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Engage them before they copy.
Reading, authorship, and critical thinking in times of generative artificial intelligence

Cative-os antes que eles copiem.
Leitura, autoria e pensamento crítico em tempos de inteligência artificial generativa

Cátivalos antes de que copien.
Lectura, autoría y pensamiento crítico en tempos de inteligência artificial generativa

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Abstract. This article presents reflections based on interactions with children in the early years of schooling and young adults at the beginning of their academic journey. These are combined with contributions from psycholinguistics, including the *Good Enough Processing* approach, which serves as a starting point to think about the reading experience. The growing presence of generative artificial intelligence tools in educational and social contexts has been reshaping reading and writing practices, highlighting their impacts. Within this scenario, two risks stand out and deserve attention. The erosion of authorial voice, when writing is reduced to fulfilling formal patterns, and the superficiality of comprehension, when reading settles for interpretations that are only "good enough". The article explores how these issues relate to contemporary challenges in developing critical readers and authors, drawing on classroom observations and research findings in the field. The ideas are discussed in an expanded way, sometimes going beyond their original formulations, to engage with the current educational concerns. The aim is not to provide definitive answers, opinions, or ready-made pedagogical strategies, but to share questions that arise from practice and available evidence, inviting reflection on reading, authorship, and critical thinking in the context of artificial intelligence.

Keywords: Reading. Manifestation of authorship. Psycholinguistics. Generative artificial intelligence. Critical thinking.

Resumo. Este artigo apresenta reflexões a partir do contato com crianças no início da escolaridade e de jovens em início de percurso acadêmico, articuladas com contribuições da psicolinguística, entre elas a abordagem *Good Enough Processing*, usada como ponto de partida para pensar sobre a experiência leitora. A crescente presença de ferramentas de inteligência artificial generativa em contextos educacionais e sociais tem reconfigurado práticas de escrita e leitura, evidenciando seus impactos. Nesse cenário, destacam-se dois riscos que merecem atenção. A perda da voz autoral, quando a escrita se reduz ao cumprimento de padrões formais, e a superficialidade da compreensão, quando a leitura se satisfaz com interpretações apenas "boas o suficiente". O artigo explora como tais questões se relacionam a desafios contemporâneos relacionados à formação de leitores e autores críticos, tomando como base episódios observados em sala de aula e resultados de estudos da área. As ideias são apresentadas de modo ampliado, por vezes extrapolando os conceitos originais, para dialogar com preocupações atuais da educação. Não se pretende oferecer respostas ou opiniões definitivas, nem estratégias pedagógicas estruturadas, mas compartilhar questões que surgem da prática e de evidências disponíveis. O objetivo é convidar à reflexão sobre a leitura, a autoria e o pensamento crítico no contexto da inteligência artificial.

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Palavras-chave: Leitura. Manifestação da autoria. Psicolinguística. Inteligência artificial generativa. Pensamento crítico.

Resumen. Este artículo presenta reflexiones a partir del contacto con niños en los inicios de la escolaridad y con jóvenes en el inicio de su trayectoria académica, articuladas con aportes de la psicolingüística, entre ellos el enfoque del *Good Enough Processing*, utilizado como punto de partida para reflexionar sobre la experiencia lectora. La presencia creciente de herramientas de inteligencia artificial generativa en contextos educativos y sociales está reconfigurando prácticas de escritura y lectura, lo que exige una mirada atenta sobre sus impactos. En este escenario, se destacan dos riesgos que merecen consideración: la erosión de la voz autoral, cuando la escritura se reduce al cumplimiento de patrones formales, y la superficialidad de la comprensión, cuando la lectura se conforma con interpretaciones "suficientemente buenas". El artículo explora cómo estas cuestiones se relacionan con desafíos contemporáneos vinculados a la formación de lectores y autores críticos, tomando como base episodios observados en el aula y resultados de estudios en el área. Las ideas son presentadas de manera ampliada, a veces yendo más allá de los conceptos originales, con el fin de dialogar con preocupaciones actuales de la educación. No se pretende ofrecer respuestas ni soluciones definitivas, sino compartir preguntas que surgen de la práctica y de la evidencia disponible. El objetivo es invitar a la reflexión sobre lectura, autoría y pensamiento crítico en el contexto de la inteligencia artificial.

Palabras clave: Lectura. Manifestación de la autoría. Psicolingüística. Inteligencia artificial generativa. Pensamiento crítico.

Introduction

Since the 1980s, and especially from the 1990s onward, there has been a major shift in the understanding of dyslexia and other reading-related learning disorders. This transformation was marked by the strengthening of cognitive and neuropsychological approaches, and by the consolidation of phonological awareness as a critical predictor of reading success (see, for example, Hulme & Snowling, 2013; Kirby et al., 2008; Morais, 1995; Snow et al., 1998; Stanovich, 2009).

It was in this context that Torgesen (1998, p. 1) issued a warning: "The best solution to the problem of reading failure is to allocate resources for early identification and prevention." The very metaphor in the title of his article – *Catch them before they fall* – reinforced the urgency of identifying and intervening early with children at risk, before reading difficulties could become consolidated, and highlighted that "it is a tragedy of the first order" to wait for school failure to take hold before intervening.

This emphasis on early intervention was supported by a substantial body of evidence. Initial difficulties in mastering grapheme-phoneme correspondences and in building an orthographic knowledge – that is, knowledge of word-specific spelling forms – can persist and affect fluency and reading comprehension, as well as the motivation to read and write throughout their education. The evidence gathered at the time suggested that critical skills for success in reading were not mere assumptions; in fact, they were "well-established facts" (Torgesen, 1998, p. 2), including a central and seemingly obvious premise that the ultimate

purpose of reading instruction should be adequate comprehension, enabling students to learn, understand, and appreciate written language. From a neuroscience perspective, Dehaene (2020) points out that sensitive periods of brain plasticity close rapidly. Deprivation of stimulation in essential domains (such as language, literacy and culture) may lead to irreversible losses of mental flexibility. Although the brain retains some plasticity throughout life, evidence suggests that early interventions are more effective (p. 141).

If, by the end of the twentieth century, it had become a consensus that early intervention in the development of phonological skills was crucial to prevent school failure, now, in the first decades of the twenty-first century, new urgencies have emerged. The increasingly early exposure to generative artificial intelligence in everyday life – whether in writing assistants, AI-powered response systems, or AI-based conversational search systems, which no longer limit themselves to lists of links, and now produce complete answers, sometimes indistinguishable from human writing – may not be a threat in itself. Yet it is an element that must be understood, contextualised, and pedagogically addressed. More than discussing whether its use should be permitted, the challenge lies in producing knowledge and reflecting on how these tools reshape children's (as well as young people's and adults') relationship with the text, through both reading and the experience of authorship.

The central question today is not simply whether children can decode a text, but how they comprehend, question, and transform it – and whether they still perceive themselves as authors in a context where "perfect" texts can be generated within seconds.

This article gathers reflections arising from the observation of children in the early years of schooling and of young people at the beginning of their academic journey, combined with insights from psycholinguistics, including the *Good Enough Processing* approach (Christianson et al., 2001; Ferreira et al., 2002; Ferreira & Patson, 2007), which is used here as a starting point to think about the reading experience. The ideas are discussed in an expanded way, sometimes extrapolating their original formulations to engage with issues in today's educational landscape. The aim is not to offer definitive answers or structured pedagogical strategies, but rather to share questions that emerge from practice and from available evidence, inviting reflection on reading, authorship, and critical thinking (see Stanovich & Stanovich, 2010) in the context of generative artificial intelligence.

From writing with meaning to purely correct writing: What changes along the schooling path?

Recently, a ten-year-old child declared, “I’m not going to study Portuguese grammar anymore because in the future only ChatGPT will write.” The statement, seemingly naïve, reflects the perception that writing can be delegated (or even dispensed with entirely). This leads us to question, for instance, where (and how) basic principles such as those presented by Josette Jolibert and her colleagues, *Formando crianças produtoras de texto* (1994), will stand. It is a proposal aimed precisely at fostering subjects who write with purpose, with the will to communicate, and with the awareness that they are producers of meaning, in other words, writers. In this approach, real writing situations – with specific audiences, meaningful topics, and much discussion – serve as experiences that promote mastery of written language and foster a sense of authorship in the early years of schooling. At what stage did we begin to accept that writing means simply producing a text correctly instead of expressing something? Going further, when did we start to believe that what is written correctly is necessarily informative, or worse, true?

During a recent class with first-year undergraduate students, when commenting on excerpts that were visibly generated by artificial intelligence, one student said (with evident surprise and sincerity), “But it’s so well written!” The almost innocent remark revealed an increasingly common association between formal correctness and the validity of content. Does this represent a change in how writing is perceived? Is the polished text grammatically and orthographically correct, generated with fluency, beginning to be accepted as sufficient – even when it is not the expression of one’s own thought, nor of genuine understanding, critical judgement, or reflection?

At the other end of the age and academic spectrum, reading a master’s dissertation – whose content and experiences clearly belonged to the author herself – revealed an overly polished text, lacking in hesitation, in marks of authorship, in an “I” that thought, erred, experimented. Someone was missing from the text. It was grammatically impeccable, well organised, with appropriate references. Yet ideas and concepts appeared as facts, without the author’s engagement with the cited texts being made “visible”. It is possible that part of this refined polish resulted from the measured use of writing-support tools, perhaps combined with the strong formal pressures of certain academic contexts – pressures that the author herself mentioned during her viva (oral defence). These stylistic aspects, more than details of the erasure of authorial voice, seem both a symptom and a warning. When formal rigour outweighs

personal expression, writing may lose something – and that something may be essential. Yet, academic writing does not exclude personal expression; on the contrary, the "power" of a text often lies in the singularity of its writer.

An academic report, for example, can (and perhaps should) incorporate traces of lived experience, authenticity, and affective engagement – even if accompanied by certain formal imperfections. Shouldn't pedagogical concern, then, also be directed towards how to keep the singularity of an author's voice alive amid a tendency towards writing that is increasingly technically perfect? To invite the writer to be present in the text?

This concern brings us back to children's written productions, those where the desire to write has not yet been shaped or discouraged. Contrary to what is often assumed, children – even very young ones – are by nature observant, creative, and highly critical. One could even say that they are little linguists. Reading their written productions reveals that there is an understanding, albeit more intuitive, of the regularities of language and of the relations between speech and writing (see, for example, Cagliari, 1989, pp. 51–94; Lourenço-Gomes et al., 2016; Rodrigues & Lourenço-Gomes, 2021), as well as of the multiple layers of text.

For a keen observer, seemingly trivial classroom events may constitute both material for study and clues about where our attention should be directed when the practice of writing coincides with the accelerated emergence of sophisticated writing-support tools. Perhaps we should begin with the youngest. Or rather, we should include the youngest among the concerns raised by these tools, because we are facing a phenomenon that simultaneously affects multiple levels of education. In the early years, interesting episodes can be observed. Moments when children demonstrate fine attention to formal aspects of writing, curiosity about the functioning of language, and creativity in text production. For example, when a child noticed that a classmate had written a word beginning with *ç* she suggested checking the dictionary to see whether such words "exist in Portuguese". Another child brought to the teacher what she called a "medicine leaflet". Both the titles and the text contained sequences of letters without meaning, which most likely represented the names of medicinal substances.

These episodes, far from being just anecdotal, provide clues about how the relationship with reading and writing is built, and how it might be preserved in the face of the growing presence of automated tools.

A particularly emblematic episode, originally described in Lourenço-Gomes (1999), also reported in Lourenço-Gomes et al. (2016), and is worth recalling here, involves a child who, when asked to write a sentence with the word *formiga* (ant), wrote: "*A formiga é* ." (The ant is .) leaving a large blank space before the full stop. The teacher, assuming the

child did not know how to complete the sentence, suggested that she draw what she intended to write in the blank space. With simplicity and firmness, the child then explained, reading the sentence aloud: "A formiga é invisível" (The ant is invisible). The grace and intelligence of the response lie not only in the humour. They also lie in the cognitive sophistication of someone who understands the functioning of language, the relationship between form and meaning, the idea of absence and representation. The child understood the task and even answered with originality. Though well-intentioned, the teacher's gesture perhaps illustrates how school sometimes fails to believe in the imaginative and spontaneous potential of children's thinking, prioritising the expected form and letting slip opportunities to develop skills essential for the formation of writers.

That same creative capacity can be seen in many other contexts, as shown by data from *EFFE-On* (*Escreves como falas – falas como escreves?* [Do you write as you speak – Do you speak as you write?]), an online corpus of children's writing and speech in the first years of schooling (Rodrigues et al., 2015). In Figure 1 below, we see a text produced by a 7-year-old child, a speaker of European Portuguese. The task was to describe a scene, which included target words such as *bruxa* (witch), *desenho* (drawing), *dinheiro* (money), *igreja* (church), *jornal* (newspaper), *rádio* (radio), *televisão* (television), among others.

Despite the unconventional orthographic forms and some grammatical slips, the child's narrative reveals much more: the ability to organise events, to articulate descriptions with temporal and causal sequencing, and to create hypotheses for unusual elements. It also reveals interpretative creativity – for example, when the child associates the character dressed as a witch (visible outside the window in the stimulus picture) with the idea of having *modado o meu pai* (a misspelling of *mudado* [changed] produced by replacing *u* with *o*; here the change suggests that the witch had magically transformed her father) – and even humour, with the unexpected yet coherent logic of *meti tudo em tribunal* (I took everything to court).

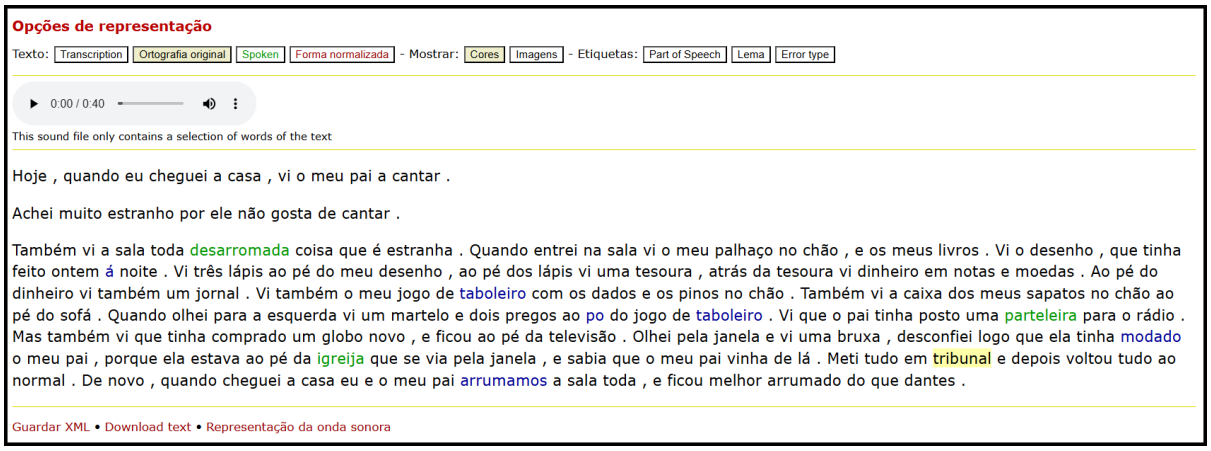

Figure 1. Descriptive-narrative text produced by a Year 2 pupil (53_SA_2A_CM)

Note. Original text in Portuguese. English translation provided by the author. Non-standard spellings in the original text are shown in italics in the translation.

Today, when I got home, I saw my father singing.
I found it very strange because he doesn't like to sing.
I also saw the whole living room *untidy*, which is strange. When I went into the room, I saw my clown on the floor and my books. I saw the drawing, which I had made last night. I saw three pencils next to my drawing, and behind the scissors I saw money in notes and coins. Next to the money I also saw a newspaper. I also saw my *board* game with dice and pieces on the floor. I also saw my shoe box on the floor next to the sofa. When I looked to the left I saw a hammer and two nails *next to* the *board* game. I saw that Dad had put a *shelf* up for the radio. But I also saw that he had bought a new globe, and it was by the TV. I looked out the window and I saw a witch, and I immediately suspected that she had *changed* my father. I also saw the *church* through the window, and I knew my father came from there. I took everything to court, and then everything went back to normal. Again, when I got home my father and I tidied the whole living room, and it was better organised than before.

Non-standard spellings in the original: *taboleiro* [*tabuleiro,* board game], *parteleira* [*prateleira,* shelf], *ao po* [*ao pé*, next to], *arrumamos* [*arrumámos*, we tidied], *modado* [*mudado,* changed], *igreija* [*igreja*, church].
Source. Corpus EFFE-On. Centro de Linguística da Universidade de Lisboa. http://teitok.clul.ul.pt/effe/pt/index.php?action=file&cid=/53_SA_2A_CM.xml&jmp=w-221

In another example, based on a comic strip without text (Figure 2), a 7-year-old child constructed a narrative that included both the expected sequence of actions from the stimulus and new characters – a vampire and a ghost – and added a typical ending from children's oral storytelling: *Vitória vitória acabou-se a história* [Victory, victory, the story is over]. Even with non-standard spellings such as *buxa* (for *bruxa*, witch), *máguica* (for *mágica*, magic), or *derrutala* (for *derrotá-la*, defeat her), the story progresses, incorporates new information, and remains consistent with the proposed theme.

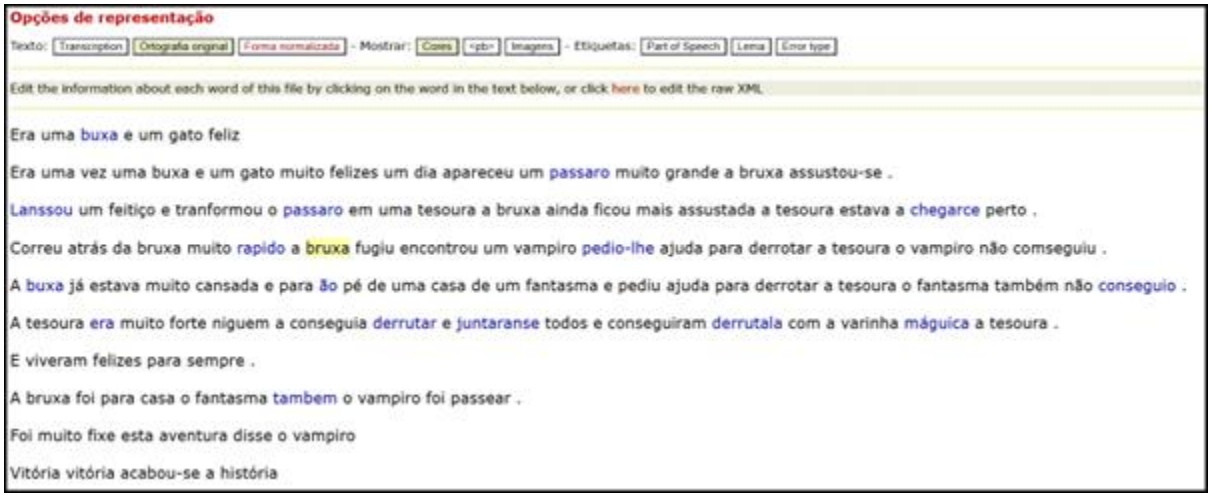

Figure 2. Descriptive narrative text produced by a Year 2 pupil (E_255_BR-PAS_3_VB)
Note. Original text in Portuguese. English translation provided by the author. Non-standard spellings in the original text are shown in italics in the translation.

Once upon a time there was a *witch* and a happy cat
Once upon a time there was a *witch* and a happy cat one day a very big bird appeared and the witch got scared.
[She] cast a spell and turned the bird into a pair of scissors the witch even more frightened saw that the scissors were getting closer.
It ran [the scissors] very *quickly* after the witch who fled and met a vampire she *asked him* for help to defeat the scissors the vampire could not.
The *witch* was already very tired and stopped *near* a ghost's house and asked him for help to defeat the scissors the ghost also *could* not.
The scissors were very strong and *no one* could *defeat* them so they all came together and managed to *defeat* with the *magic* wand.
And they lived happily ever after.
The witch went home and the ghost and the vampire went for a walk.
It was really cool this adventure said the vampire
Vitória vitória acabou-se a história [Victory, Victory, the story is over]

Non-standard spellings in the original: *buxa* [*bruxa*, witch], *passaro* [*pássaro*, bird], *chegarce* [*chegar-se*, get closer], *pedio-lhe* [*pediu-lhe*, asked him], *ão pé* [*ao pé*, near], *conseguio* [*conseguiu*, managed to], *derrutar* [*derrotar*, defeat], *juntaranse* [*juntaram-se*, came together], *derrutala* [*derrotá-la*, defeat her], *máguica* [*mágica*, magic], *tambem* [*também*, also].
Source. Corpus EFFE-On. Centro de Linguística da Universidade de Lisboa. http://teitok.clul.ul.pt/effe/pt/index.php?action=file&cid=/E_255_BR-PAS_3_VB.xml&jmp=w-124

These cases suggest that, at least before writing becomes excessively governed by rules and formal expectations, children can use the linguistic resources available to them to express their own ideas. Unconventional orthographic forms, which concern only one layer of the text, can be dealt with afterwards – once the child has expressed their ideas – to preserve and stimulate creativity and linguistic competence.

Although the examples presented above are more closely related to children's spontaneous writing and orthography in the early stages of learning, this discussion can also be extended to grammar teaching at more advanced levels of schooling. Pilati (2017) argues that work with mandatory grammatical content should be guided by an active language-learning approach, grounded in linguistic knowledge. Rather than presenting lists of rules to be

memorised, she advocates creating opportunities for students to reflect on their knowledge of the language, connect it with their prior knowledge (Principle I, pp. 101–103), and develop "deep understanding" – not limited to recognising rules. Rather, integrating use, reflection, and critical analysis of the phenomena studied (Principle II, pp. 103–108), thereby making learning more conscious, critical, and effective.

Between "correct" writing and the erasure of the authorial voice

Episodes such as those described in the previous section are common among children in their first years of contact with writing. At a certain point in schooling, however, these same children (and later, university students) seem to shift the focus of their writing. It is no longer so much about communicating their own ideas. Rather, it is about meeting normative and formal expectations. This shift does not result solely from schooling; it also reflects a broader context marked by assessment pressures, rigid models of "good writing". More recently, generative artificial intelligence tools have appeared, capable of producing texts in line with such models. These tools can generate texts that are impeccable according to these standards – and even reproducing an author's stylistic traits when instructed to do so – yet they do not derive from genuine experience or intentionality.

This conflict between form and expression was the focus of an activity carried out with first-year undergraduate students in an academic writing course. The aim was to make participants aware of the multiple layers of a text and of the need to assess its quality beyond spelling and grammar. For this purpose, seven texts from the EFFE–On corpus (Rodrigues et al., 2015), produced by children in the early years of schooling, were presented. Each student was asked to evaluate each text on a scale from 1 (not at all adequate) to 5 (fully adequate), considering parameters such as central idea, logical sequence, cohesion, and coherence in terms of tone and appropriateness to the circumstances. Although the task was centred on children's texts, the intention was to emphasise that careful and analytical reading is necessary in any genre of text. Interestingly, even though the task explicitly did not ask for orthographic or grammatical evaluation, several students expressed difficulty in assigning high scores to texts with many formal deviations. One even said that such a task was "impossible". This reaction illustrates the weight that formal correctness can exert on the judgement of a text's quality and, in a way, anticipates what is observed later in the academic trajectory. The tendency to prioritise form over meaning.

In academic settings, this phenomenon is evident in the revision of undergraduate and postgraduate work, and even in scientific publications. Texts may be correct, often well

structured, yet the authorial voice seems to dissolve, as if detached from their own reasoning. The problem is not only aesthetic. When writing is reduced to fulfilling formal requirements, it can erase the marks of experience, reflection, and engagement with knowledge.

This concern is not exclusive to educational or scientific contexts. In the public debate, the concern with the "erasure" of the author in times of artificial intelligence is also evident. In a newspaper opinion column entitled *A IA vai matar os livros?* [Will AI kill books?], João Pedro Pereira argues that the threat does not lie in the end of the book as an object. Instead, it lies in the disappearance of the one who writes, after describing a scenario where he considers that texts produced by machines are becoming increasingly indistinguishable from those of a human (Pereira, 2025). From another perspective, Cláudia Maximino, in *Emocionar é humano* [To be moved is human], recounts episodes from the most recent International Literary Festival of Paraty (FLIP) that emphasise the value of authorial presence, including emotion, intentionality, and even error, as marks of human work (Maximino, 2025).

Emotion and intentionality, when associated with experience, are indeed representative properties of human work and seem difficult for machines to supplant in real-world contexts. Another genuinely human characteristic would be the learning of abstract concepts – the ability to form general representations that encode the essential attributes of an object or concept across multiple modalities (visual, motor, social, linguistic), independently of their concrete attributes (Dehaene, 2020, pp. 27–29).

Recent studies (e.g., Yoo & Lee, 2024) in some ways challenge this idea by showing that large language models can produce responses that are more "abstract" or more "concrete", depending on the type of instruction (or prompt) they receive. However, this "abstraction" seems more like a statistical reorganisation of language than evidence that the model possesses integrated multimodal representations of the physical and social context, of the kind that Dehaene (2020, pp. 27–34) describes in the neurocognitive sense.

The distinction between cognition and subjective experience is also widely discussed in neuroscience and philosophy of mind. Seth et al. (2025), for example, analyse different dimensions of what we call "consciousness", while Findlay et al. (2024) explore, hypothetically, scenarios where machines or advanced computer programmes could be assessed for the possible presence of conscious experience. Drawing on Integrated Information Theory, and in explicit contrast with computational functionalism, the authors argue (p. 10) that what matters for consciousness (its presence, quality, and quantity) is the intrinsic structure of a system (*what the system is*), and not its extrinsic functions (*what the system does*). They add that consciousness would be a matter of being, not of doing. These studies do not seem to

suggest that artificial systems possess, or are likely to possess, consciousness in the human sense. On the contrary, they reinforce that high-level intelligent performance is not equivalent to subjective experience.

Thus, whether due to the absence of emotion and intentionality, the qualitative difference in the way abstractions are handled, or the lack of consciousness, texts produced by generative artificial intelligence systems, with little or no human intervention, tend to lack the marks of human experience. When this type of production becomes the model or standard for "correct writing", the risk is not only that styles are levelled. The singularity and the writer's voice are also erased.

The lack of singularity and connection with experience can also appear in human writing that is overly guided by formal standards. The erasure of the authorial voice is generally not observed in the early years of contact with writing, when spontaneity and the intention to communicate prevail, as illustrated early.

In reviews of manuscripts submitted to scientific journals, for example, we often find texts that are technically adequate, well structured, and with an abundance of references. Yet they often reveal a distance between the author and the very object of study. At the same time, there are also cases, as in a recent review, where the weaknesses observed did not concern orthographic or grammatical correctness. What stood out instead was the superficiality of the theoretical framework, the use of references without clear integration into the argument, the inclusion of sources of little relevance, and even the attribution of direct quotations that could not within the original texts. Inaccurate interpretations of cited studies and references included without a clear contribution to the objectives of the work were also observed.

The distance between the writer and knowledge is not inevitable. Scientific writing can reveal authorial presence. An example could be Wason's (1959) article, whose reading demonstrates conceptual clarity, reflection, and integration between theory, method, and discussion, with little reliance on citation. The results are not merely presented through quantitative data; they are consistently linked to the initial hypotheses and to broader conceptual implications. Although he cites only four sources, the study is rich in information and makes a significant contribution to knowledge about the object of research. Between pp. 103–105, for instance, Wason incorporates participants' introspective reports to interpret the findings. Comments such as "Nice illustrations of the fallibility of introspection." (p. 104) or "(This subject also made the interesting observation that at one stage she suffered from a complete block and could not decide which colour was green and which was yellow.) (p. 105) show a "willingness" to understand rather than simply to quantify or confirm. The discourse

conveys intellectual sincerity and a strong interpretative capacity that contrasts with much of the more recent scientific writing. This example underlies that academic writing can (and perhaps should) preserve the writer's voice, allowing data, interpretations, and experiences to coexist within the same space of discussion. We risk losing this dimension if writing is reduced to an exercise in complying with formal standards, and risk impoverishing science itself (and not only in its style of writing).

Comprehension, critical thinking, and "good enough" processing

Throughout this article, it has been argued that an excessive emphasis on formal standards of writing can stifle the writer's voice and reduce the richness of interpretation. However, there is another risk that seems equally relevant. The risk that comprehension itself may also become superficial, with negative consequences for critical reading.

In psycholinguistics, the approach known as *Good Enough* (Christianson et al., 2001; Ferreira et al., 2002; Ferreira & Patson, 2007; see also Frances, 2024, for a review) proposes that language does not always result in complete and accurate semantic representations. Instead, listeners and readers often construct meanings that are just "good enough" to move communication forward and to extract the essentials from the linguistic material, even if partial or incorrect. In everyday communication, the goal is usually to grasp sufficient meaning for the immediate need, relying on shortcuts and tolerating inaccuracies when a detailed analysis is not strictly necessary.

The empirical results in support of this approach are mixed, as Frances (2024) notes. Some studies raise questions about central claims of the approach, suggesting that the depth and completeness of processing may vary depending on the type of task, the context, and the characteristics of the reader or listener. The proposal also contrasts with traditional models that assume detailed and exhaustive linguistic processing (Frazier & Fodor, 1978; Ferreira & Clifton, 1986; MacDonald et al., 1994; Trueswell et al., 1994, among others).

Among the best-known examples of this approach is the "Moses illusion" (Erickson & Mattson, 1981), where factual errors or contradictions go unnoticed when the statement presents a plausible scenario and familiar concepts. For instance, when people are asked, *How many animals of each kind did Moses take on the Ark?* many answer *two* without correcting the incorrect presupposition – it was Noah, not Moses, who took the animals. In the original study, three experiments tested variations of this illusion. The results showed that semantic similarity between the incorrect name and the context (for example, biblical names) had a more robust effect than phonological similarity.

Another classic case is that of garden-path sentences (Frazier & Fodor, 1978), which induce initial misinterpretations and require reanalysis – that is, a revision of the interpretation based on new information within the sentence itself. For example, in *While the man hunted the deer ran into the forest* (presented without punctuation), the initial tendency is to interpret *the deer* as the direct object of the first clause, requiring later correction (Christianson et al., 2001; see also Ribeiro, 2012, for studies in Portuguese).

The *Good Enough* approach is grounded in assumptions about the economy of language processing. One of these is the principle of minimal effort (Ferreira & Patson, 2007). The comprehension system seeks to do only the work necessary to build an interpretation sufficient for the task at hand, given limitations of time and processing resources. Another is the principle of variable depth of processing (Ferreira & Lowder, 2016). Detailed analyses are cognitively costly and not always indispensable. The tendency, then, is to construct representations adequate for the immediate goal (for example, keeping a conversation going), relying on shallow analyses. More detailed processing occurs only when there is a "signal of need" – that is, some indication from the context or from comprehension itself that the interpretation may be incorrect or incomplete – which requires deeper processing.

These phenomena suggest that, in many situations, language processing can be shallow and guided by the economy of effort.

In light of these observations, it is plausible to assume that critical reading requires a more deliberate and attentive processing than that described in *Good Enough* cases. While this tendency may be functional in everyday life, in educational contexts it can compromise critical reading. The challenge begins in basic education and extends across all stages of schooling, with the need to cultivate, from an early age, practices that encourage careful analysis, the verification of presuppositions, and the detection of inconsistencies. Metacognitive strategies and specific activities could play an important role in strengthening the "signal of need", understood here in a broad sense to encompass the demands of critical reading as well.

An illustrative example is Maia's (2022) work, which reports on reading workshops with secondary, undergraduate, and postgraduate students, using qualitative eye-tracking data (gaze plots and heat maps) as a starting point for discussions about reading strategies. Students inspect and compare their own fixation patterns with those of other readers, including more proficient ones, revealing the reading process itself. This exercise of "thinking about thinking" (metacognition) fosters greater awareness of areas where reading may become superficial and helps develop sensitivity to how meaning is constructed throughout the text.

The findings of Lourenço-Gomes et al. (2022) also show, for example, that a simple change in response in linguistic judgement tasks is associated with variations not only in the time taken for the final decision on a given stimulus but also in other stages of processing. Significant variations were observed in reading times and in response submission times throughout the test, suggesting that hesitations or re-evaluations may affect cognitive engagement during the task. Complementarily, Pilati et al. (2022) discuss how linguistic learning can be made more visible and active, bringing grammar teaching closer to reflections on use and meaning.

Although with different focuses, these three works converge on the goal of strengthening this "signal of need" in educational contexts, highlighting the processes of reading, re-evaluation, and knowledge construction.

An additional resource for educators is the Education Endowment Foundation (EEF) website, which presents a well-structured collection of evidence-based educational activities. The platform provides summaries of pedagogical approaches and strategies for optimising reading at different stages of development, along with downloadable materials.

Concluding remarks

The present moment, when education and artificial intelligence converge, has been marked by a constant and intense flow of information – scientific and non-scientific, sometimes hypothetical, at times dystopian, at times utopian. This avalanche of data, opinions, and predictions, coming from multiple fields of knowledge and amplified by the media, creates a "fight or flight" scenario. Although the recent acceleration of generative artificial intelligence is remarkable, it did not emerge out of nowhere. It is the result of decades of research in which engineers, mathematicians, and cognitive scientists worked side by side to model, at least in part, human processes of learning and language. This suggests that there were already opportunities to prepare ourselves better – and that there is still time to do so. Even so, it is both possible and necessary for joint efforts between researchers and educators to help transform the current "stress" into an opportunity for adaptation and innovation.

Throughout this article, I have sought to highlight two interrelated risks: the erasure of authorial voice, when writing is reduced to meeting formal standards; and the superficiality of comprehension, when reading settles for interpretations that are no more than "good enough". Both become more concerning when generative artificial intelligence models begin to serve as references of "good writing" and when the speed of access to information favours shallow processing.

These reflections do not aim to offer definitive answers or ready-made solutions. They arise from experience – with children at the beginning of schooling and with students just beginning university – that have often led me to pause in reading or to stop and listen to a student to reconsider my own opinion.

The challenge is how to act without adopting a prohibitive or excessively critical stance. It is, as the title of this article suggests, about engaging students before they copy – not only in the traditional sense; above all, in preventing reliance on artificially produced texts without reflection or their own authorship.

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