

Research topic/question

How do different AI avatar personalities (empathic vs neutral) influence learners' perceived empathy, learning effectiveness, and engagement in an AI-supported learning environment?

H1: Emotional Support

H1: Learners interacting with the empathic avatar will feel **more emotionally supported and encouraged** during the learning process compared to the neutral avatar.

Measured by the following questions:

SECTION 5 — Perceived Empathy & Support

Q2. The avatar's responses felt supportive.

Q3. I felt encouraged while interacting with the avatar.

Q5. The avatar made the learning experience feel more comfortable.

H2: Perceived Learning Effectiveness (SELECTED)

H2: Learners interacting with the empathic avatar will report **higher perceived learning effectiveness** than those interacting with the neutral avatar.

Measured by the following questions:

SECTION 4 — Perceived Learning Effectiveness

Q1. The avatar helped me understand the psychology concepts clearly.

Q2. The explanations were easy to follow.

Q3. I feel more confident about the topic after interacting with the avatar.

Q4. The learning session was effective for my learning needs.

Q5. I would like to use a similar AI avatar for learning in the future.

H3: Engagement

H3: The empathic avatar will lead to **higher learner engagement** compared to the neutral avatar.

Measured by the following questions:

SECTION 6 — Trust & Interaction Quality

Q3. I felt engaged during the interaction.

Q4. The avatar's tone influenced my motivation to continue learning.