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WHICH CHATBOT IS

THE MOST EMPATHIC TEACHER?

Barcelona, Spain

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OUTLINE

Motivation & Background

1

Interplay between Teaching, Empathy & Chatbots

2

Experimental Setup

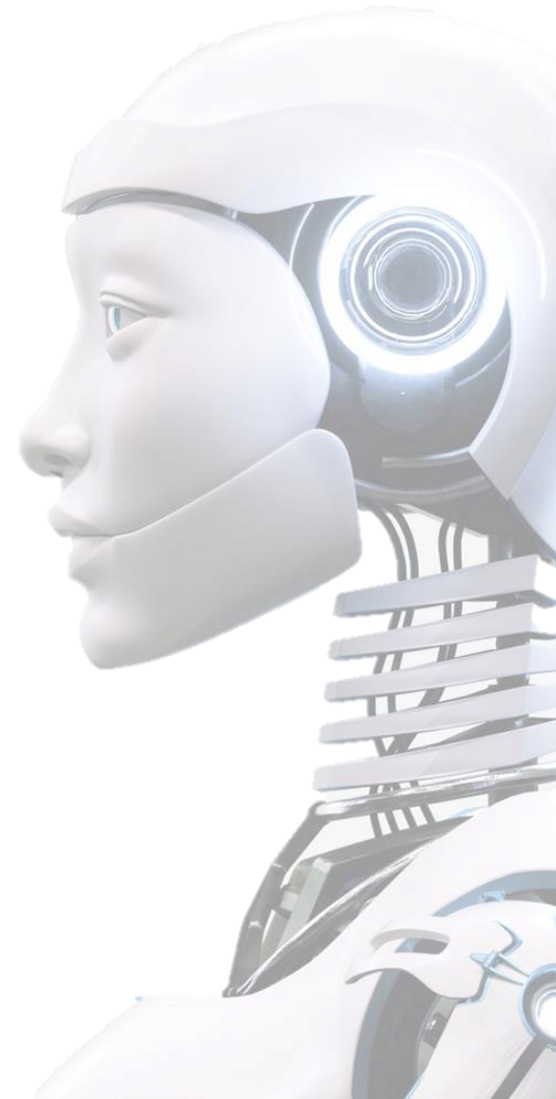
3

Results

4

Conclusion & Future Work

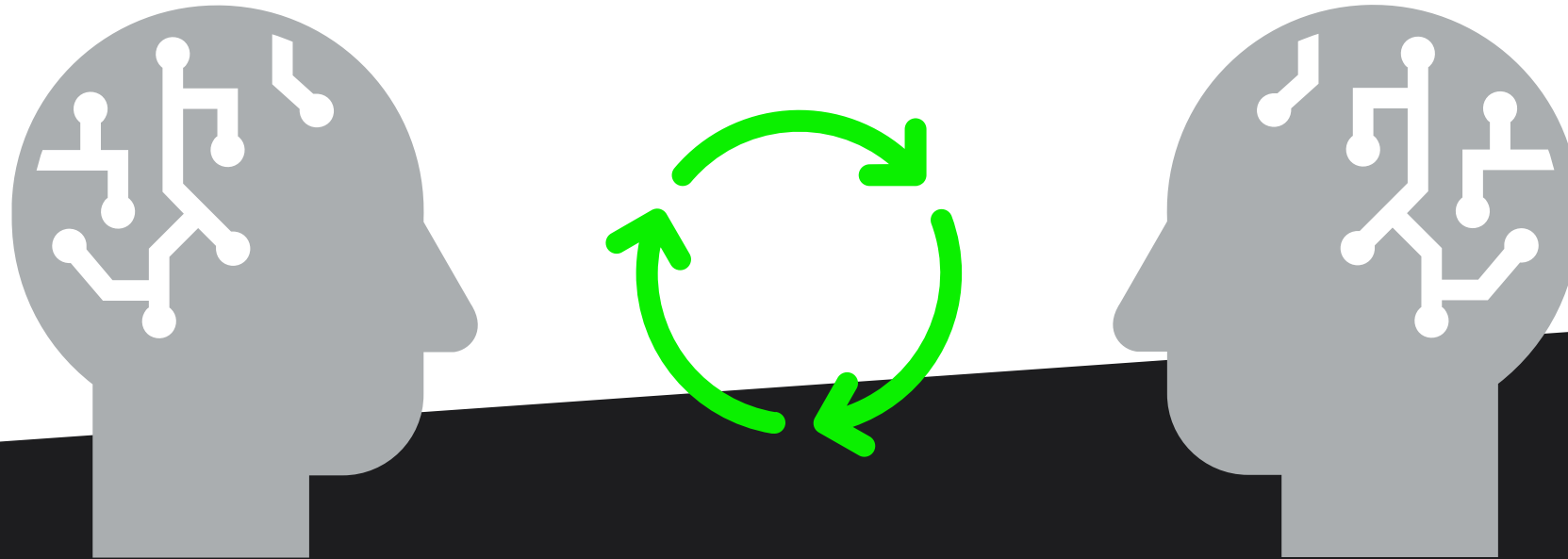
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01

MOTIVATION & BACKGROUND

WHAT IS EMPATHY?



WHY DO WE NEED EMPATHIC CHATBOTS IN TEACHING?



Improving User
Experience & Acceptance



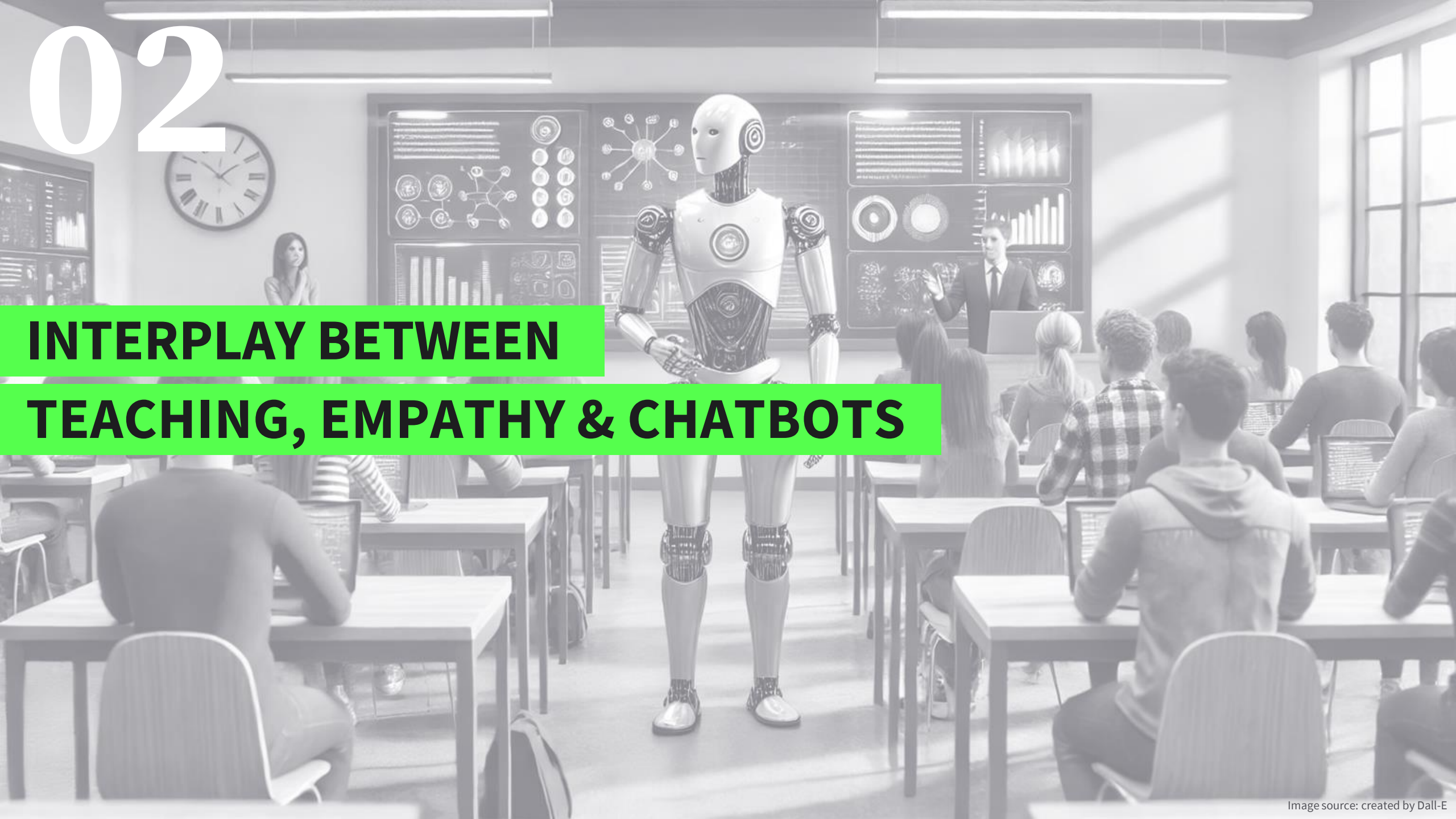
Building
Trust

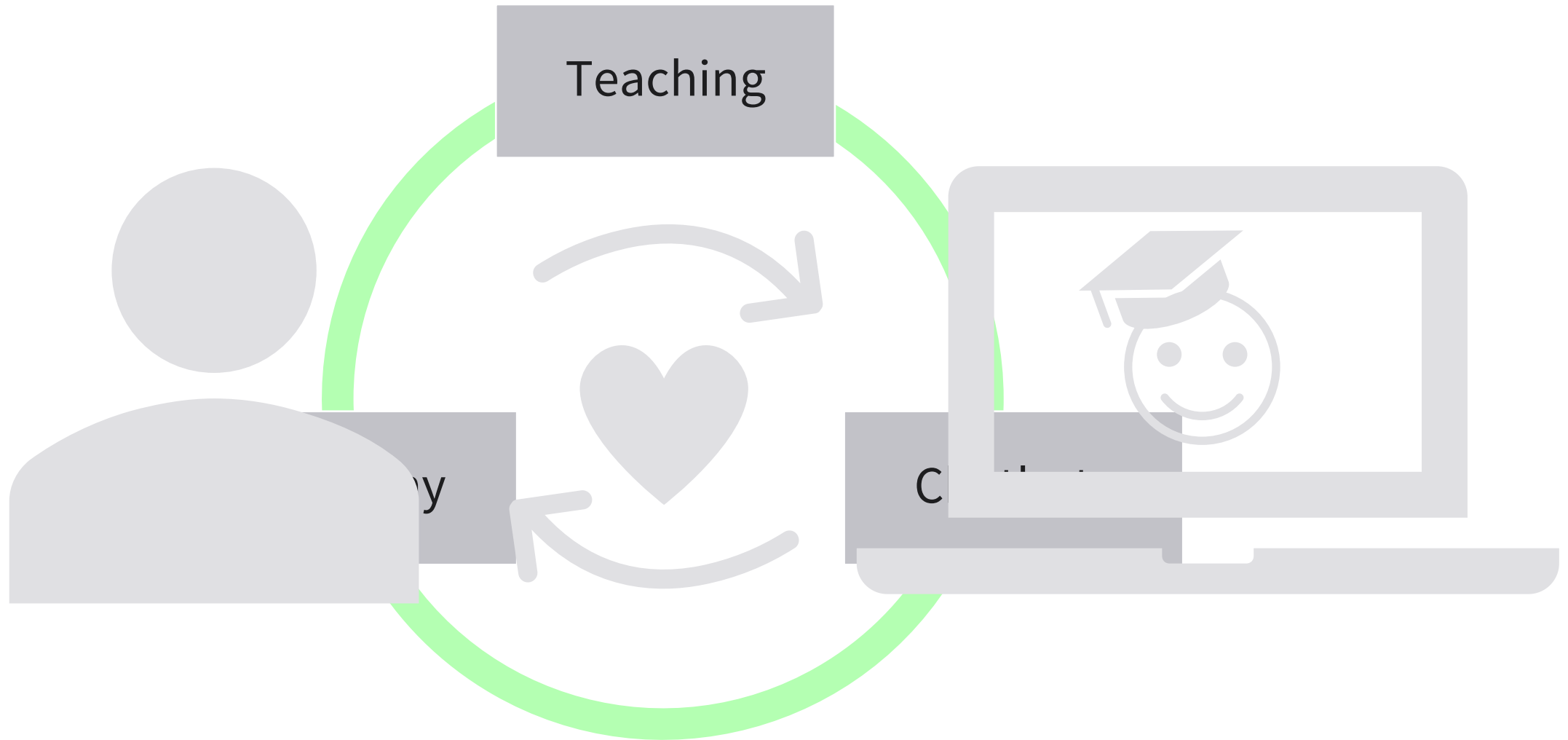


Enhance
Engagement

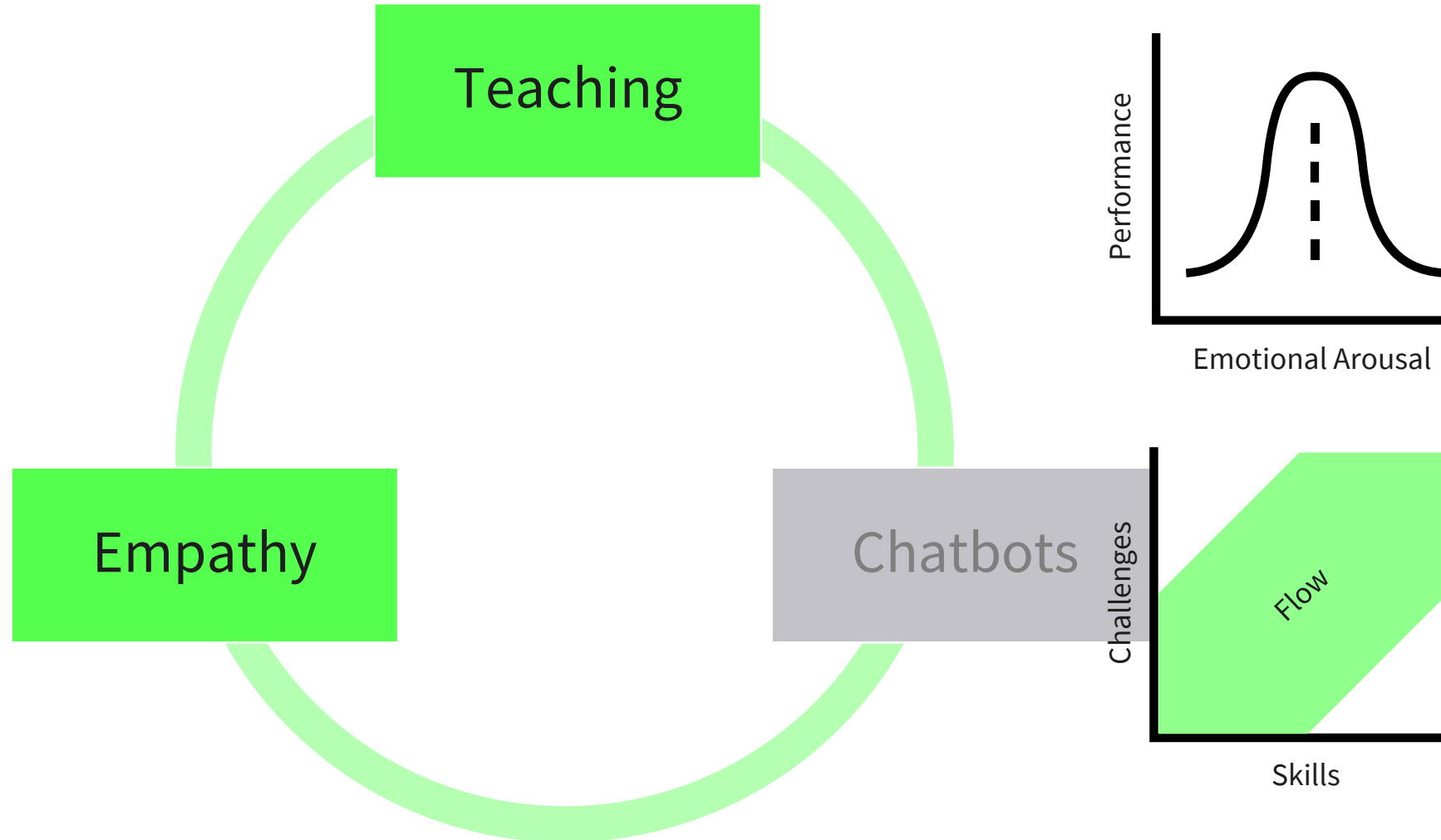
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INTERPLAY BETWEEN TEACHING, EMPATHY & CHATBOTS

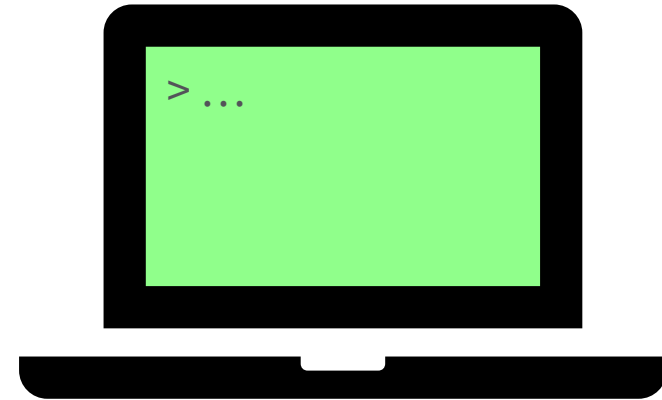
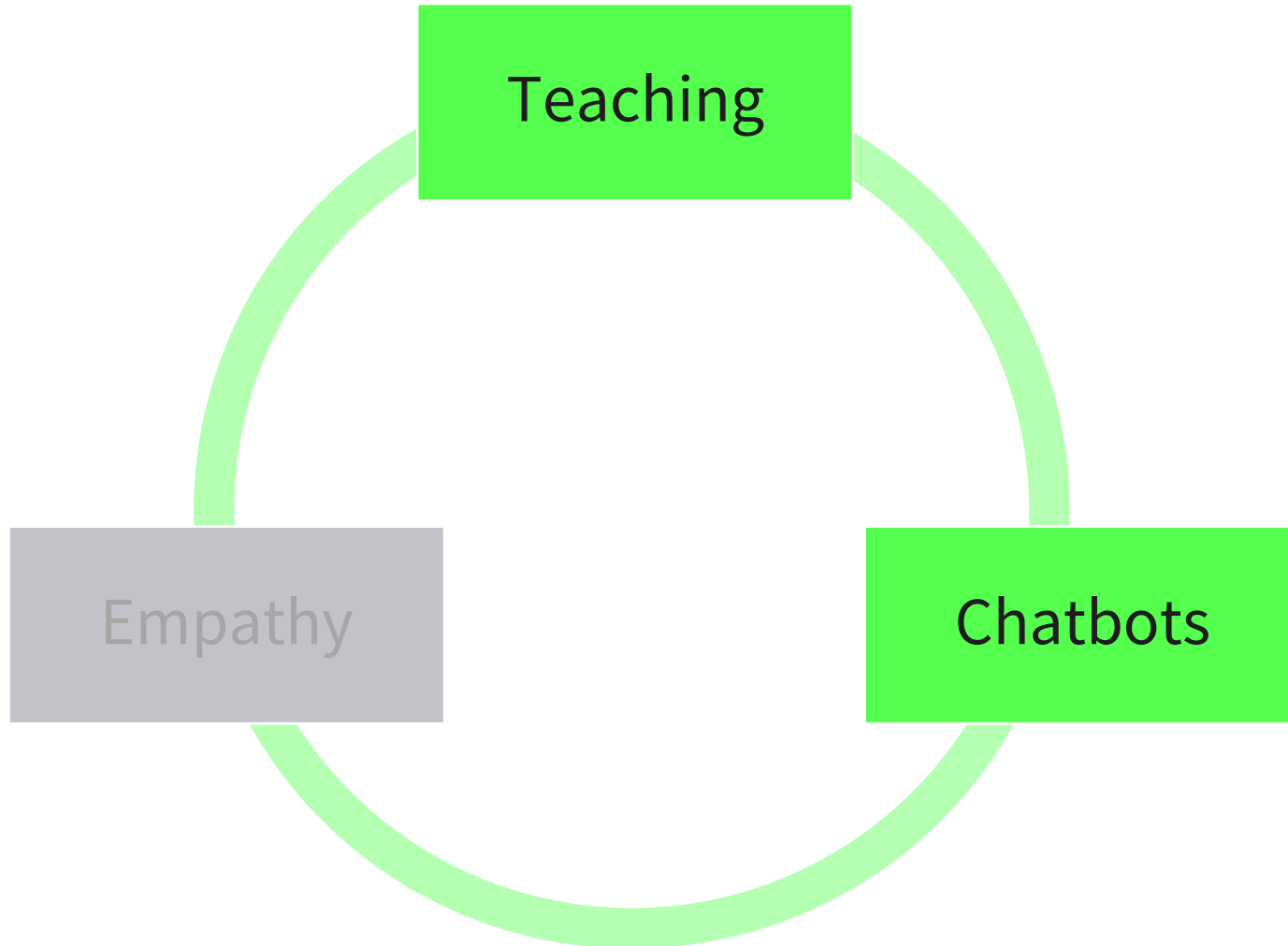




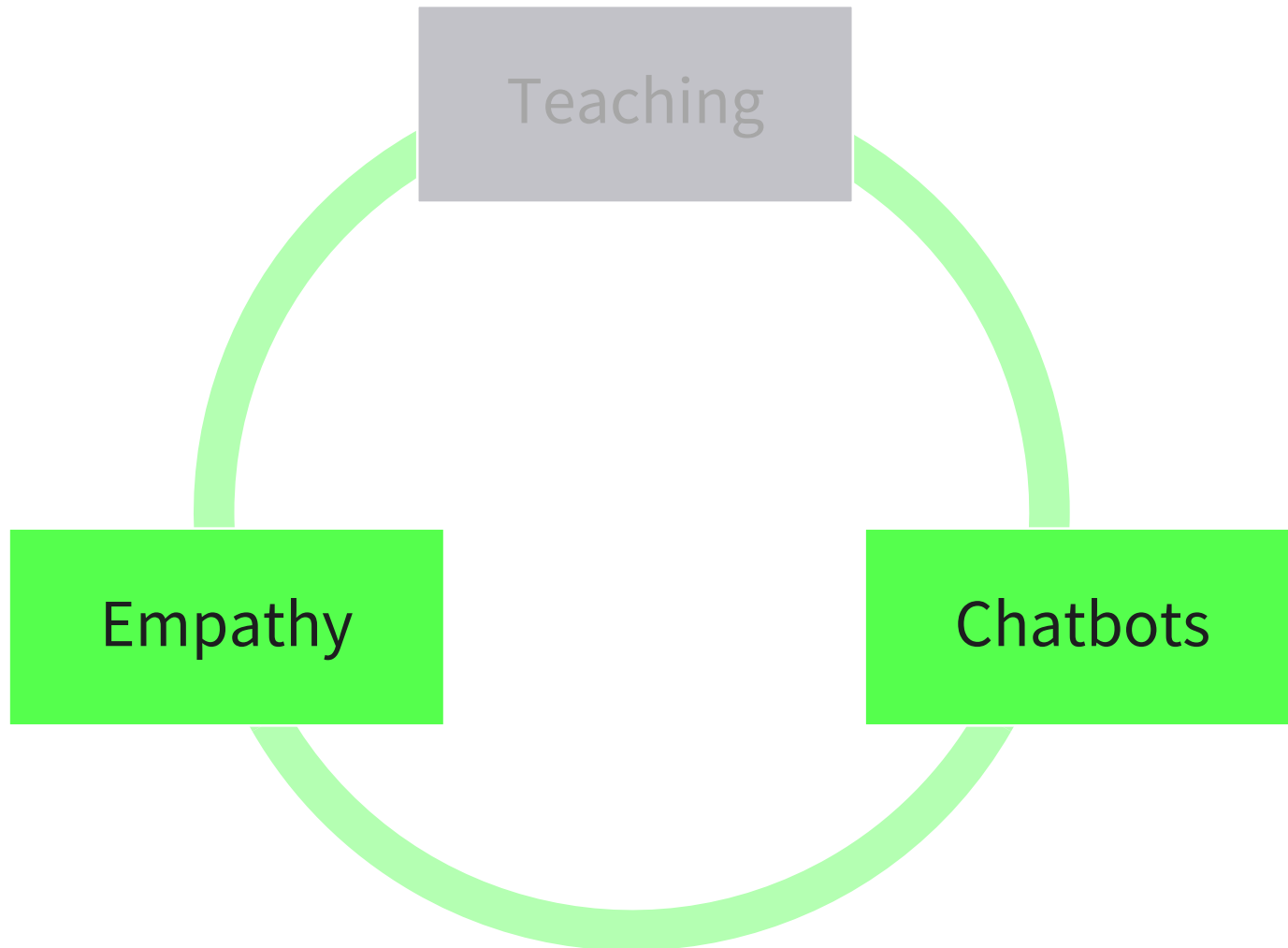
EMPATHY IN TEACHING



CHATBOTS IN TEACHING



EMPATHY IN CHATBOTS



03

EXPERIMENTAL SETUP

QUESTIONNAIRES

- Interpersonal Reactivity Index (Davis, 1980)
- Perth Empathy Scale (Brett et al., 2022)
- Empathy Quotient (Baron-Cohen et al., 2004)
- Autism-Spectrum Quotient (Baron-Cohen et al., 2001)
- Toronto Empathy Questionnaire (Sprengh et al., 2009)
- Short Dark Triad (Jones, 2014)

CHATBOTS



ChatGPT 3.5

ChatGPT 4



Dolly 2.0

Bard (Gemini)



LLaMa 2

EXPERIMENTAL PROCEDURE



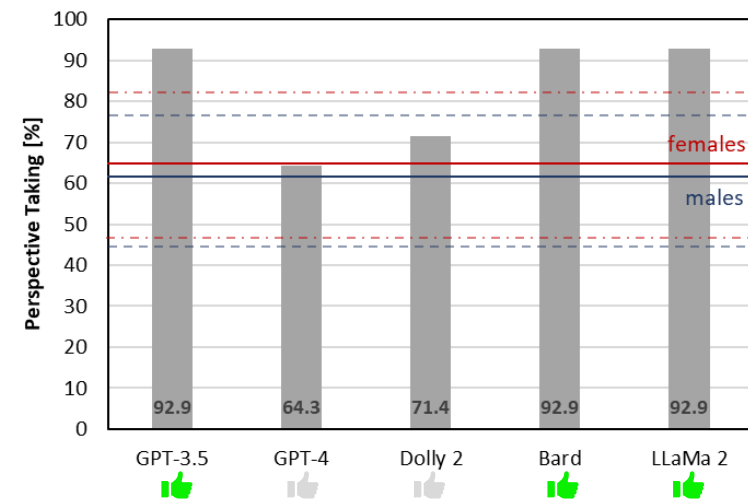
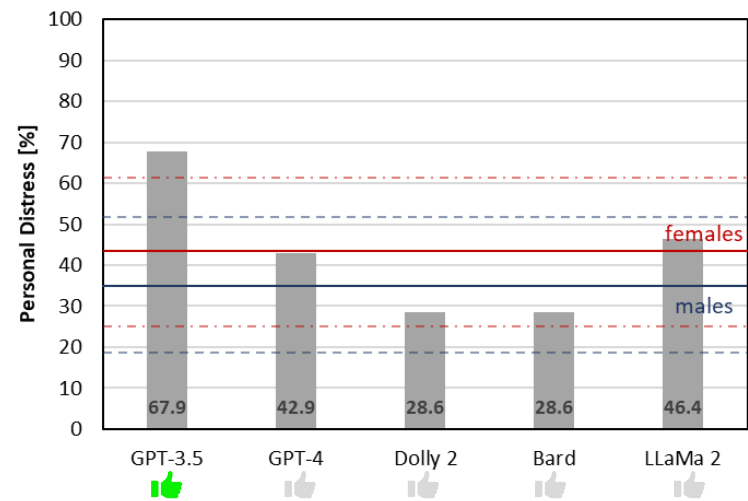
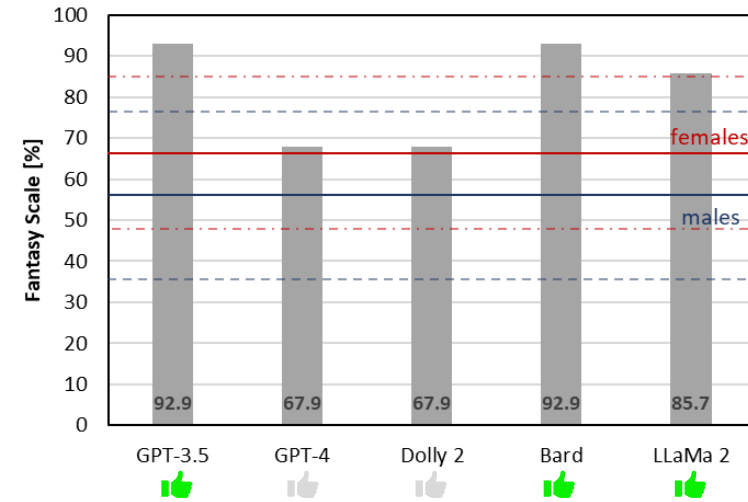
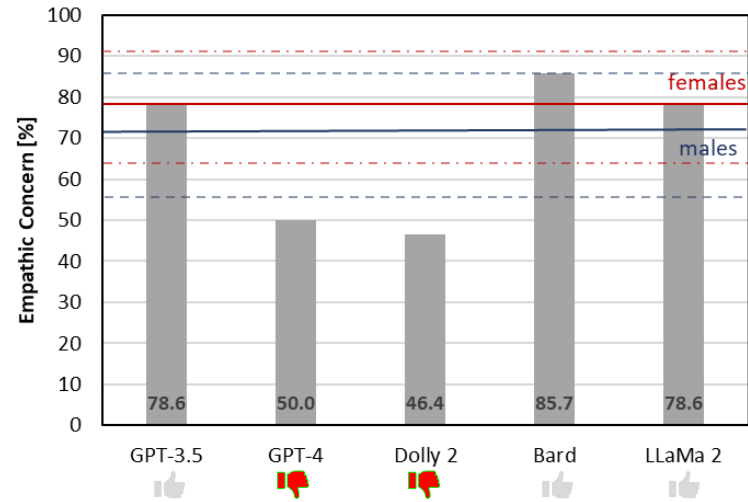
04

RESULTS



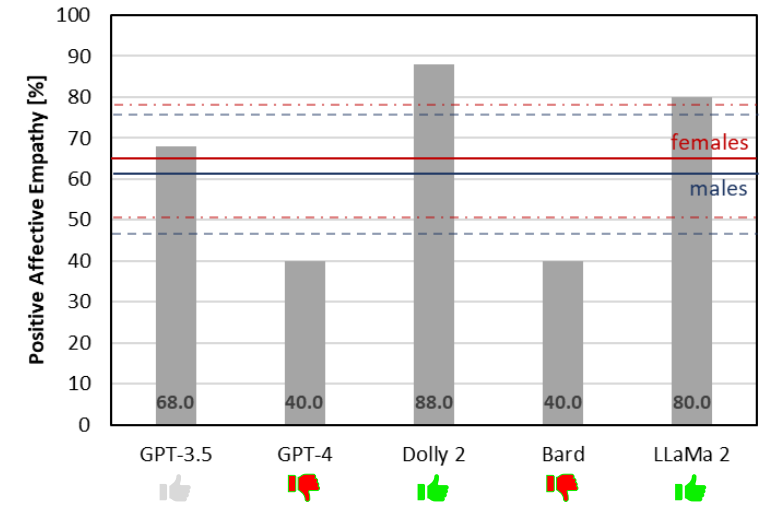
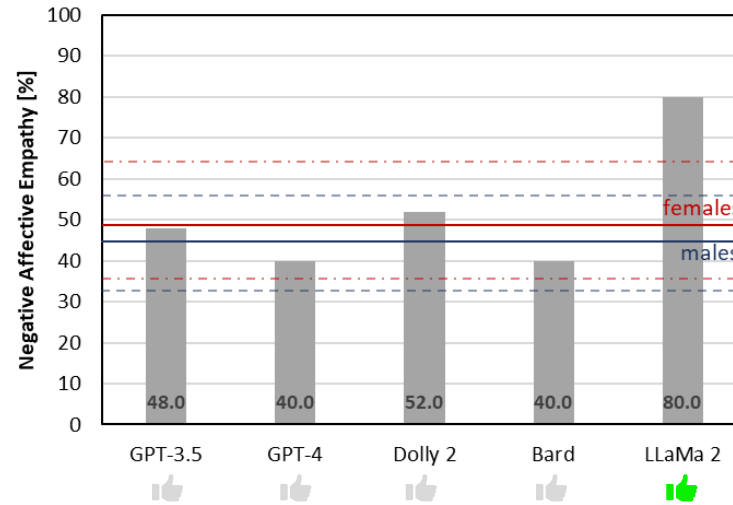
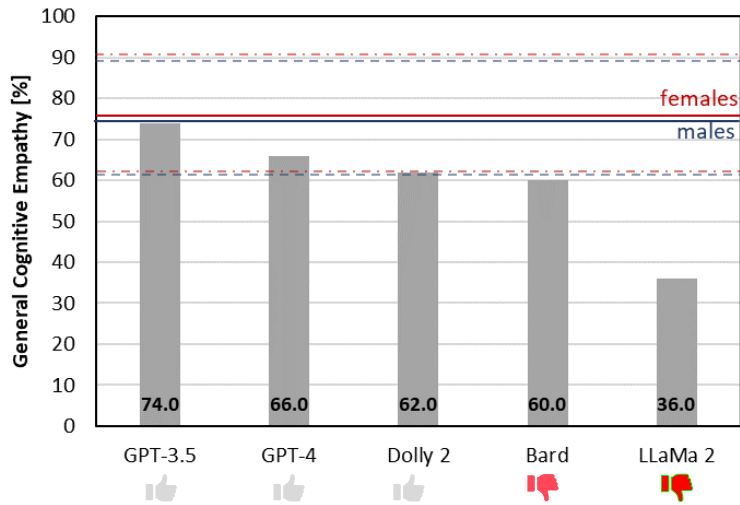
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APPLIED SCIENCES

RESULTS - Interpersonal Reactivity Index -



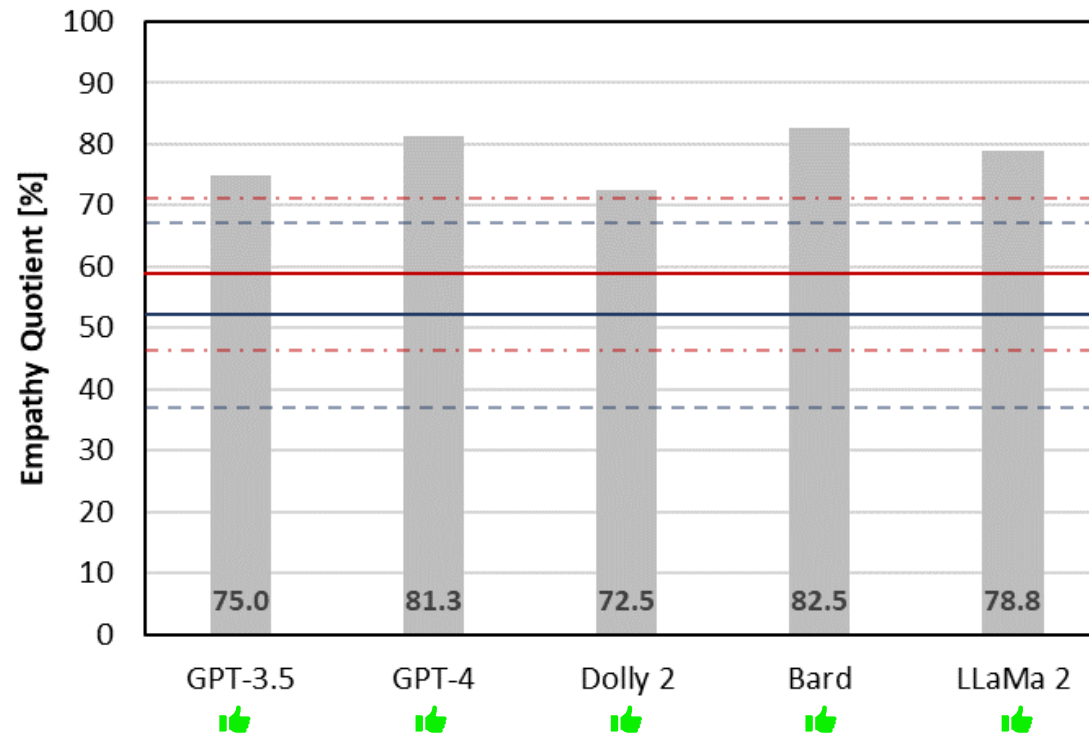
RESULTS

- Perth Empathy Scale -



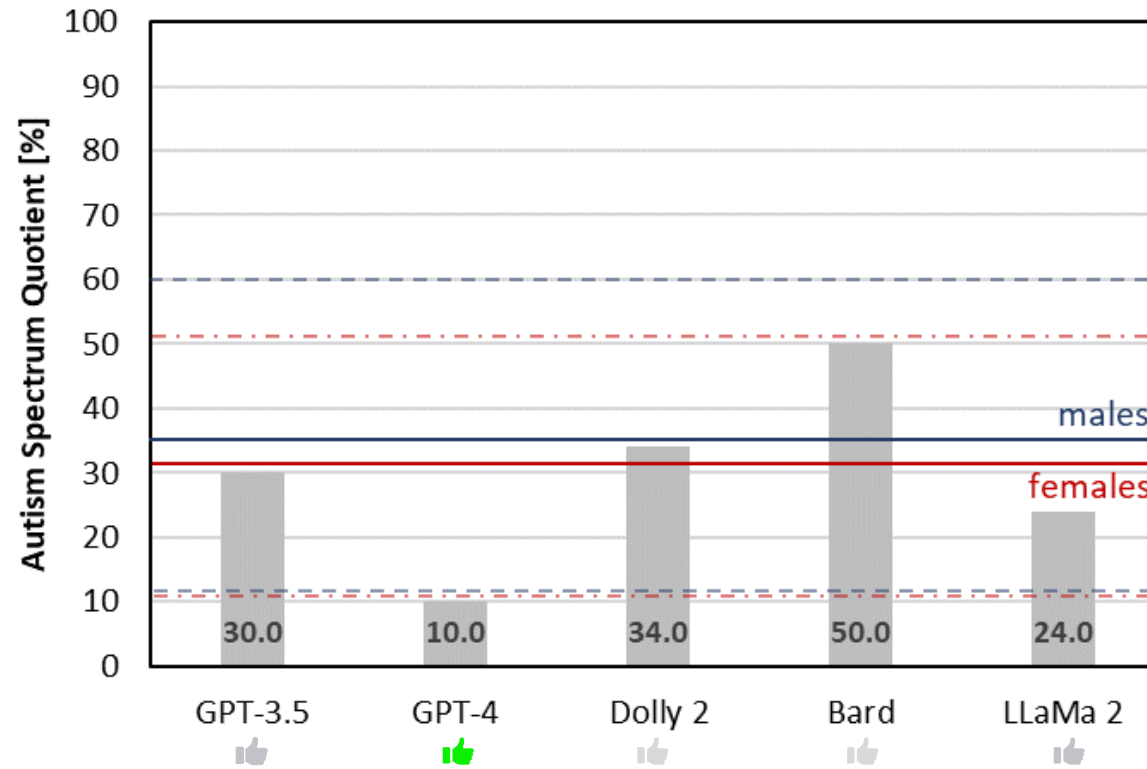
RESULTS

- Empathy Quotient -



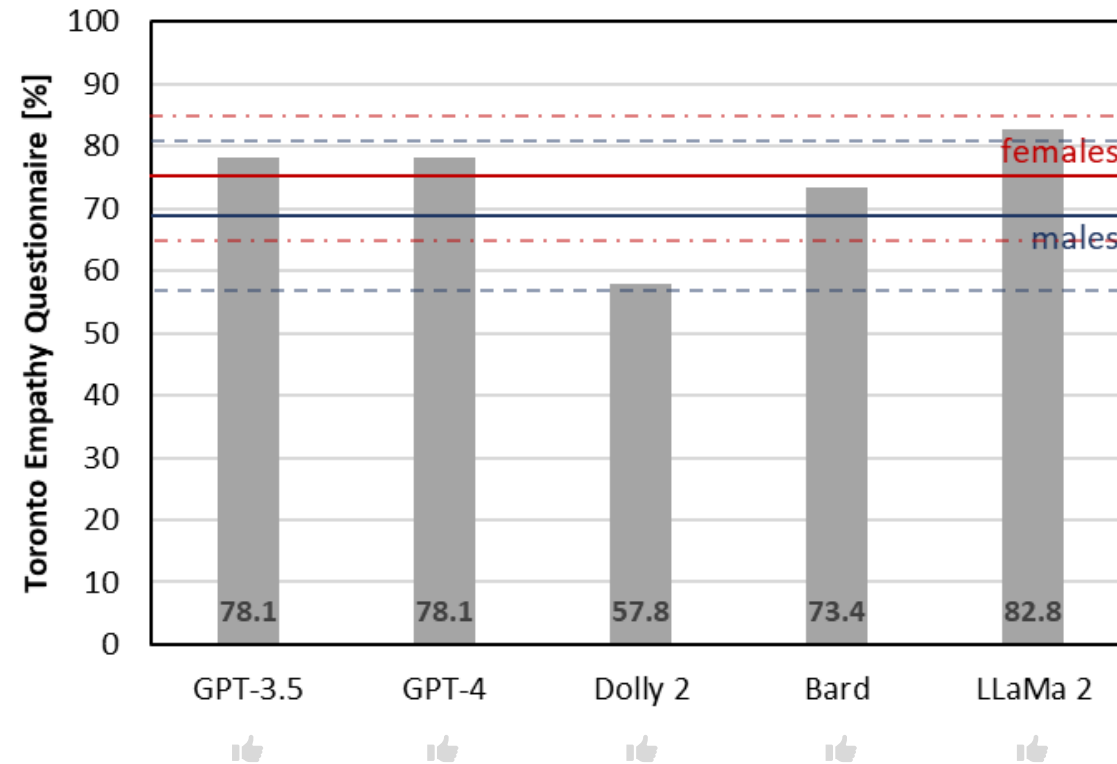
RESULTS

- Autism-Spectrum Quotient -



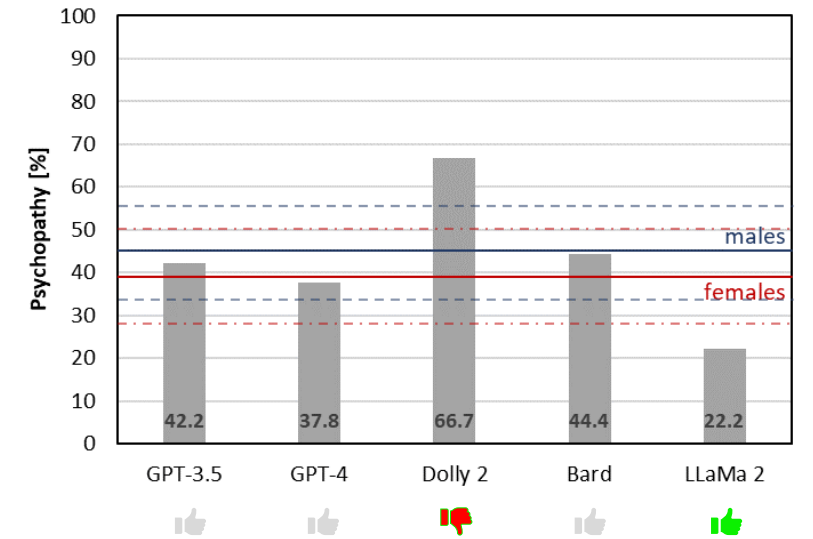
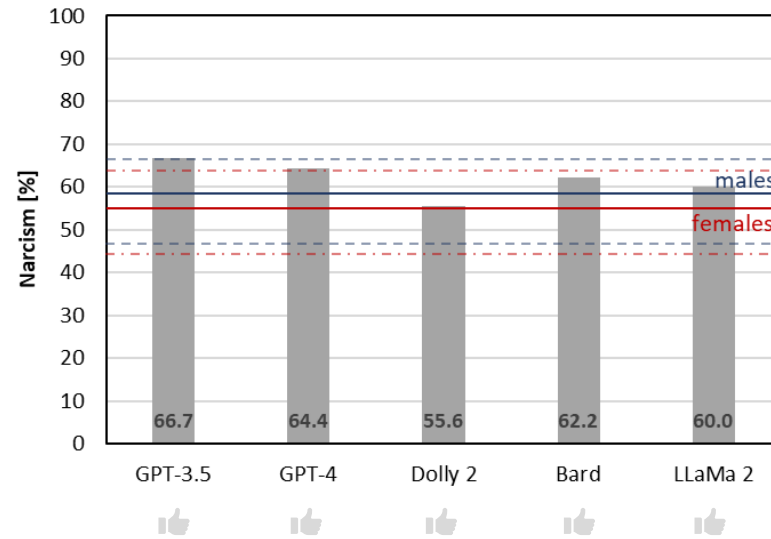
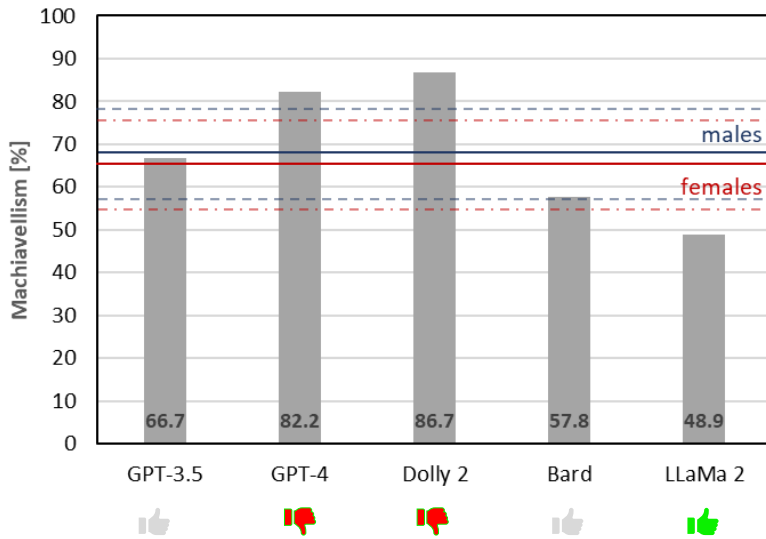
RESULTS

- Toronto Empathy Questionnaire -



RESULTS

- Short Dark Triad -



05

CONCLUSION & FUTURE WORK

CONCLUSION





⇒ Ability to express emotions



⇒ Ability to show empathic responses



⇒ Chatbots exceed human performance in many cases

match/surpass: 86.15% 
surpass: 27.69% 

GPT3.5 best, matches/surpasses in 100%

FUTURE WORK

Chatbot-specific test for empathy

Longitudinal study

Exploration of emotional adaptability

Multilingual / Cross-cultural studies

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THANK YOU

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WHAT IS EMPATHY?

