

# CALICO

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## Five Things to Know about Generative Artificial Intelligence

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Generative artificial intelligence (GenAI) has recently taken the educational stage. Many teachers are skeptical about allowing students to use GenAI tools in the classroom, while others believe that this new wave of technology can be harnessed to improve teaching and learning. For those who are ready to learn and leverage this novel technology, here are a few things to consider.

### 1. What it can do

GenAI is a type of AI that can generate text, images, audio, and video in response to prompts. GenAI chatbots like ChatGPT (GPT 3.5 and GPT 4), Bing Chat, and Bard are considered large language models (LLMs), as they work by learning patterns and structures of massive datasets and are able to create new content that is similar to the data they were trained on (Google, 2023b; Microsoft, 2023b; OpenAI, 2023c). For example, imagine there is a recipe book with a wide variety of recipes to make *empanadas*. A GenAI model could be trained on these recipes to learn the common ingredients and steps involved in making *empanadas*. Once the model has learned the patterns, it could easily generate a new recipe for *empanadas* similar to the ones in the recipe book.

### 2. Prompts are key

With GenAI chatbots, users just need to ask a question or write a prompt and the tool will generate human-like texts in response to the input. Prompts need to be:

- **Specific.** They should provide specific details about the topic or task. For example, “write a two-paragraph summary of *Don Quixote*” instead of just “write about Don Quixote.”

- **Clear and concise.** The prompt should be straightforward and easy to understand. For example, “write a short review of the movie *Coco* in Spanish” rather than “write a review.”
- **In context.** It should provide information about the context or situation. For example, “imagine you are a language teacher in Costa Rica, and I am a tourist trying to learn some basic Spanish phrases. Can you teach me how to order food at a traditional restaurant?”

Therefore, a good prompt that has all the elements previously mentioned will be something like: “You are a Spanish teacher. Write an exciting text of 200 words for your intermediate Spanish students about the importance of Machu Pichu using the simple present tense in Spanish.” Prompts can be entered in different languages, but at this time, it seems that English works best. Teachers can try and play around with different ways of prompting the available tools.

### 3. GenAIs available

Some of the most currently used GenAI chatbots are:

**ChatGPT** (GPT-3.5): This is a free tool from OpenAI. ChatGPT is powered by GPT-3.5 (Generative Pre-trained Transformer) technology. Users can write a question or prompt and the tool will generate a text in response to it. ChatGPT does not have access to the internet and does not have updated information after September 2021. The sources it provides might not be accurate, and sometimes it even makes up references. Therefore, it is essential to cross-check the output.

**ChatGPT Plus** (GPT-4): This tool is also known as GPT-4 and it is also from OpenAI. This is the paid version (\$20.00 per month) of ChatGPT. ChatGPT Plus uses GPT-4 technology and it is described as a large multimodal model. With GPT-4, users can input text and images as prompts, but it generates output only as text. Like ChatGPT, it does not have access to the internet, and the information it generates might not always be accurate, so users should always fact-check the output.

Both versions of ChatGPT save conversations automatically.

**Bing Chat** is a tool from Microsoft; it is accessible through Microsoft Edge, and it is free of cost. Bing Chat is powered by GPT-4 technology. Bing Chat has internet access and provides up-to-date information. It also provides the sources of the output, but sometimes the links do not work, and sometimes the information is not accurate. One big advantage of Bing Chat is its multimodality, allowing users to create images with DALL-E (AI powered by GPT-3 and can generate images from a text prompt; OpenAI, 2023b). Bing Chat has three conversation modes: More Creative, More Balanced, and More Precise. Images can be created when the conversation style is set under the “More Creative” mode. Conversations cannot be saved at this moment in time.

**Bard** is a free tool from Google. However, users will need to join a waitlist ([bard.google.com](https://bard.google.com)) and wait for an email notification to try it. Bard uses LaMDA (language model for dialogue applications) technology. Bard has access to the internet and provides up-to-date information.

The generated output might not always be accurate, but it can be looked up with a convenient button to Google it. Bard has some multimodality, as it provides options to enter either a written or spoken prompt. Conversations cannot be saved at this point in time.

#### **4. Potential uses**

##### ***For teachers***

###### *Create lesson plans*

Teachers can save time by providing the chatbot with their learning objectives and ask it to generate, for example, a lesson plan that includes grammar and communicative activities.

###### *Make outline for slides*

Teachers can input a text and ask the bot to generate an outline for their slides by prompting the AI tool to, for example, “create four slides about the importance of learning a world language. Use Heading 1 for the titles and Heading 2 for the bullet points.”

###### *Summaries*

The AI tool can quickly create summaries of books, articles, or texts that have been entered.

###### *Brainstorm*

The bot can help teachers brainstorm ideas for tasks and activities based on, for example, the lesson of the day.

###### *Differentiation*

A chatbot can help create tasks that are engaging by varying the levels of difficulty (Egbert et al., 2022). With GenAI it is possible to ask the tool to change the level of challenge of a task to reach each student at each student's individual level.

###### *Make tables*

Bots can make tables when the users specify what they would like in each column. For instance, teachers could ask the AI tool to “make a table about the preterit tense in Spanish; the first column should have personal pronouns and the other three columns should have example verbs that end in -AR, -ER, -IR.” The ChatGPT output for this prompt is shown in Figure 1.

**Figure 1**  
*ChatGPT Table Output of the Preterit Tense*



Sure! Here's a table with the preterit tense in Spanish:

Personal Pronouns	-AR Verbs (hablar)	-ER Verbs (comer)	-IR Verbs (vivir)
yo (I)	hablé (I spoke)	comí (I ate)	viví (I lived)
tú (you)	hablaste (you spoke)	comiste (you ate)	viviste (you lived)
él/ella/usted (he/she/you formal)	habló (he/she/you formal spoke)	comió (he/she/you formal ate)	vivió (he/she/you formal lived)
nosotros/nosotras (we)	hablamos (we spoke)	comimos (we ate)	vivimos (we lived)
vosotros/vosotras (you all)	hablasteis (you all spoke)	comisteis (you all ate)	vivisteis (you all lived)
ellos/ellas/ustedes (they/you all formal)	hablaron (they/you all formal spoke)	comieron (they/you all formal ate)	vivieron (they/you all formal lived)

Note that in Spanish, the preterit tense is used to talk about completed actions in the past, especially actions that occurred at a specific time or over a specific period of time. Also note that there are many irregular verbs in the preterit tense, but this table only includes regular verbs for simplicity's sake.

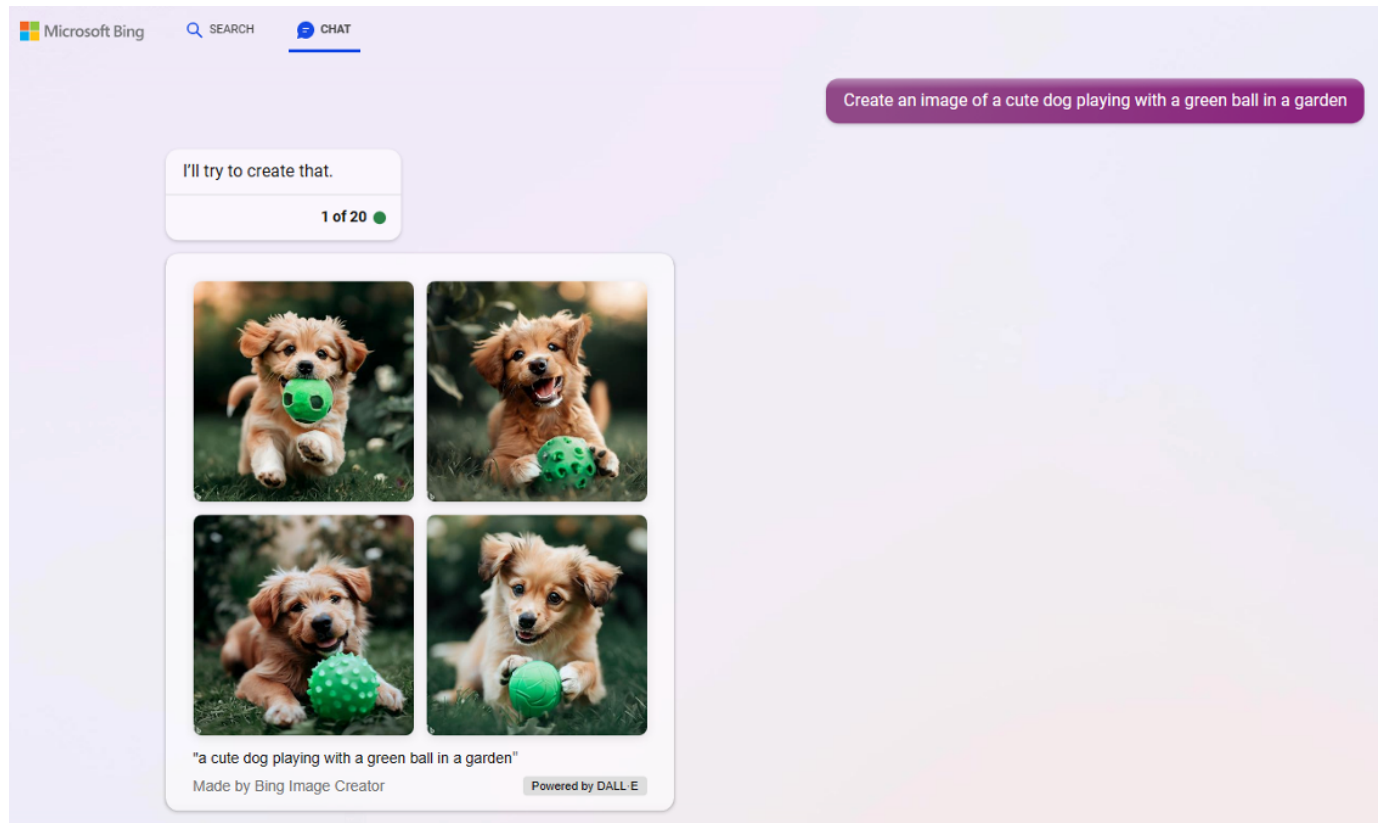
Source: OpenAI ChatGPT, 2023a

The bot provided everything asked for and even more; it added translations, conjugations, and a reminder on how to use the preterit in Spanish.

### *Create images*

The bot can create images that can be added to a presentation or activity. At this time, only Bing Chat can create images under its “More Creative” mode, as shown in Figure 2.

**Figure 2**  
*Bing Chat Generated Image of a Dog with a Green Ball*



Source: Microsoft Bing Chat, 2023a

### ***For students***

#### ***Feedback***

Learners can copy and paste their homework into one of the tools. Then they can ask the bot to provide feedback on their work and suggest potential ways to improve it.

#### ***Create flashcards***

Students can ask the bot to create a table by specifying, for example, to put a noun in one column and its definition in the column next to it.

#### ***Practice written conversations***

Chatbots can be great conversation partners. Students can give the bot a scenario and ask it to follow the conversation. For instance, learners can tell the bot, "I need some help practicing my intermediate level Spanish. Can you be my conversation partner?" The bot might answer something like, "Of course! What would you like to chat about?" The user can then say, "You are a local tourist guide and you are taking me for a tour in la Gran Sabana." The chatbot and the learner can then engage in an interactive conversation.

## Translations

Students can use the chatbots to translate texts into their native or target language.

## Explain concepts

Students can use any of the GenAI tools to explain grammar points or simplify concepts in a way that is easy to understand. Below is an example of Google Bard explaining an acronym to remember how to use verbs *ser* and *estar* in Spanish.

### Figure 3.

#### Google Bard's Response of Acronyms to Use Verbs *Ser* & *Estar*

◆ Sure, here are some acronyms to help you remember how to use the Spanish verbs *ser* and *estar*:

##### Ser

- D.O.C.T.O.R.
  - Description (descripción)
  - Occupation (ocupación)
  - Characteristic (característica)
  - Time (tiempo)
  - Origin (origen)
  - Relationship (relación)

##### Estar

- P.L.A.C.E.
  - Position (posición)
  - Location (ubicación)
  - Action (acción)
  - Condition (condición)
  - Emotion (emoción)

For example, you would use the verb *ser* to describe something that is permanent, such as your name, your nationality, or your birthday. You would use the verb *estar* to describe something that is temporary, such as your mood, your location, or your physical condition.

Here are some examples of how to use these verbs:

- **Ser**
  - Soy una estudiante de ingeniería. (I am an engineering student.)
  - Mi padre es de México. (My father is from Mexico.)
  - Mi cumpleaños es el 1 de enero. (My birthday is January 1st.)
- **Estar**
  - Estoy cansado. (I am tired.)
  - Estoy en la escuela. (I am at school.)
  - Estoy enfermo. (I am sick.)

I hope these acronyms help you remember how to use the Spanish verbs *ser* and *estar*!

Source: Google Bard, 2023a

Bard provided two acronyms, DOCTOR and PLACE, to help remember the verbs, as well as explanations and examples on how to use them.

## 5. Ethical considerations

The use of GenAI tools can raise ethical concerns, such as the potential for misuse and bias. Even whether it should be cited or not is still up for debate. However, the American Psychological Association (APA) treats GenAI output as algorithm products, and therefore suggests quoting and citing the generated texts and images. Based on McAdoo's (2023) blog post, the APA recommends the following:

OpenAI. (2023). *ChatGPT* (Mar 23 version) [Large language model]  
<https://chat.openai.com/chat>

In this reference entry, OpenAI is the "author," 2023 is the year it was used, *ChatGPT* is the model used and is italicized, followed by the version in parenthesis. Then square brackets are used to add the descriptor, and last the URL is also added (for more information, check McAdoo's 2023 article).

Another concern is that the GenAI chatbots can create "hallucinations" that are made up of texts that look like facts. Therefore, it is essential for users to cross-check and edit the text generated by any of the AI tools. Many educators also fear that AI tools will broaden the digital divide. Currently, ChatGPT Plus is a paid service while ChatGPT, Bing Chat, and Bard are free. Teachers can use the free AI tools to teach digital literacy and expand diverse learning situations. Teachers should show their students how GenAI tools work and how they can support their learning, as well as establishing ground rules on what the tools can be used for and how they should report the use of the tools.

## Conclusions

GenAI is evolving very quickly. This might be an opportunity for teachers to rethink the way they teach and students learn. GenAI tools can be used to support learning when used in a responsible way. Teachers are the experts in their fields and can help create learning environments that can prepare and empower students to master digital literacy skills like AI and be ready for college and jobs that might not even exist yet.

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