

A joint responsibility to ensure sound use of chatbots in education

1. Background and rationale

The widespread availability of conversational artificial intelligence (AI) systems, commonly referred to as “chatbots”, is rapidly changing the conditions under which learning, and then teaching, take place. These systems are increasingly able to generate explanations, solve problems, provide examples, summarize texts, translate documents in different languages, engage in conversations, and support many ordinary educational tasks, all by interacting in natural languages. Their presence in the learning environment is no longer a marginal or future possibility: it is becoming part of the everyday reality of students, teachers, families, institutions, and educational technology providers.

For this reason, the central educational question is not whether learners will interact with chatbots. They will. The more relevant question is how they will interact with them, under what conditions, with what purposes, and with what consequences for learning.

From a pedagogical point of view, interactions with chatbots are not intrinsically beneficial or harmful. They support learning when they help students ask better questions, clarify doubts, receive feedback, explore alternative explanations, test their understanding, and develop greater autonomy. And, in the broader perspective, they support learning when they help students become better future citizens, equipped to address the complex challenges of our society. Vice versa, they undermine learning when they replace the learner’s intellectual activity, encourage passive dependence, conceal misunderstanding, or reduce education to the production of acceptable outputs.

The purpose of this recommendation is therefore not to promote the uncritical adoption of chatbots, nor to support their simple prohibition. Its purpose is to encourage the educational system, the companies, and the technology providers to collaborate to govern their use: to design practices, policies, and tools that make chatbot interaction pedagogically meaningful, ethically responsible, and societally sustainable.

Its purpose is also to exhort the private sector providing the chatbots to take their responsibility and not focus solely on creating customers as “token consumers”. Commercial firms should be part of the development of responsible education systems aligned with technological possibilities by also studying the impact their products have on the learning process and working with educators to adapt the chatbots to provide optimal learning experiences and skill development. A powerful technology like the one at the basis of chatbots must serve as an enabler for human flourishing, not as a substitute for human judgment and agency.

Hence, all relevant societal subjects are invited to become co-designers of responsible conversational AI for education.

2. Two guiding assumptions for educators and private sector alike

These recommendations are based on two guiding assumptions.

First, learners will increasingly interact with chatbots, both inside and outside formal educational settings. Any educational policy that ignores this fact risks becoming ineffective or merely symbolic. Schools and universities should therefore move from defensive questions, like “How can we prevent students from using chatbots?”, to the key formative question: “How can we educate students to use chatbots to become better learners and, in perspective, better citizens?” Companies should move away from solely providing schools and universities with the tools – selling their technological systems – to be active co-creators of helpful products.

Second, the educational value of chatbot interaction depends on how such interaction is designed, framed, monitored, and reflected upon. Indeed, the same tool may support deep learning in one context and superficial shortcutting in another. What matters is not only the technical capability of the system, but also, and much more critically, the pedagogical situation in which it is used.

These assumptions lead to three key questions:

1. How does learning change when chatbots become part of the learning process?
2. What can educational institutions do to make interactions with chatbots beneficial for learners?
3. What can the private sector do to help educators using chatbots for constructive learning experiences?

The first question provides the cultural and conceptual ground for answering the next two questions. Before defining rules of use, education systems need to understand what is changing in the very ecology of learning when chatbots become a key component of learning processes.

3. The changing structure of learning: the WHY and the HOW, not only the WHAT

In traditional educational settings, the learner-teacher relationship has often been organized around disciplinary contents. A teacher of chemistry, literature, mathematics, history, or philosophy is expected, first of all, to teach chemistry, literature, mathematics, history, or philosophy. Methodology and motivation are certainly present, but they often remain implicit or secondary: the teacher teaches a subject, and students are expected to learn it.

The availability of proficient chatbots changes this arrangement. In many domains and for many ordinary educational purposes, chatbots are already remarkably capable of handling content. They can provide explanations, reformulations, examples, exercises, and answers at a scale and speed that no educational institution can ignore. At the same time, their outputs still require verification, contextualization, interpretation, and critical assessment.

This situation does not make disciplinary contents irrelevant. On the contrary, contents remain essential. They are the concrete medium through which learners acquire concepts, develop judgment, encounter difficulty, and build intellectual habits. However, when access to answers becomes easier, the educational priority begins to shift. The key challenge is no longer only to provide access to information or explanations: it is to help learners understand why learning matters, how knowledge should be sought, evaluated, and used, and what responsibilities come with the ability to obtain immediate answers.

In this sense, we may be facing an inversion of priority in education. Traditionally, the “what” of learning, namely disciplinary content, has occupied the foreground, while the “how” and the “why” of learning have often remained in the background. In the age of chatbots, education must bring the “why” and the “how” to the foreground, while preserving contents as the living substance of learning.

The fundamental pedagogical question becomes: why should learners continue to learn, when they can interact with artificial entities that appear to know more than they do? The answer cannot simply be that they must learn in order to reproduce answers. Rather, they must learn in order to understand, judge, question, create, participate, take responsibility, and remain intellectually free. This shift requires moving away from traditional teaching models toward authentic learning communities where knowledge, insights, and judgement are co-constructed through human discourse.

4. Pedagogical principles for good use

A pedagogically sound use of chatbots should be guided by the following principles.

4.1 Chatbots should support, not replace, the learner’s activity

The central educational risk is premature delegation. Learners may be tempted to delegate to the chatbot not only routine tasks, but also the effort of formulating questions, facing uncertainty, developing arguments, checking results, or revising their own work.

Good use should therefore preserve and strengthen the learner’s agency. A chatbot should be used as a tutor, interlocutor, simulator, critic, or assistant, not as a substitute learner. The educational value of the interaction should be measured not only by the quality of the output, but also by the quality of the learner’s engagement.

4.2 Chatbot use should make thinking more visible

One of the most promising educational uses of chatbots is to make learning processes more explicit. Students can be asked to compare alternative explanations, identify errors in chatbot responses, improve prompts, justify why they accept or reject an answer, document how their understanding changed, or reflect on the limits of the tool.

In this perspective, the chatbot becomes not merely a source of answers, but a mirror and amplifier of the learner's reasoning. The goal is not to hide the process behind a polished result, but to bring the process into the open.

4.3 Verification and critical judgment are essential

Like human beings, chatbots can produce inaccurate, incomplete, biased, or misleading responses. Even when their answers are plausible, they may lack appropriate context, disciplinary nuance, or epistemic reliability. Therefore, students should be explicitly taught that chatbot outputs are not authoritative simply because they are fluent.

Educational institutions should cultivate practices of verification as key conditions of responsible authorship: checking sources, comparing answers, identifying assumptions, distinguishing facts from interpretations, and understanding when expert judgment is required.

4.4 Motivation must be addressed explicitly

The availability of chatbots makes the motivational question unavoidable. Students may reasonably ask why they should make the effort to learn something that a chatbot can apparently produce on demand.

Education should be able to answer this question explicitly. Learning is not valuable only because it enables the production of answers: it is valuable because it forms persons capable of understanding the world, participating in shared inquiry, making responsible decisions, and not being dependent on systems they cannot evaluate.

The aim of education is not merely access to information, but the development of knowledge and the formation of judgment.

4.5 The role of the teacher becomes more important, not less

Chatbots do not eliminate the need for teachers. They change the conditions of teaching. Teachers are needed to design meaningful learning environments, select appropriate tasks, frame the use of tools, interpret student difficulties, cultivate motivation, assess understanding, and preserve the human and relational dimension of education.

In a chatbot-rich environment, teachers become even more necessary as designers of learning, guardians of intellectual standards, mediators between technological possibilities and educational purposes, and interlocutors with companies developing the chatbots and associated toolkits.

4.6 Pedagogical principles should remain open to revision

The principles presented here should not be understood as fixed prescriptions, but as orientation points for educational practice. Their value depends on how they are interpreted, tested, and refined across different disciplines, educational levels, institutional contexts, and technological developments.

The rapid evolution of generative AI makes continuous pedagogical inquiry indispensable. Teachers are therefore called not only to apply educational principles, but also to evaluate their effectiveness, identify unintended consequences, share emerging practices, and revise their approaches in light of experience and evidence. In this sense, the responsible integration of chatbots into education requires teachers to act as reflective practitioners, capable of combining educational judgment with ongoing experimentation.

5. Recommendations for stakeholders

5.1 For teachers

Teachers should be supported in integrating chatbots into pedagogical practice where appropriate. This does not mean using chatbots in every activity, but understanding when they can help and when they may be harmful. Possible educational uses include: generating examples and counterexamples, supporting revision, simulating dialogue, providing formative feedback, helping students compare explanations, creating exercises at different levels of difficulty, and encouraging metacognitive reflection.

Teachers should also redesign some assessment practices. If a task can be completed by a chatbot without requiring real understanding from the learner, then the task may need to be reconsidered. Assessment should increasingly value process, justification, oral explanation, critical comparison, personal synthesis, and the ability to use tools responsibly.

Moreover, teachers should be actively involved in the chatbot development cycle, for supporting their appropriate educational-aware training.

5.2 For students

Students should critically question the use of chatbots and understand their possibilities and limitations. They should make the deliberate choice not to become dependent on them but use them as tools to support and improve their learning process. They should understand the potential and dangers of chatbots in their

professional and personal lives, and actively acquire the skills and knowledge to set chatbots to their hands, as enablers for building the future they want. They should be educated to use chatbots as learning companions, not as machines for avoiding learning. They should learn to ask good questions, interpret answers critically, request explanations, challenge responses, verify claims, and use chatbot interaction as part of a broader process of life-long learning.

Students should also be made aware that depending too heavily on chatbots can weaken their own abilities. The goal is not to use such tools as little as possible, nor as much as possible, but to use them in ways that increase competence, autonomy, and meaningful relationships, with the aim of becoming responsible citizens.

5.3 For school leaders and university administrators

Educational institutions should not leave chatbot use to individual improvisation. They should develop clear, flexible, and pedagogically grounded guidelines. These guidelines should distinguish between recommended, acceptable, problematic, and unacceptable uses, while recognizing that different disciplines and age groups may require different approaches.

Institutions should provide teacher training, promote experimentation, collect evidence about effective practices, and ensure that issues such as data protection, equity of access, transparency, and academic integrity are properly addressed.

5.4 For policymakers

Policy should avoid both technological enthusiasm and defensive prohibition. The appropriate task of public policy is to create the conditions for responsible educational adoption. This includes investment in teacher training, research on learning outcomes, public-interest evaluation of educational AI systems, and the development of standards for transparency, safety, privacy, accessibility, and accountability. Policymakers should recognize that the chatbot revolution is not only a technological matter: it is a cultural and educational transformation, that affects what students learn, how they learn, why they learn, and how institutions define the purposes of education. They should make sure that the chatbot behaviour is respectfully aligned with the local cultural contexts, instead of implicitly imposing external contents and practices.

Policymakers should not blindly promote the use of commercial chatbots in the learning environment without critically evaluating them for their learning potential and risks, and ensuring that they have the functionalities needed to promote constructive learning. Policymakers should not accept the free or subsidized “gift” of chatbots by commercial providers to their educational institutes without posing strict conditions requiring alterations to the commercially available chatbots.

5.5 For parents and families

Families should be involved in the educational discussion about chatbots. Parents should be helped to understand that chatbot use is not simply a matter of cheating or convenience. It can become either a shortcut that weakens learning or a support that strengthens it.

Families can encourage responsible habits, by asking children to explain what they obtained from a chatbot, how they checked it, what they understood, what they changed, and what remains unclear.

5.6 For companies and technology providers

Companies developing chatbot for educational use have a responsibility that goes beyond return on investment. The technical performance of chatbots should be aligned to the learning outcomes described above. They should design, in cooperation with educators, systems that support learning rather than mere output production.

Educational chatbots should encourage reflection, verification, transparency, age-appropriate interaction, privacy protection, and responsible use. They should help learners understand, not simply complete tasks for them. Providers should collaborate with educators, researchers, institutions, and public authorities to ensure that educational tools are aligned with pedagogical values.

6. Practical directions

The pedagogically sound use of chatbots requires practical action from both educational institutions and technology providers. Schools, universities, public authorities, and companies should not treat chatbot use as a purely individual matter, left to students, teachers, or consumers alone. It should be addressed as a shared educational responsibility.

6.1 For educational institutions

Educational institutions should consider the following actions:

- develop shared guidelines for chatbot use in teaching, learning, and assessment;
- distinguish between recommended, acceptable, problematic, and unacceptable uses, according to age, discipline, learning objectives, and assessment context;
- include chatbot literacy as part of digital, information, and critical literacy;
- train teachers to design activities in which chatbot interaction supports learning processes;
- encourage classroom activities in which students analyze, compare, correct, and improve chatbot responses;

- require students, when appropriate, to document how they used chatbots, how they evaluated the outputs, and how the interaction contributed to their own understanding;
- promote assessment formats that value understanding, explanation, justification, process, critical judgment, and responsible tool use;
- ensure equitable access to reliable tools, avoiding new forms of educational inequality;
- protect teachers' and students' privacy and data;
- support research on the pedagogical effects of chatbot use across different ages, disciplines, and learning contexts;
- involve families, institutions, and companies in a shared culture of responsible educational use.

6.2 For companies and technology providers

Companies developing or deploying chatbots for educational contexts should recognize that they are not merely providing general-purpose tools: they are contributing to the design of learning environments. Accordingly, their responsibility includes not only technical performance, but also pedagogical alignment, transparency, safety, and respect for learner autonomy.

Technology providers should consider the following actions.

1. Work with educators, by:

- conducting field tests and educational stress tests with teachers and students, of both schools and universities, before releasing or widely deploying chatbots in educational contexts;
- establishing, as part of the production process, permanent advisory panels including school and university teachers, educational researchers, students, and other relevant stakeholders, with a real role in guiding design choices and deployment policies;
- collaborating with educational institutions and public authorities in developing standards for responsible educational AI.

2. Design chatbots with functionalities aligned with learning outcomes, by:

- implementing chatbot features that encourage pedagogically valuable interaction, such as step-by-step explanation, Socratic questioning, formative feedback, comparison of alternative answers, source checking, and requests for learner justification;

- evaluating not only whether chatbots produce accurate answers, but also whether their interaction patterns support understanding, reflection, critical judgment, and learner agency;
- providing modes of interaction that can withhold immediate solutions when appropriate and instead guide learners through hints, questions, partial feedback, and progressive scaffolding;
- providing tools for documenting chatbot use in ways that support reflection and academic integrity without creating excessive surveillance.

3. Ensure transparency, data protection and flexibility, by:

- ensuring transparency about system limitations, data use, privacy protections, content filtering, and the conditions under which outputs should be verified;
- making it possible for educational institutions to configure chatbot behaviour according to their pedagogical purposes, age groups, disciplines, assessment policies, and ethical requirements;
- allowing schools and universities, within appropriate safeguards, to adapt commercial chatbots to authorized educational materials, local curricula, institutional values, and specific learning objectives.

In this perspective, the design goal should not be to make chatbots better at completing tasks on behalf of learners, but to make them better at helping learners understand, question, verify, revise, and take responsibility for their own work. Educational technology should be judged not only by what it can produce, but by what it enables learners to become capable of doing.

7. Conclusion

The emergence of chatbots challenges education because it changes the meaning of access to knowledge. When answers become easy to obtain, the educational task cannot be reduced to the transmission or reproduction of answers. It must focus more explicitly on understanding, judgment, motivation, method, and responsibility.

This does not diminish the value of disciplinary contents. Rather, it gives them a renewed role. Contents are the concrete field in which learners exercise attention, reasoning, imagination, verification, dialogue, and intellectual responsibility.

The central recommendation is therefore clear: educational systems should not merely react to chatbot use, but actively shape it. The goal is to move from unregulated access to answers toward responsible practices of understanding.

Chatbots should be used in education when they help learners become more capable, more critical, more autonomous, and more responsible. They should be resisted when

they make learners more passive, more dependent, or less able to understand what they produce.

The future of education in the age of chatbots will not be decided by the tools alone. It will be decided by the pedagogical, institutional, and ethical choices by educators, governments, and commercial chatbot providers alike, through which we teach learners how to use these powerful systems.

Annex 1

GeSI, the Global Enabling Sustainability Initiative (GeSI) is an International non-for-profit industry association headquartered in Brussels. GeSI represents over 55 multinational ICT companies, with a combined market value of more than USD 5 trillion, and a network of over 100 partner organizations including UN bodies, universities, business associations, scientific and financial institutions, and non-profit organizations. GeSI's mission is to harness digital innovation to deliver positive societal impact while advancing the United Nations Sustainable Development Goals (SDGs). GeSI hosted the AI with Purpose Global Summit at the occasion of the 79th UN General assembly in NY, USA, on September 19th, where the Secretary General of the United Nations launched the report "[Governing AI for Humanity](#)".

GeSI_Digital Education for Impact Alliance (GeSI_DEFIA). GeSI has committed to actively engaging its global membership in support of SDG4, promoting sustainable practices in digital education, including through outreach to teachers and students, ensuring that feedback loops are created between the primary users of digital education solutions and the commercial product and service providers. GeSI co-founded the Digital Education for Impact Alliance with the University of Coimbra, Portugal, and Huanghe Science and Technology University, China, and launched the Alliance officially at COP 30 In Belem, Brazil.

The **objective of the Alliance** is to establish, a thought-and-do leader to forward needed and achievable changes in the field of education and life-long learning, as well as being an effective catalyst for transformative action in response to technological opportunities and the changing demands for skills, attitudes, knowledge and shared values systems.

This AGI call for action is a follow up to the AI with Purpose Global Summit GeSI convened at the occasion of the 79th session of the United Nations General Assembly that explored how AI can be a force for good and societal progress while addressing some of the most critical ethical challenges of our time. Further statement on the urgent need to change how we teach and learn are forthcoming.

Annex 2

Individual endorsements

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