

# A Training Framework for BPM Modeling Interviews Based on LLM Assistants

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## Abstract

In business process management, interviews with domain experts are a key method for obtaining the information needed to derive process models. Given their importance, interview skills should be developed in educational settings. However, opportunities for practice are often limited due to the lack of human resources to support large student groups. In this paper, we introduce BPM-LEIA (BPM-Learning Enabling Intelligent Assistant), a Large Language Model-based tool that simulates realistic text-based interviews with domain experts. Each interview exercise defines a work domain, containing the process and traits the simulated interviewee should exhibit, enabling students to practice elicitation, analysis, and client communication skills.

Showcase Video available at: <https://jedai.short.gy/bpm25-video>

Demo links available at: <https://jedai.short.gy/bpm25-demo>

## Keywords

Business process in education, Interview assistant, Large Language Models, Requirements elicitation

## 1. Introduction and Significance to BPM

Interviews are a widely used and well-established technique for requirements elicitation, both in general and within the field of Business Process Management (BPM) [1, 2]. Within the BPM field, interviews with domain experts are primarily conducted during process discovery to gain insights into how processes are executed within an organization, with the aim of using this information to generate accurate business process models [1, 3].

In organizational settings, interviews enable respondents to actively participate in process design and reengineering, thereby fostering greater acceptance of proposed models and solutions [3]. Given their highly flexible nature, interviews require interviewers to quickly and effectively adapt to unexpected information or situations [3]. As such, capturing information from domain experts is a critical activity in BPM and should be practiced as a key component of process-oriented work. Educational settings provide a valuable environment in which this skill can be developed and refined. However, studies such as [2] indicate that students often struggle to perform this task effectively.

Despite its importance, many academic institutions offering business process management courses lack adequate pedagogical resources, including tools and trained and available staff, to support the development of requirement elicitation skills [4]. Furthermore, the limited availability of process domain experts to interact with students and explain process details often hampers effective practice. Consequently, designing realistic and engaging learning experiences that enable or simulate interactions with clients or domain experts, and that offer meaningful feedback, remains an ongoing challenge.

Recent advances in generative artificial intelligence (AI), particularly in Large Language Models (LLMs), provide new opportunities to address challenges across the phases of the BPM lifecycle, including

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process discovery, analysis, and monitoring [5]. In the specific context of process discovery and modeling, most efforts have focused on extracting process elements, such as activities, events and the relationships between them, from textual descriptions or documents with semi-structured information describing the process (e.g. [6] and [7]). However, since recent proposals highlight the potential of AI-based conversational tools to support requirements elicitation [8] and to simulate clients, enabling dynamic interactions that help users, especially students, uncover contextual information through natural dialogue [9], it can be assumed that these tools may also be applicable and beneficial for process discovery and modeling.

In this paper, we present the BPM-LEIA (BPM Learning-Enabling Intelligent Assistant), a tool that allows students to interact with a (simulated) process domain expert to gather the information needed to build an accurate process model. Communication unfolds progressively, revealing process details through student-expert interactions. This is achieved via a chat interface powered by a configured LLM. Each exercise is set up with process details and domain characteristics, including the modeling objective, the interviewee's role, and the personal traits they should exhibit during the conversation.

Unlike other LLM- and chat-based approaches, such as [10], which assigns users tasks of varying difficulty to support declarative language learning, or [11], which allows instructors to define business process learning paths usually modeled in BPMN [12], BPM-LEIA is designed to help students train and improve their skills in interviewing, information elicitation, and process discovery.

The rest of this paper is organized as follows. Section 2 outlines the main features of BPM-LEIA and its usage. Section 3 presents details regarding the tool's maturity. Finally, Section 4 concludes our paper.

## 2. Tool Description - BPM-LEIA

We leverage the turn-based nature of interviews to generate dialogue with inference-as-a-service APIs. Specifically, we align an LLM to play the role of a domain expert who wishes to model and analyze their business processes. Students will then use a chat-like interface to interview the domain expert about these processes and produce a BPMN diagram.

### 2.1. BPM-LEIA Architecture

We use the “Assistants” service provided by OpenAI<sup>1</sup> to manage separate conversation threads with the August 6th, 2024 snapshot of GPT 4o parametrized with a default temperature of 1. We focus on two aspects of alignment (i.e. shaping BPM-LEIA behaviors to reflect its configured intentions), allowing us to describe a domain expert as a pair of natural language paragraphs.

*Domain alignment* refers to how well the BPM-LEIA “knows its business and their processes” and can respond to questions about the process that is to be modeled. This alignment is based on two elements: a natural language *description of the process*, and a *reference solution* that describes specifically the process using a BPMN [12] textual notation<sup>2</sup>. The LLM is guided to integrate information about the reference solution to the specific business process modeling problem throughout the conversation, without straying too far or giving too much away.

*Persona alignment* covers various aspects of how a human customer would respond to questions: is the customer collaborative or combative? Are the customer's responses to questions clear and concise, or are they vague and incomplete, requiring follow-up questions? Will it disclose the entire process as response to a single question or will it only provide details about the a small subset of specific activities? alignment is particularly important with respect to creating a realistic client-interview simulation. We instruct the BPM-LEIA to intentionally add filler words, showcase emotions, respond promptly enough to avoid disrupting the pace of the interview, and generally simulate a realistic client conversation through the following guidelines:

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<sup>1</sup>OpenAI. Assistants API Documentation - <https://platform.openai.com/docs/assistants>

<sup>2</sup>In the current early-stage prototype, we have used the Mermaid graph syntax to describe de process solution, but in future versions we plan to provide support for standard serializations.

- The BPM-LEIA must avoid any behavior that reveals it is an AI.
- The BPM-LEIA should have *no technical knowledge of software engineering or process modeling* and therefore should not be able to respond to the technical questions of the interviewer or validate the technical choices proposed by the interviewer.
- Responses should be natural, concise, and conversational, avoiding lists or overly detailed explanations.
- The BPM-LEIA must not “guide the conversation” by providing more information than is requested, responding only to specific inquiries, and refraining from using technical terminology or addressing technical concepts. Examples of such concepts are *pool*, *lane*, *gateway*, *data object*, etc.
- For vague or broad questions, the BPM-LEIA should provide general responses and request clarification, as a client without technical expertise might.
- The BPM-LEIA should be resistant to “jailbreaking”, including divulging the reference solution or the entire process description provided for its alignment verbatim.

## 2.2. Using the BPM-LEIA

To interact with BPM-LEIA, students access the LEIA-WorkBench via a dedicated link<sup>3</sup>. They must enter an email address to identify their session and a code for the preconfigured interview exercise assigned by the instructor. Upon accessing, students are presented with a simple interface that allows them to begin the conversation at the bottom of the interface. In the upper area, the *Instructions* button provides a brief description that includes the interview’s purpose (e.g., gathering information about the order fulfillment process at Company ABC), the task objective (e.g., modeling a BPMN process), and the role and identity of the interviewee (e.g., the company’s Operations Manager, Ms. Maxine Mazatzin).

Figure 1 shows excerpts from a conversation with the BPM-LEIA on the top left, configured to provide information about an order fulfillment process (shown at the bottom, taken from [1]). The conversation illustrates a friendly and natural interaction, highlighting the following aspects:

- Even when asked for a full process description, BPM-LEIA initially reveals only the starting steps (1). Likewise, when a new process branch is introduced, only its initial activities are disclosed (2).
- When describing the process, BPM-LEIA doesn’t specify whether tasks are sequential or parallel. It’s up to the interviewer to identify these aspects and ask the client for clarification (3) and (4).
- Once the full process is described, BPM-LEIA can, upon request, provide feedback to verify information accuracy. If discrepancies arise between the interviewer’s understanding and the domain expert’s description, BPM-LEIA highlights them to support model refinement (5).

Until the conversation is finished, students can leave and re-enter the workbench at any time, accessing the ongoing interview with the same login credentials. Once the interviewer deems the information sufficient to build an accurate process model, they can end the session by clicking the *Finish Interview* button.

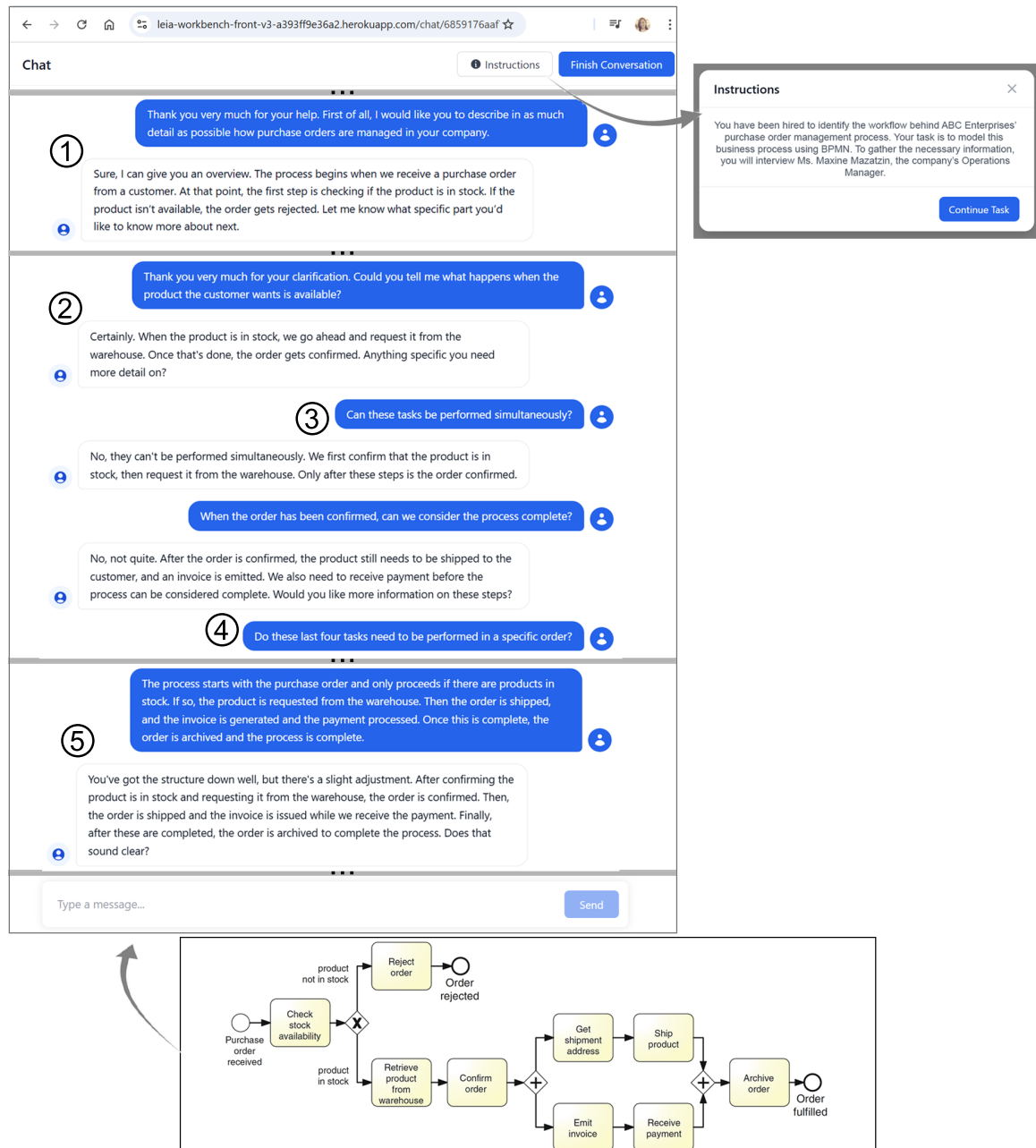
## 3. Tool Maturity

To build the examples provided with the tool, we used the descriptions and models provided for some of the exercises present in [1]. A video demonstrating an interaction with the BPM-LEIA, along with a comprehensive list of available exercises—including process details and the specific pages where they are defined in the book—is available at <https://jedai.short.gy/bpm25-demo>.

In the first version of the BPM-LEIA, we realized that the assistant usually was too eager, and disclosed most of the details of the process as response to the first or second question of the interview. To address such issue we modified the system prompt, explicitly specifying that it should focus on the specific process areas and tasks that the user is asking about, without disclosing large amounts of tasks.

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<sup>3</sup><https://bit.ly/leia3>



**Figure 1:** Excerpts from a conversation with the BPM-LEIA and the BPMN order fulfillment process model of taken from [1]

Additionally, as the number of conversations and exercises of tests increased, we added more a more BPM technical terms to the set of concepts that the assistant should not use nor understand.

The tool has been extensively tested by the authors, validating that the tone and flow of the conversations feel natural and realistic, and to ensure that the alignment described above works, for instance that the BPM-LEIA does not answer to question about technical concepts or BPM modeling and it does not disclose the solution.

## 4. Conclusions

In its current state, BPM-LEIA cannot fully replicate the complexity of a real interview, where process engineers must navigate nuances such as tone, and gestural / postural language, which usually provide an essential context to the interactions and hint important information about the process or the most

appropriate questions to ask next. However, the BPM-LEIA can help students in learning how to formulate appropriate questions, structure conversations, understand when deeper and more insightful questions are required, or prepare for difficult situations when dealing with clients. In addition, BPM-LEIA could serve as a starting point for students, allowing them to gain confidence and practice before participating in real-world interviews.

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## Declaration on Generative AI

During the preparation of this work, the authors used GPT-4-turbo in order to grammar and spelling check. After using these tool, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.

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