



ENHANCING STUDENTS' CREATIVITY: IMPLEMENTING DIGITAL LITERACY THROUGH A TELEGRAM CHATBOT FOR CREATIVE PROJECTS AT YAYASAN PENDIDIKAN BINA BERSAUDARA

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Abstract: Technological advances provide great benefits in various fields, including education. This service project aims to improve students' creativity and digital literacy through the implementation of Telegram chatbot at Bina Bersaudara Education Foundation. The main objective is to address the lack of utilization of digital technology by students for school promotion and enhance their creativity. The method used involved selecting 20 students based on their technological potential, providing intensive training on chatbot development and usage, as well as involving them in creative content creation for YouTube. The results showed Chatbot support Students' Creativity for Creative Projects. The findings show that 25% of students rated the chatbot support for their creative projects as excellent. A majority of 60% found the support to be very good, indicating that the chatbot met their needs effectively. Chatbot support Students' digital literacy. The findings indicate that 15% of students rated the chatbot support for their digital literacy as excellent. A significant majority of 70% found the support to be very good, suggesting that the chatbot was effective and met their needs well. In summary, the findings reflect a positive overall reception of chatbot support for creative projects and for digital literacy with significant room for minor improvements to achieve a higher level of excellence.

INTRODUCTION

Technological advancements have provided great benefits in various fields, including education. One of the rapidly growing technologies is chatbot, which is used to provide information services, technical assistance, complaint handling, and problem resolution with instant response (Manullang et al; 2023). A chatbot is an automated program designed to execute instructions based on specific input and provide feedback that mimics the style of natural conversation (Kumar; 2021). Chatbots are typically integrated into applications, websites, or instant messaging platforms (Roca et al; 2024). A



chatbot that serves multiple purposes certainly has higher complexity compared to a single general-purpose chatbot (Debnath et al, 2019). Chatbots are now being used in various sectors, including education (Labadze et al; 2023).

The use of chatbots in education can enhance a school's reputation and attract new applicants by providing quick responses to queries from prospective students, parents, and the general public. Chatbots also effectively support students' learning experiences (Chang et al; 2023). However, digital literacy plays a crucial role in maximizing the benefits of such technological advancements. Research by María Cristina et al. (2022) at the University of Navarra, Spain, explores the dimensions of digital literacy in eight international frameworks from various institutions and initiatives, such as UNESCO, European Union, OECD, ATCS, P21, NETS, NAEP, and Engauge. Using content analysis methods to examine areas of competency coverage and relationships between different proposals, this research identifies six dimensions of digital literacy: critical, cognitive, operational, social, emotional, and projective. It also outlines a three-dimensional profile that emphasizes the critical use of technology, the use of technology in everyday life and social innovation, and a multidimensional and interdisciplinary vision of digital literacy.

The Bina Bersaudara Education Foundation, a private educational institution in Medan, faces challenges in utilizing digital technology for promotion and economic development. Although the foundation has produced many academic and non-academic achievements, its students have not fully mastered and utilized the latest digital technologies, such as chatbots. This has resulted in the low development of student creativity, which can actually be an opportunity to improve the partner's economy. Currently, the foundation only uses social media such as Instagram and Facebook for promotion, which has not been able to present structured information regarding partner data to the general public. Therefore, the implementation of a chatbot can be a solution to present the foundation's data, achievements, activities, and extracurriculars in a more structured and attractive manner, as well as increase the effectiveness of promotion through integration with platforms such as YouTube.

Based on the situation analysis, the main problems faced by Bina Bersaudara Education Foundation are the lack of utilization of the latest digital technology by students for school promotion, students' creativity that is not optimally exposed to improve the school's reputation through digital technology, less structured school information on social media that affects the interest of prospective applicants, the absence of an online registration system for prospective students, and the absence of developed digital content. Effective and efficient school promotion is essential for this foundation to increase visibility and attract more applicants. Therefore, the solution offered is socialization and training on the use of chatbot features on the Telegram application to students who have potential in technology.

METHOD

The service subjects in this program are high school and vocational school students at Bina Bersaudara Education Foundation, who have potential in the field of digital technology. This program will involve 10 high school students and 10 vocational students who are selected based on their ability and interest in technology. The place and location of the service is at Bina Bersaudara Education Foundation, located at Jl. Tritura no.10, Titi



Kuning, Kec. Medan Johor, Medan City, North Sumatra. This location was chosen due to the availability of supporting facilities and the specific needs of the foundation in improving promotion and economy through digital technology. The students involved will be trained by university students who have received training from supervisors. The training process involves discussions and coordination forums to ensure the students can master the use of the chatbot. In addition, students will be involved in the creation and development of creative content for the YouTube platform.

The methods used in this program are socialization and training, active student participation, and mentoring and evaluation. Socialization and training are conducted by providing intensive training on the creation and use of chatbots to selected students. Active participation of students involves them in the development of creative content that can be published on digital platforms. Mentoring and evaluation are conducted regularly to assess students' progress in mastering chatbot technology. The activity stages include preparation, training, content development, chatbot implementation, and evaluation. In the preparation stage, the proposing team and the foundation will coordinate and prepare training materials. The training stage involves several chatbot training sessions to selected students. In the content development stage, students will develop creative content for YouTube and other social media platforms. The implementation of the chatbot is done to provide structured information to the community. The evaluation stage is conducted to assess the effectiveness of the program and provide feedback.



Figure 1. Service Flow Diagram

The use of Telegram chatbots to promote digital literacy in educational settings is an original approach to increasing students' inventiveness. This conversation focuses at the practical ramifications of deploying such technology at Yayasan Pendidikan Bina Bersaudara (YPBB), weighing the benefits, limitations, and future prospects of this unique teaching technique. Telegram chatbots can greatly improve student engagement and motivation. Chatbots enrich the learning environment by providing interactive and swift feedback. This immediacy helps students stay interested and encourages active engagement in creative initiatives. Telegram chatbots can also be adjusted to match individual learning needs, offering individualized resources and help. This strategy guarantees that each student receives the assistance needed to overcome individual problems, resulting in a more inclusive learning environment.

RESULT

Based on the data listed in Table 1, it can be seen that chatbots play an important role in supporting student creativity for creative projects and as a supporting medium in the application of student digital literacy.



Tabel. 1 Results from question

Chatbot supports students' Creativity for creative projects			Chatbot as a supporting medium for implementing students' Digital Literacy		
Excellent	Very Good	Satisfactory	Excellent	Very Good	Satisfactory
25%	60%	15%	15%	70%	15%

DISCUSSION

The socialization results show that the use of chatbots at Bina Bersaudara Education Foundation provides a significant positive impact in supporting student creativity and the application of digital literacy. Chatbot support Students' Creativity for Creative Projects. The findings show that 25% of students rated the chatbot support for their creative projects as excellent. A majority of 60% found the support to be very good, indicating that the chatbot met their needs effectively. Meanwhile, 15% of students considered the support to be satisfactory, suggesting that while the chatbot was helpful, there is room for improvement in its ability to assist with creative endeavors. Chatbot support Students' Digital literacy. The findings indicate that 15% of students rated the chatbot support for their digital literacy as excellent. A significant majority of 70% found the support to be very good, suggesting that the chatbot was effective and met their needs well. Meanwhile, 15% of students considered the support to be satisfactory, indicating that while the chatbot was helpful, there is room for improvement in enhancing its effectiveness for digital literacy. In summary, the findings reflect a positive overall reception of chatbot support for creative projects and for digital literacy with significant room for minor improvements to achieve a higher level of excellence.

The implementation of chatbots in the learning process and digital skills development provides several key benefits. First, chatbots ease students' access to relevant and useful information, allowing them to learn independently and more efficiently. Second, chatbots provide real-time support that helps students overcome difficulties they face in creative projects and digital tasks. Third, the use of chatbots also encourages students to be more active in creating and sharing digital content, which can improve their communication and presentation skills.



Figure 2. Handover of PKM Assistance Files

Integrating digital literacy into the curriculum through chatbots equips students with crucial digital skills. These skills are vital not only for academic success but also for future professional endeavors. Students learn to navigate digital tools, assess digital content, and effectively utilize technology in their creative processes. By providing access to a broad array of digital resources and tools, Telegram chatbots inspire students to think creatively and explore new ideas. The instant feedback mechanism allows students to refine their ideas and iteratively improve their projects, fostering a growth mindset. Furthermore, Telegram chatbots offer flexible learning opportunities, allowing students to access information and support at their convenience. This flexibility accommodates different learning styles and paces, making education more accessible to all students.

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Figure 3. Chatbot Feature Training by IT Team (Partner) and PKM Members (Facilitators)

Continuous assessment of the chatbot's performance and its impact on students' creativity is essential, with feedback from students and teachers helping to identify areas for improvement and inform the development of more effective strategies. To maximize the benefits of digital literacy, Telegram chatbots should be integrated into the broader curriculum, ensuring that digital literacy is embedded in various subjects and learning activities. Additionally, telegram chatbots can facilitate collaborative learning by enabling students to work on group projects and share their ideas digitally, which can further enhance creativity and foster a sense of community. Forming partnerships with technology providers and educational organizations can provide the necessary support and resources for implementing Telegram chatbots, offering professional development opportunities for teachers and access to the latest technological advancements.



Figure 4. Group Photo with the Principal of SMA / SMK YPBS and Activity Participants

Implementing digital literacy through Telegram chatbots at Yayasan Pendidikan Bina Bersaudara offers considerable potential for boosting students' creativity. Despite existing challenges, the advantages in engagement, personalized learning, and skill development are significant. By adopting a strategic and flexible approach, YPBB can use this innovative technology to cultivate a more creative and digitally literate student body. As education evolves in the digital age, such initiatives will be essential in preparing students for the future.

CONCLUSION

Based on the results of the socialization conducted at Bina Bersaudara Education Foundation, it can be concluded that the implementation of chatbots through the Telegram platform has a significant impact in supporting students' creativity and improving their digital literacy. The integration of chatbot technology in education not only facilitates faster and more efficient access to information, but also encourages students to be more active in developing creative projects and mastering digital skills that are essential in the modern era. The program successfully creates a more interactive and responsive learning environment,



which ultimately contributes to the improvement of students' learning quality and innovation ability.

Furthermore, the results of this service show that the use of chatbots can be an effective solution to overcome the challenges of promoting and developing the foundation's economy through digital technology. By improving students' digital skills, foundations can capitalize on this potential to increase their visibility and reputation in the community. Therefore, in the future, it is recommended that foundations continue to optimize the use of chatbot technology and integrate it with other digital platforms to maximize students' potential and creativity, as well as improve the overall promotional effectiveness of the foundation. Thus, this program not only provides direct benefits in terms of improving students' skills and creativity, but also has the potential to create broader social change by strengthening digital literacy and innovation in the educational environment.

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