

Motivation

Artificial intelligence (AI) is reshaping how students learn and interact with learning tools, making them face new emotional demands such as frustration with unpredictable outputs and fatigue. However, there is a lack of studies focusing on computer science students, a high-risk group due to the many tasks involving AI.

Findings From Software Engineers

Montes and Khojah found that frustration is the most common emotion triggered by Large Language Models' users when getting wrong answers [1].

Naseer [2] found that cognitive overload, mental exhaustion, and decreased decision-making ability resulted from long AI usage.

Gabbiadini et. al. [3] found that exposure to Generative AI (e.g., ChatGPT) triggered higher negative emotions in users.

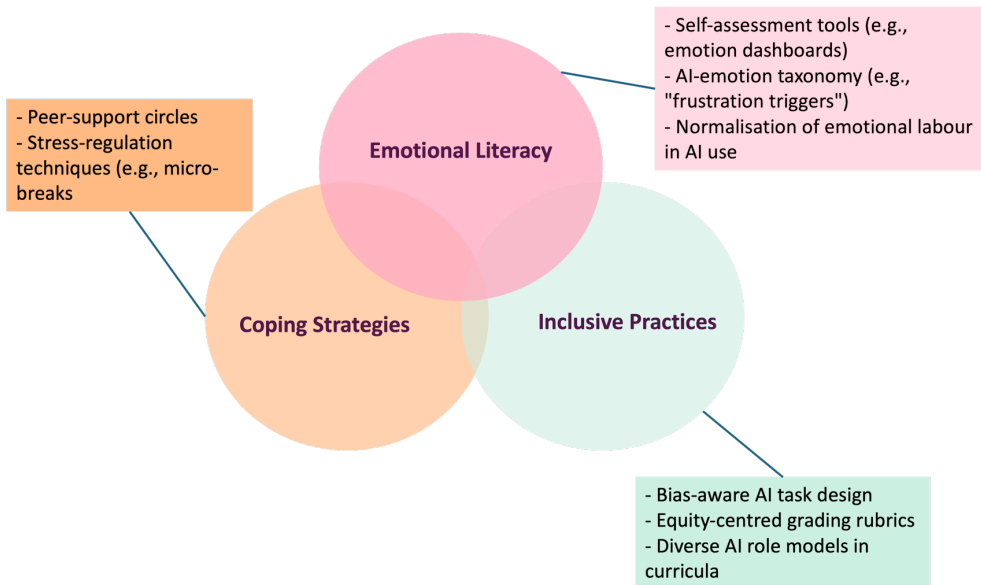


Figure 1: Envisioned Framework as Outcome

Design Process

- 1.- Exploration:** interviews and focus groups.
- 2.- Measurement and Validation Phase:** Large-scale survey.
- 3.- Testing, Evaluation and Refinement:** Pilot in computing courses

Proposed Framework And Recommendations

The empirically grounded framework will support educators and course designers in shaping course design (including structured group work and scaffolded assignments), emotional onboarding when introducing AI tools, and activities that encourage ethical dialogue and foster personal agency.

References

- Cristina Martinez Montes and Ranim Khojah. 2025. Emotional Strain and Frustration in LLM Interactions in Software Engineering. arXiv preprint arXiv:2504.10050
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- (2025) Gabbiadini Alessandro, Ognibene Dimitri, Baldissarri Cristina, and Manfredi Anna. 2025. The emotional impact of generative AI: negative emotions and perception of threat. *Behaviour & Information Technology* 44, 4 (2025), 676–693 Rukiye Altin, Tugba Tokel, Omer Delialioğlu. 2021. The Effects of Mathematics on Programming Skills and its Retention: An Experimental Study. *Journal of Computers in Mathematics and Science Teaching*, 40(3), 183-199.

