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Integrated Inclusive Model with AI for Challenges (MIIA-R): Validation Through Participatory Action Research in a Virtual University Environment

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INTRODUCTION & AIM

🤖 **GenAI expansion**
Generative AI is rapidly entering teacher education.

⚠️ **Inclusive-design gap**
Inclusive pedagogical frameworks are not evolving at the same pace.

🎯 **Objective**
To validate MIIA-R as a framework for designing inclusive, GenAI-mediated teaching–learning proposals in a virtual postgraduate context.

RESEARCH FOCUS

H1.- The implementation of MIIA-R will be associated with active participation and engagement during the formative process, and with functional-quality final proposals (M ≥ 3,0).

H2.- Greater diversity in the use of generative AI tools will be positively associated with higher levels of pedagogical creativity.

METHOD

🔬 **Design.-** Mixed-methods Participatory Action Research

🌐 **Context.-** Online master's course in education

👥 **Participants.-** **n = 83** students; **80** final team proposals; **178** coded products across the three PAR cycles

📚 **Data sources.-** Diagnostic survey, Padlet diaries, rubric, creativity scale, satisfaction survey, and proposal assessment

📊 **Analyses.-** Descriptives · Spearman · Kruskal–Wallis · Thematic triangulation

CONCLUSION

✅ **Viability**
MIIA-R showed pedagogical viability and sustained participation.

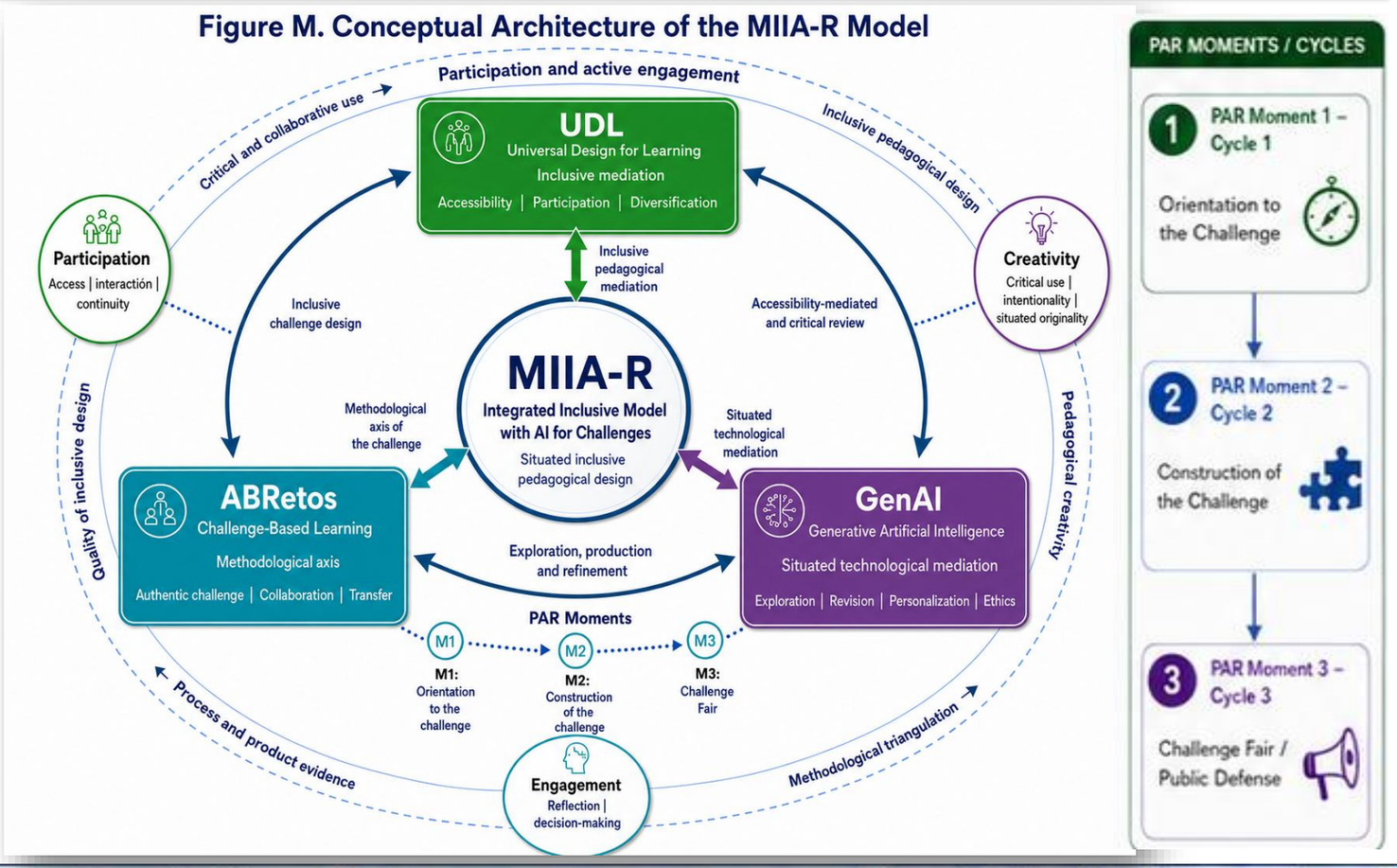
✅ **H1 partially supported**
Final proposals were functional, but UDL and pedagogical AI use need stronger scaffolding.

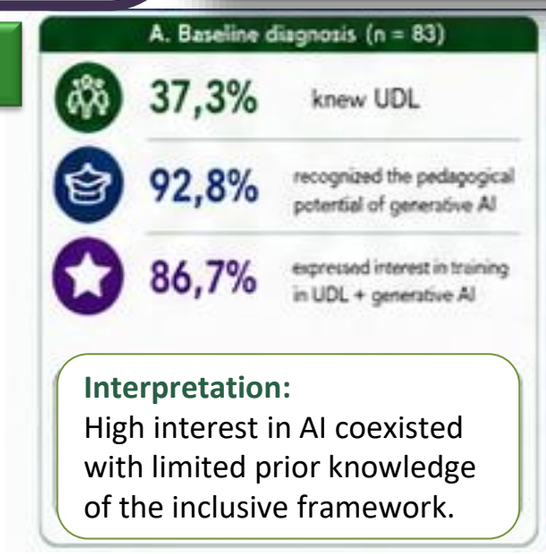
✅ **H2 contextually supported**
Creativity was higher with multimodal, purposeful and pedagogically guided AI use.

✅ **Integrated framework**
The model links UDL, ABRetos and generative AI in higher education.

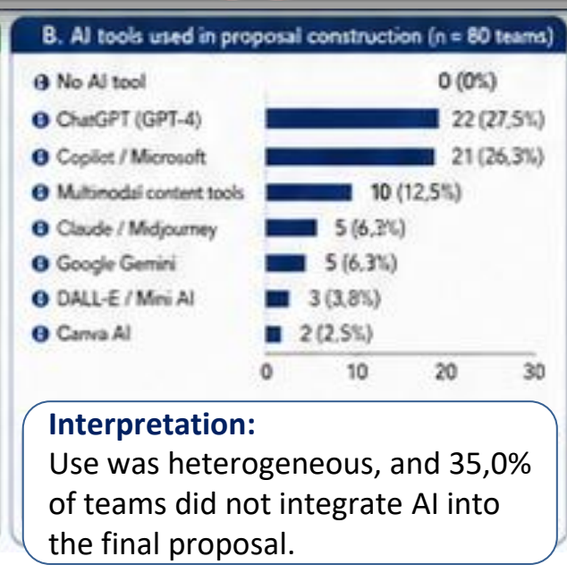
RESULTS & DISCUSSION

Figure M. Conceptual Architecture of the MIIA-R Model

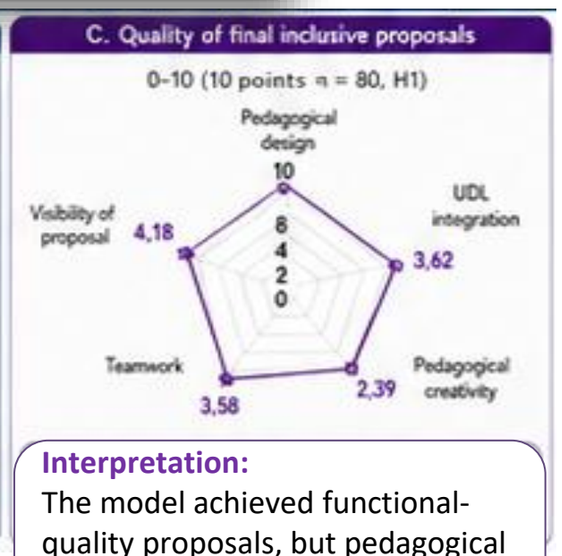




Interpretation:
High interest in AI coexisted with limited prior knowledge of the inclusive framework.



Interpretation:
Use was heterogeneous, and 35,0% of teams did not integrate AI into the final proposal.



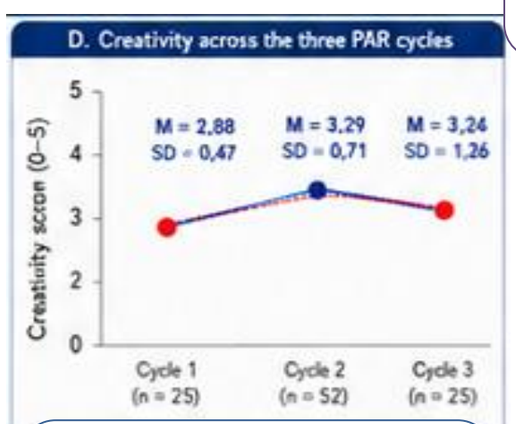
Interpretation:
The model achieved functional-quality proposals, but pedagogical integration of AI remained the weakest dimension.

QUALITATIVE EVIDENCE

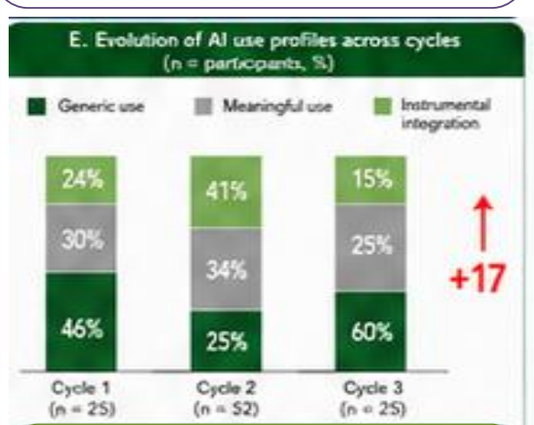
Student reflections – Padlet diaries

"Initially, we thought that using ChatGPT would make the design very good, but when we reviewed the UDL principles, we realized that AI does not guarantee inclusion by itself. We had to revise the entire proposal" _Group 3, Padlet C2

"The Fair was the moment when we truly understood what it means to design for everyone. Seeing the proposals from the other groups made us reflect on what was missing in our own" _Group 7, Padlet C3



Interpretation: creativity peaked in Cycle 2 and declined in Cycle 3, suggesting the need for pedagogical selectivity in the final stage.



Interpretation: AI use became more multimodal and pedagogically intentional.

FUTURE WORK / REFERENCES

🔄 Replicate in other higher-education contexts add comparative or quasiexperimental designs.
🔍 Deepen post hoc and long-term analyses add estimate interrater reliability.

Bhuttah et al. (2024) Bhuttah, T. M., Xusheng, Q., Abid, M. N., & Sharma, S. (2024). Enhancing student critical thinking and learning outcomes through innovative pedagogical approaches in higher education: the mediating role of inclusive leadership. *Scientific Reports*, *14*(1), 24362. https://doi.org/10.1038/s41598-024-75379-0
CAST (2024). CAST. (2024). *Universal Design for Learning guidelines version 3.0*. https://udlguidelines.cast.org
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