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RESEARCH ARTICLE

Learning in the Age of Infinite Information: AI and Cognitive Processing in English Education

Ms. Codagandla Sanjana

Assistant Professor, Department of English, Keshav Memorial Institute of Commerce & Sciences, Narayanaguda, Hyderabad, India;
sanjanaofficialkm@gmail.com

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ABSTRACT

The Development of Artificial Intelligence has revolutionised English learning from a constrained, teacher-controlled distribution of knowledge into an endless world of data. English learning tools, such as ChatGPT, grammar assistants, and English learning software, produce responses, illustrations, solutions, and rewritten texts instantly. This has established an endless world of knowledge for English learners. Though the provision seems endless and can access language input at unprecedented volumes, English learning is revolutionised at the cognitive levels of language learners. This paper will investigate the effects of the new world of endless English-learning knowledge, facilitated by Artificial Intelligence, on cognitive processing. Based on theories of cognitive load, information processing, and the world of linguistic data facilitated by Artificial Intelligence, the paper will explore the effects of an endless supply of linguistic data on English language learning. This paper will provide an overview of the English learning challenge, which is no longer a problem of accessing, but the human mind's capability to filter, process, and develop meaning from the data provided by Artificial Intelligence. This paper will emphasise the need for redefining English language learning, an environment where data is no longer scarce but suffocating.

Keywords: Artificial Intelligence; Information Overload; Cognitive Processing; Digital Learning

FULL PAPER

Introduction

The study of the English language for a vast number of centuries took place within restricted systems of knowledge. The teachers, textbooks, and libraries operated as filters to regulate the knowledge presented to the learners. The knowledge was provided to learners through graded lessons, enabling students to practice, make mistakes, and ultimately master it. This information scarcity, although limiting, necessitated intensive cognitive engagement because learners were exposed to few alternatives. The system provided a stable context for learning, allowing learners to utilise their focus, memory, and repetition.

This is the juncture at which the advent and embracing of Artificial Intelligence technology completely changed and rewritten our understanding and concept of scarcity in an age of information plenitude, with technologies such as ChatGPT, grammar checkers, translation tools, and text writers providing explanations and examples with instant results and responses. Now, rather than waiting around for a teacher or having access to a text, a learner can tap into an "infinite source" of linguistic information around them at any given time. English is thus deeply ingrained within an endlessly working digital system of knowledge where information is not only accessible but also endlessly extensible.

In modern English learning, the role of AI is not only that of a tool, as we might traditionally consider it, but also that of a knowledge mediator, which changes students' language-learning experience. Through one prompt, various versions of the same sentence can be generated, grammatical alternatives can be provided, or stylistic enhancements can be offered. Although this never-before-accessible learning seems to open knowledge to everyone, with no more hurdles to overcome, students also face a novel learning situation. These days, learners are no longer searching for knowledge; instead, they face the dilemma of which knowledge to accept, ignore, or adopt.

This state of affairs has a drastic effect on cognition. As students are presented with many “right” examples of English, their minds are distracted, their working memory overloaded, and they may lose confidence in their own language abilities. Rather than developing intimate knowledge of language, they come to rely on external AI-provided knowledge, leading to cognitive dependence. This state of affairs, with all its attendant abundance, can lead to confusion, overload, and shallow understanding.

This research paper examines the influence of the abundance of information from AI systems on the cognitive processes of English learning. This paper will examine the process of thinking, remembering, deciding, and creating meaning for English learners who are bombarded with an endless stream of language from AI systems. By considering AI systems not only as tools for learning but also as systems of knowledge, the paper will situate English learning within the discourse of information overload, cognitive computation, and the nature of knowledge in the new millennium.

AI as a Knowledge System in English Education

Artificial Intelligence has completely transformed the knowledge architecture in education. The conventional knowledge structures in English education—that of the teacher, textbook, and learning portfolio in educational institutions—are hierarchical, selective systems. They managed information in a filtered way, in a pre-defined order that they also decided on, in relation to a valid body of knowledge for every level of learners. This hierarchical order is completely dislocated by AI, giving learners constant, unregulated access to linguistic knowledge across mixed levels of its registers.

English education today involves AI as a virtual library, a private teacher, an editor, a translator, and a conversational agent all at once. The learner requires explanations of grammar, essay samples, vocabulary, stylistic changes, and pronunciation help, all within a short period. AI, unlike any other source, does not confine its efforts to searching for pre-existing information. Rather, AI creates active text, forming original sentences, paraphrasing, and interpreting, all by itself. This reveals AI to be a dynamic process for the production of languages. This ubiquity forges a completely new learning milieu. Students no longer progress from basic to advanced ideas in a linear manner. Rather, they navigate a huge data space in which various versions of 'correct English' exist side by side" (France & Kaiser). "A sentence can have multiple grammatical forms, lexical styles, and pragmatic dialects, each of which is created in zero time by the computer," report France & Kaiser.

In this milieu, grammar guidelines, word selection, and writing conventions come to suggest something less like norms and more like computer-generated alternatives: This shift alters the role of the learner. English learning will no longer focus on receiving authoritative knowledge; rather, the learner will have to explore the knowledge landscape. They will have to evaluate options, make determinations

of appropriateness, and select the one best suited to the situation. Here, the learner was shifted from being a learner to an information manager through AI.

On the other hand, this freedom also brings cognitive complexity. This is because learners will not easily distinguish the important, accurate, or appropriate from the unimportant, inaccurate, or inappropriate without the guidance of hierarchies or learning sequences. Indeed, the sheer volume of new information produced through AI increases the challenges of attention, analysis, and decision-making. English language learning in the era of AI is no longer only about enjoying the language but also about knowing how to navigate the massive digitalised system of knowledge that produces information exceeding the cognitive capacity of the human brain.

The Concept of Infinite Information

"Infinite information" is thus a concept related to the endless knowledge produced by computers and technology through their algorithms. In contrast, information or knowledge was finite in a classroom setting; there were a certain number of pages to absorb in a textbook, and students were supposed to learn a certain amount of stuff, with teachers controlling the amount of information learners were exposed to. Teaching was thus conducted within predetermined limits that were sufficient for human absorption through learning. AI-assisted learning environments operate according to an entirely different logic. There is no natural cut-off point to the information that the AI system can produce. The learner can always ask for another example, another paraphrase, another explanation, or another stylistic variation. Thus, one finds oneself in a learning environment in which knowledge is not something that is incrementally learned but continually grows in scope. English becomes, so to speak, a constantly moving target.

In the English education sector, unlimited information is presented through the following:

- Grammatical ambiguities for the same sentence
- Many stylistic rewriting tasks (formal, informal, academic, and
- Unending alternatives for vocabulary words & synonym chains

Rather than encountering a single correct way of thinking, the learner is presented with a body of possible alternatives. Language ceases to be a system of rules and begins to look like a web of possibilities created by algorithms. What the learner once knew as "correct English" is now the full spectrum of possibilities.

This has a profoundly different effect on the cognitive process involved in learning. The mind is challenged to comprehend language while simultaneously making choices among options, comparing differences, and making deliberations about what is appropriate. While this constant need to adapt may present a learning opportunity to become more creative and aware of nuances, it is also a significant burden on the mind's process and functionality. Therefore, “infinite information” not only expands knowledge, but it also redefines how knowledge is to be known. English learning will no longer be centred on encoding stable knowledge, but on navigating an ever-changing sea of knowledge. In such an environment, “the key problem is not language access, but the capacity to process and filter meaning in an ocean of possibilities produced by artificial intelligence.”

Cognitive Processing

In understanding language, attention, memory, and recognition of patterns and meanings in language play important cognitive roles for a learner to observe, utilise, and commit grammatical constructs to memory. In language learning, language learners had to utilise cognitive skills to learn from mistakes, rewrite sentences, and commit language constructs to memory. This process of actively engaging with language was important for mastering it because it required the brain to organise cognitive information.

AI fundamentally alters this cognitive process by externalising mental work. Instead of remembering the grammar rules, a learner can ask the AI directly. Instead of writing sentences, the writing can be generated. Instead of editing a draft, a person can ask for instant correction. In this way, the difficulty is reduced in immediacy, and time is saved. However, it is also changing how the brain engages in this activity of language. A learner doesn't have to hold information in working memory or practice retrieval; it is an important mechanism for long-term learning.

This moves them from internal cognition to external support. When AI executes tasks, such as remembering, selecting, and structuring language, which have hitherto been cognitive, the learner’s mental effort decreases. Consequently, information is not deeply integrated into already-learned knowledge structures but is merely superficially processed. Learners may be able to recognise correct forms when they see them, but may experience difficulty in producing them independently.

AI-type learning environments increase cognitive load by presenting learners with too many choices. Often, more than one form is possible in a single sentence in terms of its grammatical, lexical, or stylistic options, and all are given equal merit. The mind is constantly faced with choices, reducing the capacity to concentrate on

proper learning. Although the introduction of AI increases access to linguistic knowledge, it also creates a cognitively demanding environment for learners, who must simultaneously process language and information. Clearly, the issue is not so much learning English as learning to think and process effectively in an AI-driven knowledge environment.

Information Overload in English Learning

Information overload occurs when the volume, rate, and complexity of information surpass cognitive ability to process it. This happens because human cognition relies on selective attention and working memory. Too much information paralyses comprehension, slows decision-making, and hinders learning. In the process of learning English with AI, information overload occurs not due to a lack of information, but rather to an information surplus.

AI models are intended to be assistive by providing learners with a range of suggestions, explanations, corrections, and alternatives. With these purposes in mind, they also tend to generate more information than the student can process cognitively. A sentence, for example, may include various types of grammatical forms, styles, vocabulary, and possible annotations. Learners, rather than receiving a clear definition of the concept, must decide among the options presented.

Consequently, learners often experience:

- Confusion: when AI shows a variety of answers which all seem to be right.
- There is cognitive fatigue from processing too much detail.
- Paralysis by options: when there is so much choice that the mind cannot choose
- Dependence on AI-the learners start to depend more and more on the machine than their own linguistic intuitions

Instead of streamlining the language further, it tightens the screws for the learner to understand, to say the least. What it is intended to do to help the learning process has inadvertently hindered it by putting the burden of constant judgments and evaluations upon it. The learner is expected to function not as a user of the language but as an information manager sorting through AI outputs without always knowing which are most apt.

This overload weakens deep learning. With attention divided across too many inputs, memory formation becomes shallow. Learners might remember what AI suggested, but without knowing why it is correct. The effects of this surface reading of information, ultimately, would be an unfeeling comprehension of the language.

Information overload, then, is seen as more of a cognitive problem than an information-technological one.

Learner Behaviour in AI Knowledge Environments

In contexts always reshaped by infinite and instant information, the learners progressively develop new conditioned patterns of behaviour, quite different from those developed in the regular classroom. When the AI can easily produce essays, summaries, corrections, and rewrites instantaneously, many learners fall into a language selection habit rather than a language production one. Rather than toiling to frame appropriate sentences themselves, they actually select from an AI-generated list of alternatives. Composing increasingly gives way to copy-and-paste, and “improve” or “rewrite” to the system being applied, rather more often than to autonomous revision.

However, another trend that has emerged is continuous verification. Students are in the habit of checking every sentence, phrase, or grammatical aspect with the AI. This is despite students knowing the answer. A sort of cognitive dependency has developed in this manner. The students rely on the machine rather than on their cognitive assessments regarding the language. Consequently, there is a subtle but significant shift in English learning. The learner does not perceive language as something to be constructed through effort, mistakes, and experience. Rather, language is now constructed outside in terms of AI. The task of the learner changes from being the speaker or writer to being the manager of the generated language from the machine, which now selects and edits language instead of the learner’s own meaning creation. There is also a shift in how the learner perceives themselves in relation to language use.

Implications for English Education

The emergence of AI as a prominent knowledge base calls for a paradigm shift in English teaching. The teacher's function as a source of information has become secondary, as answers, examples, and corrections are readily available to students via technology. However, that does not render the teacher's function any less significant—it's actually more complicated. Teachers have become facilitators for students who need to process large chunks of information.

In English education, therefore, a paradigm shift must happen from teaching by the book and lexis to teaching cognitive and informational skills. Students acquiring such education ought to be able to learn to:

- Rove your gaze in conditions of constant digital stimulation

- Evaluate AI-produced language from a
- Determine which info is important and credible
- Develop independent linguistic judgment

In the era of limitless information, the ultimate aim of English education is not only to develop speaking proficiency but also to achieve cognitive dominance over English-language knowledge. Students need to be equipped not only to speak English, but also to think in English, select English, and comprehend English in complex digital knowledge networks. Only then can Artificial Intelligence act as an enabling factor in learning, not a replacement for thinking.

Conclusion

The challenge of English learning in the era of infinite information is no longer the availability of language knowledge but the human faculty of processing, interpreting, and absorbing it. Artificial Intelligence has transformed the English language learning process from a slow process of absorbing language knowledge into a high-speed environment where grammar rules, vocabulary, descriptions, and stylistic benchmarks are constantly at its command. However, the point is that the greater the amount of information that exceeds human cognitive capacity, the weaker the learning process.

This research has demonstrated that the use of AI in English education changes students' thinking processes regarding memory and decision-making. The students are no longer involved in acquiring a language competence; rather, they are dealing with a growing knowledge base on the digital platform. This growing knowledge base poses challenges for students who cannot keep up with it. Hence, the future of English education is to achieve holistically what technology can so generously provide while not neglecting what the human mind is capable of achieving. Here, the function of AI is to assist in education and not to replace thinking. The future of education is to enable students to possess the strength of attention and judgment so that they can make use of the infinite information available without being overwhelmed by it.

Works Referred

Baddeley, A. D. (2000). The episodic buffer: A new component of working memory? Trends in Cognitive Sciences, 4(11), 417–423. https://doi.org/10.1016/S1364-6613(00)01538-2

Bawden, D., & Robinson, L. (2009). The dark side of information: Overload, anxiety, and other paradoxes and pathologies. Journal of Information Science, 35(2), 180–191. https://doi.org/10.1177/0165551508095781

Clark, A., & Chalmers, D. (1998). The extended mind. Analysis, 58(1), 7–19. https://doi.org/10.1093/analys/58.1.7

Eppler, M. J., & Mengis, J. (2004). The concept of information overload: A review of literature from organisation science, accounting, marketing, MIS, and related disciplines. The Information Society, 20(5), 325–344. https://doi.org/10.1080/01972240490507974

OECD. (2021). 21st-century readers: Developing literacy skills in a digital world. OECD Publishing. https://doi.org/10.1787/a83d84cb-en

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. Cognitive Science, 12(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4