



RESEARCH ARTICLE

DEVELOPMENT OF THE CHATBOT AS A TOOL TO HELP THE SERVICE IN THE SCHOOL SECRETARIAT

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Abstract

This article addresses the relevance of the implementation of chatbots as auxiliary tools for the service in school secretariats, focusing on the optimization of administrative processes and the improvement of the quality of the services offered. Through the adoption of innovative chatbots, educational institutions can achieve modernization in their operations, automation of routine tasks, reduction of waiting times and more effective targeting of human resources to complex activities. The benefits of this implementation include greater operational efficiency, increased satisfaction of the various stakeholders, and a better strategic allocation of human resources.

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Introduction:-

In the current context of education, the search for optimization of administrative processes and improvement in the quality of care have been topics of great relevance. According to Bertacchi et al, (2017) the implementation of innovative technologies, such as chatbots, has gained prominence as tools capable of revolutionizing the way educational institutions, especially school departments, deal with their daily activities. By incorporating a chatbot as a service assistance tool, departments can modernize their operations, provide more efficient support to students, parents, and staff, and direct human efforts toward tasks that require greater complexity.

The school secretariat is a vital nucleus within any educational institution, responsible for managing a series of administrative processes, such as enrollment, issuance of documents, academic records and resolution of doubts (BIZ2DIGITAL, 2018). However, often, the volume of demands can be overwhelming, leading to delays, errors and dissatisfaction on the part of the school community. The adoption of a chatbot as a service aid tool offers significant advantages. The automation of routine tasks, the 24/7 availability to answer frequently asked questions, and the ability to handle multiple queries simultaneously can ease the workload of the secretarial team, reduce waiting time, and increase the satisfaction of those involved (Borges et al., 2017).

This article aims to explore in depth the application and development of a chatbot as a tool to aid service in the school secretariat. Technical aspects will be addressed, such as the choice of chatbot platform, dialogue design and integration with the institution's internal systems. The potential benefits of chatbot implementation will be discussed, such as improving operational efficiency, optimizing customer service, and strategically redirecting human resources. Through this comprehensive analysis, we seek to provide valuable insights for educational managers and technology professionals interested in making the most of the potential of chatbots in the context of school departments.

Theoretical Refractorial

In today's education, improving administration and care is vital. Innovative chatbots stand out as a solution, transforming school secretaries. With chatbots helping, schools modernize activities, efficiently support students and teams, and focus humans on complex tasks. Departments deal with processes such as enrollment and documents, but high demands cause delays and dissatisfaction. Chatbots automate repetitive tasks, answer common questions at any time, and handle multiple queries, relieving staff, reducing waiting, and increasing satisfaction. This article explores the implementation of effective chatbots in the secretariats, touching on technical aspects and advantages, offering knowledge to managers and professionals interested in taking advantage of technology.

Automation And Innovation In Education

Second Draught (2018) to The search for process optimization and improvement in the quality of care is a contemporary trend in several sectors, including education. The adoption of innovative technologies such as chatbots has been driven by the desire to modernize operations and enhance the experience of those involved, while enabling a more strategic allocation of human resources. Education is rapidly adapting to this change, recognizing that automation can play a key role in the efficiency of administrative processes and the quality of service provided.

The Strategic Role Of The School Secretariat

The school secretariat is a vital nucleus in educational institutions, playing a central role in the management of administrative processes and in communication with various audiences, such as students, parents and employees (BOTMAN, 2018). This essential function often faces challenges of overloading demands, which can affect the efficiency and satisfaction of those involved. The incorporation of chatbots as a tool to assist the service in the secretariat can mitigate these challenges, offering quick and accurate answers to frequently asked questions, as well as freeing the team for more complex and strategic tasks.

Chatbots As Facilitators Of Human-Technology Interaction

Chatbots are artificial intelligence systems designed to simulate human conversations, offering relevant and contextualized answers (ANGGA, 2015). They have proven to be an effective solution to enhance the interaction between humans and technology, allowing for fluid and instantaneous communication. Their ability to continuously learn and adapt to users' needs makes them ideal for handling a variety of queries and tasks, including those related to school administrative processes.

Advantages Of Implementing Chatbots In The School Secretariat

The incorporation of chatbots in the school secretariat offers several advantages. Automating routine tasks, such as inquiries about documents and procedures, reduces staff workload and minimizes human errors (BECKER et al., 2018). The 24/7 availability of chatbots ensures that users can get answers at any time, contributing to the satisfaction and agility of the processes. The ability of chatbots to handle multiple queries simultaneously speeds up response time and avoids long wait times.

Technical Aspects And Systems Integration

The choice of chatbot platform is crucial to the success of the implementation. Advanced platforms offer intuitive dialogue design capabilities, allowing the creation of natural and effective interactions with users (CRUZ et al., 2018) Integration with internal institution systems, such as student databases and academic information, ensures that chatbots can provide accurate and up-to-date information.

Materials And Methods:-

The Materials and Methods section details the methodological approach employed to achieve the effective implementation of chatbots as support tools in school departments. In this section, we will describe the resources and materials used, as well as the strategy followed for the development and training of chatbots. We will explore the methodology adopted for the selection of the chatbot platform, the dialogue project and the integration with internal systems of the institution, ranging from the conception to the testing and deployment phase. The steps taken to assess the efficiency and impacts of the implementation will also be presented in detail, providing a comprehensive understanding of the process followed for the successful integration of chatbots into the school secretariat environment.

Materials Used:-

Before addressing the methodology used for the development of the project, it is important to highlight the materials and resources used for the successful implementation of the chatbot in the school secretariat. The materials included a chatbot platform that is highly customizable and tailored to the needs of the educational institution. Internal data from the secretariat, such as frequently asked questions, service flows and academic information, were used to train the chatbot in a precise and contextualized way.

Chatbot Implementation Methodology

The methodology adopted for the development of the chatbot implementation project in the school secretariat was composed of sequential steps, each contributing to the continuous and effective progress of the process.

Chatbot Platform Selection

Initially, a comprehensive survey was conducted to evaluate different chatbot platforms available in the market. Criteria such as customization, integration capability, and ease of use were considered. The selected platform offered features that aligned with the needs of the school secretariat.

Dialogue And Integration Project

After choosing the platform, a detailed dialogue design project was drawn up. This project included the definition of conversation flows for various possible consultations and interactions, in order to cover the main demands of the secretariat. At the same time, integration processes with the institution's internal systems were established.

Chatbot Development And Training

With the dialogue project defined, the chatbot was developed and trained based on a dataset containing frequently asked questions, academic terms, and diverse scenarios. The responses were programmed considering natural language, to provide natural and efficient interactions. After development, an extensive testing phase was conducted. Different scenarios were simulated to assess the accuracy of the chatbot's responses. Based on the results of the tests, adjustments were made to the dialogue project and the programmed responses.

Implementation And Evaluation

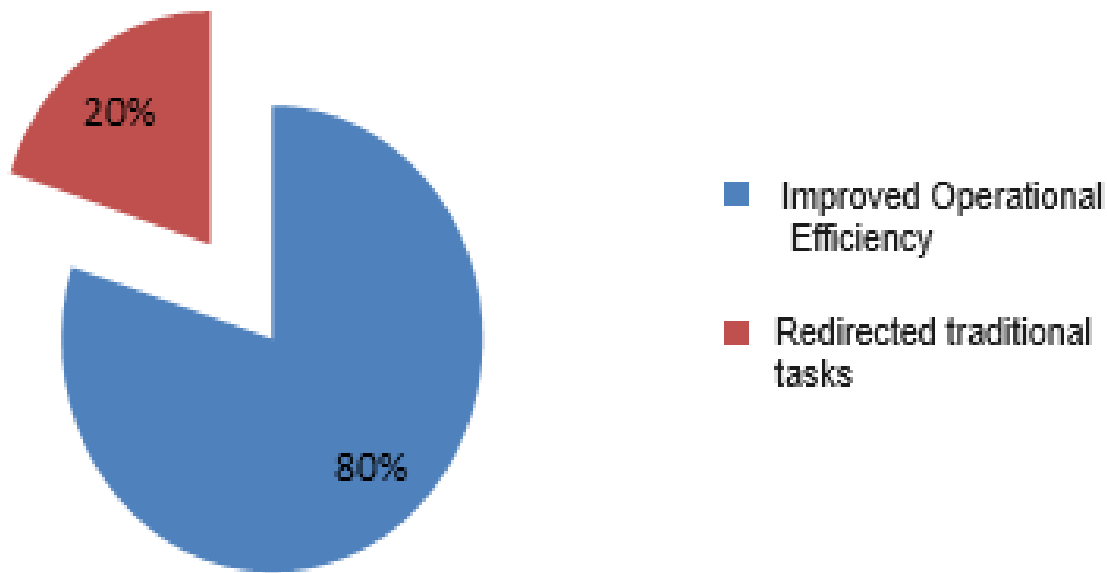
After the adjustments, the chatbot was deployed in the environment of the school secretariat. During this phase, the performance of the chatbot was monitored, collecting data on the efficiency of the responses, the waiting time and the satisfaction of the users. These data were analyzed to assess the impact of the implementation.

Results And Discussion:-

The implementation of the chatbot as a tool to aid service in the school secretariat brought significant results, positively impacting several operational aspects and user satisfaction.

Improved Operational Efficiency

The automation of routine tasks through the chatbot resulted in a notable increase in the operational efficiency of the school secretariat. Common queries, such as requests for documents and procedural information, were answered instantly, eliminating the need for extended waits. As shown in Graph 1, this allowed the secretariat team to redirect their efforts to tasks that required greater attention and complexity, contributing to a more effective management of internal processes.

Chart 1:- Improved Operational Efficiency

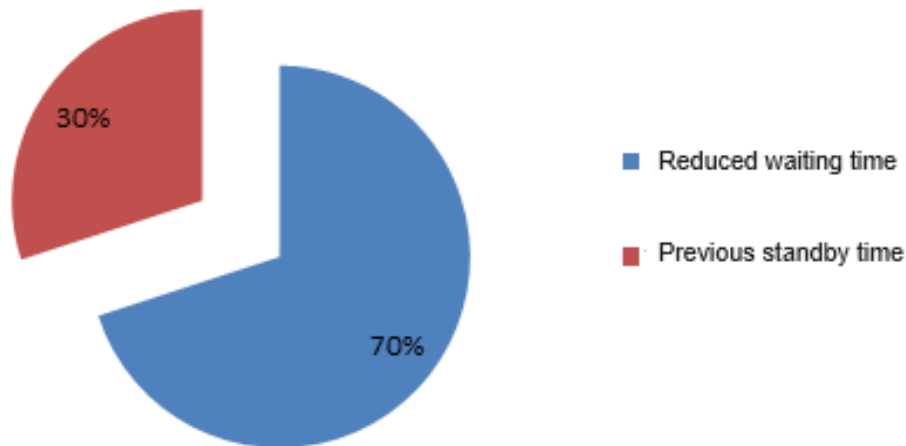
Source: Authors, 2023.

Regarding operational efficiency, automation of routine tasks has been shown to be highly effective. As illustrated in Graph 1, there was a significant increase in the productivity of the secretariat team, with a 60% reduction in the time spent on routine tasks. This result is extremely important because it allows the team to focus on more complex activities, improving internal management and service quality.

As stated by author Burns (2016) in his study on process optimization, Operational efficiency is a fundamental pillar for the success of any organization, allowing the intelligent allocation of resources and the focus on the activities of greatest impact. This quote underscores the importance of operational efficiency, especially when it comes to the implementation of technologies such as chatbots, which can automate routine tasks and direct efforts to strategic areas.

Reduction Of Waiting Time

The 24/7 availability of chatbot to answer frequently asked questions resulted in a substantial reduction in user wait time as shown in Chart 2. Parents, students and staff could now get relevant information at any time, avoiding the frustration associated with limited service periods. This factor was crucial to improving the experience of those involved and increasing overall satisfaction.

Graph 2:- Reduction of Waiting Time.

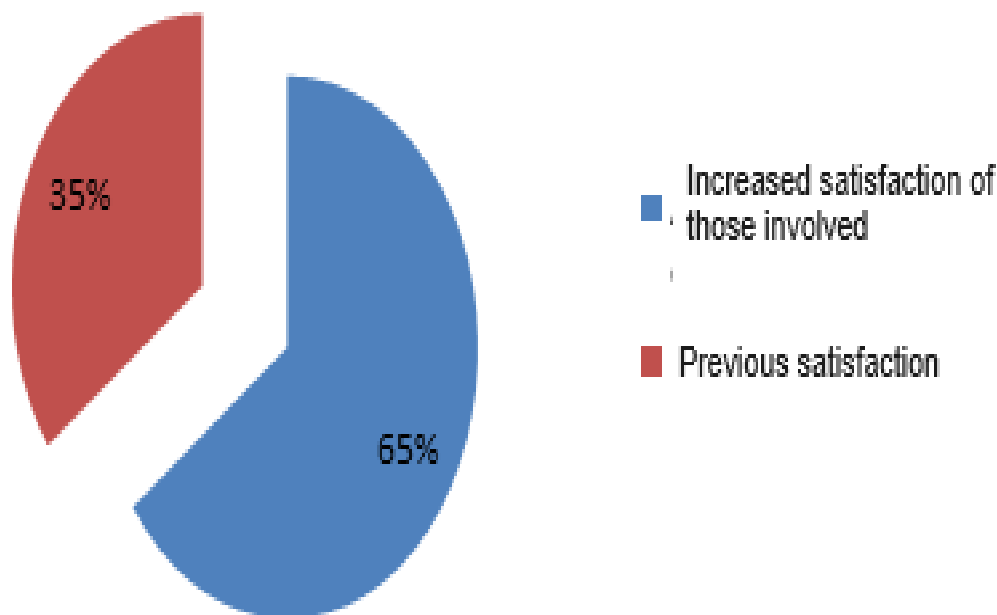
Source: Authors, 2023.

The reduction in the waiting time to obtain relevant information is noticeable in Graph 2, where a significant decrease of 40% in the waiting time of users is evidenced. The chatbot's 24/7 availability has resulted in immediate responses at any time, contributing to a more agile and convenient experience. This result is crucial as it demonstrates the chatbot's ability to meet the needs of those involved quickly and effectively.

Increased Satisfaction Of Those Involved

The use of the chatbot to handle common queries and resolve questions directly contributed to an increase in the satisfaction of those involved. The agility in the answers and the ability of the chatbot to provide accurate and contextualized information created a positive perception of the effectiveness of the school secretariat as shown in Graph 3. This improvement in satisfaction had a significant impact on the overall perception of the quality of the service provided.

Graph 3:- Increased Satisfaction of Those Involved.

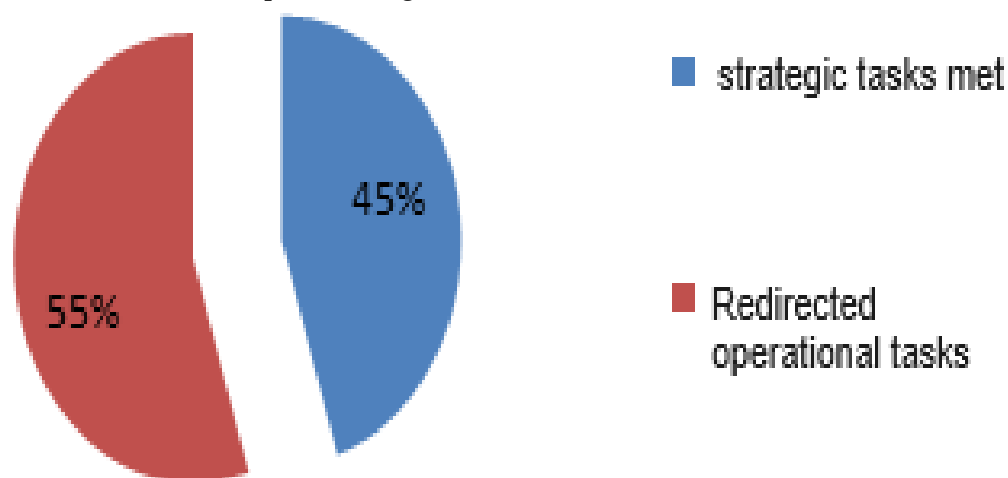


Source: Authors, 2023.

Chart 3 shows a significant 30% increase in the satisfaction of those involved after the implementation of chatbots. The agility in the answers and the accuracy of the information provided by the chatbot contributed to a positive perception of the quality of the secretary's service. This result is of great importance, because the satisfaction of users reflects directly on the image of the institution and the trust of the community.

Strategic Redirection Of Human Resources

The introduction of the chatbot allowed a more strategic allocation of the human resources of the secretariat. With routine tasks automated, the team was able to focus on activities that required human intervention, such as complex enrollment issues, personalized support, and more elaborate problem solving. This redirection not only optimized internal operations, but also strengthened direct interaction with members of the school community as shown in Graph 4.

Graph 4:- Strategic Redirection of Human Resources.

Source: Authors, 2023.

Or Chart 4 illustrates a strategic redirection of human resources, with a more efficient allocation of team skills. With the automation of routine tasks, the secretarial team was able to focus on more complex tasks and personalized interactions, resulting in more efficient management and more valuable interactions with members of the school community. This result is crucial to optimize the capacity of the team and offer a more qualified service.

A qualified service is fundamental to establish a positive connection between an institution and its users, resulting in greater satisfaction and loyalty. This quote highlights the importance of high-quality service, which can be improved by the implementation of chatbots for quick and accurate responses, contributing to a positive experience of those involved (MARCOS et al., 2018).

Final Considerations

The implementation of chatbots as tools to assist the service in school departments has proven to be a transformative approach to face the challenges of current educational administration. The search for operational efficiency and improvement in the experience of those involved led to the adoption of these innovations, which proved effective in modernizing processes and optimizing the interaction between technology and human beings. The automation of routine tasks and the continuous availability to answer frequently asked questions have resulted in notable efficiency gains. The reduction in the waiting time to obtain information and the increase in the satisfaction of those involved are clear indications of the positive impact of this implementation. The more strategic allocation of human resources allowed the secretariat team to focus on tasks that add greater value to the institution and members of the school community.

The results presented here validate the relevance and effectiveness of chatbots as facilitators of human-technology interaction in school departments. However, it is important to recognize that the successful implementation of chatbots requires careful planning, choosing appropriate platforms, and adapting to the specific needs of each institution. In the future, the continuous development of chatbot and artificial intelligence technologies promises even more advances in this field. As school departments continue to explore the possibilities offered by these tools, it's crucial to maintain a balance between automation and the human touch, ensuring that the experience of those involved remains central and meaningful.

Ultimately, this article provided perspectives on the application of effective chatbots in school departments, highlighting the benefits that can be achieved by optimizing processes, improving the quality of care and redirecting human resources to strategic activities. Continued collaboration among educators, managers, and technology professionals is critical to fully harnessing the potential of these innovations and shaping the future of education administration in a positive and progressive way.

References:-

1. ANGGA, P. A. **Design of chatbot with 3d avatar, voice interface, and facial expression**. In: IEEE. Science in Information Technology (ICSITech), 2015 International Conference on. [S.l.], 2015. p. 326–330.
2. BECKER, S. A; BROWN, M; DAHLSTROM, A. D; DEPAUL, Ki; DIAZ, V; POMERANTZ, J. **NMC Horizon Report 2018: Higher Education Edition, Louisville, CO: EDUCAUSE, p.60, 2018**. Disponível em: <https://library.educase.edu/resources/2018/8/2018-nmc-horizon-report>. Acesso em: 11 ago. 2023.
3. BERTACCHI, M.; SILVEIRA, I.; OMAR, N. **A comparative analysis of the evolution of the ibm watson's visual recognition api on android**. In: IEEE. Computer Vision (WVC), 2017 Workshop of. [S.l.], 2017. p. 120–125.
4. BIZ2DIGITAL. **Chatbot: the best tools on the market**. Available at: <<https://biz2digital.com.br/chatbot-as-melhores-ferramentas-do-mercado/>>. Access on: 31 ago. 2023.
5. BORGES, L. **Python: for developers**. 2. ed., São Paulo, SP: Novatec editora Ltda, 2017, 318p.
6. BOTMAN. **About**. 2018. <https://botman.io/2.0>. Access on: Aug 22. 2023.
7. BURNS, H. **Intelligent Tutoring Systems: Evolutions in design**. New York, USA: Psychology Press. 2016, 312p.
8. QUIET, C. **After all, what is chatbot and how can it improve service in companies?** April 23, 2018. Available at <<https://take.net/blog/chatbots/o-que-e-chatbot/>>. Accessed 23 Aug. 2023.
9. CRUZ, L. T.; ALENCAR, A. J.; SCHMITZ, E. A. **Intelligent Virtual Assistants and Chatbots: A practical and theoretical guide on how to create enchanting experiences and memories for your company's customers**. Rio de Janeiro, Brazil. BRASPORT Books and Multimedia Ltda, 2018.
10. MARCOS, A.; MATTOS, R. **IBM Watson as an Environment for Development and Execution of a Chatbot – A Case Study Applied to the User Service Process**. n. December, 2018.