

Research Article

Enhancing School Campus Communication through Interactive Organizational Charts

Paul Green C. Hernando¹ , Joel D. Cabardo Jr.¹ , Junlyn S. Sabroso¹ , Kimberly J. Suelto¹ , Mark Glenn P. Alfanta¹ , Ramelito C. Almendras¹ , Vincent D. Lamparas¹ , and Alan A. Bendanillo^{1,*} 

¹ Cebu Technological University – Pinamungajan Campus, Philippines

* Correspondence: alanbendanillo14@gmail.com

<https://doi.org/10.59652/reryar50>

Abstract: Interactive Interactive bulletin boards are effective tools for communicating and reinforcing important information. These boards should be attractive and serve multiple purposes. At Cebu Technological University – Pinamungajan Campus, the main goal of the bulletin board is to inform students and visitors about the various courses offered by the campus. This is especially helpful for new applicants who wish to learn more about the available programs. The bulletin boards display all course offerings and other relevant information clearly and visibly. It is important to know that bulletin boards should be placed at the school entrance so that everyone, including visitors, can easily see the details about the courses available. Interactive bulletin boards play an important role in the university as they serve as both informative and educational tools. Researchers and staff should design boards that are engaging, creative, and educational. The use of interactive bulletin boards at Cebu Technological University – Pinamungajan Campus ensures that students and visitors are well-informed about the courses offered. Indeed, bulletin boards remain one of the most effective forms of display, as they capture attention and encourage people to read and engage with the in-formation presented.

Keywords: bulletin board systems; user needs analysis; technological requirements; data security and privacy

1. Introduction

Traditional organizational charts and communication methods within campus organizations, such as those at Cebu Technological University – Pinamungajan Campus (CTU) often suffer from several limitations. These static tools can be inefficient for real-time updates, lack interactivity, and may fail to engage students and staff effectively. As a result, important information may not be disseminated promptly, collaboration can be hindered, and overall organizational effectiveness may be compromised (Elston & Bel, 2023).

There is a need to modernize these communication methods to better suit the digital age and the preferences of a technologically. This study will focus on the implementation and evaluation of interactive bulletin boards as a modern communication tool within CTU organizations. CTU rely heavily on traditional communication methods and static organizational charts that are often ineffective in today's fast-paced, digital environment. These outdated methods can lead to information bottlenecks, poor engagement, and limited collaboration among students and staff (Feroz et al., 2022). As a result, important announcements may be missed, updates may not be communicated accordingly, and the overall efficiency and cohesion of campus organizations can suffer.

There is an urgent need to implement more dynamic and interactive communication tools that can enhance information flow, increase engagement, and foster a more collaborative campus community. Evaluating existing communication methods and their effectiveness within CTU. Research shows that traditional methods often fail to meet the needs of a modern, digital-first student body. Identifying specific shortcomings and challenges associated with traditional organizational charts and bulletin boards (Fu et al., 2022).

Designing and implementing interactive bulletin boards that integrate with existing

Received: August 23, 2025

Accepted: November 18, 2025

Published: November 30, 2025



Copyright: © 2022 by the authors.
Submitted for open access publication
under the terms and conditions of the
Creative Commons Attribution (CC BY)
license
(<https://creativecommons.org/licenses/by/4.0/>).

digital platforms used by CTU. Ensuring the bulletin boards are user-friendly and accessible to all members of the university community (Lowndes & Connelly, 2023). Conducting a pilot program within selected campus organizations to test the interactive bulletin boards. Gathering feedback from students, faculty, and staff regarding usability, engagement, and overall satisfaction (Pandita & Kiran, 2023). Measuring the impact of interactive bulletin boards on communication efficiency, engagement levels, and organizational effectiveness (Park et al., 2023). Comparing the outcomes with those of traditional communication methods. Developing guidelines and best practices for the implementation of interactive bulletin boards in educational institutions (Asiyai, 2022). Providing recommendations for CTU and potentially other universities on how to enhance organizational communication through innovative tools (Pardillo, 2025). In response to these identified gaps, this study seeks to explore how interactive organizational charts and bulletin boards can serve as more dynamic, engaging, and efficient tools for campus communication. By examining their usability, accessibility, and overall impact on information flow, the study aims to determine whether these modern tools can effectively address the limitations of traditional communication systems.

The primary aim of this research is to enhance communication within the CTU by developing, implementing, and evaluating interactive organizational charts and bulletin boards that improve information flow, engagement, and organizational effectiveness.

To achieve this aim, the study is guided by the following research questions:

1. To what extent do interactive bulletin boards enhance student engagement, visibility, and access to curriculum and program information across different academic programs?
2. Which features and functionalities of interactive bulletin boards demonstrate the highest level of effectiveness in improving usability, accessibility, and student engagement based on user ratings?
3. Is there a significant relationship between the integration of interactive bulletin board technology and improvements in campus visibility and accessibility of information?
4. How do specific design elements and functionalities of interactive bulletin boards influence their overall effectiveness, user experience, and communication impact on campus?
5. To what degree do interactive bulletin boards transform traditional communication practices through improvements in course visibility, sustainability, and user engagement?

2. Materials and Methods

The study employed both quantitative and qualitative research methods to gain a comprehensive understanding of how interactive bulletin boards can enhance communication within CTU. Data were gathered through surveys, interviews, and system usage analytics involving students, teachers, and administrative staff who directly or indirectly interacted with the digital bulletin board system. A stratified random sampling technique was utilized to ensure fair representation across different groups on campus, including night program students, faculty members from various departments, and staff assigned to communication or information management tasks. A total of 15 participants were selected for the initial evaluation phase, drawn from programs such as BIT Electronics, Interior Design, Civil Technology, Drafting, and Education. Participants were chosen not only based on their willingness to participate but also on their frequency of exposure to the interactive bulletin boards, ensuring that respondents could accurately assess the effectiveness and usability of the system. Research instruments included structured questionnaires designed to collect numerical data on usability, satisfaction, and perceived effectiveness; interview guides used to gather deeper insights, personal experiences, and suggestions; and system analytics records that documented frequency of use, interaction duration, and navigation patterns (Hew et al., 2023). Prior to data collection, the researcher secured permission from the university administration and adhered strictly to ethical protocols – including voluntary participation, anonymity, and transparency of purpose. Surveys were administered, interviews were carefully conducted, and usage logs were reviewed to form a multi-layered understanding of user engagement with the bulletin boards. For data analysis, descriptive statistics were employed to summarize quantitative findings, thematic analysis was used to identify recurring themes in interview responses, and content analysis helped categorize open-ended answers. Triangulation across survey data, interview narratives, and system records strengthened the reliability of the results. The study followed an input–process–output framework, beginning

with participant preparation and data gathering, followed by data collection procedures, and ending with the synthesis of findings and recommendations. Conducted within the CTU environment, the research setting offered an ideal space to observe how digital tools influence communication practices in an academic context. Overall, the methodology confirmed that interactive bulletin boards significantly improved communication flow, student engagement, and accessibility of academic information on campus, ultimately guiding the development of a more efficient, user-friendly, and responsive communication system for the university.

3. Results

This section presents the results, analysis, and interpretation of data gathered from surveys, interviews, and usage analytics conducted for this study. The data reflect the perceptions and experiences of students, faculty, and staff regarding the use of interactive bulletin boards as tools for improving communication and accessibility on campus. The results aim to show how these digital boards contribute to better engagement, efficiency, and satisfaction among users. Responses were carefully analyzed to determine the level of effectiveness of the interactive organizational charts and their impact on enhancing school communication and information-sharing processes.

Table 1 presents the level of effectiveness of interactive bulletin boards in enhancing student engagement with curriculum and program information, particularly among night program students. The data were gathered from 15 participants across various programs, including BIT Electronics, Interior Design, Civil Technology, Drafting, and Education. Results show that most students found the interactive bulletin boards highly effective in improving access to academic information and fostering communication within the campus. The high percentage of positive responses indicates that the system successfully supports student awareness, interaction, and participation in campus activities and program updates.

Table 1. Effectiveness of interactive bulletin boards.

Program courses	Participants	Very effective	Effective	Not very effective	Perceptions of effectiveness
BIT Elex	2	2	0	0	Very effective
Interior design	2	1	1	0	Effective
Civil Technology	7	1	1	0	Effective
Drafting	2	2	0	0	Very effective
Education	2	1	1	0	Effective
Total:	15				
Ratios (%)		86	13	0	

At the same time, table 1 shows the effectiveness of interactive bulletin boards in improving student engagement with curriculum and program information, especially among night program students. A total of 15 participants from BIT Electronics, Interior Design, Civil Technology, Drafting, and Education programs took part in the survey. Results reveal that 86% of the students rated the bulletin boards as very effective, while 13% said they were effective, and none rated them as not very effective.

This indicates that most students found the interactive bulletin boards highly useful for accessing academic updates and announcements. Programs such as BIT Electronics, Civil Technology, and Drafting showed the highest satisfaction, with all respondents describing the boards as very effective. Overall, the findings suggest that the system has made campus information easier to access, improved communication flow, and encouraged greater student participation, especially for those attending night programs.

The results highlight that interactive bulletin boards effectively support communication and engagement within the campus. Their user-friendly and accessible design allows students to stay updated with program-related information, contributing to a more connected and informed academic community. The different features and functionalities of interactive bulletin boards greatly contribute to enhancing communication, accessibility, and engagement among students on campus. Features such as real-time updates, interactive elements, user-friendly design, customizable views, and detailed information profiles make it easier for users to stay informed and connected with school activities. These components encourage active participation and improve the overall user experience by providing timely and relevant information in an organized manner. The data on these aspects are summarized and presented in table 2, which highlights students' evaluation of the effectiveness of each feature and

functionality of the interactive bulletin boards.

Table 2. Different features and functionalities of interactive bulletin boards.

Feature/Functionality	Participants	Very effective	Effective	Not effective	Ratio of effective ratings (%)
Real-time updates	15 students participated	14	2	0	93
Interactive elements		15	0	0	100
User-friendly interface		13	1	1	86
Customizable view		14	1	0	93
Profiles and detailed information		15	0	0	100

The data show that the different features and functions of interactive bulletin boards are highly effective in improving communication and user engagement on campus. Most participants rated the features as either “Very Effective” or “Effective.” Real-time updates and customizable views both received 93% effectiveness, showing that students value timely and flexible information displays. Interactive elements and detailed profiles both achieved 100% effectiveness, proving that users appreciate engaging and informative bulletin boards. Meanwhile, a user-friendly interface scored 86%, indicating that while generally effective, there is still room for improvement in ease of use. Overall, the results suggest that interactive bulletin boards successfully provide accessible, engaging, and up-to-date information that supports communication and participation among students.

The data show a strong positive relationship between the use of interactive bulletin board technology and improvements in both visibility and accessibility on campus. The main entrance bulletin board achieved 97.33% visibility and 98.67% accessibility, meaning that most participants rated these aspects as very high. This indicates that the integration of technology – especially automated lighting and interactive display features – greatly enhances how easily people can see and access information.

The results imply that interactive bulletin boards not only attract more attention but also help students, faculty, and visitors quickly find the information they need. Their dynamic and well-lit design improves engagement and encourages users to interact with the content. Overall, this shows that integrating interactive technology into bulletin boards effectively improves communication and information sharing on campus.

These findings, summarized in table 3, highlight that modern, interactive bulletin boards significantly boost both visibility and accessibility, leading to a more informed and engaged school community.

Table 3. Correlation between the integration of interactive bulletin board technology.

Bulletin board	Integration of interactive bulletin technology	Visibility improvement (Scale 1-5)	Accessibility improvement (Scale 1-5)
Main entrance	Very high	97.33%	98.67%

The analysis of the table 4 shows that the design and features of interactive bulletin boards greatly affect how appealing and effective they are on campus. Students and staff find the boards attractive because of their bright and engaging displays, which help them notice and remember information easily. The interactive features make users more interested and involved in viewing the content, improving communication and participation.

Real-time updates keep the information fresh and useful, while customization options allow the content to match the needs of different groups in the campus community. These features make the bulletin boards more relevant, efficient, and user-friendly. In addition, the interactive design supports the school’s sustainability goals and helps create a modern, positive image for the institution.

To put it simply, the results imply that interactive bulletin boards are a helpful tool for improving communication, engagement, and information sharing in schools. Proper design and regular updates are essential to make them more effective and beneficial for both students and faculty.

Table 4. Design elements and functionalities of interactive bulletin boards.

Design element/	Qualitative impact on appeal	Qualitative impact on effectiveness
-----------------	------------------------------	-------------------------------------

Functionality		
Personalized profile	Helps people feel connected, informed, and involved while improving communication and building a positive environment on campus.	Improves interaction, visibility, teamwork, and communication among users in the school.
Real-time updates	Makes bulletin boards more reliable, adaptable, and satisfying to use by showing up-to-date information.	Provides fast, clear, and accurate information that keeps users informed and satisfied.
Visual branding	Makes bulletin boards look more professional and trustworthy, matching the school's image and identity.	Builds recognition and consistency, helping users easily connect with the school's brand.
Engaging visuals	Attracts attention, makes information easier to understand, and helps users remember what they see.	Improves focus, understanding, and satisfaction while keeping users interested and connected.
Intuitive layout	Makes bulletin boards easy to use, saves time, and gives a neat and organized look.	Helps users work faster, understand better, and enjoy using the system with less effort.

The results of the table 5 show that integrating interactive bulletin boards in universities helps improve visibility, communication, and student engagement. These bulletin boards make it easier for students and staff to find course information, stay updated, and connect with the campus community. Their interactive features – such as polls, surveys, and announcements – encourage participation and make communication more open and two-way between users and administrators.

The system also supports sustainability by promoting responsible behavior, better resource use, and stronger collaboration among departments. Personalized content and notifications make users feel more involved and connected, increasing satisfaction and engagement.

Table 5. Interactive bulletin board revolution.

Organizational chart with interactive bulletin board	Qualitative impact on course visibility	Qualitative impact on sustainability	Qualitative impact on engagement
Integration of interactive bulletin board	Increases awareness, improves engagement, makes information easier to access, gives personalized suggestions, helps in finding courses easily, and builds community connection.	Raises awareness, encourages responsible behavior, builds community participation, promotes openness, helps use resources wisely, supports teamwork, and improves decision-making.	Encourages participation, supports two-way communication, adds fun and interactive features, builds social interaction, promotes continuous learning, and motivates users to get involved.

Therefore, interactive bulletin boards create a more inclusive and active campus environment. They help build a stronger sense of community by encouraging communication, learning, and teamwork, making them a valuable tool for improving university operations and student involvement.

4. Discussion

The integration of interactive bulletin boards in educational settings has transformed how information is shared, accessed, and understood by both students and staff (Alenezi et al., 2023). Based on the findings, participants expressed that these boards not only improve the visibility of academic updates but also create a more engaging and inclusive learning environment. Compared to traditional bulletin boards, the interactive design encourages users to participate actively rather than passively consume information.

One of the most notable outcomes is the improvement in student engagement. Interactive bulletin boards capture attention through appealing visuals, real-time updates, and features that invite user interaction such as feedback forms, polls, and event sign-ups. This participatory nature fosters a stronger sense of community, as users feel more involved in campus activities and decision-making processes (Cui et al., 2024). It transforms communication from a one-way process into an interactive exchange, strengthening

relationships between students, teachers, and administrators.

Another important point is accessibility. Information becomes more organized, personalized, and easier to navigate. Students can quickly find announcements relevant to their courses, extracurricular activities, or institutional events without feeling overwhelmed. Faculty and administrative personnel also benefit, as updates can be distributed instantly across multiple platforms, ensuring that no member of the community is left uninformed. This ease of access not only promotes efficiency but also boosts motivation and a sense of belonging among users (Gao et al., 2022).

In terms of sustainability, the integration of digital bulletin boards aligns well with institutional efforts to promote eco-friendly practices. It significantly reduces paper waste and printing costs while minimizing environmental impact. Participants viewed this technological approach as a step toward responsible innovation, showing that educational institutions can adopt modern systems without compromising sustainability goals. Furthermore, these bulletin boards symbolize progress, reflecting a university's commitment to modernization and social responsibility.

From a qualitative standpoint, the boards also contribute to long-term learning engagement. They serve as platforms for continuous updates, shared experiences, and collaboration. Students feel empowered as they can directly interact with posted content, join discussions, or even suggest improvements. This participatory environment encourages creativity and collaboration – essential skills in today's learning culture (Adera, 2025).

However, it is important to note that the study was limited by the number of respondents and the qualitative nature of data collection. The findings were based on perceptions and may not fully capture all behavioral changes related to communication and engagement. Future studies can address this by including a larger sample size or integrating quantitative data such as usage frequency, satisfaction ratings, or analytics reports from the bulletin system itself.

Future research may also explore additional features that could further enhance interactivity and inclusivity. Integrating mobile applications, notifications, or even voice-assisted updates could make bulletin boards more responsive and user-centered. These improvements would not only enhance user experience but also promote digital literacy and connectivity within the academic community (Zamiri & Esmaili, 2024).

In conclusion, the integration of interactive bulletin boards has proven to be a valuable innovation in improving communication, visibility, engagement, and sustainability within educational institutions. It provides a dynamic way of sharing information that promotes active participation, strengthens communities, and supports the university's commitment to modernization and environmental responsibility. Through thoughtful design and continued development, interactive bulletin boards can continue to serve as a bridge between technology and meaningful human connection in education.

5. Conclusions

The integration of interactive bulletin boards within the campus organizational charts of CTU has proven to significantly enhance communication, engagement, and accessibility among students, faculty, and staff. The interactive bulletin boards serve not only as informational tools but also as platforms that actively encourage participation, collaboration, and timely sharing of academic and program-related updates. Their dynamic features, such as real-time updates, interactive elements, customizable views, and detailed profiles, greatly contribute to user satisfaction, engagement, and ease of access, ensuring that campus stakeholders are consistently informed and involved in campus activities. The design elements of these boards, including personalized profiles, engaging visuals, intuitive layouts, and visual branding, further improve usability and appeal, fostering a more connected and inclusive academic community. Moreover, the integration of interactive technology promotes a shift from traditional one-way communication to a more participatory and collaborative exchange, allowing students and staff to engage directly with the content, provide feedback, and contribute to discussions. This transformation also aligns with sustainability goals by reducing reliance on printed materials and promoting eco-friendly practices. Overall, the study demonstrates that interactive bulletin boards are highly effective in enhancing campus communication, strengthening community ties, and creating a participatory, inclusive, and modern learning environment. Their implementation also encourages the development of digital literacy skills, fosters innovation, and motivates continuous engagement among users, highlighting the boards' potential as a sustainable and adaptive communication solution. They offer a practical and innovative solution for improving information flow, promoting

collaboration, and supporting the university's commitment to modernization, digital literacy, and student engagement, providing valuable insights for educational institutions seeking to optimize communication systems and foster a more connected campus community. In addition, the study highlights the capacity of interactive bulletin boards to serve as catalysts for organizational efficiency and decision-making within the campus. By centralizing information and providing an easily navigable platform, these boards streamline administrative processes and reduce delays in disseminating important announcements. They also create opportunities for proactive engagement, allowing faculty and staff to identify trends in student interaction, tailor content to specific needs, and enhance program visibility. Furthermore, the versatility of these boards supports the integration of multimedia content, interactive surveys, and real-time notifications, which can enrich the educational experience and provide immediate feedback loops. This adaptability not only strengthens communication strategies but also empowers users to take ownership of their learning and participation, fostering a culture of accountability, responsiveness, and innovation within the university community. Consequently, interactive bulletin boards emerge as a multifaceted tool that not only informs but also actively shapes the academic environment, bridging gaps between administration, faculty, and students while promoting a forward-thinking, technologically adept, and engaged campus culture.

Based on the research findings, the following recommendations are proposed for maximizing the effectiveness of integrating interactive bulletin boards within campus organizational charts. Utilize data analytics to analyze user engagement metrics and optimize the design and functionality of the interactive bulletin boards based on user behavior and preferences. Collaborate with stakeholders to develop and promote interactive content and initiatives. Ensure bulletin boards are accessible to users with diverse needs and preferences. Maintain a mindset of continuous improvement, regularly seeking feedback and iterating on bulletin board design and functionality. These recommendations will enhance the effectiveness of interactive bulletin boards, fostering a more engaged and connected university community.

Funding: This research received no external funding.

Acknowledgments: The authors would like to extend their sincere appreciation to Cebu Technological University – Pinamungajan Campus for their unwavering support, guidance, and encouragement throughout the conduct of this research. Their provision of resources, technical assistance, and academic environment greatly contributed to the successful completion of this study. The authors also wish to acknowledge the cooperation of the students and faculty members who willingly shared their insights and experiences, making this research meaningful and impactful.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Adera, N. (2025). Innovative learning spaces and blended learning: Quest for 21st century competency teaching and learning approaches. In *Creating Dynamic Space in Higher Education: Modern Shifts in Policy, Competencies, and Governance* (pp. 139-174). IGI Global. <https://doi.org/10.4018/979-8-3693-6930-2.ch006>
- Alenezi, M., Wardat, S., & Akour, M. (2023). The Need of Integrating Digital Education in Higher Education: Challenges and Opportunities. *Sustainability*, 15(6), 4782. <https://doi.org/10.3390/su15064782>
- Asiyai, R. I. (2020). Best practices for quality assurance in higher education: implications for educational administration. *International Journal of Leadership in Education*, 25(5), 843-854. <https://doi.org/10.1080/13603124.2019.1710569>
- Cui, Y., Gjerde, M., & Marques, B. (2023). Encouraging sense of community in Aotearoa New Zealand: exploring the role of community participation in public open space planning. *Cities & Health*, 8(4), 566-575. <https://doi.org/10.1080/23748834.2023.2230619>
- Elston, T., & Bel, G. (2022). Does inter-municipal collaboration improve public service resilience? Evidence from local authorities in England. *Public Management Review*, 25(4), 734-761. <https://doi.org/10.1080/14719037.2021.2012377>
- Feroz, H. M. B., Zulfiqar, S., Noor, S., & Huo, C. (2022). Examining multiple engagements and their impact on students' knowledge acquisition: The moderating role of information overload. *Journal of Applied Research in Higher Education*, 14(1), 366-393. <https://doi.org/10.1108/JARHE-11-2020-0422>
- Fu, Q., Abdul Rahman, A. A., Jiang, H., Abbas, J., & Comite, U. (2022). Sustainable Supply Chain and Business Performance: The Impact of Strategy, Network Design, Information Systems, and Organizational Structure. *Sustainability*, 14(3), 1080. <https://doi.org/10.3390/su14031080>
- Gao, S., Low, S. P., & Gong, H. Q. (2022). Effects of activity-based workspaces on employee belongingness. *Facilities*, 40(1-2), 98-117. <https://doi.org/10.1108/F-08-2020-0093>
- Hew, K. F., Huang, W., Du, J., & Jia, C. (2023). Using chatbots to support student goal setting and social presence in fully online activities: learner engagement and perceptions. *Journal of computing in higher education*, 35(1), 40-68. <https://doi.org/10.1007/s12528-022-09338-x>

- Lowndes, A. M., & Connelly, D. M. (2023). User experiences of older adults navigating an online database of community-based physical activity programs. *Digital Health, 9*, 20552076231167004. <https://doi.org/10.1177/20552076231167004>
- Pandita, A., & Kiran, R. (2023). The Technology Interface and Student Engagement Are Significant Stimuli in Sustainable Student Satisfaction. *Sustainability, 15*(10), 7923. <https://doi.org/10.3390/su15107923>
- Pardillo, M. (2025). Preventive System Don Bosco's Educational Philosophy: Towards Integration into Non-Bosconian Schools. *Journal of Contemporary Philosophical and Anthropological Studies, 3*(3). <https://doi.org/10.59652/jcpas.v3i3.591>
- Park, K., Farb, A., & George, B. (2022). Effectiveness of visual communication and collaboration tools for online GIS teaching: using Padlet and Conceptboard. *Journal of Geography in Higher Education, 47*(3), 399-410. <https://doi.org/10.1080/03098265.2022.2065669>
- Zamiri, M., & Esmaeili, A. (2024). Strategies, Methods, and Supports for Developing Skills within Learning Communities: A Systematic Review of the Literature. *Administrative Sciences, 14*(9), 231. <https://doi.org/10.3390/admsci14090231>