General Chatbot: Proposal for UACHS Virtual Assistant

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University Academy Charter High School is a small, lottery-based, public charter school located in Jersey City, New Jersey. The school was established about 15 years ago and serves an urban population accepted at random rather than by merit. The school population was 436 students for the 2017-18 academic year. The enrollment of special populations was 17% with disabilities and 80% economically disadvantaged with a negligible percentage of English language learners. As a relatively new school, more procedures have come into place since its inception. It is sometimes complicated for students, parents, or guardians to access school procedural information or to access online systems because the information is not available in any one area. This proposal advises for the implementation of a chatbot virtual assistant to answer some of the most commonly asked questions and direct users to the appropriate location for assistance. The school's mascot is "The General," therefore the proposed chatbot name is General Chatbot.

Purpose

Rationale

Students and parents/guardians often forget how to access online systems such as PowerSchool (SIS), Schoology (LMS), and OverDrive (online library). They are often unaware of where to find information about uniform policies, club activities, the school calendar, board meetings, parent/teacher association, and other special activities. Although some of the information is on the school website, it is not easily accessible and certainly not central. Parents/guardians often call the main number while students crowd the front desk asking for information. A chatbot system to streamline the acquisition of such information could improve the school culture, improve the connection between parents/guardians and the school, and free

personnel to deal with concerns beyond the capability of the Artificial Intelligence (AI) chatbot system (Bendici, 2018).

Context

AI Chatbots are a relatively new technology that is continually improving; since the 2014 Horizon Report, "AI-augmented machine learning has dramatically increased the accuracy of both automatic speech recognition (ASR) and related natural language processing (NLP)" (Alexander et al., 2019). Chatbot technology is already in use in a variety of private-sector applications and has recently expanded to higher education campuses. Use of university AI chatbots such as Georgia State's "Pounce" or Winston-Salem State University's "Winston" increased student responses, reduced summer melt, and increased retention (Bendici, 2018). According to Bendici, "Georgia State estimates hiring an additional 10 to 15 staff members would be necessary to handle [their] message volume." Applied to a smaller educational setting, a decrease in the workload of front desk personnel would allow them to engage more efficiently with their other responsibilities.

Feasibility and Considerations

All good designs begin with the user in mind; an essential component of "human centered design" is affordance (Norman, 2013). A chatbot building platform such as Snatchbot offers multi-interaction platforms including Whatsapp, iMessage, and Facebook Messenger, which are all afforded by mobile devices (Snatchbot, n.d.). The information to be accessed by students and parents/guardians would at first be limited and target the most frequent requests: grade access, calendar, and student policies. Many AI chatbot systems, including Snatchbot, which offers connectivity to Google's Chatbase analytics system at no cost, to report on use (Snatchbot, n.d.). Privacy is always a concern when dealing with data. Of course, the school's privacy policy will

be upheld and any information regarding actual log-in or grade information will solely include general directions. A user will not be able to obtain Schoology log-in information but will be directed to navigate to uachs.schoology.com to access the system.

Cost

Snatchbot has a basic no-cost chatbot. Although set-up is needed, it does not require coding. Contracts with other systems involve a flat rate that can range from $6 to $20 per student annually" (Bendici 2018) which would be approximately $2700 on the low end of the estimation for one year. Additionally, specific input from ninth-grade teachers and the front desk who field most of the questions is essential. Therefore, compensation for contracted employees meeting outside of the school day is necessary but will add minimally to the cost.

Assessment

Almost every new implementation needs promotion. The school will initially pilot the chatbot through a "soft" rollout. That is, the chatbot will appear on the website first. After that, administration, faculty and staff will promote the chatbot during the first report card night, which tends to be heavily attended. During the first grading cycle, which consists of nine weeks, personnel will monitor the communication exchanges for anomalies and will ensure the flow is natural, conversational, and appropriate. At the end of the second cycle, an additional nine weeks, administration and front-office staff will review the analytics to determine if any additional questions and answers should be included. The analytics review requires interdepartmental collaboration. For example, the guidance department, Advanced Placement teachers, and dual enrollment teachers all field questions regarding AP testing dates and college credit acquisition. Finally, at the end of the school year, the chatbot's efficacy will be evaluated. The school will measure the chatbot's utilization through analytics and determine usability

through targeted user feedback obtained through surveys to assess General Chatbot's final success as a first-year pilot. At that time, the administration will determine the need for any additional requirements and ascertain if the school will change or drop the provider.

Conclusion

As AI chatbots continue to develop into seamless virtual assistants in the commercial arena, educational systems could utilize the technology to streamline its processes. In the future, virtual assistants may be widely used as tutors or teaching assistants, but the structure currently exists to assist in the daily operations of schools such as UACHS. At the very least, a chatbot will provide students, parents, and guardians with immediate feedback. However, General Chatbot will also allow front office personnel to focus on building relationships and maintaining the myriad responsibilities from which they are distracted by easy-to-answer, but frequent, questions.

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