

Use of Archaeological and Museographic Sources as a Didactic Strategy for the Teaching of Critical Thinking in University Students, Cusco 2025

María Luz Delgado Pacheco

Doctorate in Education, César Vallejo University, Chiclayo Branch, Peru.

ORCID: <https://orcid.org/0000-0001-6977-5195>

HOW TO CITE:

María Luz Delgado Pacheco (2026).
Use of Archaeological and
Museographic Sources as a Didactic
Strategy for the Teaching of Critical
Thinking in University Students,
Cusco 2025.
International Journal of Special
Education, 41(23s), 1159 - 1168

ABSTRACT:

Graduate peacekeeping education is institutionally complex because regulatory authority, professional capability, curriculum design, inter-agency integration, and international positioning are mutually dependent. Yet research on peace education and peace operations rarely specifies which institutional conditions should be activated first when a university creates a multidisciplinary graduate programme. This study develops and tests a prioritisation architecture for a proposed Master's Programme in Peacekeeping in Indonesia. An explanatory sequential mixed-methods design integrated Decision-Making Trial and Evaluation Laboratory (DEMATEL), Analytic Network Process (ANP), 17 semi-structured key-informant interviews, a focus-group discussion, and document review. The quantitative phase analysed 150 completed questionnaires across eight institutional drivers. DEMATEL identified policy and regulation (F1), integrative curriculum (F3), facilities and infrastructure (F6), and institutional governance (F7) as net perceived causes. ANP assigned the greatest priority to policy and regulation (0.1579), followed by peacekeeper human resources (0.1455), integrative curriculum (0.1286), and institutional governance (0.1236). Aggregate pairwise consistency was excellent ($CR = 0.0040$), although only 36% of individual matrices met $CR \leq 0.10$; consistency-screened estimates therefore flattened the priorities. Qualitative evidence explained the pattern: formal authorization unlocks resources and inter-agency commitments, whereas qualified faculty-practitioners convert those commitments into credible teaching and operational learning. Robustness analyses preserved the DEMATEL cause-effect classification across less repetitive, non-student, and experienced subsamples. The study contributes a regulation-to-capability chain and a four-layer implementation sequence: enabling governance, academic design and infrastructure, integrated professional capability, and outward diplomatic effects. The model informs evidence-based

COPYRIGHT STATEMENT:

Copyright: © 2026 Authors.
Open access publication under the

terms and conditions of the Creative CommonsAttribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).	programme development while demonstrating how sensitivity analysis can strengthen DEMATEL–ANP applications in higher-education strategy. Keywords: didactic strategy, critical thinking, archaeological sources, museography, cultural heritage.
---	---

1. Introduction

In the chair of "Critical History of Peru and National Identity", a problem that is repeated in many social sciences classrooms was diagnosed, and that is the difficulty that students have in developing cognitive skills that allow them to interpret, understand and communicate experiences, beliefs and values in the face of various historical and social issues. Critical thinking, understood as the ability to analyze, infer, evaluate, explain, self-regulate and question information (Facione & Gittens, 2015; Tasayco & Ralli, 2024), is precisely what this teaching model tends to leave uncultivated, despite being one of the competencies that higher education needs to train most urgently for the academic, professional and social performance of its graduates.

This priority is not only pedagogical, critical thinking occupies a central place in the Sustainable Development Goals, specifically in SDG 4 of the 2030 Agenda, which promotes actions to achieve a comprehensive education that trains students who perform correctly in their personal and work environment in the face of the demands of the twenty-first century (United Nations, 2024).

University students in Latin America have an excessive dependence on memorization, difficulties in analyzing and evaluating cultural differences, a lack of reasoned conclusions, and a scant use of methodical questioning of the information received. In the Cusco chair that gave rise to this study, this situation translates into traditional teaching, focused on commemorations and rote evaluations, which fail to mobilize higher-order cognitive skills.

Faced with this diagnosis, the research proposed something relatively simple to enunciate and more difficult to sustain in practice, integrating archaeological sources and museographic sources

as a didactic strategy to teach critical thinking, and not as illustrative material for a master class. The underlying premise is that these sources, worked with a critical sense, allow us to trace the veracity, origin, conservation and civilizational value of the remains, and thus stimulate analysis, inference, hypothesis testing and questioning (Rodríguez, 2025; Moncerrate & Játiva, 2025). UNESCO (2021) insists on teaching critical thinking through direct encounter with objects, relics and archaeological designs, while the Ministry of Culture of Peru (2022) proposes a shift in the conception of the museum from a memorial showcase to a didactic and pedagogical tool at the service of national and local identity.

The theoretical basis was based on four bodies of thought that, although different in their origin, converge on the same point. The Philosophical Theory of Active and Reflective Knowledge postulates that the direct interrelation with evidence enhances cognitive processes (Rodríguez, 2025). Cognitive Educational Theory conceives critical thinking as a set of rational skills (analysis, evaluation, inference, explanation, self-regulation, and questioning) that require reflexivity and understanding of information (Vendrell & Valero, 2025; Pineda, 2025; Brookfield, 2020). Cultural Heritage Theory understands museum sources as material, visual, narrative, and spatial products with educational potential (Mesa, 2023). And Paulo Freire's Critical Educational Theory conceives education as cultural and social transformation through the dialogue of knowledge and the pedagogy of the question (Moreira et al., 2023; Soto, 2025).

At the international level, Liu and Ruan (2025) showed that the classification of ceramics using deep learning models reduces interpretive biases and functions as an educational tool to develop

explanation and evaluation skills. Eshel (2025) showed that the archaeometric analysis of silver treasures teaches inferences about the social and economic organization of ancient cultures. Looper (2024) established that Maya writing connects epigraphics with cultural identity, and Orsingler et al. (2025) showed that an object as everyday as an oil bottle can reveal complex information about economics, technology, and social psychology. Hanson et al. (2025) analyzed plazas as archaeological scenarios for the exercise of power and social inclusion, and Bitušíková and Košťálová (2025) documented how cultural heritage strengthens community resilience. In the specifically didactic field, Soto (2025) traced Freire's influence on contemporary museology, and Sawaros et al. (2025) designed heritage safeguarding strategies led by young people.

At the regional level, Galo et al. (2025) point out a paradox that countries such as Ecuador, Bolivia, and Peru, internationally recognized for the richness of their archaeological sites, lack training programs that integrate this potential into university education. It is a concrete training debt, not an abstract lack, and it is what this research tried to begin to settle with empirical evidence. Consequently, the general objective of this study was to determine the significant effect of the implementation of the use of archaeological and museographic sources as a didactic strategy for teaching critical thinking in university students in the experimental group, compared to the control group that receives traditional teaching in Cusco 2025. To achieve this, a series of specific objectives were contemplated such as (a) determining the pre- and post-test differences in the analysis and evaluation scores between the experimental group and the control group in university students from Cusco, 2025; (b) To measure the pre- and post-test variations in inference and explanation scores between the experimental group and the control group in university students in Cusco, 2025. c) To determine the pre- and post-test differences in self-regulation and questioning scores between the experimental group and the control group in university students in Cusco, 2025.

2. Methodology

Design: Describe The research was applied, with a quantitative approach, hypothetical-deductive method and explanatory scope, insofar as it sought to establish causal relationships between the didactic strategy and the development of critical thinking (Hernández & Mendoza, 2023). A quasi-experimental pretest-posttest design was used with an experimental group (EG) and a control group (CG), working with intact groups, the assignment was not random, precisely so as not to alter the regular dynamics of teaching and learning. Both groups received the same pretest simultaneously; afterwards, the EG participated in the workshop with the didactic strategy while the CG continued with traditional work sessions, and in the end both groups were subjected to the post-test under the same conditions

Participants: The analysis unit was made up of students from the first semester of the Critical History of Peru and National Identity course at a university in Cusco, Peru. A non-probabilistic convenience sampling was applied, with a total sample of 30 students: 15 in the GE and 15 in the GC. Those who had current enrollment, regular attendance, and observed difficulties in critical thinking were included; those who did not take subjects related to archaeology, museography, or history, or who did not meet the regular attendance profile, were excluded. All participants signed an informed consent.

Intervention: The independent variable was the use of archaeological and museographic sources as a didactic strategy, implemented through a workshop organized at the beginning, development and closing moments. Archaeological sources (pre-Hispanic ceramics, lithic technology, rock art, pictographic writing) were articulated with museographic sources (curatorship, exhibition space, museographic narrative, visual correlate), in convergence with the cognitive, motivational, methodological, affective and social pedagogical dimensions. The intervention included field visits and practices guided by the researcher, who guided the processes of observation, analysis, interpretation, curatorial decision-making and contrast of the

institutional discourses that the students themselves constructed from their inferences. The dependent variable was critical thinking, operationalized in the six dimensions indicated.

Instruments: The survey was used as a collection technique, using an 18-item Likert scale questionnaire (1 = strongly disagree; 5 = strongly agree), with three items for each of the six dimensions of critical thinking. The instrument was validated by expert judgment (doctors of education) and in the Cronbach's alpha reliability analysis = 0.936, calculated in SPSS. The corrected item-total correlations exceeded 0.50 in all cases, and when simulating the elimination of each item separately, the coefficient remained between 0.926 and 0.936, which rules out that global reliability depends on any particular item.

Procedure: Each dimension could reach between 3 and 15 points, and the general variable, between 18 and 90. The scores were categorized into three performance levels: low (3-7 per dimension; 18-42 on the total scale), medium (8-11; 43-66) and high (12-15; 67-90). Descriptive statistics (frequencies, percentages, medians, standard deviations, ranges) were calculated and, since the Shapiro-Wilk test ruled out the assumption of normality, nonparametric statistics, the Wilcoxon signed range test for intragroup comparisons (pretest vs.

posttest) and the Mann-Whitney U test for intergroup comparisons were applied, with a significance level $\alpha = 0.05$.

Ethical considerations: The research guaranteed the confidentiality and identity of the participants, informed consent, respect for the conservation of the archaeological and museographic sources worked, and the responsible use of their heritage, historical and cultural value, in accordance with current academic standards.

3. Results

Before the intervention, the picture was practically identical in the two groups. 100% of the students, both in the EG and the CG, were at the low level of critical thinking (Table 1). This confirms that they started from a comparable baseline, and in the process shows how widespread the limitations were in reasoning, analyzing, inferring, explaining and self-regulating one's own thinking. Practically no students arrived with these skills developed. After the intervention, however, this panorama changed substantially, and only in one of the two groups. 93.3% of the EG reached the high level and the remaining 6.7% remained at the medium level, while the CG remained exactly where it had started. Not a single student in the control group moved to higher levels.

Table 1 Pre-test and Post-test Critical Thinking

Group	Timing	Low level n (%)	Average level n (%)	High level n (%)
Experimental	Pre-test	15 (100,0)	0 (0,0)	0 (0,0)
Experimental	Posttest	0 (0,0)	1 (6,7)	14 (93,3)
Control	Pretest	15 (100,0)	0 (0,0)	0 (0,0)
Control	Posttest	15 (100,0)	0 (0,0)	0 (0,0)

Note. Elaboration in SPSS by María Luz Delgado Pacheco

The Shapiro-Wilk test showed that, in the EG, both the pretest ($p = .116$) and the posttest ($p = .321$) were distributed normally. The CG, on the other hand, did not meet the assumption of normality in the pretest ($p < .001$) and, in the posttest, it simply ceased to have variance: all

students obtained the same score. This combination, with partial normality in one group and total absence of variation in the other, was what led to the choice of non-parametric tests for the entire analysis.

Wilcoxon's test (Table 2) confirmed what the comparison of levels already suggested: the EG registered 15 positive ranges and no negative ranges (average range = 8.00; sum of ranges = 120.00), with $Z = -3.411$ and $p = .001$, so the null

hypothesis of no change was rejected. The CG, in contrast, obtained only 4 negative ranges and 11 ties, with $Z = -1.841$ and $p = .066$: there was no statistical evidence that traditional teaching produced any change in the period studied.

Table 2 Wilcoxon sign rank test (post-test), critical thinking

Group	Negative Ranges	Positive Ranges	Draws	Z	Sig. asint. (bilateral)
Experimental	0	15	0	-3,411	0,001
Control	4	0	11	-1,841	0,066

Note. Negative ranges: post-test < pre-test; positive ranges: post-test > pretest. $p < .05$. Prepared in SPSS by María Luz Delgado Pacheco.

The Mann-Whitney U test (Table 3) further verified that the difference between groups in the post-test was not a matter of chance, the EG achieved an average rank of 23.00 (sum of ranks = 345.00) compared to 8.00 (sum = 120.00) for the CG, with $U = 0.000$, $Z = -4.991$ and $p < .001$.

A U-value of 0.000 is, in practical terms, the minimum possible in this test means that there was no overlap between the scores of both groups, i.e., that even the student with the lowest GE score on the post-test outperformed the student with the highest CG score.

Table 3 Mann-Whitney U test, post-test critical thinking

Group	N	Average Range	Sum of ranks	U	Z	Sig. asint.
Experimental	15	23	345	0	-4,991	<,001
Control	15	8	120			

Note. Elaboration in SPSS by María Luz Delgado Pacheco

The descriptive statistics that can be seen in Table 4 measure the magnitude of the change because in the median of the EG it went from 22.00 points in the pretest to 73.00 in the posttest, a difference of 51 points, with a range of 58 to 90. In the CG the median remained at 18.00, with a

standard deviation of .000 in the posttest, which reflects absolute stagnation. It is worth noting that the minimum score achieved by the EG in the posttest (58) more than doubles the maximum score that any student had obtained in the pretest (25), in either of the two groups.

Table 4 Descriptive statistics of the critical thinking variable

Group	Timing	Medium	Desv. Standard	Minimum	Maximum
Experimental	Pretest	22	2,366	18	25
Experimental	Posttest	73	8,938	58	90
Control	Pretest	18	0,99	18	21
Control	Posttest	18	0	18	18

Note: The values represent the total score of the Critical Thinking variable. Prepared in SPSS by Professor, María Luz Delgado Pacheco.

The increase in the standard deviation of the EG between the pretest (2.366) and the posttest (8.938) should not be read as a loss of consistency of the instrument. It is the expected reflection that the students advanced at different rates, that is, while before the intervention almost all the scores were concentrated at the low end of the scale, they were later distributed over a much wider range, although always above the performance of the control group. To answer the first specific objective, in the pretest, 100% of both groups were at a low level in analysis and evaluation, the students had difficulties in identifying components of the sources, recognizing contextual categories and making value judgments about the credibility of the findings. On the other hand, in the posttest, the EG reached 73.3% at a high level in analysis and 60.0% in evaluation, while the CG remained at a 100% low level in both dimensions. The Wilcoxon test confirmed significant improvements in the GE (analysis: $Z = -3.426$, $p < .001$; evaluation: $Z = -3.422$, $p < .001$), with 15 positive and zero negative ranges in both cases, while the CG showed no change ($p = 1,000$ in analysis; $p = .317$ in evaluation).

Regarding the second objective, in the pretest, students pointed out assumptions without evidence, drew hasty conclusions, and had difficulty establishing causal relationships. In the posttest, 73.3% of the EG achieved a high level in

both inference and explanation. Wilcoxon's test yielded $Z = -3.420$ ($p < .001$) in inference and $Z = -3.421$ ($p < .001$) in explanation, while the CG showed no progress ($p = .317$ and $p = 1.000$, respectively). The median GE went from 4.00 to 12.00 points in inference and from 3.00 to 13.00 in explanation.

Regarding the third objective, in the pretest, 100% of both groups were once again at a low level but in the posttest, the EG reached 73.3% high in self-regulation and 93.3% in questioning (the largest proportional jump of the six dimensions), suggesting that working with material sources that the student can observe, touch, and hear has a particular effect on the willingness to methodically doubt before accepting information as valid. The Wilcoxon test confirmed significant improvements in the EG (self-regulation: $Z = -3.438$, $p < .001$; questioning: $Z = -3.432$, $p < .001$), with no change in the CG ($p = 1,000$ and $p = .083$). The median GE rose from 3.00 to 13.00 in self-regulation and from 5.00 to 14.00 in questioning.

Table 5 summarizes the six contrasts. In all dimensions, the post-test Mann-Whitney U test yielded $U = 0.000$ with $p < .001$ and mean ranges of 23.00 (GE) vs. 8.00 (CG): the same total absence of overlap that was observed in the general variable is repeated, dimension by dimension, in each of the six components of critical thinking.

Table 5 Hypothesis Testing by Dimension

Dimension	Wilcoxon GE (Z)	Wilcoxon GE (p)	Wilcoxon GC (p)	M-W U	M-W Z	M-W (p)
Analysis	-3,426	<,001	1	0	-5,01	<,001
Evaluation	-3,422	<,001	0,317	0	-4,998	<,001
Inference	-3,42	<,001	0,317	0	-5	<,001
Explanation	-3,421	<,001	1	0	-4,998	<,001
Self-regulation	-3,438	<,001	1	0	-5,031	<,001
Questioning	-3,432	<,001	0,083	0	-5,046	<,001

Note. GE = experimental group; CG = control group; M-W = Mann-Whitney. In the EG, the Wilcoxon contrast was post-test vs. pre-test; the Mann-Whitney contrast was GE vs. GC in the posttest. Prepared in SPSS by Professor, María Luz Delgado Pacheco.

4. Discussion

The findings confirm the hypothesis that the implementation of archaeological and museographic sources as a didactic strategy did produce a statistically significant effect on the critical thinking of the experimental group. The jump is difficult to ignore, from 100% at a low level to 93.3% at a high level, and contrasts with a control group that simply did not move from where it started. This is not an isolated statistical coincidence; it fits with what is proposed by the Active and Reflective Knowledge Theory, for which knowledge is built by solving problems and directly confronting evidence, not by memorizing it (Rodríguez, 2025; Huayta, 2025). It is also consistent with cognitive educational theory, which understands critical thinking as a skill that is trained and cultivated, and not as a fixed trait with which some students are born and others are not (Vendrell & Valero, 2025; Pineda, 2025).

The combination of categorical intragroup improvement (Wilcoxon: $Z = -3.411$; $p = .001$) with an intergroup distance without any overlap (Mann-Whitney: $U = 0.000$; $p < .001$) is, in itself, a rather forceful way of saying that the intervention worked compared to conventional didactics. Liu and Ruan (2025) argue that including archaeological and museographic sources in teaching helps to consolidate a critical vision of social development, and Eshel (2025) warns that pedagogical models anchored in memorization tend to slow down the generation of one's own ideas, an observation that fits with the stagnation of the control group ($Z = -1.841$; $p = .066$). Students who worked directly with ceramic pieces, lithic technology, rock art, and curatorial spaces had a different type of cognitive stimulation than in the traditional classroom, something that Orsingler et al. (2025) also document regarding the mobilizing power of the historical and cultural, and that Hanson et al. (2025) link to the development of autonomous thinking.

In analysis and evaluation, 73.3% and 60.0% of the experimental group reached a high level, respectively. The difference between the two percentages is no coincidence: Martínez et al.

(2025) had already pointed out that social and historical approach didactics stimulate both analysis and evaluation, but judging the credibility of a source (which is, in essence, what the evaluation dimension measures) requires a higher level of argumentative maturity than simply identifying its components. The sources worked on allowed students to recognize elaboration materials, compare social functions, and evaluate the authenticity and ethical sense of objects, going beyond mere description and approaching a verifiable judgment, in line with what Sawaros et al. (2025) propose about the transformative effect of heritage evidence.

The improvements in inference and explanation were equally forceful ($Z = -3.420$ and $Z = -3.421$; $p < .001$ in both cases), with medians that were multiplied by three. Students constructed hypotheses adjusted to the sociocultural context and established reasonably coherent causal relationships, something that coincides with Brookfield (2020) on the effect of contact with material sources on the comprehensive reading of events. The fact that no EG student regressed, without a single negative rank in either of the two dimensions, speaks of a fairly even improvement within the group, and the stagnation of control ($p = .317$ and $p = 1,000$) confirms that didactics disconnected from the student's interests tend to inhibit both inference and explanation (Kusumoto, 2018).

The finding that is most striking, however, is in self-regulation and questioning: these are the two dimensions with the proportionally largest leap, and also the ones most linked to the student's metacognitive disposition (their ability to monitor and correct their own reasoning) rather than to a specific analytical skill. The fact that 93.3% of the experimental group ended up at a high level of questioning suggests that manipulating tangible objects, which can be observed from different angles and compared with each other, activates something different from what a conventional exhibition text activates. It was particularly revealing that several students came to question the museographic discourses that were presented to them, detecting curatorial omissions about the cosmogony of the Andean peoples: this is critical

thinking transferred beyond the classroom, in direct dialogue with Freire's pedagogy of the question (Moreira et al., 2023; Soto, 2025).

From the perspective of the doctoral contribution of this research, the results suggest a three-phase cognitive architecture (analytical exploration; immersion and exegesis; management of dialectical inquiry) articulated with three didactic categories: methodical comparison, introspection and systematization. This proposal connects critical thinking with cultural memory and heritage, and offers a replicable alternative for teacher and curricular training in higher education, in direct response to the training debt pointed out by Galo et al. (2025) in countries with high archaeological potential but little integration of this heritage into their university programs.

That said, it is important not to lose sight of the size of the sample. With only 30 students distributed in two intact groups and selected for convenience, the results, however consistent, do not allow for unnuanced generalization to other university populations or to other geographic and cultural contexts. The study also focused on a single institution and a single course, which makes it prudent to expect replication in other settings before assuming that the effect remains the same everywhere. It would be valuable to explore longitudinal designs that allow us to observe whether this improvement is sustained beyond one semester, as well as studies that incorporate the students' own perspective on why direct contact with material sources seems to mobilize their willingness to question in a way that traditional teaching does not.

5. Conclusion

The use of archaeological and museographic sources as a didactic strategy had a statistically significant effect on the teaching of critical thinking by university students in the experimental group. The Wilcoxon test showed a significant intragroup improvement ($Z = -3.411$; $p = .001$), and the Mann-Whitney U test confirmed significant intergroup differences ($U = 0.000$; $Z = -4.991$; $p < .001$), replicated in the six dimensions evaluated: analysis ($Z = -3.426$), evaluation ($Z = -3.422$), inference ($Z = -3.420$),

explanation ($Z = -3.421$), self-regulation ($Z = -3.438$) and questioning ($Z = -3.432$), all with $p < .001$.

In relation to the first specific objective, analysis and evaluation showed significant changes in the experimental group while the control group remained unchanged. Regarding the second, inference and explanation followed the same pattern, with EG students developing the ability to sustain reasoned conclusions and communicate them coherently. As for the third, self-regulation and questioning (the dimensions with the longest distance, from 3 to 13 and from 5 to 14 points respectively) confirmed that the strategy not only improved specific skills, but also a more general disposition towards methodical doubt.

Taken together, these findings show that integrating heritage objects into university teaching is not a simple illustrative resource, it is a pedagogical resource with measurable effects on higher-order cognitive skills, and this occurred in a course that, before the intervention, depended almost entirely on memorization. The strategy managed to mobilize high-level mental skills, including reasoning, the issuance of informed judgments, self-regulation and methodical questioning, relying on cognitive educational theory, cultural memory, socio-historical and the contributions of archaeology and museography. It is a robust effect, with a structure that can be replicated in other contexts, which makes it a relevant alternative for higher education, especially in places of high heritage value such as Cusco.

University teachers, specifically those related to the social sciences, are recommended to implement pedagogical practices focused on inquiry, debate ideas and document these experiences that allow the academic community to be kept informed. For their part, university authorities are suggested to adapt the undergraduate training curriculum with archaeological explorations and visits to museums regularly and not sporadically, and students are encouraged to actively inquire and question their academic environment.

6. Author Declaration

The main author declares that this article is the original product of the doctoral research entitled "Use of archaeological and museographic sources as a didactic strategy for the teaching of critical thinking in university students, Cusco 2025", presented at the César Vallejo University. She also declares that the manuscript has not been published or is under consideration by any other journal, that all the sources consulted have been

adequately cited in accordance with the APA standards (7th ed.) and that there is no conflict of interest in relation to the publication of this work. María Luz Delgado Pacheco participated in the conceptualization, methodological design, data collection and analysis, and writing of the manuscript; José Manuel Palacios Sánchez and Ever Sánchez Cotrina participated in the academic supervision and critical review of the manuscript.

References

- Aranguren, G. (2022). Smart school and soft skills development. *EDUCARE*, 26(2), 403-428. <https://doi.org/10.46498/REDUIPB>
- Bitušíková, A., & Košťalová, K. (2025). Community empowerment through cultural heritage in a marginalized community: the Hrusov case, Slovakia. *International Journal of Heritage Studies*, 31(10), 1297-1316. <https://doi.org/10.1080/13527258> [DOI incomplete in original source; check against authors' reference version before submission]
- Brookfield, S. (2020). *Teaching critical thinking: Tools and techniques to help students question their assumptions*. Jossey-Bass.
- Eshel, T. (2025). The use of silver money in the Southern Levant from the Middle Bronze Age to the end of the Iron Age (2000-600 BCE). *World Prehistory*, 38(5). <https://doi.org/10.1007/s10963> [DOI incomplete in original source; verify]
- Facione, P., & Gittens, C. (2015). *Think critically*. Pearson Educación.
- Galo, S., Franco, N., & Poblete, P. (2025). Archaeological training as a tool for historical scientific research: an analysis of its application in pre-professional practices of the History career, Riobamba, Ecuador. *Ibero-American Archaeology*, 55, 17-23. <https://doi.org/10.34096/arqueologia>
- Hanson, K., Barvick, K., Harkness, R., Giomi, E., Ortman, S., & Mills, B. (2025). From exclusive to inclusive: the changing role of plaza spaces in the Ancestral Pueblo World (AD 800-1550). *American Antiquity*, 90(3), 112-169. <https://doi.org/10.1017/aaq.2025.4>
- Hernández, R., & Mendoza, C. (2023). *Research methodology*. McGraw-Hill.
- Huayta, V. (2025). Architecture as a pedagogical tool for the development of critical thinking in higher education. *Educational Innovation*, 16(2), 149-160. <https://doi.org/10.33595/226-1478.16.2.1285>
- Kusumoto, Y. (2018). Enhancing critical thinking through active learning. *Language Learning in Higher Education*, 8, 45-63. <https://doi.org/10.1515/cercles-2018-003>
- Liu, P., & Ruan, Y. (2025). Integrated analytical study of materials and degradation in Ming Dynasty wall paintings at Shaanxi Sude Guanyin Temple, China. *npj Heritage Science*, 13, 12-60. [This reference could not be verified against a public source during review; confirm authorship, journal, and DOI before submission]
- Looper, M. (2024). From History to Cultural Diversity: The Changing Roles of Maya Writing as Archaeological Data. *Journal of Archaeology*, 33, 405-453. <https://doi.org/10.1007/s10814> [DOI incomplete in original source; verify]
- Martínez, S., Ocaña, J., & Parreño, A. (2025). Critical and transformative pedagogy of the social and educational reality of third level students. *INVECOM*, 5(3), 1-8.
- Mesa, M. (2023). The perception of university faculty on their collaboration with heritage institutions in the teaching of history. *The Future of the Past*, 14, 603-641. <https://doi.org/10.14201/fdp.27161>
- Ministry of Culture of Peru. (2022). *Cultural heritage in school: manual of theoretical-practical guidelines for*

-
- teachers. Ministry of Culture of Peru.
- Moncerrate, R., & Játiva, E. (2025). Didactic strategies for the development of critical thinking in university students. *Academic Synergy*, 8(4), 425-441.
- Moreira, S., Monroy, A., & Cevallos, L. (2023). Philosophical Foundations of Paulo Freire's Critical Pedagogy. *Alternancia*, 5(9), 77-87.
- Napa, L., & Villanueva, G. (2025). Critical thinking in students and its implications in educational contexts: a systematic study of the literature. *INVECOM*, 6(1), 1-9.
- Niño, Y. (2020). Contributions of philosophy to critical thinking. Education as liberation? A response from Nietzsche, Freire and Zuleta. *Findings*, 17(34), 185-208. <https://doi.org/10.15332/2322409X.4884>
- United Nations Organization. (2024). Eleven Drivers to Guide Educational Transformation and Sustainable Development in Mexico. UN.
- United Nations Educational, Scientific and Cultural Organization. (2021). UNESCO and Peru: 30-year log. UNESCO.
- Orsingler, A., Solard, B., & Bertelli, L. (2025). Scents of home: Phoenician oil bottles from Motya. *Archaeological and Anthropological Sciences*, 32(59). <https://doi.org/10.1007/s1086-025-09719-3>
- Pineda, V. (2025). Critical thinking in contemporary education: a systematic review from teaching practice and pedagogical training. *Invecom Journal*, 5(1), 9.
- Rodríguez, G. (2025). Archaeological heritage as a didactic resource for the teaching of social sciences: a systematic review. *Horizontes*, 9(36), 651-661.
- Roel, V. (2005). *The Liberators: Social, Economic, Political and Military Process of Independence*. Fondo Editorial de la Universidad Alas Peruanas.
- Sánchez, S. (2025). Design of methodological strategies that favor the self-regulation of UAPA students [Master's thesis, University of the Balearic Islands].
- Sawaros, T., Lee, J., Park, J., Takada, J., & Yamaguchi, S. (2025). Intangible cultural heritage safeguarding: a youth-led community of practice in Lao People's Democratic Republic. *Revista Internacional del Patrimonio Inmaterial*, 20. ISSN: 1975-3586.
- Soto, M. (2025). And the verb became flesh: Paulo Freire's influence on museums and museology. *Cuadernos de Sociomuseología*, 69(25), 134-145. <https://doi.org/10.1080/13511610> [DOI incomplete in original source; verify]
- Tasayco, A. V., & Ralli, L. (2024). Critical thinking in university student research. *AulaVirtual*, 5(12), 789-816. ISSN: 2665-0398.
- Torres, D. (2024). Theoretical approach from didactics on reading comprehension in secondary education. Libertador UPEL Pedagogical University.
- Vendrell, M., & Valero, S. (2025). The development of critical thinking in higher education from cognitive theory. *Journal of University Pedagogy*.
- Zúñiga, J. (2025). Active methodologies for the development of thought. *Journal of Contemporary Pedagogy*, 19. <https://doi.org/10.4321/rpc.2025.v19>