

# **WORKING SMARTER, NOT HARDER: APPLYING SLA THEORY TO AI USE IN LANGUAGE EDUCATION**

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# Mentimeter



# **Outline of Webinar**

- 1. On the nature of learning**
- 2. Effective student use of ChatGPT for language learning**
- 3. Effective teacher use of ChatGPT for language teaching**

# **Dr. Pack's Advice**

- 1. Teach students the difference between real gold and fool's gold**

# Part 1: On the Nature of Learning



Image from: <https://our.today/gold-rush-fools-gold-vs-the-real-deal-here-is-what-you-need-to-know/>

# Learning With AI?





# Neurons

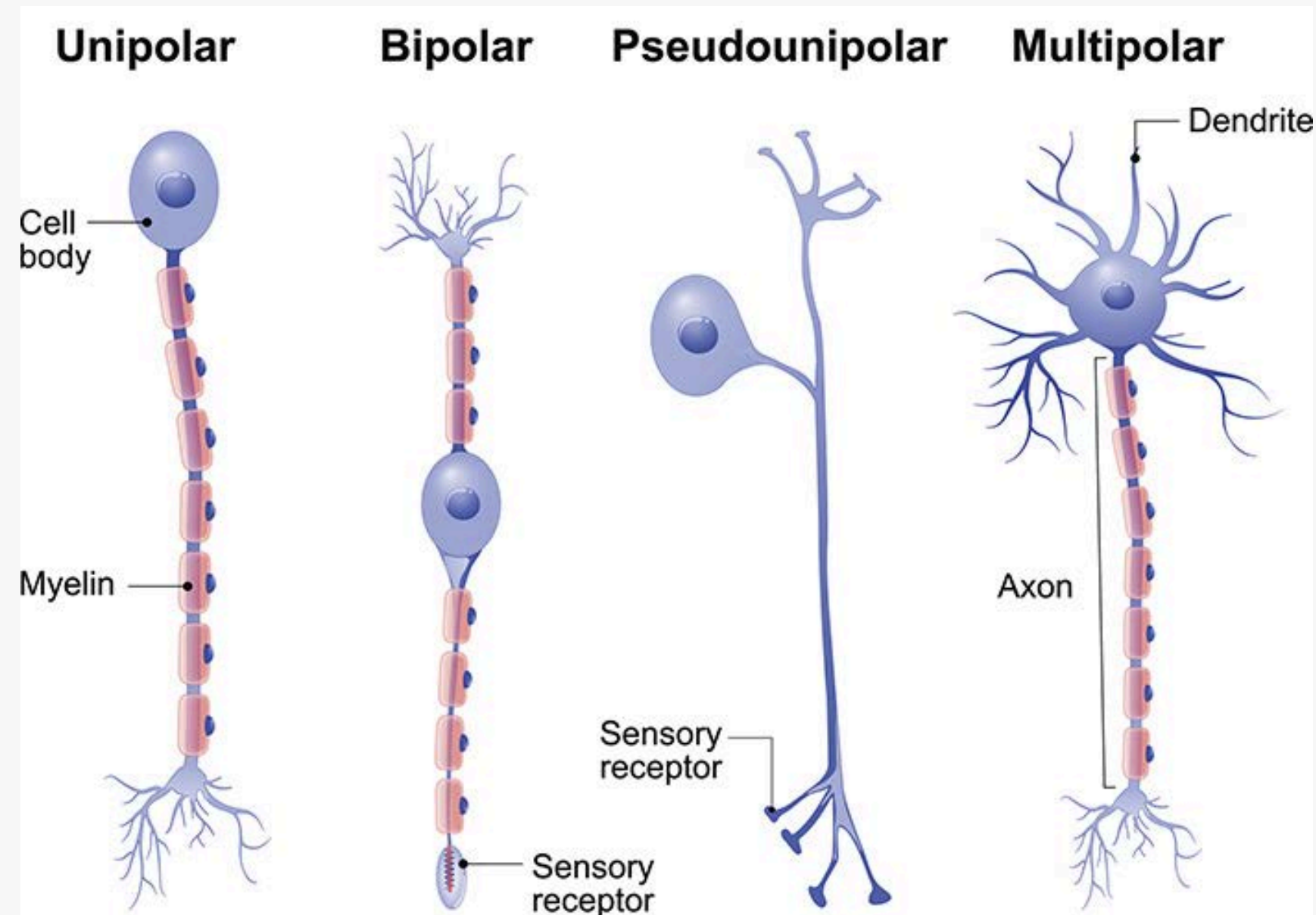

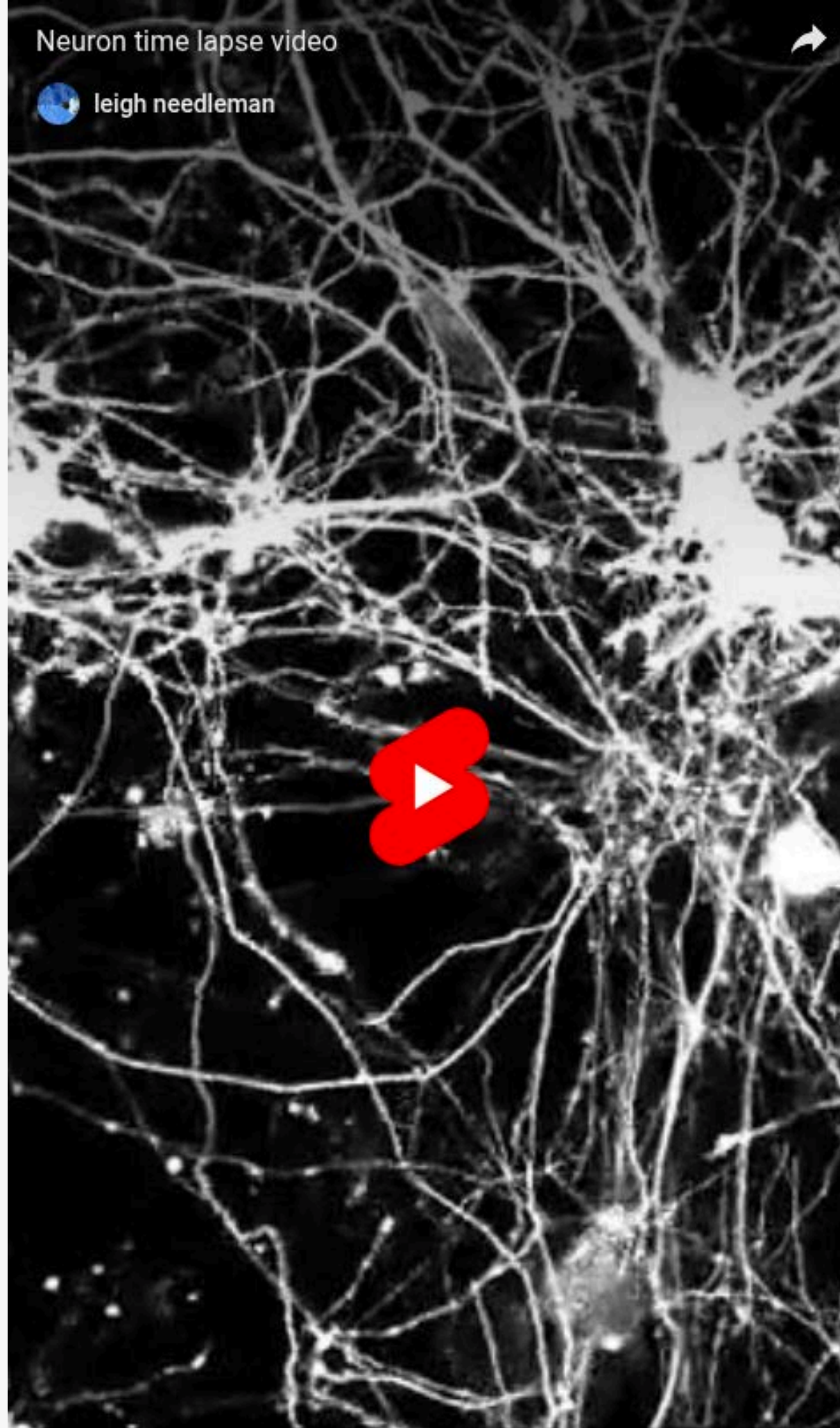


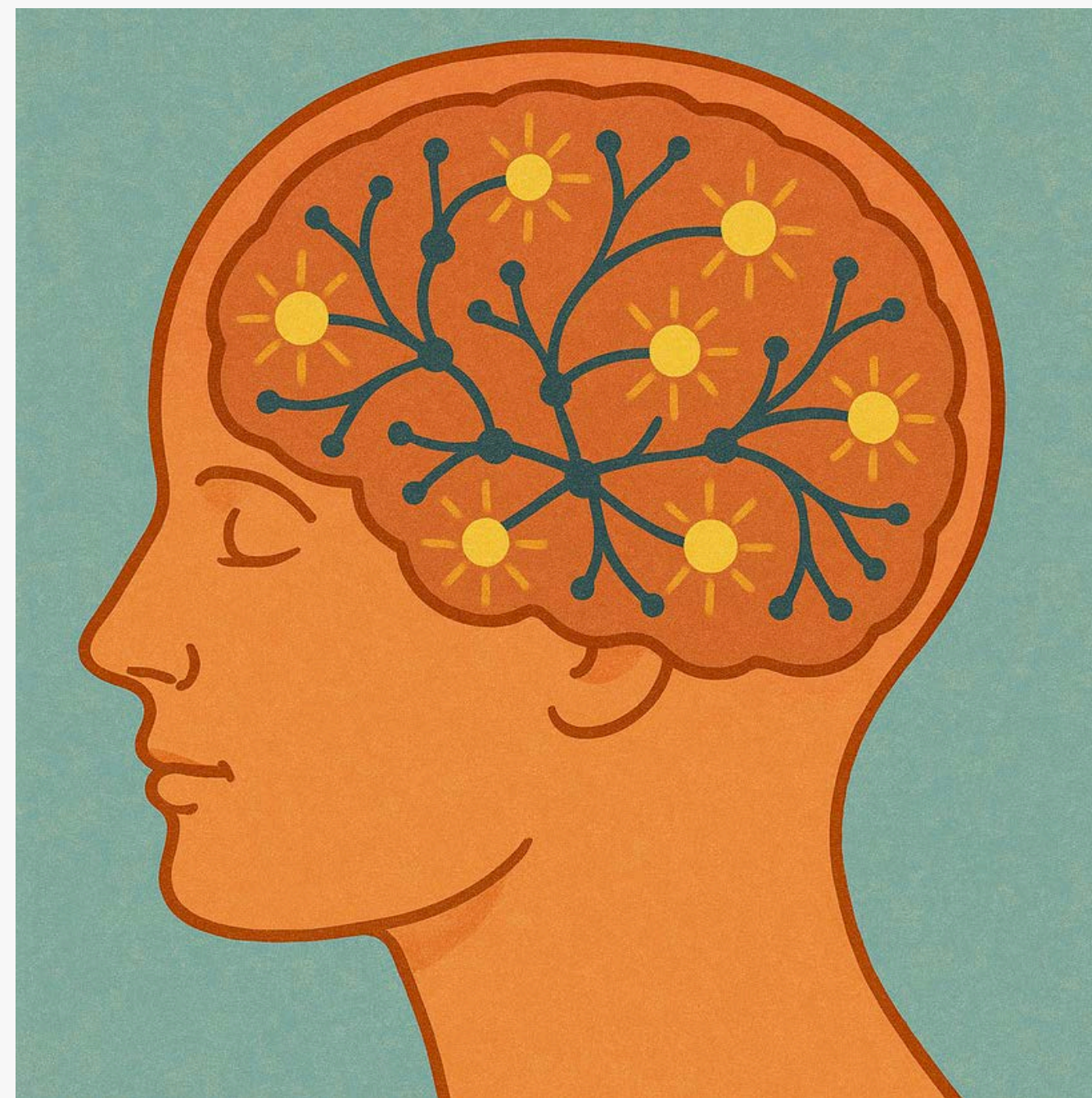
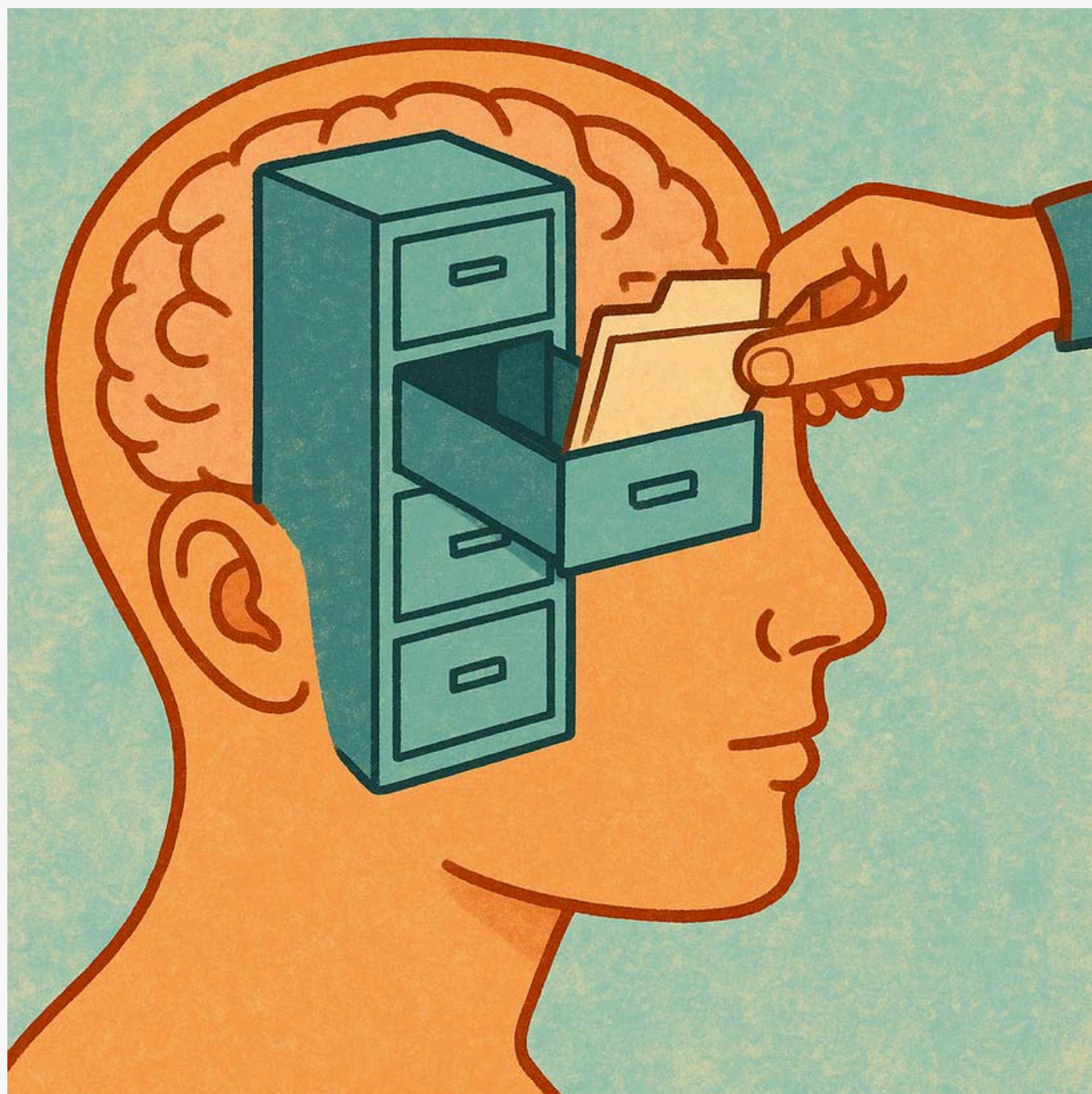
Image from: <https://qbi.uq.edu.au/brain/brain-anatomy/types-neurons>

Neuron time lapse video

 leigh needleman







Images generated by GPT-4o



# Brain Functions and Locations

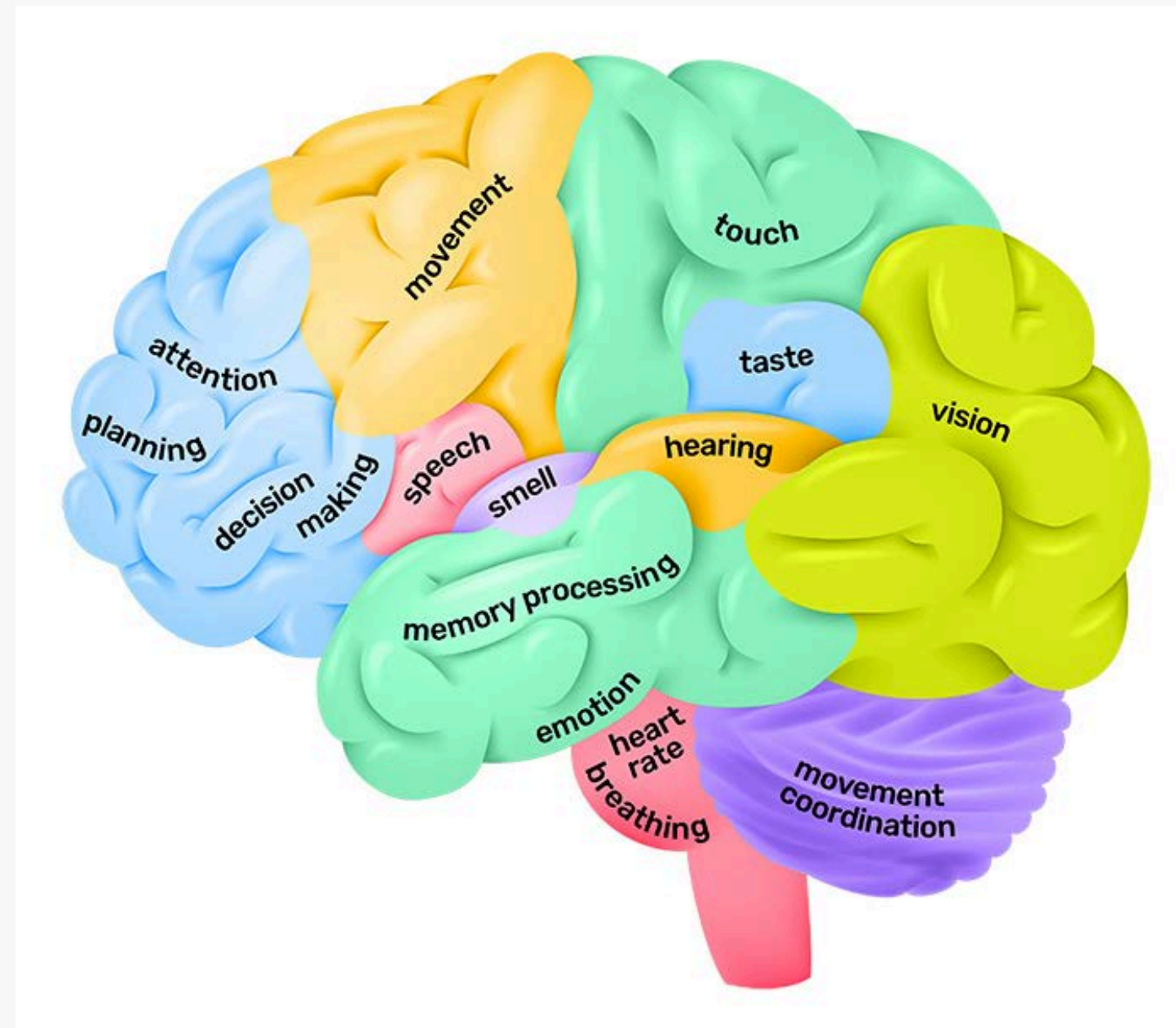


Image from: <https://qbi.uq.edu.au/brain/brain-anatomy/lobes-brain>

# Establishing Neuron Pathways

Focused Attention

Emotional Arousal

Repetition and Practice

Sleep

Association

# Stop and Reflect

How might AI be used in ways that align with how learning actually occurs?

What principles or theories from Second Language Acquisition might guide us in using AI for learning a language?



**What is required for  
effective second language  
learning to occur?**

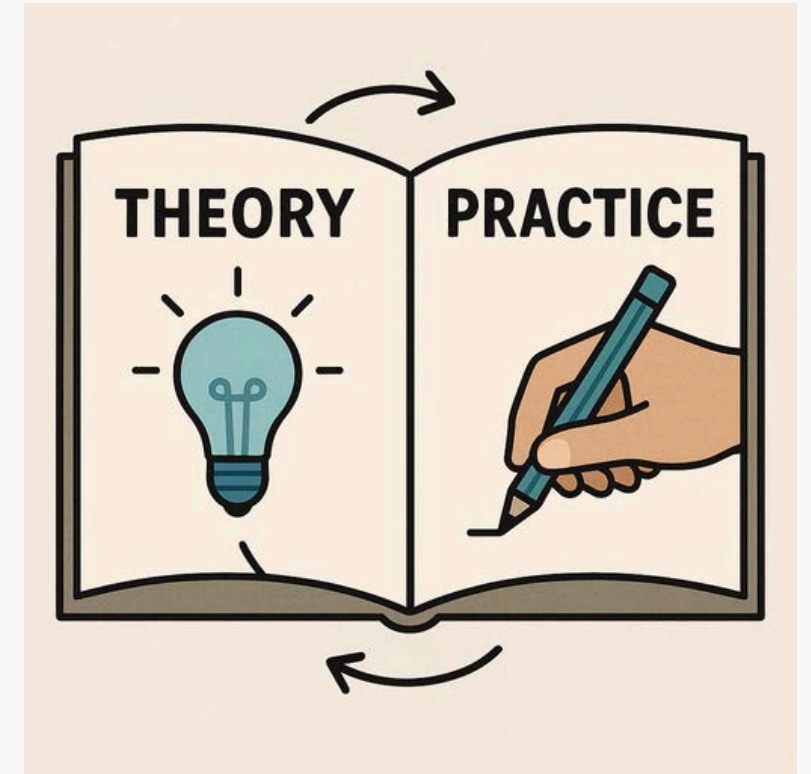
**Answer in ONE sentence**



**Effective L2 learning occurs when a student is attentive to frequent and meaningful comprehensible input and is provided opportunities to communicate that sustain the student's motivation to learn.**

# SLA Theory That Guides My Approach

1. Schmidt's Noticing Hypothesis
  2. Krashen's Comprehensible Input & Enhanced Input
  3. Bruner's Instructional Scaffolding
  4. Vygotsky's Zone of Proximal Development
- (See Urlaub & Dessen, 2024)



# **Dr. Pack's Advice**

- 1. Teach students the difference between real gold and fool's gold**
- 2. Don't just teach students what to learn, teach them *how* to learn. Model effective AI use.**

# Part 2: Effective student use of ChatGPT for language learning

The true strength of generative AI doesn't lie in it providing you with the right answer. Its real power is in **creating learning opportunities and tailoring them** for your individual learning journey. Use AI to **personalize the material** you are studying and to help you forge meaningful connections between new information and what you already know. Use AI to **scaffold the difficulty of the learning material**, making it easier, or more difficult, depending on what you need. This will enable you to learn the material and to develop language abilities more quickly.



Speaking and Writing

Listening & Grammar

Reading & Vocabulary



**Please go to [ChatGPT.com](https://chatgpt.com)**

**Effective L2 learning occurs when a student  
is attentive to frequent and meaningful  
comprehensible input**

**How can AI assist?**

**VIDEO OF ElevenLabs**

# **Using the Microsoft Edge Browser's Reading Along Feature**

# **NotebookLM**

**Please go to [ChatGPT.com](https://chatgpt.com)**

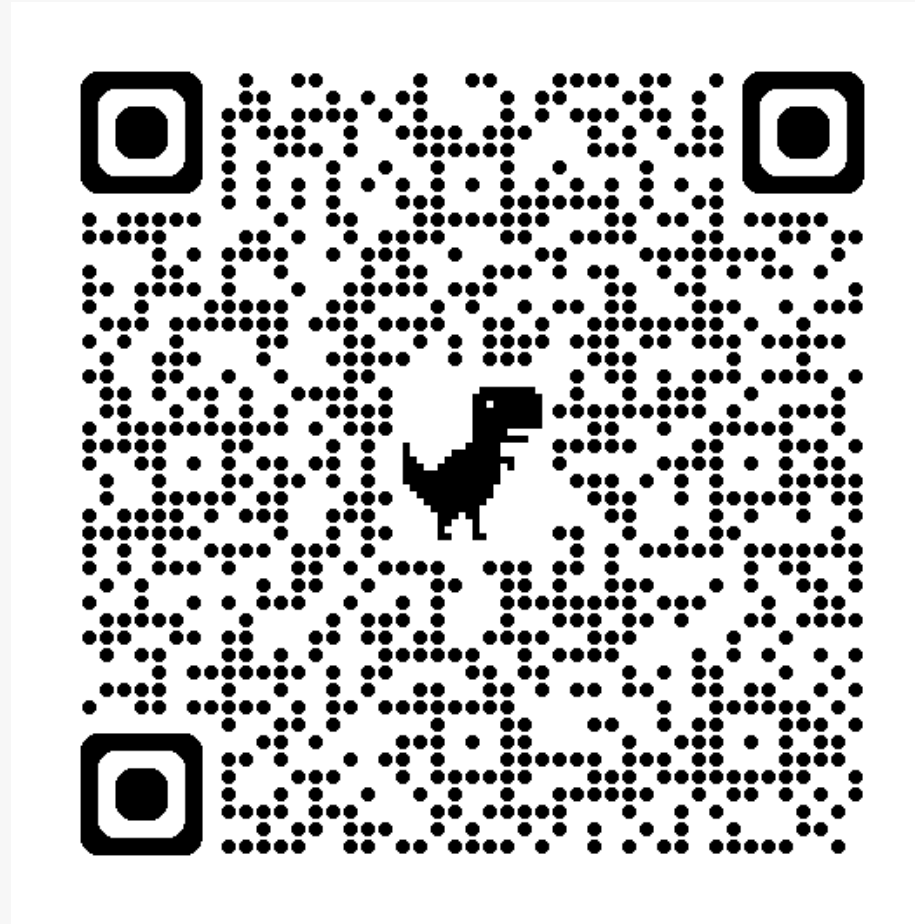
**Effective L2 learning occurs when a student is attentive to frequent and meaningful comprehensible input and is **provided opportunities to communicate****

**How can AI assist?**



# **VIDEO of Advanced voice mode ChatGPT**

# Dr. Pack's Guide for Students



**Using Generative AI Effectively:  
A Guide for Students**

# **Q&A Session**

Student use of AI  
for language learning

# Part 3: Effective teacher use of ChatGPT for language teaching

1. Highly dependent on context
2. Student Focused
3. Teacher Focused

Prompt Engineering + Custom GPTs

# **Dr. Pack's Advice**

- 1. Teach students the difference between real gold and fool's gold**
- 2. Don't just teach students what to learn, teach them *how* to learn. Model effective AI use.**
- 3. Use a prompt engineering framework.**



 Harvard Professor Explains Algorithms in 5 Levels of Difficulty | WIRED

LEVEL 1

Share



Watch on  YouTube

# ALGORITHMS



**Start at 2:00**

# Prompt Engineering

Prompt Engineering Framework (adapted from Ingley & Pack, 2023)

1. Give the chatbot a role
2. Give the chatbot a purpose/assignment
3. Give the chatbot contextual information and constraints
4. After seeing the chatbot's output, continue to converse with the chatbot to refine the output. Provide additional information and clarify instructions that the chatbot misunderstood.

# **Example - Creating a Rubric**

Role?

Purpose?

Contextual Information?

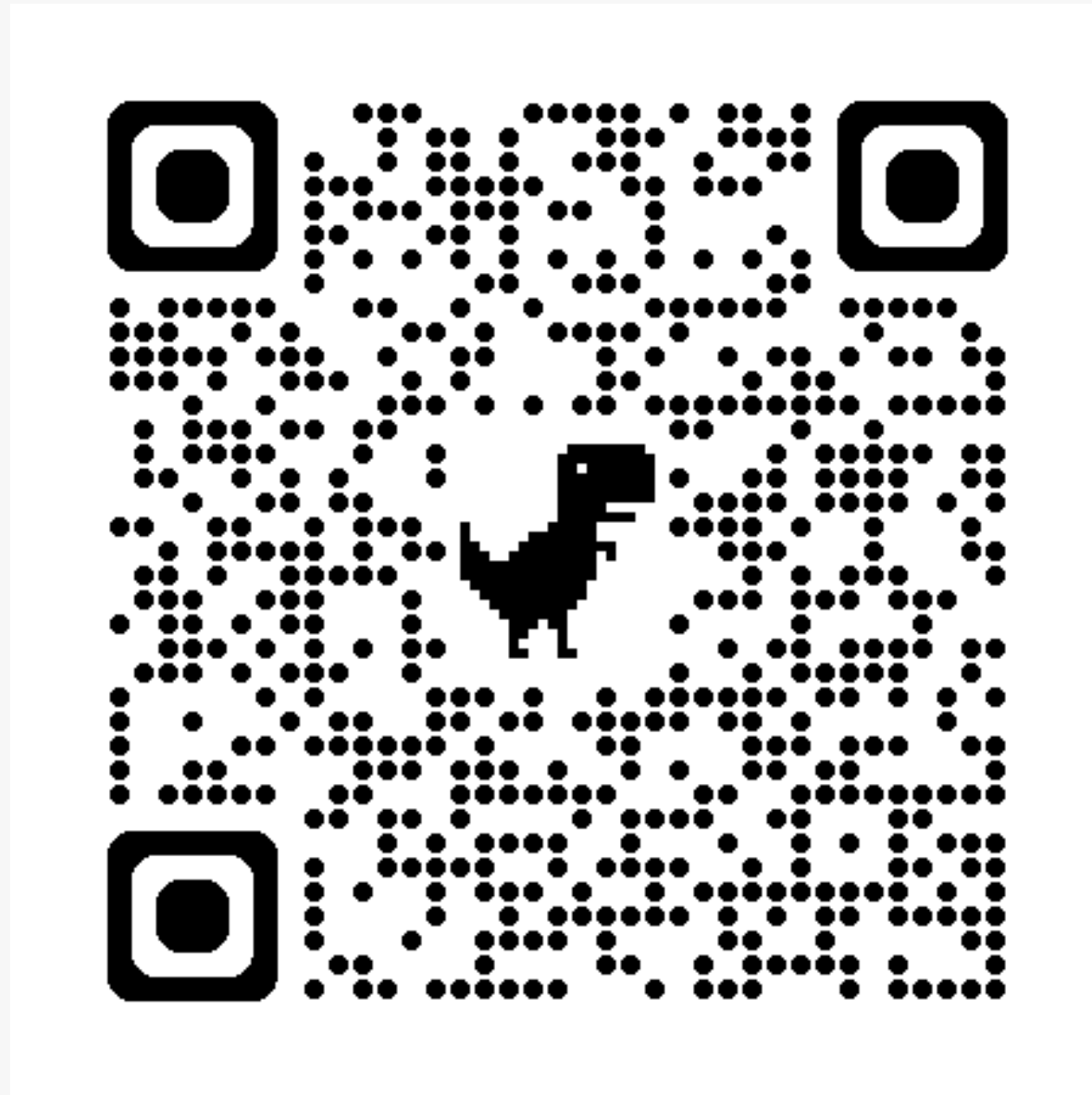
Let's practice at [ChatGPT.com](https://chatgpt.com)

# **Dr. Pack's Advice**

- 1. Teach students the difference between real gold and fool's gold**
- 2. Don't just teach students what to learn, teach them *how* to learn. Model effective AI use**
- 3. Use a prompt engineering framework**
- 4. Make use of Custom GPTs**

# Generating Reading Passages

## Custom GPT

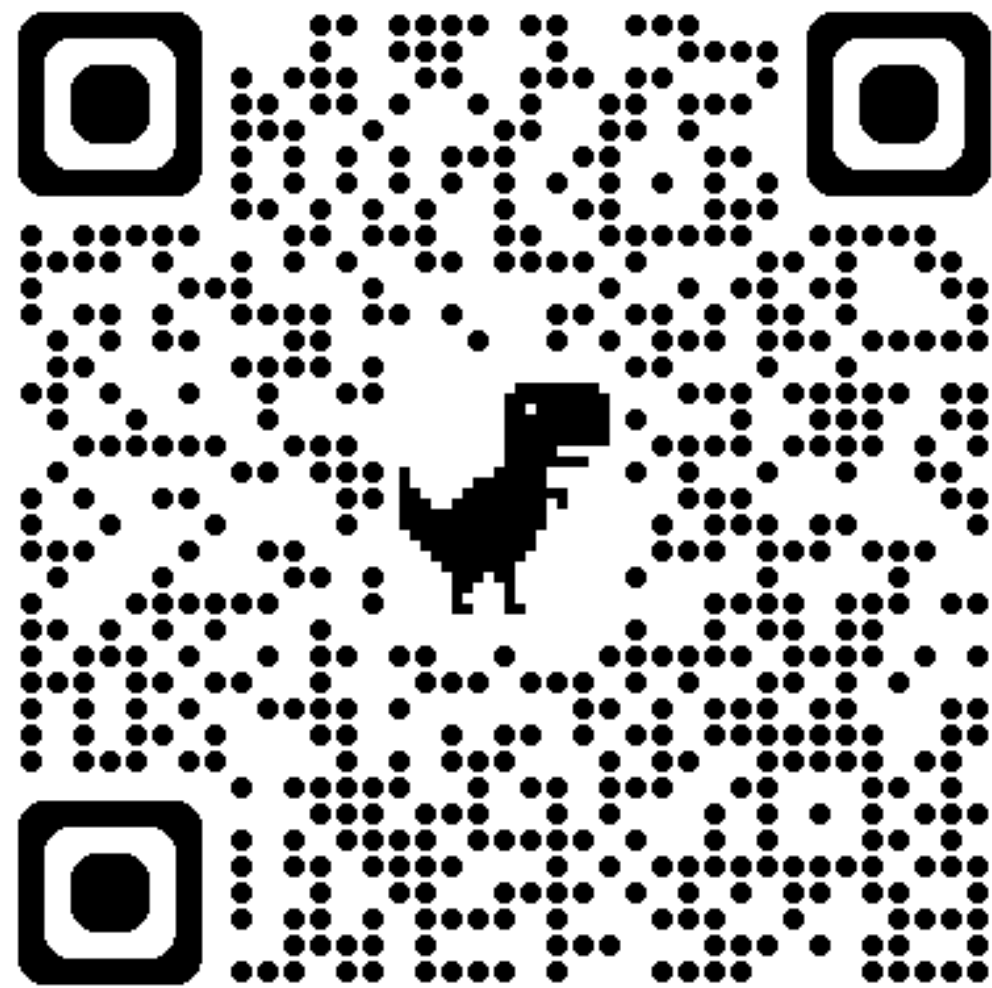


# Generating Reading Passages

- 1. ROLE** - You are an expert academic English language teacher.
- 2. PURPOSE** - You will create a reading passage and quiz for the user, in line with the following requirements:
- 3. CONTEXT** - The reading passage should be about the topic the user has chosen
- 4.** The reading passage should be in an academic English style, but easy enough that non-native English speakers with a CEFR B1 level of English can understand the passage and questions.
- 5.** The passage should be 4-5 paragraphs in length. Each paragraph should have 4-5 sentences. These paragraphs should have a clear topic sentence, supporting ideas, details (i.e., facts, evidence, examples, quotes, paraphrasing from academic sources, with relevant in-text citations).

# Generating Feedback

## Custom GPT



**Sample writing prompt:**

**Is having a good memory valued in your culture? Why or why not?**

**Sample student writing:**

**Having good memory is valued in culture. I still remember when my grandpa used to tell us how simple life was before technology came. Back then grandpa one of his hobbies with his friend is to play a guitar when the sunset comes and serenade through out the evening, He always told us that he wishes that he could turn back on the time when he's still young and go back to all the things that he loves before he passed away. My grandpa throughout his life always keeps telling stories in His day. As I get older, I was there are the things that I used to when I was a kid that right now, I can even do it again. For example, I liked to play with my friends throughout the day and I feel like I have infinite energy to do whatever I want, and it was a good feeling to remember. But right now, I feel like I'm exhausted every time and don't have the courage to do what I want. Memories are all thing that we can have after this life so why not treasure it and record it? So that in the generation to come they still remember you and tell your stories to your descendants.**

# Providing Feedback on Writing

**Utilizing OpenAI's GPT-4 for written feedback.** TESOL Journal.

**AI-generated feedback on writing: insights into efficacy and ENL student preference.** *International Journal of Educational Technology in Higher Education.*



# Providing Feedback on Writing

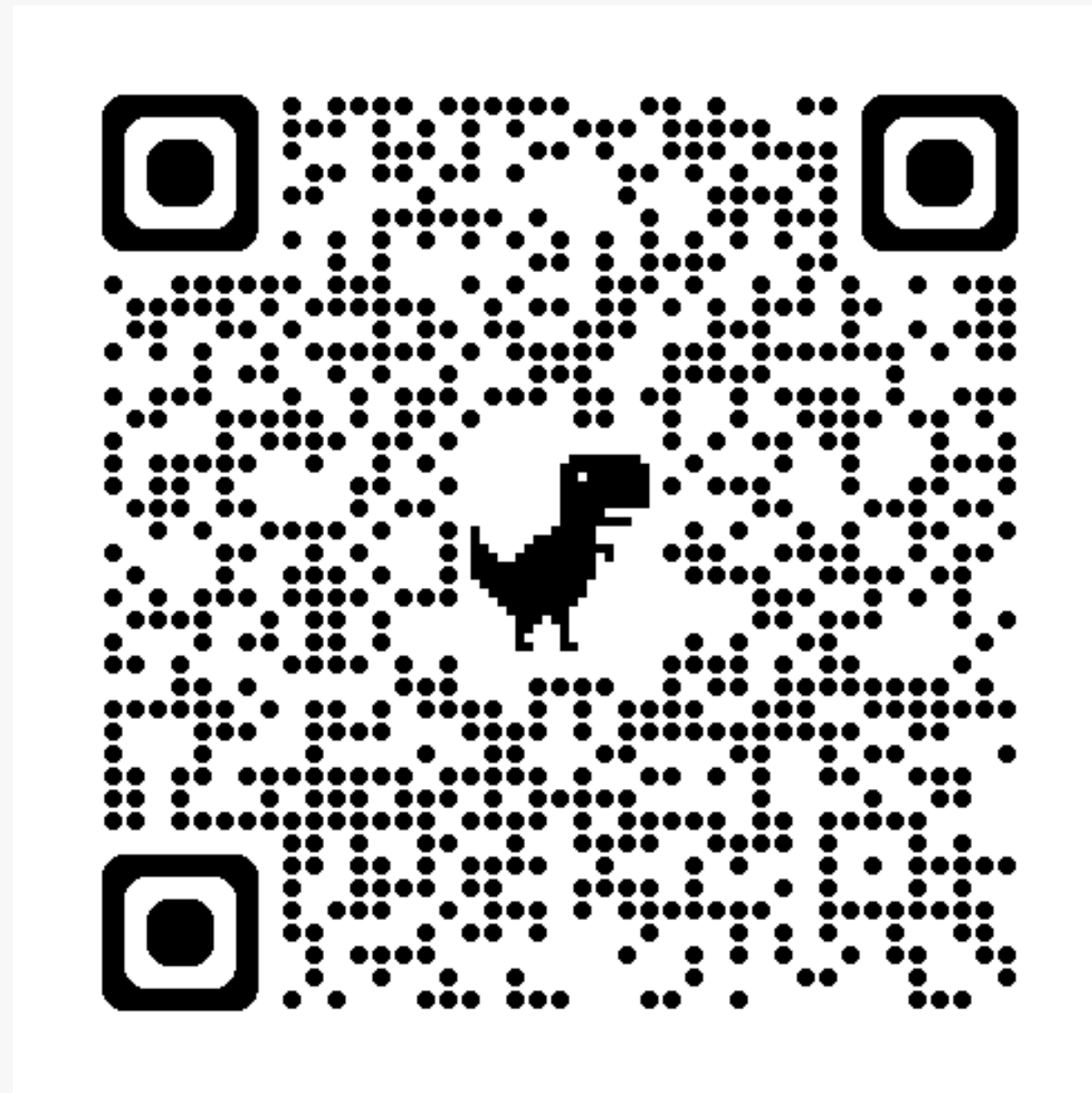
- 1. You will be a professional English teacher who is an expert on providing feedback on writing.**
- 2. Taking into consideration the prompt and user's writing, comment on the following:**
- 3. Using simple language, comment on the quality of the topic sentence and if it addresses the writing prompt. Provide suggestions for improvement but don't write a new topic sentence. Provide an example of an improved topic sentence that is about a different topic as an example. Start your feedback with the header in bold "Feedback on the quality of the topic sentence:".**

# Providing Feedback on Writing

**4. Using simple language, comment on the development of ideas throughout the writing. Specifically comment on the development of the main idea through supporting ideas and elaborating details such as examples and evidence. Start your feedback with the header in bold “Feedback on the development of ideas throughout the writing:”.**

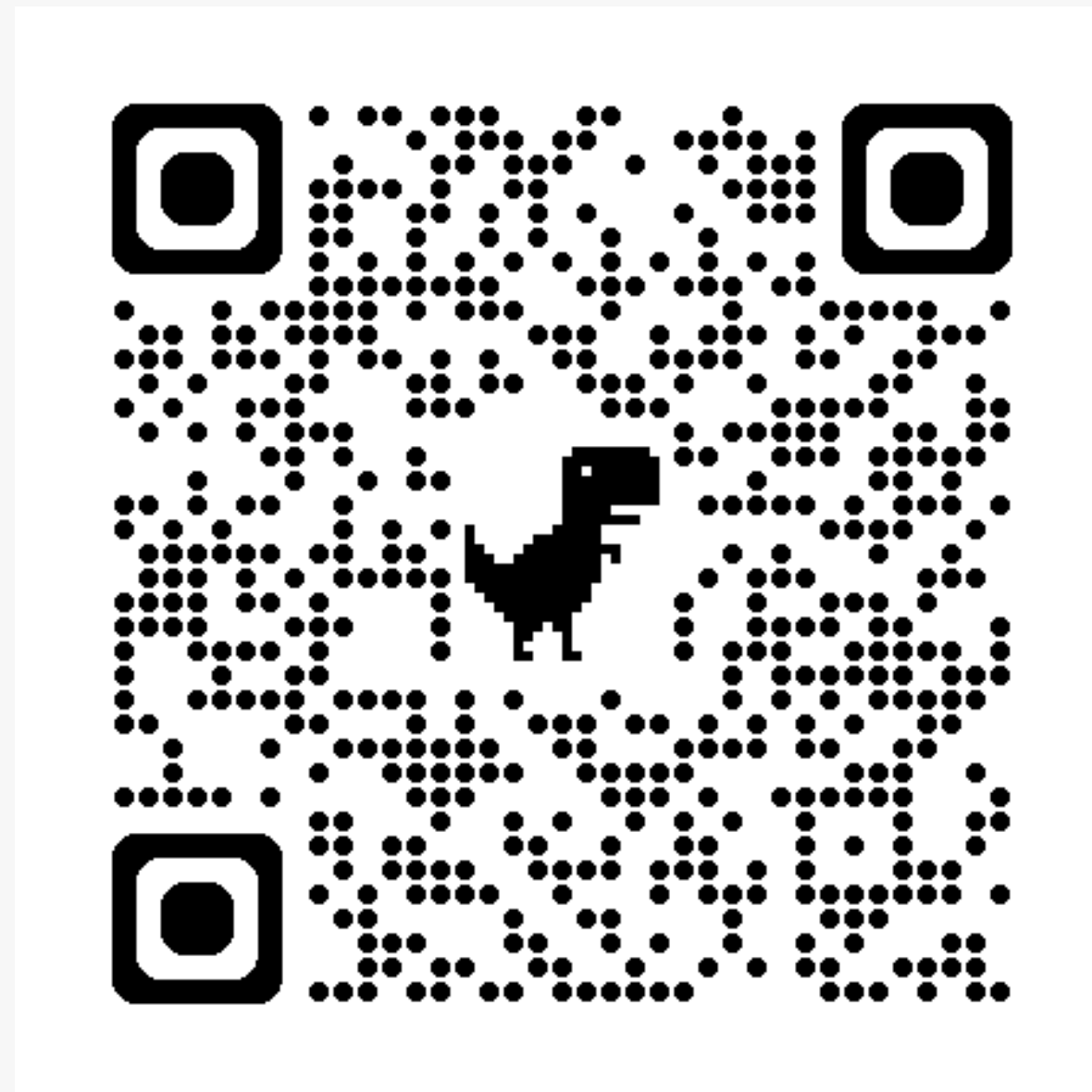
**5. Similar instructions for academic quality of the language, use of transitional phrases, use of sources and evidence, and grammatical accuracy.**

# Imitation Practice



# See more examples of custom GPTs

<https://austinpack.substack.com/>



# How to Create a Custom GPT

# **Dr. Pack's Advice**

- 1. Teach students the difference between real gold and fool's gold**
- 2. Don't just teach students what to learn, teach them *how* to learn. Model effective AI use**
- 3. Use a prompt engineering framework**
- 4. Make use of Custom GPTs**
- 5. Understand the capabilities and limitations of different models**

# Google Sheets + Gemini

# **Reasoning Models and Dynamic Written Corrective Feedback**

**How well can GenAI (GPT-4) provide written corrective feedback on English-language learners' writing?**

***International Journal of English for Academic  
Purposes: Research and Practice***



# Demo of o3 and Dynamic Written Corrective Feedback

## *Error Markings*

<i>Marking</i>	<i>Description</i>
<b>Fr-S</b>	<b>fragment-missing a subject:</b> <i>You need to add a subject – incomplete clause.</i>
<b>Fr-V</b>	<b>fragment-missing a verb:</b> <i>You need to add a verb – incomplete clause.</i>
<b>Λ</b>	<b>something is missing:</b> <i>An obligatory word is missing from the sentence and you must add it in order for the sentence to make sense.</i>
<b>X</b>	<b>omit:</b> <i>You have written an extra word in the sentence that does not need to be there. It is obscuring the meaning and accuracy of the sentence.</i>
<b>spg</b>	<b>spelling:</b> <i>A word is spelled incorrectly.</i>

***spg, spelling:** A word is spelled incorrectly.*

Incorrect: If you wish to succeed in life, you should know how to comunicate(spg).

# Teacher Feedback

Nowadays, society is more and more closed in their thought because of computers. People do not talk with other people face to face because it is easier to interact through media(spg), such as Facebook and Skype. In 2005, more than 65% of the population had computers with internet in their home, and that do(WC)(VT) families to be alone. For exemplo(spg), parents do not talk with their children because their(PRO) [always / are (WO)] in their room doind(spg) something on the internet. When people start to use less internet() probably their(PRO) will have more interaction with the society where they live and with their family.

# o3 Feedback

Nowadays, society is more and more closed(WC) in their(pro) thought(s/pl) because of computers. People do not talk with other people face to face because it is easier to interact through media(spg), such as Facebook and Skype. In 2005, more than 65% of the.(.) population had computers with internet(det) in their home, and that do(VF) families to be alone. For exemplo(spg), parents do not talk with their children because their(pro) always(WO) are in their room doind(spg) something on the internet(det).(.) When people start to use less internet(det) probably their(pro) will have more interaction with the society where they live and with their family.

# Recommended Reading

**Carlson, M., Pack, A., & Escalante, J. (2023). Utilizing OpenAI's GPT-4 for written feedback. TESOL Journal, 15(2), e759. <https://doi.org/10.1002/tesj.759>**

**Escalante, J., Pack, A., & Barrett, A. (2023). AI-generated feedback on writing: Insights into efficacy and ENL student preference. International Journal of Educational Technology in Higher Education, 20, Article 57. <https://doi.org/10.1186/s41239-023-00425-2>**

**Ingley, S. J., & Pack, A. (2023). Leveraging AI tools to develop the writer rather than the writing. Trends in Ecology & Evolution, 38(9), 837–847. <https://doi.org/10.1016/j.tree.2023.05.007>**

**Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for Language Teaching and Learning. RELC Journal, 54(2), 537-550. <https://doi.org/10.1177/003368822311628>**

**Pack, A., & Maloney, J. (2023). Potential affordances of generative AI in language education: Demonstrations and an evaluative framework. Teaching English with Technology, 23(2), 4–24. <https://www.cceol.com/Search/Article-Detail?Id=1167848>**

**Urlaub, P., & Dessein, E. (2024, May 29). Kasparov, Vygotsky, and ChatGPT: What a chess prodigy and child psychologist can teach us about AI in education. The FLTMAg. <https://fltmag.com/vygotsky-ai/>**



# Questions?

# Thank You!

**Google Scholar & Substack Pages**



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