



MethodMentor

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Context

- In Research Methods, common challenges reported by students and teaching staff relate to negative perceptions, anxiety, complexity, lack of motivation, and the need for personalised support.
- AI educational chatbots offer opportunities to address these challenges (e.g. increase motivation, reflection, and self-efficacy).
- Pedagogical innovations for Research Methods are needed and should explore AI possibilities.
- Co-creation and exploration with students and teaching staff required for educational chatbot design.

Objectives

- Develop an AI chatbot to support postgraduate student evaluation, reflection, comparison, and selection of Research Methods.
- Scaffold conversation design using best practices of educational chatbots, dialogic pedagogy, and co-creation with students and teaching staff.
- Evaluate the AI chatbot, its impact, perceptions, scalability, and usefulness from a student and teacher perspective.

Key Outcomes & Impact

- Conducted a scoping review of **100+ publications** on educational chatbots, dialogic pedagogy, and research methods teaching to identify key pedagogical and technological design principles.
- Collected data from **16 qualitative interviews** and **12 survey responses** with postgraduate students, supervisors, and lecturers.
- Qualitative inductive and deductive analysis of **111,143 words**. In-depth insights into research methods best practices and challenges, use of AI tools, and design considerations for the chatbot were gathered.

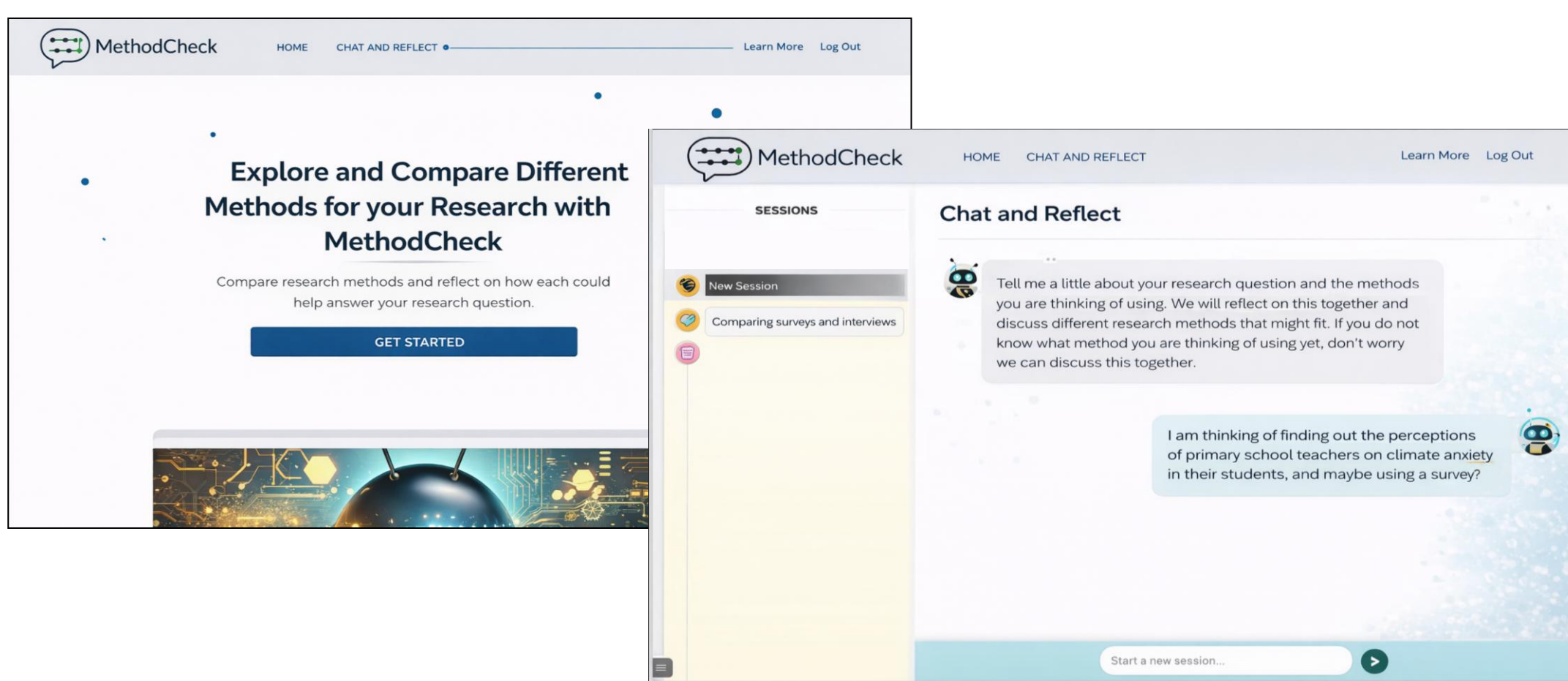


Figure 1: Screenshots of MethodCheck prototype

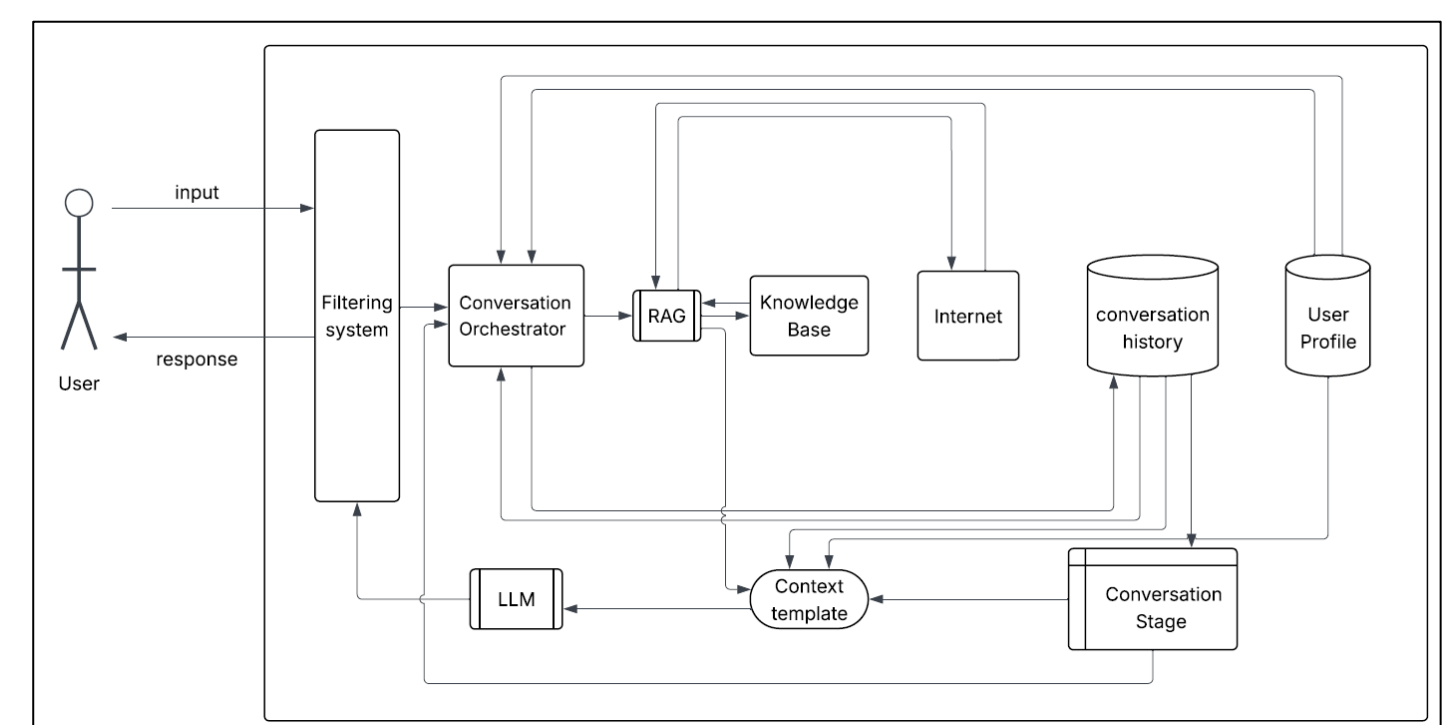


Figure 2: Preliminary MethodCheck architecture

- Preliminary design of a constructivist aligned **AI chatbot prototype “MethodCheck”** using a structured dialogic framework to support student reflection, comparison, and decision-making in research methods selection.
- Identification and curation of **60+ open-access Research Methods resources** to inform the Retrieval-Augmented Generation (RAG) knowledge base.
- Developed resources for **prototype pilot evaluation** and impact measurement (e.g. self-efficacy, reflection) with students and teaching staff in September (pending ethical approval).
- **Four outputs** from this research have been shared at academic conferences and networking events.

Reflections

- Developing educational chatbots should be grounded with relevant pedagogies.
- Co-designing educational chatbots with students and teaching staff is highly appropriate for developing user centered, meaningful, and context relevant technology tools.
- AI-supported tools for Research Methods learning should focus on reflection and connecting theory and practice rather than solely information provision.
- Collaboration across disciplines (i.e. CAP, CHARM-EU, ADAPT, School of Education) fosters innovative thinking and integration of diverse expertise and knowledge.

