

# Introduction

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DOI: <https://doi.org/10.32870/dse.v0i32.1690>

## Thought in educational processes

The thematic axis of Issue 32 of *Diálogos sobre Educación. Temas actuales en investigación educativa*, "Thought in educational processes", aims to present studies about higher cognitive processes, or those linked to thinking in educational sciences. Thinking is a fundamental process in the construction of knowledge and the formation of individuals capable of interpreting, questioning, and transforming their environment. It is in the realm of education where the development of thinking is key to the strengthening of higher cognitive competencies such as analysis, metacognition, problem solving and argumentation. Education, therefore, must revolve not only around the transmission of information, but also around the creation of environments that foster critical reflection and autonomous learning. The study of thought in education involves different theoretical and methodological approaches. From cognitive sciences to pedagogy, multiple disciplines have proposed models that explain how students acquire, process, and apply knowledge. Understanding these processes is essential for the design of didactic strategies that promote meaningful learning and enable students to cope with the challenges of an ever-changing society.

Nowadays, the teaching of thinking faces challenges stemming from technological evolution and the changes in the ways to access knowledge. Digitalization has modified learning processes, making it essential to develop critical skills to evaluate information and distinguish between reliable data and fallacies. Likewise, developments in research about the role of emotions in learning have underscored the need to integrate approaches that consider both the cognitive and the socioemotional dimensions into teaching. This issue of *Diálogos sobre Educación* seeks to contribute to the reflection on thinking in the educational context, highlighting its importance in the formation of critical and autonomous citizens. Discussion on how these skills are acquired and fostered is crucial for the design of educational policies and teaching strategies that favor the students' comprehensive development.

As an introduction, we present a brief synopsis of each of the research papers in this issue with the hope of awakening the interest of our readers. The study "Razonamiento estadístico, razonamiento condicional y conocimientos previos en estadística: evaluación y covariación" ("Statistical reasoning, conditional reasoning, and prior knowledge in statistics: assessment and covariation") by Martínez Borrayo and Mayoral Gutiérrez explores the relationship between

statistical and conditional reasoning, evaluated by Wason's task in its abstract and concrete versions, considering also previous knowledge in statistics. With a quasi-experimental design and quantitative measures, three key variables (statistical reasoning, previous knowledge, and conditional reasoning) were analyzed using Biggs and Collins' SOLO taxonomy. The results revealed a general low performance in these variables, as well as significant correlations: a positive correlation between abstract and intermediate reasoning, and a negative one between knowledge about statistics and abstract reasoning. These findings underscore the need to design educational strategies that integrate and strengthen these critical skills.

The article "Habilidades cognitivas superiores en educación: Una revisión sistemática de la literatura" ("Higher Cognitive Skills in Education: A Systematic Review of the Literature") by Rubí Surema Peniche Cetzal and Karla Karina Ruiz Mendoza analyzes the current state of research on the development and application of these skills through a systematic review of the literature based on the PRISMA model. Out of 20 relevant articles published in the last decade, the authors highlight theoretical and conceptual approaches that emphasize critical thinking, metacognition, and problem solving. Their analysis identifies trends and gaps in the literature, and underlines the effectiveness of metacognitive and self-regulation strategies in both digital and traditional educational environments. This study highlights the need to implement innovative and equitable pedagogical practices in order to provide theoretical and methodological foundations for future research and educational transformation.

In the article "La formación del estudiante universitario y su relación con las habilidades cognitivas de orden superior" ("The formation of the university student and its links to higher-order cognitive skills"), Ester Eunice Ramírez García addresses the ways in which the cognitive skills required by college students in the twenty-first century are aligned with the demands of a complex society and reflected in the institutional development plans. However, achieving these goals poses a significant challenge to teachers. The article first presents a conceptual foundation to understand higher cognitive skills and then analyzes studies that explore their impact on college education. Finally, it reflects on ways to conceive university education beyond the ideal guidelines to prepare the citizens of the future.

The text "Análisis de la competencia Aprender a Aprender en estudiantes universitarios de Enfermería" ("Analysis of the Learning to Learn competency in Nursing college students") written by Guillermo César Vázquez González, Isaías and Edith Bracamontes Ceballos and Iván Uliánov Jiménez Macías assesses the development and achievement of this competency in its cognitive, metacognitive, affective-motivational, social-relational, and ethical dimensions. It examines constructs such as learning strategies, self-regulated learning, socio-cognitive approach, and personal as well as collective improvement. The results point to strengths in areas like information, self-evaluation, motivation, and social skills but also noticeable weaknesses in communication in a second language, use of technologies, critical thinking, time management, and physical and emotional wellbeing, with a high incidence of anxiety.

José Edgar Correa Terán's essay, "El desarrollo de las habilidades del pensamiento en educación básica: realidades y desafíos" ("The development of thinking skills in basic education: realities and challenges") analyzes the development of thinking skills as a model for psycho-pedagogical intervention in the education of children and youths. Although government agencies emphasize the need to foster critical and reflexive thought, there is a significant shortage of guidelines and specialized resources. The essay proposes intervention programs that integrate strategies to stimulate key intellectual functions such as memory, perception, reasoning, language, creativity, attention, and concentration, contributing to a comprehensive and quality formation.

The educational project presented in the document "Desarrollo del pensamiento científico en estudiantes de primaria indígena desde el vínculo con su comunidad" ("Development of Scientific Thinking in Indigenous Primary School Students through the Link with their Community") by Claudia Carolina García Gaitán and Mario Humberto Ramírez Díaz analyzes the development of scientific thought in indigenous primary school students through a didactic sequence on optical phenomena, based on their interaction with their natural environment. With a research approach based on design, the study underscores the importance of considering the community context as an essential resource to understand natural phenomena, promoting a more relevant and meaningful teaching.

In the paper "Metacognición en la lectura: empleo de estrategias de lectura en contextos disciplinares" ("Metacognition in reading: the use of reading strategies in disciplinary contexts"), Pedro Moreno, Jorge Hernández and Óscar Zúñiga analyze the frequency with which university students employ metacognitive reading strategies in their academic practices. Their results show significant differences depending on the academic subject, which underscores the need to promote specialized programs to strengthen the students' academic competencies in specific disciplinary contexts.

Also on the subject of written language, Italibi Quintana presents "Procesos de composición escrita de bachilleres en distintos contextos" ("Writing composition processes of high school students in different contexts"), in which she analyzes how high school students conduct writing composition processes in school and off-school environments. Through a socio-cognitive approach based on the New Literacy Studies and Scardamalia & Bereiter's expert-novice model, she examines the strategies and skills involved in writing. Her findings suggest that in-classroom writing lacks enough structure and complexity to foster the students' development, while writing in informal contexts tends to be more elaborate and reflexive. The study seeks to highlight the importance of integrating more dynamic writing practices into formal education.

Marcos Domínguez, in his article "Aprendiendo a ponerse en los zapatos del otro: empatía y su vínculo con el desarrollo socioemocional y cognitivo en el aula" ("Learning to put oneself in someone else's shoes: empathy and its link to socioemotional and cognitive development

in the classroom”), examines the importance of empathy in the students’ socio-emotional and academic development. Through a definition based on evidence, he analyzes processes such as emotional contagion, adopting an approach, and emotional modulation. The literature reviewed shows that empathy skills are linked to better social competencies and greater academic achievement, besides acting as a protecting factor against emotional exhaustion. The article highlights strategies to foster empathy in the classroom, underscores the role of teachers, and evaluates interventions such as the *Roots of Empathy* program.

Finally, two relevant papers about the Attention Deficit and Hyperactivity Neurodevelopment Disorder (ADHD): Lizette Anguiano, in “Neuromitos del TDAH en la educación: Revisión crítica y refutaciones factuales” (“ADHD Neuromyths in education: a critical review and factual refutations”), analyzes common beliefs about ADHD in the field of education and weighs them against scientific evidence. She identifies erroneous beliefs such as the idea that ADHD disappear as people grow older, or that all children who suffer this disorder are hyperactive. Based on a review of the literature, she proposes recommendations to improve pedagogical practices and emphasizes the need to share information based on evidence. She underscores the negative impact of these myths on teaching and the urgency of training teachers in a more accurate and effective approach to ADHD. And in “Vínculos entre la clasificación categorial y el funcionamiento ejecutivo en niños con ADHD” (“Links between categorical classification and executive functioning in children with ADHD”), Germán Hernández and Teresita de Jesús Montiel analyze the link between categorization and executive functioning in children with this disorder, exploring how their difficulties with abstraction, planning, and organization affect their learning of concepts. Through a Free Classification task, they compared the performance of children with and without ADHD, and found that the former showed a lower performance in semantic and visual skills. These findings suggest that ADHD affects not only attention and behavior, but also the capacity for conceptualization and classification of information.

The section *Otros Artículos* begins with the paper “La percepción del racismo entre estudiantes de licenciatura de la Universidad Pedagógica Nacional-Ajusco” (“Perception of racism among undergraduate students of the National Pedagogical University-Ajusco”) by Juris Tipa. This exploratory case study used a mixed methodology to present the results of 233 qualitative interviews applied to students of five in-campus majors in order to find out about their perception and experiences of ethnic-racial discrimination in a university environment.

Another case study in a university environment is presented in the text “Los saberes originarios en el programa curricular de instituciones de educación alternativa”. El caso del Centro Universitario Comunal de Valles Centrales-UACO” (“Original knowledge in the curricular program of alternative education institutions. The case of the Communal University Center of Valles Centrales-UACO”). In this essay, Jacob Guzmán Zacatula and Virginia Guadalupe Reyes

de la Cruz present a reflexive-theoretical analysis on the importance of preserving, protecting, strengthening, and transmitting original knowledge in an education for life.

This section continues with the paper “Continuidad pedagógica, condiciones de vida y migración de estudiantes en la Universidad Nacional de Catamarca (Argentina) durante la pandemia de Covid-19” (“Pedagogical continuity, living conditions and migration of students at the National University of Catamarca (Argentina) during the COVID-19 pandemic”) by Daniel Esteban Quiroga, José Alberto Yuni, Belem Montalto, and Marcos Andrada. Through a mixed approach, this paper analyzes the links between the pedagogical continuity, living conditions and migration of students of the National University of Catamarca in the context of a pandemic.

On the subject of continuity in school, Manuel Rejón Baz presents another case study, “Entre pares. Tácticas para permanecer en un Colegio de Bachilleres” (“Among peers. Young students’ tactics for enduring in a Colegio de Bachilleres”). This text, based on Michel de Certeau’s conceptualization, analyzes relationships among peers as tactics that young students in a public high school in Mexico City rely on to remain in school and complete their studies.

As a contribution to the discussion on the current meanings of college education, Ana María Fernández Poncela proposes the article “Necesidades, motivaciones y educación superior” (“Needs, motivation, and higher education”). This exploratory descriptive study analyzes the discourse of two focus groups of undergraduate students at the Universidad Autónoma Metropolitana, Unidad Xochimilco, conducted in 2015 and 2023, with the aim of learning about and comparing the students’ current motivations to study in a university.

The paper “Secuencias didácticas del género textual: una herramienta de enseñanza en las aulas multigrado” (“Didactic sequences of the textual genre: a teaching tool in multi-grade classrooms”) by Fabiola Isabel Castro Romero and Blanca Araceli Rodríguez Hernández uses as a reference didactic sequences based on textual genre as a device for teaching language and presents three didactic sequences to teach Spanish to students of different grades who study in the same classroom.

Our *Debate* section begins with the essay “Educación y cognición en disputa ¿Qué nos dicen y qué omiten las investigaciones publicadas en este número?” (“Education and cognition in dispute: What does the research published in this issue tell us, and what does it leave out?”) by Luis Gerardo Martínez Borrayo and Luis Alfredo Mayoral Gutiérrez. Also in this section are Bruno Baronnet and Patricia Medina Melgarejo’s paper “La escuela de los comunes: otras pedagogías en territorios de insumisión y emancipación” (“The school of the commons: other pedagogies in territories of insubordination and emancipation”) as well as the text “Elementos teóricos para reflexionar acerca de the constitution de identidades profesionales docentes de profesores universitarios” (“Theoretical elements to reflect on the constitution of the professional teaching identities of university professors”), by Julio César Reyes Sánchez and Sergio Gerardo Málaga Villegas.

Finally, in the section *Reseñas*, this issue includes the manuscript “Un aprendizaje situado, colectivo y mixto en diversos territorios: la experiencia de tejedoras/es en México” (“Situated, collective and mixed learning in diverse territories: the ‘tejedoras/es’ experience in Mexico”) by Georgina Alethia Sánchez-Reyes, Olga Evelyn Domené-Painenao, Alan Heinze Yothers and Teresita de Jesús Santiago Vera.

In conclusion, we hope this issue of *Diálogos sobre Educación* will serve as a starting point for new research and debate that enrich our understanding of thinking and its repercussions on education. In the end, academic discussion must aspire to making progress towards a more equitable, reflexive education better adapted to contemporary challenges. This issue invites our readers to participate actively in this discussion, question the *status quo*, and explore new perspectives through critical, creative and reflexive thinking that may contribute to a more just and sustainable future.