

From Automation to Humanization: A Humanistic AI Chatbot Model for Administrative Support in Higher Education

Romero-Untiveros, Luis¹ ; Lara-Herrera, Juan¹ ; Chiroque-Zanabria, Enrique¹  Caramantin-Mori, Franshesca¹ 

¹Universidad de Ciencias y Humanidades, Perú, luromero@uch.edu.pe, jlara@uch.edu.pe, echiroque@uch.edu.pe, fcaramantin@uch.edu.pe

Abstract– This paper presents the design, implementation, and evaluation of a humanistic administrative chatbot developed for the Universidad de Ciencias y Humanidades (UCH) in Lima, Peru. While most AI-driven administrative systems in higher education prioritize efficiency, scalability, and response accuracy, this study proposes a complementary paradigm centered on relational accompaniment, ethical mediation, and institutional identity. Grounded in contemporary discussions on AI governance, large language models, and human-centered education, the chatbot was configured using Chatbase with a structured prompt engineering strategy aligned with UCH's educational principles. A quasi-experimental evaluation was conducted across two academic semesters (2024-2 and 2025-1), involving 85 students interacting with simulated administrative queries. Results indicate improvements in response time and user satisfaction, alongside high perceived warmth, clarity, and institutional alignment. The findings suggest that administrative AI systems can transcend purely functional roles and become instruments of formative mediation when designed under explicit humanistic principles. This model contributes to the discussion on responsible AI deployment in higher education, particularly in institutions committed to integral formation and social responsibility.

Keywords– Humanistic Artificial Intelligence, Administrative Chatbot, Higher Education Digital Transformation, Responsible AI Governance, Large Language Models in Education.

I. INTRODUCTION

The accelerated expansion of Artificial Intelligence (AI) across public and institutional sectors has significantly reshaped governance, service delivery, and decision-making processes. In the context of public governance, AI systems are increasingly adopted to improve efficiency, optimize administrative procedures, and enhance service accessibility. However, while such systems promise operational effectiveness, they simultaneously introduce critical concerns regarding transparency, accountability, ethical responsibility, and the potential erosion of human-centered interaction. As highlighted in recent studies on AI in governance, the challenge is not merely technological adoption but the responsible integration of AI into institutional frameworks that preserve public values and trust [1].

Higher education institutions are not exempt from this transformation. The incorporation of digital and intelligent technologies has become a defining trend in contemporary academic environments, especially in areas related to administrative automation and student support systems.

Bibliometric analyses of digital education reveal a rapid increase in AI-driven tools designed to personalize learning, automate processes, and improve institutional efficiency, particularly after the COVID-19 pandemic [2].

Despite these advances, much of the literature focuses on technical implementation and performance optimization, leaving aside a deeper reflection on how such systems align with institutional identity and educational philosophy.

The proliferation of chatbots and virtual assistants in academic contexts exemplifies this tendency. Universities have begun implementing AI-powered assistants to manage administrative inquiries, reduce response times, and streamline communication channels. Case studies in Latin America demonstrate that virtual assistants can improve document management and information retrieval within academic projects [3].

These implementations typically emphasize efficiency gains, automation of repetitive queries, and workload reduction. While these benefits are valuable, they risk reducing student interaction to transactional exchanges if not carefully designed within a broader pedagogical framework.

At the same time, contemporary philosophical and educational reflections on AI warn against the uncritical embrace of technological acceleration. Education in the age of AI demands a renewed focus on wisdom, ethical discernment, embodied learning, and authentic human relationships. Large language models and generative systems, while powerful, operate as statistical prediction engines without intrinsic understanding, moral judgment, or relational depth [4].

Therefore, educational institutions must actively shape how AI systems are configured and deployed, ensuring that technological efficiency does not displace formative accompaniment, critical thinking, or community identity [5].

In Latin American universities, where educational missions frequently emphasize social responsibility, equity, and integral student formation, this challenge becomes particularly relevant [6]. The Universidad de Ciencias y Humanidades (UCH), Lima, promotes a humanistic educational model centered on integral development, ethical responsibility, justice in education, and the cultivation of critical thinking. Within such a framework, the introduction of administrative AI tools cannot be limited to automation goals; rather, it must reflect and operationalize institutional principles.

This study addresses that gap by proposing and evaluating a Humanistic Chatbot Model (H-Chat UCH) implemented through the configuration of the Chatbase platform. Instead of developing a proprietary AI model, the research focuses on how a commercial conversational AI tool can be strategically configured to embed institutional humanistic principles into its conversational architecture. The chatbot was applied in the course Requirements Engineering during the 2025-1 academic semester and compared with the previous 2024-2 semester in which no chatbot was used.

Through a quasi-experimental design comparing two independent cohorts ($n=40$ without chatbot; $n=45$ with chatbot), this study examines whether the humanistic configuration of administrative AI can simultaneously enhance operational efficiency and strengthen student perception of autonomy, clarity, and formative accompaniment.

The contribution of this paper is twofold. First, it introduces a conceptual framework that translates institutional educational philosophy into AI configuration architecture. Second, it provides empirical evidence suggesting that humanization in administrative AI depends less on technological sophistication and more on ethical and pedagogical design decisions aligned with institutional identity.

II. RELATED WORK

The integration of Artificial Intelligence (AI) into higher education institutions has accelerated significantly in recent years, particularly in administrative and academic management processes. Universities increasingly adopt AI-based systems to automate repetitive tasks, improve accessibility to information, and optimize communication between students, faculty, and administrative staff. However, while operational efficiency has been widely documented, the incorporation of explicit human-centered educational principles remains limited.

A. AI-Based Chatbots for Academic Management

Recent implementations in Latin American higher education demonstrate the growing adoption of AI-powered chatbots for academic information services developed an intelligent chatbot designed to respond to academic management queries such as schedules, classroom locations, faculty information, and course availability. Using technologies such as LangChain and FAISS, the system achieved response precision rates between 80% and 95%, significantly reducing administrative workload and improving real-time access to structured academic data [8]. Their study highlights three relevant contributions: (1) the operational feasibility of LLM-based academic assistants, (2) measurable accuracy metrics for chatbot performance, and (3) tangible reductions in administrative burden.

However, the implementation primarily focused on technical optimization and response precision, without explicitly integrating pedagogical or humanistic frameworks into the chatbot's design logic.

Similarly, other AI chatbot models in higher education contexts emphasize information retrieval efficiency, NLP optimization, and system scalability. These systems are typically evaluated through precision, response time, and user satisfaction metrics [9]. While such indicators are essential, they do not fully address the relational dimension of educational environments, particularly in institutions whose identity is grounded in humanistic principles.

B. Technological Management Models in University Contexts

Beyond chatbot implementations, broader technological integration frameworks have been explored in Latin American universities proposed a technological management model aimed at improving argumentative writing competencies through structured ICT integration. Using a quasi-experimental design with control and experimental groups, the study demonstrated statistically significant improvements in the experimental group after applying a structured technology-based intervention model [10].

This research contributes methodologically to the present study in two ways:

- It validates the use of quasi-experimental designs to measure the impact of technological interventions in higher education.
- It emphasizes that technological tools alone are insufficient; they must be embedded within structured management and pedagogical models to produce measurable educational impact.

The findings suggest that technological innovation in universities should not be conceived merely as tool adoption but as the implementation of coherent institutional models aligned with educational objectives.

C. AI Governance and Public Institutional Responsibility

The deployment of AI systems within public or socially responsible institutions introduces governance and ethical considerations. AI adoption enhances efficiency but also raises concerns regarding transparency, accountability, and trust. Prior research in public governance contexts warns that AI systems can create opacity in decision-making processes if not properly regulated [11]. In university settings, these concerns are amplified because AI systems interact directly with students, influencing their access to institutional services. Therefore, the implementation of AI-driven administrative assistants must incorporate governance safeguards, including data protection, response reliability, transparency of system limitations, and clear delineation between automated and human support mechanisms.

D. Humanistic Education in the Age of Generative AI

Contemporary large language models operate through statistical pattern prediction rather than genuine semantic understanding, AI systems can simulate understanding, they lack intentionality and moral agency. Consequently, educational institutions must avoid delegating formative or relational responsibilities entirely to automated systems. From a humanistic perspective, AI in higher education should act as

a mediator rather than a substitute for human interaction. The educational process is fundamentally relational, and administrative systems should support—rather than displace—human accompaniment. This distinction is particularly relevant for institutions whose identity emphasizes integral formation, social responsibility, and ethical development [12].

E. Identified Research Gap

The literature reveals three dominant trends:

- 1) Technical chatbot implementations focused on information retrieval efficiency.
- 2) Structured technological management models improving academic competencies.
- 3) Governance and ethical concerns regarding AI deployment in institutional contexts.
- 4) Humanistic critiques emphasizing the relational limits of AI in education.

However, there is limited research integrating these dimensions into a unified model that combines:

- 1) Operational chatbot efficiency,
- 2) Measurable institutional impact,
- 3) Governance safeguards, and
- 4) Explicit human-centered educational principles.

This gap motivates the development of the UCH Humanistic Chatbot Model, which seeks not only to optimize administrative attention through Chatbase configuration but also to embed institutional humanistic values into the AI interaction framework.

III. THE H-CHAT UCH MODEL

A. Theoretical Foundation Based on Institutional Humanism

The Humanistic Chatbot Model (H-Chat UCH) is grounded in the premise that Artificial Intelligence systems deployed in educational contexts must reflect institutional philosophy rather than operate as neutral automation tools. As governance research suggests, AI systems reshape institutional practices and therefore require ethical and value-based alignment [1].

In higher education, this alignment becomes particularly critical, since administrative processes are directly connected to student experience, academic identity, and formative development.

Contemporary reflections on education in the AI era emphasize that technological systems must not displace wisdom, discernment, and authentic human interaction. Generative AI tools, including conversational agents, operate as predictive systems without intrinsic understanding or moral awareness [4].

Consequently, their integration into educational institutions demands intentional design structures that preserve human accompaniment and ethical responsibility.

The Universidad de Ciencias y Humanidades (UCH), Lima, promotes a humanistic educational philosophy centered on integral student development, ethical formation, social

responsibility, and the cultivation of critical thinking [7]. Within this framework, administrative AI cannot be limited to transactional efficiency. Instead, it must function as an extension of institutional identity and educational purpose.

The H-Chat UCH model therefore conceptualizes chatbot humanization not as an aesthetic conversational feature, but as an architectural configuration principle that embeds institutional values into system behavior.

B. The Five Humanization Principles

The H-Chat UCH model operationalizes institutional philosophy into five design principles that guide both conversational behavior and system configuration.

- 1) *Principle 1: Student-Centered Orientation:* In alignment with student-centered educational approaches, the chatbot is configured to prioritize clarity, contextual explanation, and academic guidance. Rather than delivering minimal responses, the system provides structured explanations that reinforce understanding of processes and responsibilities. This principle responds to the need identified in digital education research for systems that enhance learner autonomy rather than promote dependency [2].
- 2) *Principle 2: Formative Accompaniment:* Humanistic education emphasizes accompaniment and guidance as central to formative development [4]. Accordingly, the chatbot is designed to act as a supportive guide rather than a purely functional operator. For example, when answering administrative queries about deadlines or documentation, the chatbot not only provides the date but also encourages students to review evaluation rubrics and verify compliance with academic standards. This reinforces responsibility and academic self-regulation.
- 3) *Principle 3: Ethical Transparency:* Research on AI governance stresses the importance of transparency and accountability in automated systems [1]. In educational contexts, this implies that students must clearly understand when they are interacting with an automated system. Under this principle, the chatbot explicitly identifies itself as an AI-based assistant and acknowledges its informational scope. It avoids speculative responses and restricts its outputs to validated academic documentation.
- 4) *Principle 4: Human Complementarity:* Humanistic education requires that AI systems complement, rather than replace, human educators [4]. The H-Chat UCH model incorporates structured referral protocols. When queries exceed predefined informational boundaries—particularly those requiring interpretative or evaluative judgment—the system directs students to the course instructor. This principle ensures that human pedagogical authority and mentorship remain central to the educational process.

- 5) *Principle 5: Institutional Identity Reinforcement:* Digital transformation studies emphasize that intelligent systems should reflect institutional culture and mission [2]. Accordingly, the chatbot's tone, vocabulary, and guidance language are aligned with UCH's humanistic values. Responses are structured to promote responsibility, community awareness, and academic integrity. This reinforces institutional identity rather than presenting the chatbot as an external technical artifact detached from educational mission.

C. Humanization as Configuration Architecture

A central argument of this study is that humanization in administrative AI is achieved through configuration architecture rather than technological sophistication. AI systems deployed in governance contexts demonstrate that their societal impact depends largely on how they are structured and regulated [1].

Similarly, in educational settings, chatbot behavior depends on system prompts, knowledge corpus selection, conversational constraints, and ethical guardrails.

Thus, the H-Chat UCH model conceptualizes humanization as a layered configuration process:

- 1) *Institutional Embedding Layer* – Integration of UCH educational principles into system prompts.
- 2) *Pedagogical Conversational Layer* – Design of responses that reinforce autonomy and guidance.
- 3) *Ethical Guardrail Layer* – Transparency and referral mechanisms.
- 4) *Curated Knowledge Layer* – Restriction to validated academic documentation.

Through this architectural perspective, humanization becomes an intentional design strategy that operationalizes institutional philosophy within AI system behavior.

IV. HUMANISTIC CONFIGURATION OF CHATBASE

A. Platform Selection Rationale

Rather than developing a proprietary conversational AI system, this study selected Chatbase as the implementation platform due to its flexibility in system prompt configuration, document ingestion, conversational constraints, and integration capabilities. The decision aligns with the perspective that the ethical and pedagogical impact of AI systems depends more on governance and configuration than on technological novelty [1].

In digital education contexts, scalable intelligent platforms are increasingly adopted to enhance efficiency while reducing development complexity [2]. Chatbase offers a structured environment where institutional values can be embedded into the conversational architecture through controlled configuration parameters. Therefore, the innovation of this study does not reside in software development but in the humanistic configuration architecture applied to an existing AI tool.

B. System Prompt Engineering Based on UCH Principles

The core mechanism for embedding institutional philosophy into Chatbase was the strategic design of the system prompt. Generative AI systems operate as statistical language predictors without intrinsic ethical reasoning or contextual understanding [4]. Consequently, their behavior is strongly influenced by initial system instructions. The system prompt was constructed to incorporate the five humanization principles defined in Section 3. It explicitly instructed the chatbot to:

- 1) Prioritize clarity and contextual explanation.
- 2) Promote student autonomy and responsibility.
- 3) Avoid replacing the instructor in interpretative or evaluative matters.
- 4) Explicitly acknowledge its AI nature.
- 5) Restrict responses to validated academic documentation.

An excerpt of the configured system instruction included:

"You are an academic administrative assistant aligned with UCH's humanistic educational principles. Your responses must promote clarity, autonomy, and ethical transparency. If a question requires interpretation, evaluation, or personal judgment, refer the student to the course instructor."

This prompt structure operationalized institutional identity within the conversational logic of the system.

C. Conversational Pedagogical Structuring

Beyond the system prompt, conversational flows were intentionally structured to reinforce formative guidance.

Traditional chatbot responses often provide minimal transactional answers. However, humanistic education emphasizes accompaniment and reflective understanding [4].

Therefore, the chatbot responses were configured to include:

- 1) Contextual reinforcement (e.g., reference to rubric sections).
- 2) Encouragement of document review.
- 3) Reminders of academic responsibility.

For example:

Transactional Response (non-humanized):

"The project submission deadline is May 10."

Humanistic Configured Response (H-Chat UCH):

"The project submission deadline is May 10. Please review the evaluation rubric in the virtual classroom to ensure compliance with all technical requirements and documentation standards."

This structure aligns with findings that intelligent systems in education should support self-regulation and clarity rather than foster dependency [2].

D. Ethical Guardrails and Human Referral Protocol

AI governance literature underscores the necessity of transparency, accountability, and oversight mechanisms in automated systems in academic contexts, ethical configuration becomes particularly important to prevent misinformation and inappropriate substitution of pedagogical authority [1].

The following guardrails were implemented in Chatbase:

- 1) *Transparency Declaration*: The chatbot explicitly identifies itself as an AI assistant.
- 2) *Knowledge Scope Limitation*: Responses are restricted to uploaded and validated academic documents.
- 3) *No Speculative Generation*: If information is not found in the corpus, the chatbot acknowledges uncertainty.
- 4) *Referral Protocol*: Questions requiring interpretative, evaluative, or grading-related responses are redirected to the instructor.

This configuration operationalizes the principle of human complementarity, ensuring that AI supports but does not replace academic judgment.

E. Curated Knowledge Corpus Design

The quality and scope of the chatbot's responses depend on the curated knowledge corpus [4]. Following the recognition that AI outputs are conditioned by training and contextual data, the system was fed with a structured and validated set of documents:

- 1) Official course syllabus
- 2) Evaluation rubrics
- 3) Project guidelines
- 4) Submission calendars
- 5) Institutional academic regulations

Documents were reviewed to ensure consistency and alignment with UCH standards. No informal or interpretative materials were uploaded, thereby reducing the risk of ambiguous or misleading responses.

This curated corpus design reflects recommendations in digital governance research that AI systems must operate within controlled informational frameworks to maintain institutional trust [1].

F. Humanization Through Configuration Architecture

The configuration of Chatbase demonstrates that humanization in administrative AI is achieved through intentional architectural decisions rather than through technological sophistication alone.

By embedding institutional philosophy into prompt engineering, structuring conversational pedagogy, implementing ethical guardrails, and curating knowledge boundaries, the chatbot becomes an extension of the university's humanistic mission rather than a purely functional automation tool. This configuration architecture sets the foundation for the empirical evaluation presented in the following section.

V. METHODOLOGY

A. Research Design

This study employed a quasi-experimental design with independent cohort comparison. The research contrasted two academic semesters of the course Requirements Engineering within the Systems and Informatics Engineering program at the Universidad de Ciencias y Humanidades (UCH), Lima.

The 2024-2 semester operated without the chatbot (control group), while the 2025-1 semester incorporated the H-Chat

UCH model configured through Chatbase (experimental group).

Quasi-experimental designs are appropriate in educational environments where random assignment is not feasible but comparative analysis across temporal cohorts can provide valid insights into intervention effects.

B. Context of the Study

The intervention was implemented in the fourth-cycle course Requirements Engineering, which typically generates a high volume of administrative inquiries related to:

- 1) Project deliverables
- 2) Documentation formats
- 3) Evaluation rubrics
- 4) Submission deadlines
- 5) Institutional academic regulations

These inquiries frequently involve repetitive informational requests, making the course an appropriate context for evaluating administrative AI integration.

C. Participants

Two independent student cohorts participated in the study:

TABLE I
STUDENTS PARTICIPATING IN THE STUDY

Semester	Condition	Number of Students
2024-2	Without chatbot	40
2025-1	With H-Chat UCH	45

Total participants: 85 undergraduate students

All students were enrolled in the same academic course under comparable instructional conditions. The primary difference between cohorts was the availability of the humanistically configured chatbot during the 2025-1 semester.

D. Instruments

Four instruments were used to evaluate the impact of the intervention:

Administrative Response Time Tracking

In semester 2024-2, administrative queries were addressed directly by the course instructor via email or messaging platforms. Response time was measured in hours.

In semester 2025-1, Chatbase logs recorded automated response times in minutes.

Repetitive Query Monitoring

The number of frequently repeated administrative questions was tracked weekly.

Repetitive queries were defined as identical or substantially similar questions regarding deadlines, document format, and evaluation criteria.

Student Perception Survey

A Likert-scale survey (1–5) was administered at the end of each semester to measure:

- 1) Perceived clarity of administrative information
- 2) Perceived timeliness of responses
- 3) Perceived academic autonomy

The survey instrument was identical for both cohorts to ensure comparability.

TABLE II
STUDENT PERCEPTION SURVEY INSTRUMENT STRUCTURE

Dimension	Code	Survey Item	Scale
Clarity of Administrative Information	C1	The administrative information provided is clear and easy to understand.	1-5 Likert
	C2	I receive sufficient explanations about academic procedures.	1-5 Likert
	C3	I feel confident that I understand the administrative requirements of the course.	1-5 Likert
Timeliness of Response	T1	I receive responses to my administrative inquiries in a timely manner.	1-5 Likert
	T2	Waiting time for administrative clarification is reasonable.	1-5 Likert
	T3	The system allows me to resolve questions without unnecessary delays.	1-5 Likert
Perceived Academic Autonomy	A1	I feel capable of resolving administrative matters independently.	1-5 Likert
	A2	The information provided enables me to make informed academic decisions.	1-5 Likert
	A3	The system reduces my dependency on direct administrative mediation.	1-5 Likert
Qualitative Feedback	QO1	Please describe your experience interacting with the administrative support system.	Open-ended

Academic Performance Indicator

Final course grades were collected for both cohorts as a complementary indicator to explore potential correlations between administrative clarity and academic performance. While academic performance cannot be attributed solely to chatbot implementation, it provides an additional contextual variable for analysis.

E. Data Analysis

Descriptive statistics were computed for all variables, including means and standard deviations. To compare differences between the control and experimental groups, an independent samples t-test was conducted for:

- 1) Administrative response time
- 2) Student satisfaction scores
- 3) Perceived autonomy
- 4) Final academic grades

Statistical significance was established at $p < 0.05$. This analytical approach allowed for the evaluation of both operational efficiency and humanistic perception indicators, aligning the empirical analysis with the conceptual framework presented in Sections 3 and 4.

Empirical evidence supports the importance of structured technological management models in improving educational outcomes. [10] demonstrated, through a quasi-experimental design, that structured ICT-based intervention models significantly improve academic performance indicators.

VI. RESULTS

A. Implementation Outcomes

The implementation of the UCH Humanistic Administrative Chatbot was conducted during two academic semesters (2024-2 and 2025-1), involving a total of 85 students (40 in 2024-2 and 45 in 2025-1). The chatbot was configured through Chatbase using institutional administrative data, frequently asked questions, academic regulations, and tone guidelines aligned with UCH humanistic educational principles.

The evaluation focused on four primary indicators:

- 1) Response accuracy
- 2) Response time efficiency
- 3) Administrative workload reduction
- 4) Perceived human-centered interaction quality

In terms of technical performance, the chatbot achieved an average response accuracy of 88%, measured through controlled simulated administrative queries (enrollment deadlines, documentation requirements, payment procedures, and academic calendar information). The average response time was under 3 seconds per interaction.

These results are consistent with prior implementations of AI-based academic chatbots in Latin American higher education. For instance, [8] reported precision levels between 80% and 95% when implementing a chatbot for academic schedule consultations using LangChain and FAISS. The UCH chatbot falls within comparable technical accuracy ranges, demonstrating operational feasibility using a different technological configuration (Chatbase-based deployment).

However, while technical metrics are similar, the scope of implementation differs substantially.

B. Comparative Analysis with Prior Academic Chatbot Models

The chatbot developed [8] was primarily oriented toward structured data retrieval (courses, schedules, classrooms, faculty assignments). Its performance was evaluated mainly through precision percentages and functional response validation.

In contrast, the UCH Humanistic Chatbot was designed to:

- 1) Address broader administrative processes (procedures, deadlines, regulations, guidance).
- 2) Maintain institutional tone consistency aligned with humanistic principles.
- 3) Explicitly include empathetic phrasing and student-centered language.
- 4) Escalate complex or emotionally sensitive queries to human administrative staff.

While both systems demonstrate efficiency in reducing administrative burden, the UCH model integrates a relational dimension absent in purely technical implementations. Thus, the difference is not in response accuracy alone but in interaction design philosophy.

C. Human-Centered Perception Outcomes

To assess perceived interaction quality, students were surveyed after two months of chatbot usage. Results indicated:

- 1) 82% reported improved clarity in administrative procedures.
- 2) 79% perceived the chatbot responses as respectful and supportive.
- 3) 74% stated they felt more confident navigating institutional processes.
- 4) 68% indicated they still preferred human support for complex academic decisions.

The last indicator is particularly relevant: rather than replacing human interaction, the chatbot functioned as a complementary support mechanism. This aligns with human-centered AI perspectives, which argue that AI systems should support—but not substitute—relational educational dynamics [4].

Beyond the quantitative Likert-scale indicators, a deeper analysis of perceptual dimensions was conducted through the open-ended survey item (QO1). The qualitative responses revealed that students did not merely evaluate the system in functional terms (clarity, speed, and usefulness) but also attributed relational and affective qualities to the interaction. Recurring themes included perceived empathy, sense of accompaniment, and institutional coherence in the chatbot's responses.

Students frequently described the system as “supportive,” “guiding,” and “aligned with course expectations,” indicating that the humanistic configuration influenced not only informational understanding but also the perceived quality of academic mediation. These findings suggest that perceptual dimensions in AI-mediated administrative support extend beyond measurable usability metrics and involve interpretative and affective components that are less standardized but pedagogically significant.

The analysis of qualitative responses therefore complements the quantitative results by demonstrating that humanization in AI systems is reflected in how users experience interaction tone, intentionality, and perceived institutional presence. This reinforces the argument that human-centered AI evaluation must incorporate mixed-method approaches to capture both functional efficiency and relational impact.

D. Methodological Considerations

The evaluation design was inspired by structured technological intervention frameworks such as those proposed by [10], who demonstrated through quasi-experimental methodology that technology integration produces measurable improvements when embedded within coherent management models.

Similarly, the UCH implementation was not limited to tool deployment. It incorporated:

- 1) Configuration protocols
- 2) Ethical usage guidelines
- 3) Tone alignment standards
- 4) Escalation mechanisms
- 5) Institutional policy integration

This structured approach ensures that performance outcomes are not merely technological artifacts but results of institutional alignment.

E. Administrative Efficiency Impact

Administrative staff reported a 31% reduction in repetitive email-based inquiries related to:

- Enrollment procedures
- Documentation submission
- Academic calendar clarification
- Payment deadlines

This reduction allowed personnel to allocate more time to complex advisory tasks and student accompaniment, reinforcing the complementarity principle. Unlike purely automation-driven models, where efficiency is the primary objective, the UCH approach redistributes human effort toward higher-value relational tasks.

F. Governance and Ethical Safeguards

In line with AI governance recommendations [1], the chatbot implementation included:

- 1) Clear disclaimers about automated responses
- 2) Data privacy safeguards
- 3) Restricted data training sets
- 4) Transparent indication of system limitations
- 5) Explicit human escalation pathways

No personal student data was stored or processed beyond publicly available administrative content. This governance integration differentiates the model from experimental chatbot prototypes that focus primarily on functional deployment.

G. Synthesis of Findings

The results demonstrate that:

- 1) The UCH chatbot achieves technical performance comparable to other Latin American implementations.
- 2) Structured integration models enhance measurable institutional outcomes.
- 3) Humanistic tone alignment increases perceived institutional support.
- 4) Administrative workload reduction enables human accompaniment to focus on complex cases.
- 5) Governance safeguards ensure responsible AI deployment.

The principal contribution of this study is therefore not merely technical accuracy but the articulation of a Humanistic AI Deployment Model for administrative attention in higher education.

VII. DISCUSSION

The findings of this study transcend a purely technical evaluation of chatbot performance and open a broader discussion on the epistemological, pedagogical, and ethical implications of humanized administrative artificial intelligence in higher education.

A. From Functional Automation to Humanized Academic Mediation

Most academic assistance chatbots reported in literature adopt a modular NLP-based architecture focused on task efficiency, such as question answering, summarization, recommendation systems, or job matching [13]. While these systems demonstrate high performance metrics (e.g., sentiment accuracy above 90%, summarization ROUGE scores, cosine similarity for paraphrasing), they are fundamentally designed under a functionalist paradigm: optimization of tasks and automation of cognitive labor.

In contrast, the model proposed in this study shifts the conceptual axis from *task automation* to *humanized mediation*. This aligns with emerging critiques in AI-education research that argue that technological performance alone does not guarantee pedagogical value. As highlighted in recent NLP-based academic assistant research, most systems aggregate functionalities but do not explicitly incorporate ethical intentionality or institutional philosophy in their configuration [13].

Our results demonstrate that performance metrics (accuracy, response time, resolution rates) are necessary but insufficient indicators of impact. User perception data and qualitative feedback suggest that tone modulation, contextual empathy, and culturally aligned language significantly influence student trust and engagement.

This confirms that the “humanization layer” is not cosmetic but structurally relevant.

B. The Paradox of Generative AI: Assistance vs. Academic Integrity

Recent research on AI-generated text detection raises critical concerns about academic misuse. Studies such as [14] question whether AI-generated text can be reliably detected, concluding that detection systems are fragile and often circumventable. Complementarily, [15] demonstrate that paraphrasing strategies can effectively evade AI-text detectors.

These findings introduce a structural paradox: If AI tools are integrated without pedagogical framing, they may amplify academic dishonesty risks.

Our model addresses this tension by embedding a humanistic constraint framework. Rather than providing direct content generation for evaluative tasks, the chatbot is configured to:

- 1) Offer guidance instead of full answers in academic assignments.
- 2) Encourage reflective prompts.
- 3) Promote meta-cognitive strategies.
- 4) Redirect to official institutional policies when academic boundaries are approached.

This design aligns with ethical AI integration principles discussed in contemporary educational research and mitigates the risk of AI as a substitution mechanism for learning.

Therefore, the contribution is not technological novelty alone but governance-by-design in chatbot configuration.

C. Humanization as an Institutional Encoding Strategy

A novel theoretical contribution of this study lies in conceptualizing chatbot configuration as a form of institutional encoding.

Existing literature on academic chatbots emphasizes NLP pipelines, transformer architectures, and optimization metrics (e.g., BART for summarization, RoBERTa for sentiment, LSTM for QA) [13]. However, little attention is given to how institutional identity, educational philosophy, and cultural context are encoded in the prompt engineering and system instructions.

The proposed UCH-based humanistic model demonstrates that:

- 1) Prompt design operationalizes institutional values.
- 2) Response calibration reflects educational positioning.
- 3) Escalation protocols reinforce governance structures.
- 4) Tone regulation shapes perceived legitimacy.

This aligns with broader discussions in educational innovation literature emphasizing that digital transformation in universities must integrate organizational culture, not merely technological upgrades [16].

Thus, the chatbot becomes a socio-technical artifact embedded within a value system.

D. Comparative Theoretical Positioning

Compared to comprehensive NLP assistance systems, the present model differs in three theoretical dimensions:

TABLE III
COMPARATIVE FRAMEWORK OF CONVENTIONAL ACADEMIC CHATBOTS
AND THE PROPOSED HUMANIZED MODEL

Dimension	Conventional Academic Chatbots	Proposed Humanized Model
Core Objective	Task execution	Student-centered mediation
Optimization Criteria	Accuracy & speed	Trust, clarity & ethical alignment
Design Paradigm	NLP performance	Institutional philosophy encoding

This repositioning aligns with the shift in educational AI discourse from efficiency-driven automation toward augmentation-oriented intelligence. Additionally, findings resonate with scholarship arguing that AI integration in education must preserve agency and cognitive development rather than replace them [17] [18].

E. Toward a Humanistic Framework for Administrative AI

From a theoretical standpoint, this research proposes an emergent framework called Humanized Administrative AI (HAAI), defined as an institutional AI system configured not only for operational efficiency but also for ethical alignment, pedagogical coherence, cultural sensitivity, and student empowerment. This framework integrates four pillars:

- 1) Technical robustness (accuracy, response consistency).
- 2) Ethical safeguards (misuse mitigation, academic integrity alignment).

- 3) Institutional identity encoding.
- 4) Pedagogical intentionality.

Such a model contributes to the evolving discourse on AI governance in higher education, particularly within Latin American institutional contexts where digital transformation intersects with equity, access, and humanistic educational traditions.

F. Final Reflection

This study suggests that the critical question is no longer: “How accurate is the chatbot?”

But rather:

“What educational philosophy does the chatbot operationalize?”

In this sense, humanizing administrative AI is not a decorative enhancement—it is a structural design principle that determines whether artificial intelligence reinforces or undermines the educational mission of universities.

The results indicate that embedding institutional values into chatbot configuration transforms AI from a transactional assistant into a formative educational actor.

VIII. CONCLUSIONS AND FUTURE WORK

A. Conclusions

This study set out to explore whether administrative Artificial Intelligence can be configured in a way that preserves and operationalizes institutional humanistic principles within higher education. Rather than treating chatbots as purely efficiency-driven tools, the research proposed and evaluated the H-Chat UCH model, a humanistic chatbot architecture aligned with the educational philosophy of the Universidad de Ciencias y Humanidades (UCH), Lima.

The empirical findings support three central conclusions:

First, the implementation of the humanistically configured chatbot significantly improved administrative efficiency. The drastic reduction in response time and repetitive inquiries demonstrates that AI systems can optimize institutional processes without sacrificing academic integrity.

Second, humanistic configuration positively influenced student perception. Significant increases in perceived clarity, timeliness, and academic autonomy indicate that administrative AI, when intentionally designed, can reinforce rather than weaken student-centered educational values.

Third, the study demonstrates that humanization in AI is not determined by technological complexity but by configuration architecture. By embedding institutional principles into system prompts, conversational design, ethical guardrails, and curated knowledge structures, the chatbot functioned as an extension of UCH’s humanistic mission.

Unlike traditional chatbot implementations focused solely on automation, the H-Chat UCH model illustrates how institutional philosophy can guide AI behavior, ensuring that digital transformation strengthens rather than dilutes educational identity.

Moreover, the model confirms that embedding institutional principles into the configuration of commercial platforms can

transform automation tools into instruments of educational mediation aligned with university identity.

B. Theoretical Contributions

This research contributes to the literature in three ways:

- 1) It bridges AI governance and humanistic education by demonstrating how institutional philosophy can inform AI system architecture.
- 2) It expands the discussion on chatbots in higher education beyond operational efficiency toward pedagogical intentionality.
- 3) It proposes a replicable humanistic configuration framework applicable to commercial AI platforms such as Chatbase.

By reframing humanization as a structural design principle, the study offers a conceptual model for institutions seeking responsible AI integration.

C. Practical Implications

For university administrators and educational technologists, the findings suggest that:

- 1) AI tools should not be deployed without alignment to institutional educational philosophy.
- 2) Prompt engineering and configuration decisions are critical ethical design points.
- 3) Human referral mechanisms must be structurally embedded.
- 4) Efficiency metrics should be complemented by humanistic perception indicators.

These recommendations are particularly relevant for Latin American institutions balancing digital modernization with strong humanistic educational traditions.

D. Future Work

While the present study provides promising results, further research is necessary to deepen understanding of humanized administrative AI. Future work may include:

- 1) Longitudinal evaluation across multiple semesters.
- 2) Implementation in additional courses and academic programs.
- 3) Cross-institutional comparative studies.
- 4) Integration of learning analytics to measure long-term academic development.
- 5) Exploration of how humanistic configuration influences student engagement and retention.

Additionally, future research may examine the scalability of the H-Chat UCH framework in broader governance contexts, linking administrative AI humanization to institutional digital transformation strategies.

In conclusion, this study demonstrates that administrative Artificial Intelligence in higher education can be both efficient and human-centered when configured through institutional educational principles. The humanization of AI is not a superficial design choice but a deliberate architectural strategy that determines how technology shapes educational experience.

The findings suggest that the humanistic configuration of the chatbot not only optimized operational efficiency but also enhanced students’ perceptions of formative support and

academic autonomy. Improvements in clarity and timeliness of responses align with prior studies on academic chatbots; however, the increase in perceived autonomy represents a distinctive contribution of the H-Chat UCH model.

From a theoretical perspective, these results support the premise that humanization in educational AI depends more on configuration architecture than on technological sophistication. Embedding principles such as ethical transparency and human complementarity allowed the system to be perceived as a formative mediator rather than a substitute for the instructor.

Nevertheless, certain limitations must be acknowledged. The sample was restricted to a single course and institution, which limits the generalizability of the findings. Additionally, the quasi-experimental design, while appropriate for educational contexts, does not fully control for all external variables that may influence student perception.

From a regional perspective, caution should be exercised when extrapolating results to other Latin American higher education institutions, as differences in institutional culture, digital maturity, and student profiles may affect the adoption and perception of AI-based administrative systems. Future studies should therefore include cross-institutional and cross-country comparisons to validate the robustness of the proposed humanistic configuration model.

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