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MULTIMEDIA INTERFACE DESIGN AND USABILITY EVALUATION OF A CENTRALISED CAMPUS EVENT PLATFORM: THE CASE OF EVENTBUZZ UUM

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ABSTRACT

Campus event information is often distributed across messaging groups, social media accounts, and physical posters, which may make event discovery and coordination difficult for students and organisers. This study designed and evaluated EventBuzz UUM, a centralised mobile platform for campus event communication at Universiti Utara Malaysia. The prototype was developed with FlutterFlow and Supabase through an iterative design process. Evaluation was conducted in two stages. First, three experts completed task-based cognitive walkthroughs and semi-structured interviews using an 80 per cent complete high-fidelity prototype. Second, 30 target users, comprising 19 students and 11 club or society organisers, completed realistic tasks and an adapted 19-item Computer System Usability Questionnaire. Expert feedback identified issues involving interface consistency, institutional identity, status synchronisation, navigation, registration pathways, and error prevention. The target-user evaluation produced favourable mean scores for system usefulness (6.05), information quality (5.79), interface quality (5.67), and overall usability satisfaction (5.90) on a seven-point scale. Participants particularly valued simple navigation, search and filtering, and a clean interface, while clearer validation messages, campus mapping, and reminders were requested. The findings indicate that EventBuzz UUM was perceived as easy to learn and useful for discovering and managing campus event information. The study contributes a campus-specific example of sequential multimedia interface evaluation combining expert diagnosis with target-user usability ratings.

Keywords: Campus event promotion, Mobile application, Multimedia design, Usability evaluation, User experience.

INTRODUCTION

University life includes academic seminars, cultural programmes, sports activities, competitions, workshops, and student-led events. Participation in these activities can create opportunities for social interaction, leadership, communication, and a stronger sense of connection with the institution (Farrell & Brunton, 2020; Tani et al., 2021). Student engagement is shaped not only by classroom experiences but also by the interface between students and the wider university environment, including the opportunities, information, and support made available to them (Kahu & Nelson, 2018). Research also indicates that extracurricular participation and social interaction can contribute to university belonging, especially when students are able to identify suitable activities and form meaningful connections (Thies & Falk, 2023). However, these potential benefits depend partly on whether students can discover relevant activities, understand event details, identify registration requirements, and receive accurate updates.

At Universiti Utara Malaysia (UUM), the academic project that formed the basis of this study was initiated from an observed communication problem: campus event information was commonly circulated through separate WhatsApp or Telegram groups, social media accounts, and physical promotional materials. These channels can support immediate dissemination, but information may become fragmented, repeated, or difficult to retrieve when students need it later. The project did not conduct a preliminary channel audit or attendance study; therefore, fragmentation is treated here as a practical design problem rather than as evidence that the existing channels directly reduce participation. The use of multiple communication channels may nevertheless contribute to information overload and make it more difficult for students to identify relevant campus activities. Organisers may also need to repeat promotional work across several channels. These concerns motivated the development of a dedicated campus platform that could organise essential event information within one structured interface.

Mobile platforms are suitable for this problem because they can organise information around user tasks and provide access at the point of need. Event-based systems commonly use searchable event descriptions, categories, user interests, time, and location to reduce discovery effort (Trinh et al., 2021). Although event-management systems are widely available, a campus platform has requirements that differ from a general commercial event marketplace. University activities may require organiser verification, institutional moderation, campus-specific location information, and links to external registration processes rather than ticket sales. A useful campus solution therefore needs to combine information architecture, multimedia presentation, role-based data management, and clear interaction feedback.

Research Objectives

Based on the research problem, three operational research objectives were established:
RO1: To identify and analyse the system and content requirements for developing a centralised mobile application for campus event promotion.
RO2: To develop a functional cross-platform mobile prototype that centralises campus event information and supports registration-related workflows.
RO3: To evaluate the mobile application for campus event promotion prototype through formative expert review and summative usability testing with target users, focusing on user experience, visual quality, functionality, and perceived usability.

EventBuzz UUM was developed as a centralised mobile prototype connecting two principal user groups: students seeking activities and organisers promoting campus programmes, with an administrative moderation role supporting event approval. Its main functions included event listing and filtering, event details, organiser profiles, event submission, administrative approval, and registration pathways. The next section reviews the relevant literature and related campus systems before presenting the methodology, results, and discussion.

LITERATURE REVIEW

Campus Participation, Engagement, and Belonging

Student engagement in higher education is multidimensional and develops through interactions between personal characteristics, institutional conditions, emotions, self-efficacy, belonging, and opportunities for participation. Kahu and Nelson (2018) describe the educational interface as the space in which student and institutional factors interact and shape engagement. Extracurricular and cocurricular activities can also support social connection. Thies and Falk (2023) found that participation in extracurricular activities and social interactions predicted university belonging among international students. They also highlight the importance of making participation opportunities visible and socially accessible. From this perspective, event communication is not merely an administrative task. It forms part of the institutional environment through which students learn what opportunities are available and decide whether participation is relevant and manageable. Clear information cannot guarantee participation, but it can remove avoidable barriers from the decision process. A campus event application should therefore be considered both as a technical information system and as a communication interface through which students identify an event, understand its details, locate the venue, and determine the next action.

Digital Event Systems and Campus-Specific Requirements

Digital event systems generally support discovery by organising information according to event content, user interests, time, location, and social context. Trinh et al. (2021), for example, developed a content-based event recommendation model that incorporated event characteristics and user-related information, while Abdollahi et al. (2023) showed that language-specific and spatio-temporal context can influence event recommendation. These studies demonstrate the potential value of personalisation, but advanced recommendation requires sufficient interaction data and additional computational complexity. For an early-stage campus prototype, a reliable category feed, keyword search, and filtering system can provide a practical starting point before advanced recommendation is introduced.

Related Campus and Institutional Event Platforms

Recent higher-education studies show that centralised event systems are being developed for different institutional needs. Mohd Akin et al. (2024) developed a mobile application for residential-college event attendance, with functions for registration, attendance, ratings, and attendance history. Syafrizal et al. (2025) described EVENTCIBLE, a USIM campus event mobile application planned around event discovery, booking, and notifications. Ainul Hisham and Mohd Zin (2025) developed a UTHM campus event management system that centralised club and event information and included public event registration, although mobile access was identified as future work. These studies confirm that fragmented or manual event processes are relevant problems in higher education, but their primary emphasis differs from the present study.

Table 1 compares the selected systems with EventBuzz UUM. The comparison is not intended to claim that EventBuzz UUM is technically superior. Instead, it clarifies the practical gap addressed in this study. In the reviewed systems, attention is mainly placed on attendance management, planning, registration, or web-based event administration. EventBuzz UUM combines mobile event discovery and filtering with organiser submission, administrator moderation, registration pathways, and a sequential evaluation in which expert feedback is used before target-user usability testing. This combination provides the basis for the study's campus-specific application and multimedia design contribution.

Table 1

Comparison of Selected Campus Event Systems and EventBuzz UUM

System / Study	Context And Platform	Main Emphasis	Relevance to the Present Study
College Events Attendance Monitoring System (Mohd Akin et al., 2024)	Residential college; mobile application	Registration, event attendance, ratings, attendance history	Shows mobile support for college events; primary emphasis is attendance management rather than event discovery and moderation.
EVENTCIBLE (Syafrizal et al., 2025)	USIM; mobile application	Event discovery, booking, notifications; hybrid planning approach	Provides a recent campus event application example; the published work mainly reports planning and development.
UTHM Campus Event Management System (Ainul Hisham & Mohd Zin, 2025)	UTHM; web-based system	Club information, event registration, stakeholder management	Demonstrates institutional centralisation; mobile access and analytics were proposed as future extensions.
EventBuzz UUM (present study)	UUM; mobile prototype	Discovery, search/filtering, organiser submission, administrator approval, registration pathway	Adds sequential formative expert evaluation and summative target-user usability testing with explicit multimedia interface analysis.

Multimedia Interface Design Principles

EventBuzz UUM was designed as a multimedia interface combining images, text, colour, icons, buttons, and interactive navigation. Two theoretical ideas were used to interpret the design decisions and the expert findings: signalling and perceptual grouping. Mayer's signalling principle proposes that visual or verbal cues can direct attention towards important information and support the selection of relevant material (Mayer, 2024). In an event interface, headings, category cues, status labels, institutional identifiers, and action buttons can act as signals when they help users understand ownership, status, or the next step. Gestalt research explains how proximity, similarity, continuity, and figure-ground organisation influence the way visual elements are perceived as related groups (Wagemans et al., 2012). For EventBuzz UUM, these ideas are relevant to the grouping of image, title, date, location, and action controls within event cards.

The signalling and Gestalt principles were not treated as psychometric constructs in the CSUQ and were not used as formal validated scales. Instead, they served as an interpretive lens for the formative expert findings and for explaining why particular interface revisions were important. Table 2 makes this relationship explicit by linking the multimedia principles to the design elements examined during the expert walkthroughs. This distinction is important because the study evaluates perceived usability with the CSUQ, while multimedia theory is used to interpret specific design evidence rather than to claim direct measurement of signalling or Gestalt perception.

Table 2

Multimedia Design Principles and Their Use in the Formative Evaluation

Principle	EventBuzz UUM design elements	Formative evaluation focus
Signalling (Mayer, 2024)	Headings, category cues, approval labels, university identity, visible action buttons	Clarity of important cues, consistency of approval status, visibility of next actions, and institutional identification.
Perceptual grouping / proximity (Wagemans et al., 2012)	Event cards containing image, title, date, location, description, and actions	Grouping, spacing, visual hierarchy, consistency across cards, and layout behaviour when content length changes.

Usability and Complementary Evaluation Methods

Recent mobile-application research emphasises that usability involves more than visual attractiveness. Huang and Benyoucef (2023) conceptualise mobile application usability through a hierarchical approach linking broad usability principles with measurable attributes and interface features. Weichbroth (2024) also highlights task-based usability testing in laboratory and field settings because direct interaction with an application can reveal difficulties associated with particular tasks. In a university context, Tileng et al. (2023) applied a cognitive walkthrough to evaluate scenario-based tasks in a student mobile application, including task success, errors, and completion time. These studies support the use of task-based evaluation for identifying navigation and interaction problems before wider implementation.

Expert review and target-user testing provide different forms of evidence. Ab Salam et al. (2024) used five experts to evaluate the content, design, and functionality of a gamified mobile learning application, while Adams et al. (2023) emphasise that expert inspection can complement, but should not replace, evaluation with end users. Fitria (2024) similarly demonstrates how inspection and cognitive-walkthrough methods can identify different usability concerns. A broader systematic review by Maqbool and Herold (2024) also shows that usability studies commonly combine inquiry, testing, and inspection methods. EventBuzz UUM followed this complementary logic by using expert walkthroughs to identify formative problems and then collecting perceived-usability ratings and openended feedback from target users for summative evaluation.

For the summative stage, the Computer System Usability Questionnaire (CSUQ) provided a structured multidimensional measure of perceived usability. Lewis (1995) developed the IBM usability satisfaction questionnaires, and later work continued to support the CSUQ as a measure covering system usefulness, information quality, interface quality, and overall satisfaction (Lewis, 2018). In this study, the 19-item version was adapted to a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree), so higher scores represented more favourable evaluations.

METHODOLOGY

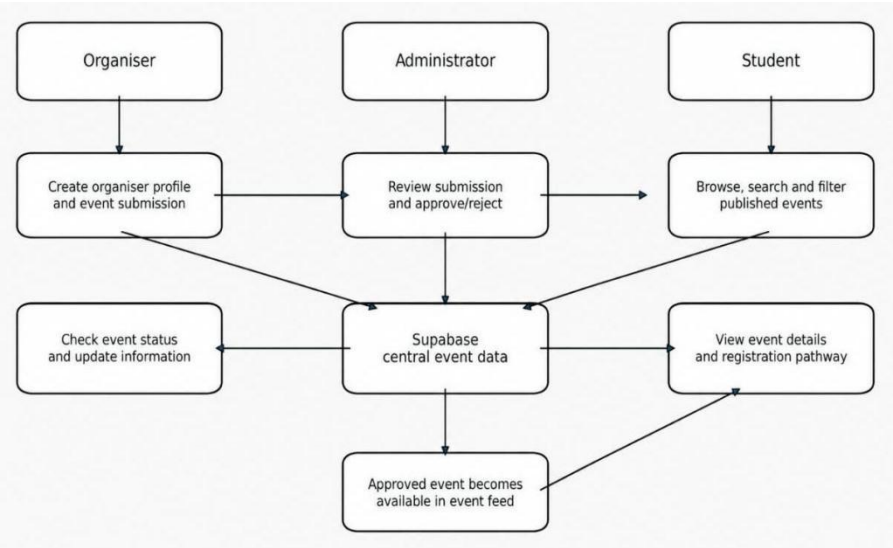
Research Design

The study used a sequential design-and-evaluation approach. The first stage was a qualitative formative evaluation of an 80 per cent complete high-fidelity prototype. The second stage was a summative usability evaluation with target users after the development had considered the formative findings. This sequence was appropriate because the formative stage was intended to diagnose specific interface and system problems while changes were still possible, whereas the summative stage documented how the later prototype was perceived by its target users. However, the study did not test causal effects on event attendance, academic outcomes, organiser workload, or long-term adoption.

Prototype Development

EventBuzz UUM was developed as a cross-platform mobile prototype using FlutterFlow for interface construction and application logic and Supabase for the cloud database. The prototype served students, organisers, and administrators. Student functions included browsing event cards, viewing event details, searching or filtering activities, and accessing a registration pathway. Organiser functions included profile creation, entering event information, uploading promotional material, and checking approval status. Administrative functions supported the review and approval of submitted events. The interface used university-related colours, event images, category cues, and card-based presentation to organise content. Requirements were translated into wireframes, database entities, screen flows, and role-based functions. The prototype was sufficiently complete for experts to test the central logic but remained open to changes before the final user evaluation.

Figure 1 summarises the role-based workflow for EventBuzz UUM mobile application. Organisers submit event information, administrators review the submission, approved information becomes available to students through the event feed, and students can proceed from event details to the available registration pathway. Figure 2 presents representative screenshots of the EventBuzz UUM prototype, including the login page, student event feed, event details page, event-creation form, and organiser status dashboard. These screens illustrate how the role-based functions, institutional identity, event information, registration pathway, and organiser workflow were implemented in the prototype.



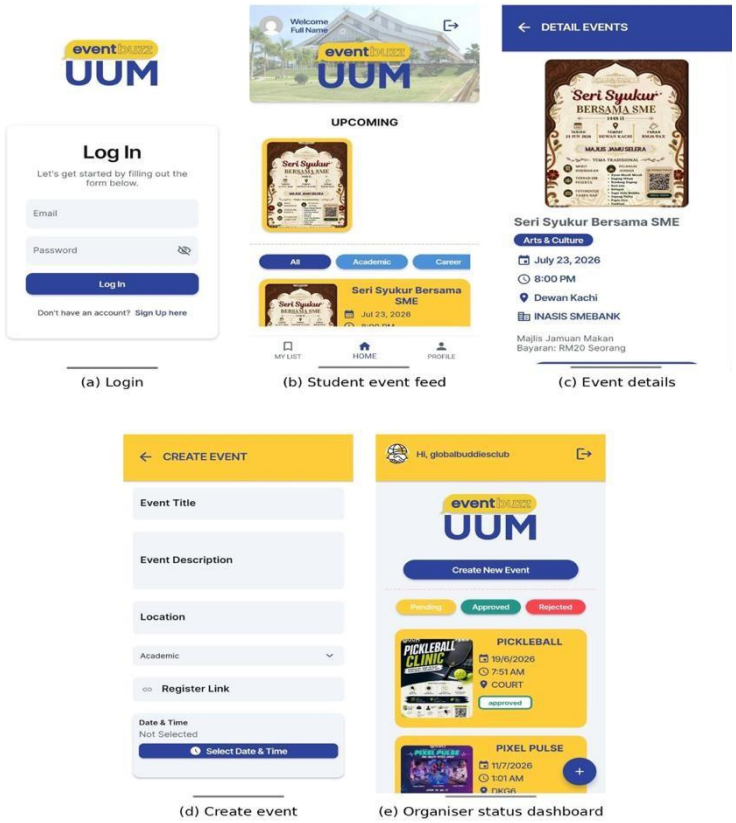


Figure 1. *Role-Based Event Workflow for EventBuzz UUM*

Figure 2. *Schematic Representation of Key EventBuzz UUM Screen*

Formative Evaluation

Three experts were purposively selected. Expert A was a subject-matter expert with an academic and research background in information technology and examined system logic, organiser validation, event submission rules, and alignment with university needs. Expert B was a multimedia expert who examined typography, layout, colour, input-field presentation, and transitions between screens. Expert C was an interactive media expert who focused on visual consistency, system feedback, navigation, user control, and the relationship between database states and interface messages. The use of different expert roles allowed both technical-content logic and multimedia interaction to be considered.

The formative evaluation combined cognitive walkthroughs with semi-structured interviews. The experts received a briefing about the evaluation purpose and provided informed consent as recorded in the project report. They then completed task scenarios rather than exploring the interface randomly. The tasks included registering as an organiser, completing an event-creation form, checking an event's pending or approved status, moving between primary and secondary pages, and examining the event details and registration pathway. Actions, hesitations, and comments were observed during the walkthrough. Semi-structured interviews were conducted immediately after task completion and covered visual presentation, typography, branding, navigation, feedback messages, content completeness, database behaviour, and suggested improvements.

Then, observation and interview feedback were separated into individual usability or design issues. Each issue was then grouped under one of three broad dimensions: visual design and interface

consistency, system feedback and user control, or system architecture and content logic. Feedback from the three expert roles was compared to identify recurring concerns and issues that could directly affect task completion or interpretation of system status. These results are presented as structured expert feedback rather than as a standalone interpretive qualitative study. The resulting issues were translated into development actions for the later prototype that include strengthening input-field boundaries, revising the hierarchy of event cards, displaying clearer university identity, synchronising approval text and colour, improving responsive layout, adding visible back controls, replacing freetext date and time fields with structured pickers, clarifying registration actions, and considering links between the mobile application and public university communication channels. However, not every advanced feature suggested by experts or users was implemented during the study, such as interactive mapping or automated reminders. The summative evaluation therefore assessed a later prototype rather than the same version reviewed by the experts.

Summative Evaluation

Thirty members of the UUM campus community participated in the summative evaluation. Nineteen participants were students acting primarily as event attendees, representing 63.3 per cent of the sample. Eleven participants were organisers or committee members of campus clubs or societies, representing 36.7 per cent. The sample was purposive and relatively small, so it supports descriptive evaluation of the prototype rather than statistical generalisation to the whole university population. Participants received a brief introduction to the purpose of EventBuzz UUM without detailed instruction on individual interface elements. Student tasks involved locating an event through browsing or filtering, opening its details, and proceeding through the registration pathway. Organiser tasks involved preparing event text and promotional material, creating an event entry, and submitting it through the system. The event-discovery task was designed around a short completion window to examine rapid learnability, although complete task-time records were not available for analysis. Immediately after the tasks, participants completed an online questionnaire through Google Forms. Responses were collected anonymously, and two open-ended items were asked to the participants to describe the most negative and most positive aspects of the prototype.

The summative instrument was adapted from the 19-item CSUQ (Lewis, 1995). Items 1 to 8 measured system usefulness, including ease of use, task completion, efficiency, comfort, learnability, and perceived productivity. Items 9 to 15 measured information quality, including message clarity, help and error information, content organisation, and ease of finding needed information. Items 16 to 18 measured interface quality, including visual pleasantness, satisfaction with the interface, and expected capabilities. Item 19 assessed overall satisfaction. The project adapted the response direction to range from 1 (strongly disagree) to 7 (strongly agree), with a not-applicable option; higher scores therefore represented more favourable perceived usability. Table 3 summarises the instrument structure.

Table 3

Structure of the Adapted CSUQ Instrument

Dimension	Items	Primary focus	Interpretive direction
System usefulness	1–8	Ease of use, task completion, efficiency, comfort, learnability, and productivity	Higher mean = more favourable
Information quality	9–15	Message clarity, help, error guidance, content organisation, and findability	Higher mean = more favourable
Dimension	**Items**	**Primary focus**	**Interpretive direction**

Interface quality	16–18	Visual pleasantness, interface satisfaction, and expected capabilities	Higher mean = more favourable
Overall satisfaction	19	General satisfaction with the application	Higher mean = more favourable

Following the summative evaluation, mean scores were calculated for the three CSUQ dimensions—System Usefulness, Information Quality, and Interface Quality—as well as for overall usability satisfaction. These scores were interpreted descriptively, and no statistical significance, group differences, or causal relationships were made. Open-ended responses were reviewed and organised into recurring descriptive themes, including navigation simplicity, search and filtering efficiency, visual design, image-loading delay, error-message clarity, campus mapping, and reminders. These themes were compared with the earlier expert findings to identify repeated design priorities for further system and interface refinement.

RESULTS

The results are organised to show how the study evidence relates to the three research objectives. RO1 and RO2 concern design and development outputs, while RO3 concerns the empirical evaluation of the prototype. Table 4 summarises this alignment. The detailed empirical results that follow focus mainly on RO3, because the first two objectives are demonstrated through the documented requirements and the completed prototype used in both evaluation stages.

Table 4

Alignment of Research Objectives with Study Evidence

Research objective	Evidence in the study
RO1: Identify and analyse system and content requirements	Requirements were represented through centralised event listing, search/filtering, organiser profiles, event submission, administrative approval, and registration pathways.
RO2: Develop a functional crossplatform prototype	A working FlutterFlow–Supabase prototype was produced and used during both expert and target-user evaluation sessions.
RO3: Evaluate user experience, visual quality, functionality, and perceived usability	Three experts completed cognitive walkthroughs and interviews; 30 target users completed practical tasks, the adapted CSUQ, and open-ended feedback.

Formative Evaluation Findings

The expert feedback was grouped into three themes. The first concerned visual design and interface consistency. The use of a clean sans serif font was considered suitable for digital reading, but Expert B found that the event containers appeared too similar and that some form fields were visually plain. Stronger image hierarchy, clearer text separation, and cleaner input-field boundaries were recommended. Expert C also noted that the application did not clearly communicate its connection with the university. Displaying the official university identity more clearly on main pages and headers was therefore recommended as a meaningful institutional cue rather than as decoration alone.

The second theme concerned system feedback and user control. A major issue occurred on the organiser dashboard when an event status changed from “Pending” to “Approved” in the Supabase database. The status container changed to green, but the text still displayed “Pending”, producing contradictory feedback. The experts recommended that colour and text be updated from the same system state. They also recommended replacing free-text date and time entry with calendar and timepicker controls. An overflow problem could hide important buttons when an event was added to a

personal agenda, while some secondary pages lacked clear back controls. These issues affected navigation, error prevention, and the user's ability to understand what the system had done.

The third theme concerned system architecture and content logic. The event details page presented core information clearly but did not provide a direct registration action. Because EventBuzz UUM was mainly designed as an information directory rather than a full transaction system, Expert A suggested allowing organisers to provide an external registration link, such as a Google Form. Public findability was also raised because event information was mainly available through the mobile application. Connecting the platform with the university web environment was suggested as a future way to increase discoverability. Table 5 summarises the formative findings and the related improvement directions.

Table 5

Summary of Formative Evaluation Findings

Theme	Key findings	Recommended improvements
Visual design and interface consistency	Readable typography, but repetitive event-card structure, plain input fields, and weak institutional identity.	Improve image/text hierarchy, input-field boundaries, flexible card layout, and university identity cues.
System feedback and user control	Approval colour and text were inconsistent; free-text date/time entry, layout overflow, and unclear back navigation were identified.	Synchronise status feedback, use date/time pickers, improve responsive layout, and provide clear navigation controls.
System architecture and content logic	Event details lacked a direct registration action and the mobile-only approach limited public findability.	Provide a clear registration pathway and consider links with wider university communication channels.

Summative Evaluation Findings

The summative evaluation involved 30 participants: 19 students evaluated event discovery, filtering, details, and registration, while 11 organisers or committee members evaluated event creation, media upload, form submission, and approval-related functions. As shown in Table 6, system usefulness received the highest reported mean score at 6.05 out of 7.00. The evaluation result also recorded a learnability item mean of 6.43, and 96.7 per cent of participants selected the highest agreement category for the statement that the application was easy to learn. Information quality received a mean of 5.79, interface quality 5.67, and overall usability satisfaction 5.90. Because higher values represented stronger agreement on the adapted scale, the pattern indicates generally favourable perceived usability across the reported dimensions.

Table 6

CSUQ Mean Scores for EventBuzz UUM Usability

Usability dimension	Items	Mean (1–7)	Descriptive interpretation
System usefulness	1–8	6.05	Favourable
Information quality	9–15	5.79	Favourable
Interface quality	16–18	5.67	Favourable
Usability dimension	**Items**	**Mean (1–7)**	**Descriptive interpretation**
Overall usability satisfaction	Overall	5.90	Favourable

The pattern across dimensions is more informative than the overall score alone. Participants rated system usefulness more favourably than information and interface quality. Among others, within information quality, the lowest reported item was related to the clarity of instructions when errors

occurred, with a mean of 4.86 out of 7.00. This finding is consistent with the formative observation that system states and validation messages could become unclear. The interface-quality mean remained favourable, although some participants reported image-loading delay under weaker campus network conditions. However, the data do not separate network latency from application processing time, thus this issue should be interpreted cautiously.

Meanwhile, open-ended feedback produced two broad descriptive themes. Eleven of the 30 participants (36.7 per cent) left the negative-feedback item blank or provided a neutral response. Other participants mentioned delayed image loading, unclear error messages after unsuccessful uploads, the absence of an integrated campus map, and the need for an event reminder. Positive comments focused on navigation simplicity, search and filtering, speed during normal interaction, and a clean interface. Search and filtering were repeatedly valued for helping participants locate particular event categories. These comments support the favourable system-usefulness pattern but do not establish that the application increased actual attendance or participation. Figure 4 visualises the reported subscale and overall means.

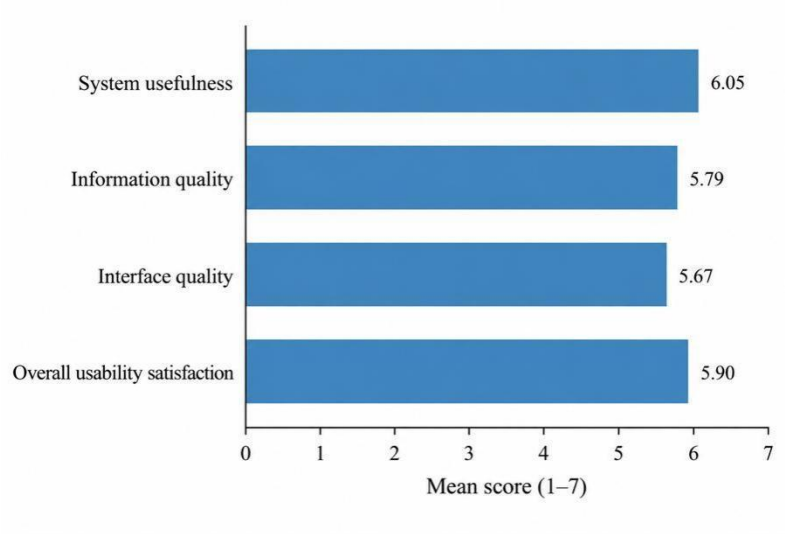


Figure 4. *CSUQ Mean Scores for EventBuzz UUM*

DISCUSSION

The study positions EventBuzz UUM as a campus-specific multimedia communication artefact rather than as a general commercial event application. Its contribution does not come from inventing event listing, registration, or mobile filtering. Similar functions are already present in recent highereducation event systems (Ainul Hisham & Mohd Zin, 2025; Mohd Akin et al., 2024; Syafrizal et al., 2025). The practical contribution lies in combining these familiar functions with a UUM-specific organiser workflow, administrator moderation, campus event discovery, and a two-stage evaluation that links formative multimedia design feedback with target-user usability evidence.

The sequential evaluation strategy was an important phase of the study. Cognitive walkthroughs are useful for examining learnability and action selection (Mahatody et al., 2010), and recent work continues to show the value of combining inspection and user-based methods rather than treating either as sufficient on its own (Adams et al., 2023; Maqbool & Herold, 202 4).Ab Salam et al. (2024) demonstrated how expert review can identify design, content, and functional improvements in a multimedia mobile application. EventBuzz UUM extends this logic by using expert findings as formative input before a separate target-user evaluation. The expert stage revealed problems such as contradictory status feedback and missing navigation controls that may not be fully represented by an

overall questionnaire score, while the CSUQ and open-ended responses showed how the later prototype was perceived during realistic tasks.

The summative pattern suggests that participants perceived the central workflow as useful and relatively easy to learn. The system-usefulness mean of 6.05 and the reported learnability item mean of 6.43 support this interpretation, but they should not be treated as proof of system effectiveness. Lewis (2018) describes the CSUQ as a perceived usability measure, and should be understood through several dimensions rather than through a single overall score. Although the overall mean of 5.79 remained favourable, the lowest individual item concerned the clarity of instructions provided when errors occurred, with a mean score of 4.86. This suggests that the application worked better during normal task completion than during situations where users required support or recovery from an error. The finding is also consistent with the earlier formative evaluation, where experts identified inconsistent system feedback, such as an approval status changing colour while the text still displayed "Pending." This repeated concern across both expert and user evaluations indicates that system feedback should be treated as an important design priority.

The multimedia findings can be interpreted more directly through the design principles introduced earlier. The approval-status problem is a signalling problem because the colour cue and the word "Pending" communicated incompatible meanings. A useful signal should reduce ambiguity, not create it (Mayer, 2024). Similarly, the expert concern about repetitive event cards reflects the difference between consistency and visual hierarchy. Gestalt principles support grouping related information through proximity and predictable structure, but they do not require every card to be visually rigid (Wagemans et al., 2012). Event image, title, date, location, and registration action should remain grouped and easy to scan while the internal layout responds to different content lengths. Institutional branding can also act as a meaningful cue when it helps users recognise that the platform is connected with the university, provided that the branding does not compete with task information.

The suggested map and reminder features should be considered future enhancements rather than evidence that the existing prototype failed in its core purpose. A campus map could reduce uncertainty when students know the event but are unfamiliar with a specific venue. An automated reminder could support time management for registered users, but notifications should remain relevant and controllable because excessive interruption may affect engagement and self-regulation (Mumcu & Çebi, 2025). The present study did not compare EventBuzz UUM directly with WhatsApp, Telegram, commercial event platforms, or existing UUM channels under controlled conditions. It also did not measure actual event attendance, organiser workload, missed deadlines, or long-term retention. The findings therefore support perceived usability and design refinement, not a causal claim that EventBuzz UUM increases participation.

From a sustainability perspective, the platform offers a reusable digital communication structure rather than a one-off promotional campaign. A central database allows event information to be structured once and presented consistently across user roles, which may reduce repeated manual formatting and fragmented records. Sustainability is used here in the sense of continuity and maintainability of institutional communication rather than as an environmental outcome. Long-term value will depend on governance, responsibility for content, technical maintenance, accessibility, and integration with existing university systems. Before advanced functions are added, the most immediate development priority is to ensure that every core action produces accurate, visible, and recoverable feedback. This priority is supported by both the expert findings and the target-user comments.

LIMITATIONS AND RECOMMENDATIONS

Several limitations should guide interpretation. First, the summative sample contained only 30 participants from one university and was selected to represent the two main user roles. The results are therefore descriptive and cannot be generalised statistically to all UUM students, organisers, or other institutions. Second, participants interacted with a developmental prototype over a short period rather than using a deployed application across a semester. The study measured immediate perceptions after assigned tasks, not continued use. Third, network conditions affected image loading for some participants, making it difficult to separate interface performance from connectivity. Finally, the study relied mainly on self-reported perceptions and expert observations. Objective task completion rates, actual completion times, error counts, and backend logs were not available.

Future research should therefore follow several actionable directions. First, the application should be evaluated with a larger and more diverse sample across faculties and, where possible, across universities to improve the representativeness of the findings and allow stronger generalisation. Second, a longitudinal deployment should examine continued use over a semester and measure outcomes such as event discovery, registration completion, attendance, organiser workload, and missed-event rates rather than relying only on immediate perceptions. Third, future evaluations should be conducted under more controlled or documented network conditions so that usability issues related to the interface can be distinguished from those caused by internet connectivity or system performance. Finally, future studies should complement self-reported perceptions and expert observations with objective usability measures, such as task completion rates, completion time, error frequency, interaction logs, and backend analytics. Combining subjective and objective measures would provide a more comprehensive assessment of the application's usability and effectiveness.

CONCLUSION

This study designed and evaluated EventBuzz UUM, a centralised mobile prototype for campus event communication at Universiti Utara Malaysia. The evaluation combined a formative expert stage with a summative target-user stage. Three experts first identified issues involving visual hierarchy, institutional identity, status synchronisation, navigation, registration pathways, and content discoverability. A later evaluation with 30 target users produced favourable mean scores for system usefulness (6.05), information quality (5.79), interface quality (5.67), and overall usability satisfaction (5.90) on the adapted seven-point scale. Participants particularly valued navigation, search and filtering, and a clean interface, while both experts and users identified clearer feedback and error recovery as priorities for improvement. The study therefore contributes a documented example of how a campus-specific event platform can be developed and evaluated through a sequential multimedia design process that combines expert diagnosis with target-user usability ratings. However, EventBuzz UUM should not yet be described as proven to increase student participation or ready for unrestricted institutional deployment. The current evidence supports favourable perceived usability and identifies a clear refinement agenda. Future work should strengthen feedback and validation, incorporate location and reminder support, evaluate accessibility and governance, and test the platform at a larger scale using both subjective and objective measures.

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AUTHOR CONTRIBUTIONS

All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by all authors.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

Informed consent was obtained from all individual participants included in the study.

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