# STIAEM — Open Educational Resource (OER) Repository for AI

Metadata Sheet — WP2 / Erasmus+ KA220-SCH, ref. 2025-1-IT02-KA220-SCH-000365213

## OER 2.2.2

*Structural Origins of Algorithmic Hallucinations and Practical Classroom Mitigation Strategies*

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| **Identifier** | OER 2.2.2 |
| **Title** | Structural Origins of Algorithmic Hallucinations and Practical Classroom Mitigation Strategies |
| **Creator** | University of Alicante - Spain |
| **Description** | Focusing on a precise effect of probabilistic generation, the resource explains why hallucination is the structural correlate of stochastic sampling and not an accidental failure. It analyses the signals that lower vigilance — fluency, assertive tone and apparent authority — and the role of emergent capabilities. The practical focus is a four-step classroom mitigation protocol (primary sources, triangulation, consequential validity and terminological hygiene) leading from verification to digital citizenship. |
| **Keywords** | hallucination; stochastic sampling; fluency heuristic; source triangulation; consequential validity; digital citizenship; critical thinking; classroom protocols |
| **Language** | EN (English) |
| **Affiliation** | University of Alicante - Spain |
| **Contributor** | STIAEM Transnational Scientific Board (peer review, Rhodes validation protocol) |
| **Media Format** | Text; Infographics |
| **Genre** | Training Manual; Educational Guide |
| **URL** | https://www.stiaemproject.eu/?oer_download=OER-2.2.2 |
| **Citation** | University of Alicante. (2026). *Structural Origins of Algorithmic Hallucinations and Practical Classroom Mitigation Strategies* [Educational guide]. Slow Tech Innovation: AI, Ethics, and New Teaching Methods (STIAEM), 2025-1-IT02-KA220-SCH-000365213. |
| **References** | Bender, E. M., & Koller, A. (2020). Climbing towards NLU: On meaning, form, and understanding in the age of data. In Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (pp. 5185-5198). Association for Computational Linguistics. https://aclanthology.org/2020.acl-main.463/<br>Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (pp. 610-623). ACM. https://doi.org/10.1145/3442188.3445922<br>Brown, T. B., Mann, B., Ryder, N., Subbiah, M., Kaplan, J., Dhariwal, P., ... Amodei, D. (2020). Language models are few-shot learners. Advances in Neural Information Processing Systems, 33, 1877-1901. https://arxiv.org/abs/2005.14165<br>Cosgrove, J., & Cachia, R. (2025). DigComp 3.0: European digital competence framework (Fifth edition). Publications Office of the European Union. https://data.europa.eu/doi/10.2760/0001149<br>Miao, F., & Cukurova, M. (2024). AI competency framework for |

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| | teachers. UNESCO. https://doi.org/10.54675/ZJTE2084<br>Wei, J., Tay, Y., Bommasani, R., Raffel, C., Zoph, B., Borgeaud, S., ... Fedus, W. (2022). Emergent abilities of large language models. Transactions on Machine Learning Research. https://arxiv.org/abs/2206.07682 |
| **Educational Level** | Secondary School |
| **Associated Module / MOOC Video Lesson** | Module 2 - AI Fundamentals and LLM Mechanics / Video 2.2 - Probabilistic Functioning of Large Language Models |
| **Learning Objectives** | Explain why hallucination is the structural correlate of stochastic sampling and not an accidental failure; recognise the signals that lower vigilance - fluency, assertive tone, apparent authority; apply in the classroom a four-step mitigation protocol: primary sources, triangulation, consequential validity, terminological hygiene. |
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| **Date Available** | 14/09/2026 |
| **Date Modified** | |