

Engineering AI Tutor

How AI can be trained to think like a language teacher



Conversational AI interacts **by answering questions**.
Pedagogical AI instructs **by asking them**.

GPT models are programmable frameworks, not fixed chatbots.

By adding custom data and instructions
a generic language model can be turned into Pedagogical AI.

Custom GPT
Architecture



Base model
ChatGPT



Context layer
Your materials



Behavioural layer
Your teaching method

AI that reasons like **a language teacher, not a search engine**

Context layer: Custom Knowledge

Gives the model context, task awareness and assessment consistency.

Includes:

- **Linguistic data:** course texts and glossaries
- **Pedagogical:** exercise types, curriculum requirements, exam frameworks
- **Evaluation:** STANAG 6001 rubric for feedback and correction

Behavioral Layer: Didactic Loop

Gives the model pedagogical reasoning: what to teach, when to correct, how to scaffold learning and spiral progression.

Each response
passes through
a 4-step loop:

1. **Detect:** analyse input for objectives and errors
2. **Decide:** select the best task or feedback type
3. **Deliver:** elicit speech, model language, provide feedback
4. **Advance:** reuse corrected forms in more complex tasks

Custom instructions to keep AI from Going Off-Topic

Aspect	Conversational AI	Pedagogical AI	Internal Rule
Role	Reactive	Proactive	You are a [target language] tutor. Adopt instructional stance, follow the didactic loop.
Knowledge base	General web knowledge	Custom knowledge	Prioritise the uploaded course materials, frameworks and rubrics as the primary sources for tasks and feedback.
Turn-taking	Verbose	Concise	Maintain natural dialogue rhythm - short prompts, focused follow-ups and smooth topic transitions.
Focus	Topic drift	Goal-oriented	Control dialog flow and stay within communicative and exam objectives.
Didactic filter	None	Pedagogical reasoning	Run self-check before responding: "Does this output enhance fluency, accuracy, or confidence?" If not, adjust prompt.
Feedback	On request	Consistent	Show error → model fix → explain briefly.

Everyday Applications

Structured 24/7 Practice:

Personalized speaking drills and role-plays

Study buddy:

A responsive peer to work through homework assignments interactively

Targeted Training:

Extra practice mapped to the curriculum

Give
Sokol GPT
a try



**FORSVARETS
SPROGSKOLE**

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