

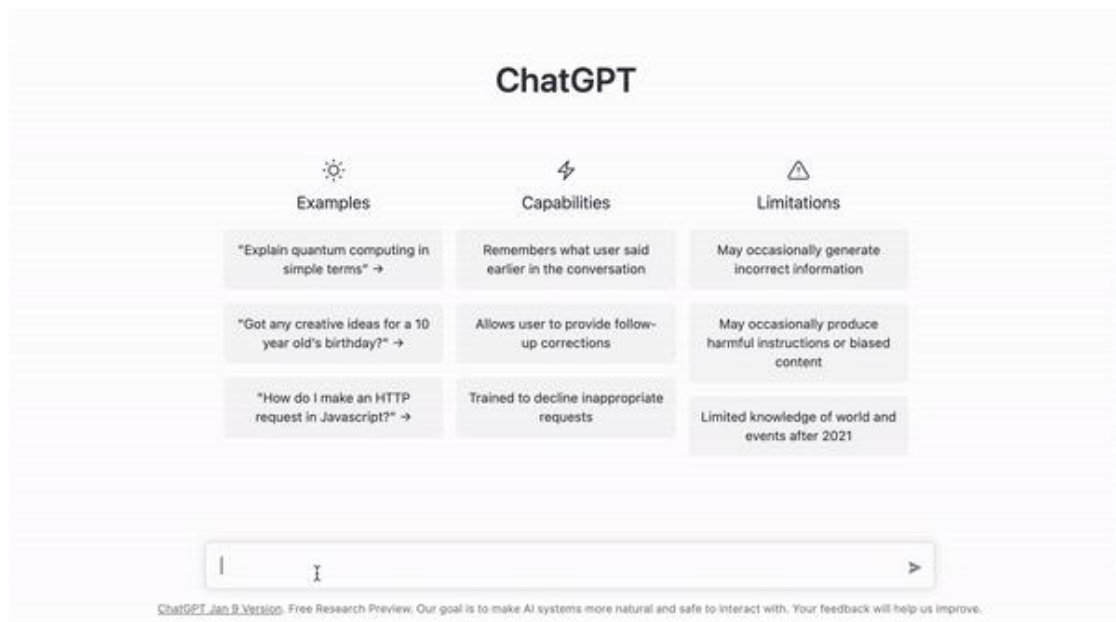
# ChatGPT and generative AI: Background and SWOT analysis

## Background

Recent developments of ChatGPT and similar human-like conversational chatbots are garnering significant attention. These generative artificial intelligence (AI) tools are developed using Large Language Models (LLMs), which are capable of generating conversational text in response to prompts and performing natural language tasks. It is conceivable that generative AI will be a game-changer for education, work and other facets of life. Questions abound as educators discuss the impact of generative AI tools and their future role in teaching, learning and assessment.

## ChatGPT

ChatGPT, an extremely popular and versatile generative AI tool, went viral after its release on November 30, 2022, and has gained 100 million monthly active users in less than two months.



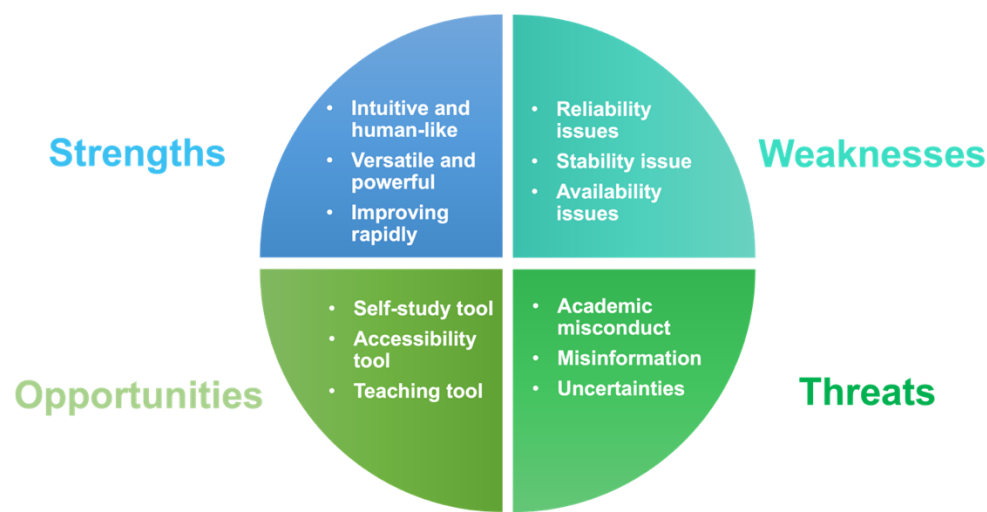
*ChatGPT (accessed on January 10, 2023)*

Since its launch, important questions have been raised about the profound impact of generative AI tools on teaching, learning and assessment. Among them are concerns about **academic standards, academic integrity, assessment design, detection and prevention of academic misconduct**. Some universities and schools around the world have issued bans to

prohibit students from using generative AI tools. In spite of scepticisms, techno-optimists argue that its educational value may outweigh the potential challenges.

## SWOT analysis

To take a closer look at the impact of generative AI tools, it is worth analysing the strengths, weaknesses, opportunities and threats of ChatGPT:



### Strengths

#### I. Intuitive and human-like

- Understands long and complex requests (prompts)
- Generates human-like, coherent and generally accurate responses to a wide range of prompts

#### II. Versatile and powerful

- Trained on an extremely vast corpus of text databases from the internet
- Built on a leading modelling network (transformer model)

#### III. Improving rapidly

- Advancement of generative AI tools based on larger and more complex language models (e.g. release of GPT-4, a more powerful version of the GPT language model with enhanced features such as higher accuracy, visual input and longer context)
- Improvement of response accuracy and quality by domain-specific models

### Weaknesses

#### I. Reliability issues

- ChatGPT could generate plausible-sounding responses that are factually inaccurate and biased

- Produces answers with non-existent references, devoid of citations, and without knowledge of current events (after 2021)

## II. **Stability issue**

- The free version of ChatGPT is occasionally at capacity and unavailable at peak times

## III. **Availability issues**

- ChatGPT is not available in all countries
- Priority access requires fee-paying subscription (ChatGPT Plus)

## Opportunities

### I. **Self-study tool**

- A virtual assistant that helps students with independent learning
- For example, students can use ChatGPT to generate summaries, simplify complex text, translate languages, improve writing clarity, critique ideas and correct errors

### II. **Accessibility tool**

- An 'equaliser' that personalises learning for students who need additional learning support

### III. **Teaching tool**

- Saves time and improves the quality of curriculum design, teaching activities, assessment and feedback
- For example, lecturers can ask students to critique and improve AI-generated answers

## Threats

### I. **Academic misconduct**

- AI-text detectors are not completely reliable (e.g. Turnitin, OpenAI's classifier, OpenAI GPT2 Output Detector, and GPTZero)
- Paraphrasing tools (e.g. QuillBot) could affect the detection of AI-generated text

### II. **Misinformation**

- By generating plausible-sounding but false information and fake references, ChatGPT can spread misinformation and misguide students

### III. **Uncertainties**

- Concern about the devaluation of certain skills and subject knowledge in the existing curricula
- Do all students have equal access to ChatGPT? The service has been unstable and not available in certain regions
- Question of intellectual property ownership - who owns AI-generated work?

If you have any questions, please contact the [Academic and Learning Enhancement team](#).