaborativo	IE + AC (modelo combinado)
B	.428	.376	.291 / .254
Wald	26.814	19.457	14.603 / 12.884
Sig.	.000	.000	.000 / .001
Exp(B)	1.534	1.457	1.338 / 1.289
Cox & Snell	.318	.292	.372
Nagelkerke	.438	.404	.521

The results indicate that both emotional intelligence ($B = .428$; $p < .001$) and collaborative learning ($B = .376$; $p < .001$) significantly predict creative self-efficacy. The odds ratio shows that an increase in emotional intelligence raises the probability of exhibiting high levels of creative self-efficacy by 53.4%, while collaborative learning increases that probability by 45.7%. However, the combined model (EI + CL) has greater explanatory power (Nagelkerke $R^2 = .521$), indicating that both variables act complementarily to explain creative self-efficacy in virtual and hybrid university settings.

DISCUSSION

The results of this study demonstrate that emotional intelligence and collaborative learning are significantly related to creative self-efficacy in university students participating in virtual and hybrid modalities. First, the descriptive analysis showed that most students fall into medium levels of emotional intelligence, collaborative learning, and creative self-efficacy, with a homogeneous distribution across gender. These findings concur with the framework proposed by Mayer, Caruso, and Salovey (2016), who argue that emo-

tional intelligence constitutes a measurable cognitive ability that influences academic and social performance, independently of gender.

Regarding predictive influence, the dimensions of emotional intelligence showed positive and significant coefficients on creative self-efficacy, with emotional regulation standing out as the predictor with the greatest explanatory weight. Similarly, this aligns with the OECD (2023) report, which indicates that socio-emotional competencies are critical determinants in developing innovative and creative capacities in higher education. In this regard, the results confirm that the ability to manage emotions not only contributes to well-being but also enhances complex cognitive processes such as the generation of original ideas.

Concerning collaborative learning, all of its dimensions showed a significant incidence on creative self-efficacy, particularly promotive interaction and positive interdependence. These results are consistent with those reported by Hernández-Sellés *et al.* (2019), who found that emotional support and interaction in virtual environments strengthen collaborative learning and improve academic outcomes. Consequently, this study reaffirms that structured collaboration

and teamwork in technology-mediated contexts constitute facilitating factors for creative thinking.

On the other hand, the combined model of emotional intelligence and collaborative learning presented greater explanatory capacity than each variable separately, reaching a Nagelkerke R² of .521 for creative self-efficacy. This result suggests a complementary effect between emotional competencies and collaborative dynamics, which coincides with Beghetto (2023), who emphasizes that creative self-efficacy largely depends on the socio-emotional climate of the classroom. Likewise, Henriksen *et al.* (2020) maintain that the educational environments integrating social interaction and emotional regulation favor the development of creative thinking. In this sense, the findings of the study provide empirical evidence that integrates both perspectives within the virtual and hybrid university context.

Finally, the results allow us to assert that creative self-efficacy in digital environments does not rely solely on individual cognitive factors; rather, it is constructed from the interaction between emotional skills and collaborative processes. This is coherent with the international literature presented in Table 1, where empirical evidence shows that emotional intelligence and academic collaboration predict innovation and creative performance. Consequently, this study expands existing evidence by jointly analyzing these three variables within a Peruvian university context, providing empirical support for the need to strengthen both socio-emotional competencies and collaborative methodologies to enhance creative self-efficacy in contemporary higher education.

CONCLUSIONS

This study demonstrated that emotional intelligence and collaborative learning are significantly and positively related to creative self-efficacy in university students participating in virtual and hybrid modalities. The results showed that both variables act as relevant predictors of creative self-efficacy, with emotional regulation and promotive interaction being the dimensions with the greatest explanatory weight within the statistical model.

Furthermore, the combined model showed greater explanatory capacity than each variable separately, confirming that socio-emotional competencies and collaborative dynamics do not operate in isolation, but rather interact complementarily in the development of creative thinking. This indicates that students who properly manage their emotions and actively participate in collaborative processes are more likely to generate original ideas and innovative solutions in technology-mediated academic environments.

In conclusion, the reinforcement of emotional intelligence and the implementation of collaborative learning strategies constitute key factors for enhancing creative self-efficacy in contemporary higher education. These findings provide relevant empirical evidence for designing pedagogical proposals aimed at the holistic training of university students in virtual and hybrid contexts.

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Authors' Roles:

Conceptualization: JYMH, JGPR, JEAB

Formal analysis: TQQ, CPCC, JYMH

Methodology: JYMH, JGPR, JEAB

Project management: JGPR, JEAB

Drafting of the original manuscript: TQQ, GMR, CPCC

Drafting, review, and editing: JYMH, TQQ, GMR

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