Integration of Chat GPT: Updating the Graduation Profile

Ítalo Sepúlveda Solari[1][0000-0002-6019-9344] , Yaely Barrios Rodriguez[2][0009-0003-3310-9950] , Thomas Mandel Galindo[3][0009-0001-1747-3686] , Gabriela Peterssen Soffia[4][0000-0002-3102-107X]

[1, 2, 3, 4] Universidad Autónoma de Chile, Facultad de Arquitectura, Construcción y Medio Ambiente, Ingeniería en Construcción, Chile
italo.sepulveda@uautonoma.cl

Abstract. This article focuses on the positive influence of integrating artificial intelligence, specifically ChatGPT, into the updating of the graduation profile for the Construction Engineering program. The involvement of key stakeholders and meticulous planning allowed for an in-depth analysis of the current industry needs and potential improvements to the graduation profile. ChatGPT played an invaluable role as an advisor, facilitating a deeper understanding and assisting in decision-making to realign the graduation profile with the current and future challenges of the industry. However, it is evident that the success of integrating ChatGPT not only relies on the ability to generate effective prompts but also on a profound knowledge of the subject matter, thereby maximizing the benefits of this tool.

Palabras clave: Graduation Requirements, Artificial Intelligence, Curriculum Evaluation, Research Universities.

1.   Introduction

The transformation in information interaction, driven by artificial intelligence (AI) and exemplified by natural language processing models like ChatGPT, has reshaped various disciplines, including health and education (Xu et al., 2021; Zawacki et al., 2021; Zhai, 2022). These models, trained on vast datasets, operate with an extension of 570 GB of text, facilitating collaboration with an intelligent assistant (Rahman & Watanobe, 2023). AI, particularly ChatGPT, offers capabilities that go beyond mere data collection, stimulating critical thinking and providing data evaluation, suggestions, and trend detection (Kohnke et al., 2023). This research demonstrated the utility of ChatGPT in updating a graduation profile in construction engineering.

2. Theoretical Framework

2.1. Chat GPT:

Developed by OpenAI, it represents a milestone in natural language processing (NLP). It is a system designed to generate interactions that emulate human discourse, interpreting context and crafting relevant responses (Deng, J., & Lin, Y., 2022). Since its launch on November 30, 2022, it attracted over a million users in five days. Despite its ability to respond coherently, its accuracy can vary due to a lack of context and training limitations. Therefore, it is crucial for users to provide clear instructions to ChatGPT (Yu H, 2023).

2.2. Prompts:

Prompts, as per Liu et al. (2023), represent a set of instructions provided to large language models (LLM), like ChatGPT, that customize and/or refine their capabilities. These instructions or queries are essential in interacting with ChatGPT. According to Morales M. (2023), the quality and accuracy of the responses generated by ChatGPT are strongly linked to how these prompts are formulated. A well-structured and specific prompt tends to elicit more accurate and useful responses. On the other hand, a vague or ambiguous prompt might result in less clear and limited utility responses. Thus, it is crucial to pay special attention to the quality of the prompts and ensure they are well-constructed to achieve successful interaction with ChatGPT.

3. Methods

Following a request from the dean, the updating of the graduation profile began, leading to the training of the curriculum committee. The planning, reflected in a Gantt Chart, comprised six stages detailed in Table 1, from the development of the initial form to feedback and completion of the profile. Unlike traditional processes that require a curricular advisor, this one integrated ChatGPT. Through appropriate prompts, it provided insights on trends and challenges in construction and collaborated in document drafting. With the help of ChatGPT, the updated graduation profile was delivered, highlighting its efficiency, and added value.

Table 1. Method of Applying ChatGPT

Process Stages	Description	Uso ChatGPT
Start of the Process	This marks a notable starting point where the dean requests permission to update the graduation profile.	--
Training	The curriculum committee receives detailed training on the process of creating the new graduation profile.	--
Planning	A document is established with key dates and goals to guide the process.	--
Strategic Prospective Analysis	In this phase, previous diagnostics are reviewed, meetings are held with relevant actors, and the national and international context is analyzed.	Use
Pre-Profile Definition	The General Description, performance areas, and disciplinary and professional competencies are created.	Use
Pre-Profile Validation	The Curriculum Committee reflects on the process.	Use
Graduation Profile	The Graduation Profile is officially delivered.	--

Unlike the traditional process, detailed in Table 2, which requires a curricular advisor, the innovative process incorporated ChatGPT. Through appropriate prompts, it provided insights into trends and challenges in construction and assisted in document drafting. Table 2 contrasts both methodologies, highlighting the efficiency of incorporating ChatGPT in updating the graduation profile.

Table 2. Process Comparison

	Traditional Process	Innovative Process
Members	Coordinator, Curriculum Committee, Undergraduate Teaching Directorate, and Curricular Advisor	Coordinator, Curriculum C Undergraduate Tea
Description	In the traditional approach, the curriculum committee works with a curricular advisor in several stages update the graduation profile. Collaboration is iterativ latencies in resp time dedi fin	In t

4.   Results:

During the validation, the curricular committee, with the guidance of ChatGPT, analyzed the pre-profile and drafted documents. Table 3 highlights the benefits of incorporating ChatGPT at key stages, including writing, analysis, and recommendation generation.

Table 3. Identified Benefits

Benefit	Description
Text Analysis	ChatGPT can analyze large volumes of texts, including transcripts, in a short period, allowing for more efficient and faster information processing.
Current Trend Review	Thanks to its training with a large amount of data, ChatGPT can provide information on current trends and topics in the construction industry, helping to maintain the relevance of the graduation profile.
Recommendations	ChatGPT can generate recommendations based on the analyzed data. These recommendations can assist in decision-making during the profile updating process.
Document Drafting	ChatGPT can assist in document drafting, saving time and effort. It can also ensure consistency in tone and writing style throughout the process.
24/7 Availability	ChatGPT is available at all times to provide assistance. This means that one can work on the project at any time, without depending on the availability of a human advisor.
Cost Reduction	By using ChatGPT for analysis, drafting, and recommendation tasks, the need to hire additional experts for these tasks can be reduced, resulting in cost savings.

In relation to the above, the use of prompts, as mentioned, is crucial to direct and optimize interaction with ChatGPT. Consequently, Table 4 presents a variety of prompt examples used in this process and the benefits associated with their use.

Table 4. Use of Prompts and Examples

Benefit	Prompts Used	Examples of Prompts
Text Analysis	Prompts asking ChatGPT to analyze transcripts and other texts, identifying key points and relevant topics.	"Please analyze the following transcript and highlight the main points."
Current Trend Review	Prompts asking ChatGPT to provide information on current and future trends in the construction industry, based on its vast knowledge database.	"What are the current and future trends in the construction industry?"
Recommendations	Prompts asking ChatGPT to generate recommendations from the analyses performed, focusing on relevant aspects for the graduation profile update.	"Based on the previous analysis, what recommendations can you make for updating the graduation profile?"
Document Drafting	Prompts asking ChatGPT to draft specific parts of documents, such as the General Description, performance areas, and disciplinary and professional competencies.	"Please draft a general description for the updated graduation profile based on the identified key points."
24/7 Availability	Prompts can be entered at any time, allowing users to work on the project when convenient for them.	Not applicable, as this benefit is not directly related to a specific type of prompt.
Cost Reduction	By using ChatGPT to perform tasks that would otherwise require hiring additional experts, the prompts used contribute to significant cost savings.	"Please provide a detailed analysis of the current context of the construction industry."

5.   Discussion

During the update of the graduation profile in Construction Engineering, ChatGPT proved to be essential. Its use, backed by adequate training, facilitated data analysis and trend identification. Although curricular recommendations, derived from expert collaboration, are essential, artificial intelligence provided an innovative perspective, helping to define a profile adapted to the current and future needs of the industry. By interacting with AI, experts could explore hypothetical scenarios, assess long-term impacts, and consider possible evolutions in the sector. Artificial intelligence became a reflection partner, helping to optimize more adaptable and forward-looking graduation profiles. Classic strategies of analysis, consultation, and review were complemented by an innovative and supplementary approach.

6.   Conclusions

The process of updating the graduation profile for the Construction Engineering degree successfully incorporated the use of ChatGPT, demonstrating that the combination of human experience and the capabilities of AI ChatGPT allowed for the analysis of large amounts of data to identify trends, generate prompts to foster relevant discussions, analyze interviews to extract key patterns, emerging themes, and thus collaborate in generating content for the graduation profile in the form of competencies, skills, and objectives, as well as serving as a review and editing tool. Curricular recommendations remain the essential foundation for creating and validating graduation profiles. The rise of artificial intelligence adds a dynamic dimension that enriches the process by offering updated information and forward-looking perspectives. The intelligent collaboration between human experience and AI leads to more adaptable, relevant graduation profiles capable of facing tomorrow's challenges. In higher education today, tradition and innovation converge with the aim of shaping the education of the future.

7.   Limitations and Future Research

It is essential to provide ChatGPT with clear prompts and an appropriate interpretation of its responses in the educational field. It is suggested to develop guides to improve these prompts and explore their use in curriculum design and didactic material creation. By integrating ChatGPT with analytical tools, emerging educational trends can be identified. It is vital to assess its ability in crafting complex academic content.

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