Library News
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THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
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Using Artificial Intelligence to Improve English Language Skills

Worldwide, there are approximately 1.3 to 1.5 billion speakers of English,[1,2] and it's estimated that fewer than 400 million of these individuals are native speakers.[1] Add to that the fact that English is the language of publication for the top 100 most influential scientific journals[1] and 60% of internet content[1] and the need among many scientists for top-notch resources for learning English becomes clear. So what role do generative artificial intelligence (AI) tools such as Chat Generative Pre-trained Transformer (ChatGPT) play in helping non-native English speakers improve their skills?

The short answer is that we don't yet know the answer to that question. Although scholars are divided in regard to AI—some are enthusiastic about its ability to simulate natural language,[3] whereas others describe it as "eerily humanlike" and express concern about its impact on society[4]—there is cautious optimism about well-chosen applications of these tools. Yet much remains unknown. For example, to what degree do AI models mirror language use in the real world? What biases do these models have? How well can these models respond to learners' needs? How does working with AI compare to working with a human? And if learners engage with AI to learn a language, what long-term changes, if any, can they expect in their linguistic abilities as a result of that engagement?

A June 2024 systematic review assessed findings on AI chatbots designed to give users practice in speaking English as a foreign language. The review concluded that, although chatbots sometimes have technological and speech-recognition limitations, and although they remain focused on general-purpose learning rather than on learners' specific needs, they can be highly effective in helping users enhance their oral proficiency and motivation to learn. In particular, they are useful for shy students uncomfortable with speaking in class.[5] A July 2024 study examining the use of ChatGPT to enhance written English skills among medical students for whom English was a second language also reported positive outcomes; 92% of students felt that the use of ChatGPT for revisions had

improved their academic writing, and 84% felt that it had advanced their linguistic skills.[6] Likewise, a study of the use of ChatGPT in improving Chinese students' written English skills found that, compared to the control group, students who received AI-assisted instruction showed improvements in the coherence and organization of their papers and in their grammar and motivation to write.[7] However, the authors cautioned that larger studies with more diverse participants are needed to confirm the validity of their findings, that great care must be taken to ensure that ChatGPT is used ethically (e.g., ensuring that writers' original style and ideas are retained), and that it remains unknown whether the benefits of using ChatGPT to improve writing skills persist over time.

For now, our advice to anyone looking to improve their skills in English as a second language is to experiment with AI chatbots such as Mango (free access with a Houston Public Library card), Duolingo, Gymglish, Memrise, Andy, and Mondly to improve speaking skills, bearing in mind that, as helpful as AI can be, it cannot replace interaction with a native speaker. In addition, the Research Medical Library will be offering an in-person class this fall (Thursdays, October 24-December 19, 3-4 pm) for anyone wanting to practice and improve their skills in spoken English. If you're interested in joining the class, please contact Laura Russell at llrussell1@mdanderson.org.

When using AI to improve written skills—especially when writing papers for publication—remember that MD Anderson's Electronic Confidential Data and Restricted Confidential Data Use, Access, and Storage Policy (ADM 1187) prohibits employees from feeding confidential materials, including unpublished research data or manuscripts and unfunded grant applications, into generative AI applications. It's also important to verify the results you receive from ChatGPT or other generative AI tools by asking a native English speaker to review the AI output for accuracy, appropriateness, and relevance. The Research Medical Library's recent presentation, Exploring AI in Education, contains helpful information regarding how AI should and should not be used, and the library staff are always happy to answer AI-related questions about scientific writing and to help the MD Anderson community assess new technologies and determine how to use them appropriately.

References

1. Chua, Amy. Book review: The Rise of English: Global politics and the power of language. https://www.nytimes.com/2022/01/18/books/review/the-rise-of-english-rosemary-salomone.html. Accessed July 17, 2024.

2. Britannica. English language. https://www.britannica.com/topic/English-language. Accessed July 17, 2024.
3. Han Z. ChatGPT in and for second language acquisition: A call for systematic research. *Studies in Second Language Acquisition*. 2024;46(2):301-306. doi:10.1017/S0272263124000111
4. Satariano, A., & Kang, C. How nations are losing a global race to tackle A.I.'s harms. https://www.nytimes.com/2023/12/06/technology/ai-regulation-policies.html. Accessed July 17, 2024.
5. Jinming Du, Ben Kei Daniel. Transforming language education: A systematic review of AI-powered chatbots for English as a foreign language speaking practice. *Computers and Education: Artificial Intelligence*. 2024;6:100230. doi:10.1016/j.caeai.2024.100230.
6. Li J, Zong H, Wu E, Wu R, Peng Z, Zhao J, Yang L, Xie H, Shen B. Exploring the potential of artificial intelligence to enhance the writing of English academic papers by non-native English-speaking medical students - the educational application of ChatGPT. *BMC Med Educ.* 2024 Jul 9;24(1):736. doi: 10.1186/s12909-024-05738-y. PMID: 38982429; PMCID: PMC11232216.
7. Song C, Song Y. Enhancing academic writing skills and motivation: Assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students. *Front Psychol.* 2023 Dec 15;14:1260843. doi: 10.3389/fpsyg.2023.1260843. PMID: 38162975; PMCID: PMC10754989.

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5 Tips for Starting a Literature Review

Embarking on a literature review can be a daunting task, whether you're a student, clinician, or seasoned researcher. A well-structured literature review lays the groundwork for understanding the existing research landscape and identifying gaps or opportunities for further study. Here are five essential tips to help you get started:

1. Define Your Research Question Clearly
Before diving into the literature, it's crucial to have a well-defined research question or objective. A clear question will guide your search strategy, help you stay focused, and ensure that you review relevant studies. Spend time refining your research question to be specific, manageable, and aligned with your research goals. It can be helpful to structure your question in PICO format. For more information on formulating your question, visit our LibGuide on defining your search.

2. Develop a Search Strategy

A thoughtfully constructed search strategy is key to a thorough literature review. Choose appropriate databases (see databases available through the RML here) to search and identify relevant keywords, phrases, and controlled vocabulary terms related to each element of your research topic. Use Boolean operators (AND, OR, NOT) to combine concepts and refine your search. See our Libguide on developing a search strategy for more details.

3. Organize and Document Your Findings

As you run your literature searches, keep meticulous records of your search strategies and results. Use reference management tools like EndNote to organize your citations and build bibliographies for your publications. Visit our Endnote Libguide for detailed instructions on how to create a library, add references, and output citations using appropriate styles.

4. Critically Evaluate the Literature

Not all publications are created equal, so it's essential to critically evaluate the quality and relevance of the literature you review. Assess the credibility of each source by considering the author's expertise, the publication's metrics and reputation, and the study's methodology. Look for biases, limitations, and the applicability of the findings to your research question. A critical evaluation will help you identify the most valuable and reliable studies for your review. See our Evidence-Based Medicine Libguide on Appraising the Evidence for guidance.

5. Synthesize and Structure Your Review

Once you have a comprehensive collection of sources, focus on synthesizing the information to identify trends, gaps, and key insights. Clearly outline the structure of your review to present a coherent and logical argument that reflects the state of the existing research and highlights areas for further investigation. When choosing a journal to submit your work, consult our Libguide on identifying reputable journals.

For additional 1:1 support for any step of the process, you can request a consultation with a librarian using this form.

Guidelines on Reporting Race and Ethnicity from the AMA Manual of Style

The *AMA Manual of Style* is extremely influential in scientific publishing; its guidelines on writing and publishing scientific articles are followed by *JAMA*, the JAMA Network journals (eg, *JAMA Oncology*), and many other biomedical journals. Included are guidelines on reporting race and ethnicity, which were most recently updated in 2021 (1).

These updated guidelines are available in the online version of the 11th edition of the manual, which can be accessed from any MD Anderson–connected computer. If you happen to have a copy of the print edition of the 11th edition, do not refer to it for guidelines on race and ethnicity as the manual was printed before the guidelines were updated; use the online version instead.
We encourage authors who write about people to read the updated guidelines in the manual, which are extensive. Here, we highlight some of the key guidelines on reporting race and ethnicity.

Person-first language

The *AMA Manual of Style* advocates the use of *person-first language* (1), which is language that emphasizes the person over the person's conditions or characteristics. This has 2 important implications regarding the reporting of race and ethnicity.

First, names of racial and ethnic categories should be used as adjectives, not nouns. For example, instead of "We compared Blacks and Whites," which equates people with their race, write "We compared Black patients and White patients," which presents race as a characteristic of the patients.

Second, people should not be referred to as *minorities*. If the term *minority* is used, it should be preceded by an explanatory modifier and treated as an adjective, for example, "Special effort was made to recruit members of racial

and ethnic minority groups" or "Special effort was made to recruit racial and ethnic minority individuals."

Treatment of names of racial and ethnic categories

The guidelines on reporting race and ethnicity also include several principles for reporting the names of racial and ethnic groups, including the following:

- Capitalize all names of racial and ethnic groups. Formerly, the *AMA Manual of Style* recommended lowercasing *black* and *white* as these terms are not derived from proper nouns. However, in February 2021, the style manual committee decided to begin capitalizing *Black* and *White* so that all terms used to describe race and ethnicity are capitalized. The committee notes that an exception may be warranted if "capitalization could be perceived as inflammatory or inappropriate"; they give "white supremacy" as an example of an appropriate exception (1).
- Avoid *Caucasian* except to refer to people from the Caucasus region. Previously, *Caucasian* was sometimes used as a synonym for *White*, but that usage is now considered outdated.
- Do not hyphenate names derived from geographic entities. For example, instead of "Asian-American and Mexican-American caregivers," write "Asian American and Mexican American caregivers."
- Do not abbreviate names of racial and ethnic groups. For example, do not abbreviate "African American" as "AA." However, in tables and figures in which a lot of information needs to be fit within a small space, abbreviating the names of racial and ethnic groups may be acceptable if the abbreviations are defined in a footnote.

Reporting on race and ethnicity in research articles

In research articles, authors should use "the formal terms used in research collection" (1). For example, if a survey used in a study listed *Caucasian* as one of the racial and ethnic categories, even though that term is considered outdated today, the report of the study should use *Caucasian* rather than *White*.

Names of racial and ethnic groups in tables should be presented in alphabetical order, not in order of the numbers of individuals in the groups.

CORRECT

Table 1. Patient characteristics

	Group A (n=50)	Group B (n=49)
Sex, n (%)		
Male	35 (70)	37 (76)
Female	15 (30)	12 (24)
Race and ethnicity, n (%)		
Asian	1 (2)	0 (0)
Black	9 (18)	11 (22)
Hispanic	2 (4)	3 (6)
White	38 (76)	35 (71)

INCORRECT

Table 1. Patient characteristics

	Group A (n=50)	Group B (n=49)
Sex, n (%)		
Male	35 (70)	37 (76)
Female	15 (30)	12 (24)
Race and ethnicity, n (%)		
White	38 (76)	35 (71)
Black	9 (18)	11 (22)
Hispanic	2 (4)	3 (6)
Asian	1 (2)	0 (0)

A conceptual change

The 10th edition of the *AMA Manual of Style* noted that "Like gender, race and ethnicity are cultural constructs, but they can have biological implications" (2). The 11th edition indicates that "Although race and ethnicity have no biological meaning, the terms have important, albeit contested, social meanings" (1). Later, the manual further explains these concepts, noting that "There are many examples of reported associations between race and ethnicity and health outcomes, but these outcomes may also be intertwined with ancestry and heritage, social determinants of health, as well as socioeconomic, structural, institutional, cultural, demographic, or other factors (3-5). Thus, discerning the roles of these factors is difficult" (1).

References

1. Frey T, Young YK. Race and ethnicity. In: Christiansen SL, Iverson C, Flanagin A, et al. 11.12.3 Race and Ethnicity. In: *AMA Manual of Style: A Guide for Authors and Editors*. 11th ed. Oxford University Press; 2020. Accessed September 9, 2024. https://academic.oup.com/amamanualofstyle/book/27941/chapter/207567296#med-9780190246556-chapter-11-div2-23
2. Iverson C, Christiansen S, Flanagin A, et al. *AMA Manual of Style: A Guide for Authors and Editors*. 10th ed. Oxford University Press; 2007:414.
3. Borrell LN, Elhawary JR, Fuentes-Afflick E, et al. Race and genetic ancestry in medicine: a time for reckoning with racism. *N Engl J Med*. 2021;384(5):474-480. doi:10.1056/NEJMms2029562
4. Ioannidis JPA, Powe NR, Yancy C. Recalibrating the use of race in medical research. *JAMA*. 2021;325(7):623-624. doi:10.1001/jama.2021.0003
5. Bauchner H. Race, poverty, and medicine in the United States. *JAMA*. 2015;313(14):1423. doi:10.1001/jama.2015.2262

The "What" and "How" of Oral History

Historians work with a miscellaneous set of sources when studying the past. With these sources, they craft secondary sources to synthesize, analyze, and make sense of the past. But, how do these secondary sources come to be? What do historians, archivists, and people at large rely on to craft historical narratives?

Primary sources assist in building arguments and analyzing the past. These primary sources are diverse. They can be recipes, diaries, photographs, and songs. They can be found in formal repositories, like libraries, or in the homes of those who have held on to their treasures from the past.

Primary sources also take the form of oral narratives. Recorded conversations between interviewer and interviewee(s) probe the past in ways that recall historical moments, give new perspectives on the past, and offer fresh insight into a person's life, a community's history, and significant events of the past.

This form of primary sources is known as oral history. What exactly is oral history, though? Is it the same as an interview? Is it a field of study? As the Oral History Association states, "Oral history is a field of study and a method of gathering, preserving and interpreting the voices and memories of people, communities, and participants in past events."

Oral history, therefore, is much more than an interview. It is a way of recording the past in the present. It is a way to ensure that a plethora of voices and experiences are preserved and archived. Ultimately, oral history is a way of recording history, and this way of recording history is rooted in conversation and active listening.

Where might one begin a journey to engage the field of oral history? Guidelines and resources by the Oral History Association are valuable. They can be found here. There are also many digitized oral history projects that reveal the scope of the field. For an example, view the Making Cancer History Oral History Collection in Open Works.

Oral history is an act of preservation, and curiosity drives this methodological practice. Here are a few ways to think of curiosity in motion throughout oral history:

- Curiosity on who to interview. What new information can we learn through them? What can they help us understand in more nuanced ways? This does not have to be someone well-known. Everyone has a history.
- Curiosity to establish and grow relationships. What is one's own positionality? Time often is an essential part of the oral historian's toolkit. Some histories are easier to talk about than others, and time is often necessary in order to cultivate a relationship based on respect and trust before asking for someone's historical memories.
- Curiosity when researching and learning more about the person one plans to interview. What is already known about them? What historical memories do they have that can be amplified? What other existing sources should be engaged in order to gain proper context needed for an oral history?
- Curiosity when crafting oral history questions. What aspects of the person's story would be helpful for project and learning goals? Sometimes, what questions should not be asked? Question building is a process where one synthesizes and balances what is known of the past *and* curiosity to learn more through an interviewee's knowledge.
- Curiosity when conducting the oral history. An oral historian is not merely a questioner. Oral historians actively listen throughout an interview and explore relevant threads that an interviewee may bring up. In turn, an oral history is a reciprocal relationship where all involved build an archival source.
- Curiosity after the oral history. Sometimes interviews leave more questions. That is okay. Follow-up interviews can be an exciting way to

flesh out historical memories and continue a relationship with an interviewee.

Ultimately, thoughtful curiosity throughout ensures a methodological practice that is serious about preserving the past in a way that meets interviewees where they are. It is okay if this takes time. It is okay if people decline or if some questions are met with silence. In the end, it allows us to make sense of a complex past.

For questions, please contact the Historical Resources Center at the Research Medical Library.

Reference
"Oral History: Defined," Oral History Association. https://oralhistory.org/about/do-oral-history/

Prepositional Phrases: Where in a Sentence Should They Go?

Last month, we wrote about prepositions and how useful they are for providing details in a sentence. Now let's discuss their placement within sentences.

We'll start with a couple of simple sentences about squirrels.

Examples:
The squirrel jumped onto the roof.
The squirrel jumped over a log.

Here, the prepositions *(onto, over)* and their objects *(roof, log)* form prepositional phrases that describe where the squirrel jumped. These sentences are simple and straightforward. When a sentence gets more

complex, the location of a prepositional phrase can affect the sentence's flow and clarity.

Example:
The squirrel jumped into a bush with some acorns. [It sounds here like the bush had acorns, but acorns grow on trees.]
Better: The squirrel with some acorns jumped into a bush. [The prepositional phrase *with some acorns* is now next to the noun it relates to, *squirrel*.]

Example:
We found a difference using RNA-sequencing analysis between the two groups. [This sentence sounds awkward because the prepositional phrase *between the two groups* is separated from the word it relates to, *difference*.]
Better: We found a difference between the two groups using RNA-sequencing analysis. [The phrase *between the two groups* is now next to the word it relates to, *difference*.]
Better: Using RNA-sequencing analysis, we found a difference between the two groups. [Here, the phrase *Using RNA-sequencing analysis* is also next to the words it relates to, *we found*.]

Following are some other considerations for the placement of prepositional phrases.

If you're giving directions, provide information in sequential order.

Example:
Take elevator A to the ninth floor in the Main Building.
Better: In the Main Building, take elevator A to the ninth floor.

If prepositional phrases are being used to compare groups, it can be helpful to place them at the beginning of sentences. Use the same sentence pattern (i.e., use parallel structure) for any related sentences that follow to make your text easy to understand.

Example:
In mice that received drug treatment, the expression of proteins A and B increased. The expression of protein C initially increased and then decreased in the control mice. [The sentences use different patterns, with the prepositional phrases about the mouse groups in different parts of the sentences. We don't know that the second sentence is about control mice until the end of that sentence.]
Better: In mice that received drug treatment, the expression of proteins A and B increased. In the control mice, the expression of protein C initially increased and then decreased. [These sentences use the same pattern: In (mouse group), the expression of (protein) increased/decreased.]