

From "Search as Learning" to "Converse for Learning"

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Abstract: "Search as learning" is a topic of research, connected to the application of retrieval mechanisms to Education. With the rise of Generative Artificial Intelligence, the pathways for learning have widened. In a first stage, tools based on transformers have allowed to create interfaces where the generative power could be used to search information about a subject of study, create explanations about topics, and give answers to students' questions. Then, the rise of large language models gave students the opportunities for a more personalized use of general purpose, hugely trained, chatbot.

Nowadays we are also witnessing the possibilities to build specialized conversational agents, e.g. via RAG technology, in order to allow a student to dialogue with the chatbot (yes, the agent) in a contextualized environment, where the context is given by the knowledge base provided to the agent, on which to limit the span of the answers.

Hence, research activities over the last decade can be seen as a progression from search for learning toward "converse for learning". In this perspective, learning is supported through dialogue with a specialized conversational agent (yes, the chatbot) operating within a domain-specific context of interest. When properly contextualized and guided by pedagogical instructions, such an agent may provide meaningful support to learners, while limiting cognitive delegation and safeguarding the development of critical thinking and problem-solving skills.

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