

**ABSTRACT**

The integration of artificial intelligence into STEM reading pathways represents a profound shift in how learners engage with scientific knowledge. Rather than replacing traditional reading practices, AI has the potential to expand and enrich them, transforming the act of reading into a more interactive, adaptive, and conceptually connected experience.

**RESULTS**

- 1. Cooperative working - Collaborative active reading, guided individual reading**
- 2. Active reasoned reading and contextual digital re-elaboration proposal**

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Written AI engaging activities as

**READER LEARNING DESIGNER in critical thinking**

**DISCUSSION AND CONCLUSION**

The integration of generative AI into reading pathways dedicated to DNA, molecular biology, botany and the neuroscience of memory has shown that technology can expand didactic possibilities without ever replacing what remains the true core of the educational process: the teacher’s mind, vision and professional judgment.

**STEM BIOSCIENCE ACTIVITIES**

- WRITE AN ARGUMENTATIVE ESSAY: BIOLOGY AS AN INFORMATION PROCESS FROM GENES TO MEMES
- DISCUSSION: HOW AI CAN HELP UNDERSTAND SYSTEMS BIOLOGY
- SIMULATION MODULATED INTERVIEW WITH ENRICO BUCCI
- INTERDISCIPLINARY WORKSHOP: BIOLOGY + PHILOSOPHY + COMPUTER SCIENCE: COMPARISON OF GENES AND MEMES AS INFORMATION CARRIERS
- KEY QUESTION FOR TEXT: LIFE AS AN INFORMATION NETWORK: FROM GENES TO CONSCIOUSNESS

**EFFECT OF EARLY SCIENTIFIC READING**

EARLY EXPOSURE TO READING ARE PREDICTIVE FACTORS FOR THE DEVELOPMENT OF NUMEROUS SKILLS, FAVORING PERSONAL AND PROFESSIONAL DEVELOPMENT

FIRST TEACH TO READ BOOKS, THEN TO COD AND SCREENS

SCIENTIFIC READING EDUCATION SHOULD NOT BE AIMED AT SIMPLY PROPOSING READING → BUT RATHER AT DEVELOPING A MENTAL CAPACITY AND SENSIVITY THAT ALLOWS EACH INDIVIDUAL TO INDEPENDENTLY PURSUE THE CONSTRUCTION OF THEIR PERSONAL CULTURE

READING TO DISCOVER THE PASSION FOR STEM BIOSCIENCE

**BIOSCIENCE IN CRITICAL THINKING**

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**STEM READING PATHS WITH MULTIPLE ACTIVITIES**

\* READERS PROTAGONISTS OF THE READING , ANALYSIS, RESEARCH, RELABORATION AND COMMUNICATION PROCESS

\* OPPORTUNITY IN READING SCIENTISTS'BOOK TO DESIGN, TO CREATE ENGAGING LARNING AND ORIENTATION PATHS

**PASSION**

- \* DIGITAL SKILLS INTEGRATED INTO THE EDUCATIONAL PATH:
  - TO RECOVER DISCIPLINARY AND EXPRESSIVE SKILLS
  - TO DEEPEN AND THINK CRITICALLY WITH IBSE METHODOLOGY
  - TO EXPRESS REASONED EVALUATIONS,
  - TO DOCUMENT AND TO COMMUNICATE



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**METHODS**

Scientific reading should not be proposed to young people as simple reading but rather inserted into specific educational paths, developing the mental capacity and sensitivity that allows the reader to build his or her own personal culture by cultivating reading to discover a passion for STEM bioscience integrated with critical thinking useful to cultivate the “narrative intelligence”.

**CULTIVATE AND DEVELOP “NARRATIVE INTELLIGENCE”**



THE ABILITY TO MAKE SENSE OF EXPERIENCE THROUGH STORIES, TO RECOGNIZE, TO CONSTRUCT AND INTERPRET NARRATIVES

**INHABITING COMPLEXITY**

DEVELOP AWARENESS OF REALITY THROUGH THE PRACTISE OF DEEP READING

ESTABLISHING CONNECTIONS, THOUGHTS, VISIONS AND NEW POINTS OF VIEW

**POWER OF DEEP READING: TRAINING CRITICAL THINKING**

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**COMPARING READING PRE AI AND POST AI**



**PRE AI?**

\* INDIVIDUAL READING WORK PREVALENT - ACTIVE READING

• WRITTEN ACTIVITIES

• DIGITAL INTEGRATION

• TERMINAL COMPARISON IN GROUP

**POST GENERATIVE AI?**

• COOPERATIVE WORKING PREVALENT - COLLABORATIVE ACTIVE READING GUIDED INDIVIDUAL READING

• ACTIVE REASONED READING AND CONTEXTUAL DIGITAL RIELABORATION - PROPOSAL

• WRITTEN COMPARING ACTIVITIES - LEARNING DESIGNER

• CRITICAL THINKING

**PROTAGONIST READER**

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**IMPORTANT INFORMATION LITERACY**

INFORMATION BIOLITERACY IS FUNDAMENTAL COMPONENT EDUCATION AT DIFFERENT LEVELS ALSO FOR HIGHER EDUCATION

CRUCIAL ROLE TO CULTIVATE INDEPENDENT AND COMPETENT

STUDENTS AND CITIZENS CAPABLE OF

IDENTIFYING, EVALUATING AND UTILIZING DIFFERENT INFORMATION RESOURCES

AI BIAS

**LIFELONG LEARNING SKILLS**



Teacher architect of the pathway, learning designer who intentionally shapes the learning environment and who—precisely through the conscious use of AI—can transform students into designers of their own thinking, capable of questioning texts, generating ideas, and evaluating responses critically.

**REFERENCES**

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- [3] Leon, C., Lipuma, J., Oviedo Torres, X. (2025). Artificial intelligence in STEM education: a transdisciplinary framework for engagement and innovation. *Frontiers in Education*.
- [4] Ajayi, A. (2024). AI Integration in STEM Curriculum: A Conceptual Model for Deepening Student Engagement and Learning. *International Journal of Advanced Multidisciplinary Research Studies*.

- \*Why to realize interdisciplinary book paths in AI age
- \*How to realize innovative STEM reading education at different levels
- \*Which interdisciplinary STEM reading activities with protagonist reader at the center of reading process