EC Link: A Digital Platform for Enhancing Student Concern Management in Higher Education

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ABSTRACT

Higher education institutions require efficient mechanisms for collecting and responding to stakeholder concerns to improve service quality and institutional accountability. However, many universities lack real-time and systematic feedback systems that enable timely reporting and resolution of service-related issues. This study aimed to develop and evaluate EC Link, a digital platform designed to enhance student concern management and improve the responsiveness of university support services through real-time feedback and monitoring. A Participatory Action Research (PAR) approach was employed following the Plan–Act–Observe–Reflect–Replan cycle. EC Link was developed using Google Forms, Google Sheets, and QR code technology to facilitate real-time reporting of concerns by students, teaching personnel, and non-teaching staff. A stratified random sample of 337 participants evaluated the system's usability. Data were collected through a researcher-developed survey instrument with high internal consistency (Cronbach's $\alpha = 0.905$) and analyzed using descriptive statistics, including frequency, mean, and standard deviation. Findings indicated that EC Link was positively evaluated across all stakeholder groups. Participants rated the system as Fairly Satisfactory to Very Satisfactory in terms of accessibility, ease of navigation, interface clarity, and functionality. Teaching and non-teaching personnel reported particularly high satisfaction levels, while students demonstrated favorable but more varied responses. Areas requiring improvement included system responsiveness and acknowledgment of submitted concerns. User feedback informed several enhancements, including improved accessibility, system reliability, and automated confirmation notifications. EC Link demonstrates the potential of low-cost digital technologies to strengthen transparency, stakeholder engagement, and service responsiveness in higher education. The platform provides an effective mechanism for real-time concern management and supports continuous improvement initiatives. Future work should focus on scalability, advanced analytics, and integration with institutional information systems to further enhance service delivery.

Keywords: Real-time feedback, University service delivery, Participatory Action Research (PAR), Digital reporting system, Stakeholder engagement

INTRODUCTION

Efficient and responsive services are essential to the smooth operation of any university. These services ranging from physical plant and facilities to health and security directly influence the overall educational experience, health, safety, and satisfaction of stakeholders. However, many institutions face challenges in monitoring the quality and timeliness of these services due to the lack of real-time, systematic feedback from stakeholders (Ali et al., 2021).

To address these gaps, this action research introduces EC Link, a University Real-Time Concern Monitoring System designed to enhance the delivery and management of general services across the University. Real-time feedback mechanisms, especially those leveraging mobile technologies have been shown to significantly improve responsiveness and institutional transparency (Rao et al., 2020; Jiang & Li, 2023).

By applying an action research framework, this study implemented the system in a pilot phase, gathered and analyzed feedback data, and assessed its usability in improving service responsiveness. Furthermore, it aimed to

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cultivate a culture of transparency, shared accountability, and continuous improvement in university service delivery.

This project ultimately supports the University's broader goals for Organizational Excellence and stakeholder satisfaction by integrating technology, feedback culture, and service management into one cohesive monitoring strategy.

METHODOLOGY

This study adopted a Participatory Action Research (PAR) design, which is increasingly utilized for service delivery improvements in higher education (Carvalho & Brito, 2021). The iterative Plan–Act–Observe–Reflect–Replan cycle aligns with institutional quality assurance goals, making it suitable for evaluating technology-driven interventions like EC Link (Fernández & Torres, 2020).

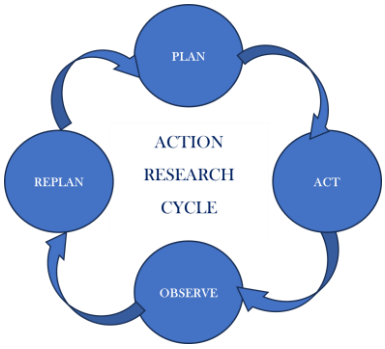

Figure 1. Action Plan Research Cycle

Development and Implementation of the EC Link used a digital reporting tool, called Google Forms and QR Code. Digital tools such as Google Forms and QR codes have become effective, low-cost methods for engaging stakeholders and collecting feedback (Zhou et al., 2022). The interface is designed with simplicity which is accessible via QR codes and campus Wi-Fi. Posters and awareness materials were distributed and posted to promote use. After two weeks of implementation, survey questions are distributed to the participants to evaluate the usability of the developed system.

Survey question is designed for this study and validated using Cronbach Alpha which has a value of .905, Cronbach Alpha score of 0.905 indicates strong internal consistency in survey measures, meeting standards for usability research (Nguyen & Du, 2020), this suggests that the items on the scale are highly correlated and consistently measuring the same concept. The following scale is used in the study:

Scale	**Verbal Interpretation**
1.00 – 1.49	Very Unsatisfactory
1.50 – 2.49	Unsatisfactory
2.50 – 3.49	Satisfactory
3.50 – 4.49	Fairly Satisfactory
4.50 – 5.00	Very Satisfactory

Table 1. Likert Scale

The survey is designed and floated using Google Forms, responses are collected and subjected for data analysis. Descriptive statistics, frequency, mean, and standard deviation are used to analyze quantitative data.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

Participants who are part of the University during the second semester of school year 2024 – 2025 were included in the study. These are a diverse group of stakeholders like, students from various departments and year levels, faculty and academic staff, and non-teaching personnel. Since the population of the participants is not equal, stratified random sampling is used. This method was used because the population was divided into categories or strata, such as students, academic or teaching staff, and non-teaching staff, with different numbers of populations. Stratified random sampling aided to get the proportion to its size or enrolment. With this technique, the error of getting too many or too few samples were avoided. The foregoing table summarizes the population and sample size of the participants.

Strata	Population	Percentage	Sample Size
Student	2,507	93%	312
Teaching Staff	144	5%	18
Non-Teaching Staff	57	2%	7
Total	2,708	100%	337

Table 2. Participants' Population and Sample Size

RESULTS AND DISCUSSION

The study used a Participatory Action Research (PAR) design. Phase 1 which is Plan stage, includes identification of service issues and design of the EC Link. Researchers identified the problem as the lack of real-time and systematic feedback from stakeholders. Because of this issue, a feedback system is designed to gather feedback from stakeholders and provide immediate response on the issues. The system is designed using Google Form and linked to QR code. The design is simple to provide ease of use to the intended users. Mobile phones can be used to scan the QR code and access the system. Further, the system responded quickly without errors or delays and that users received acknowledgment or follow-up after submitting feedback. To ensure the legitimacy of the users, only email addresses under the domain name of the University will be accepted.

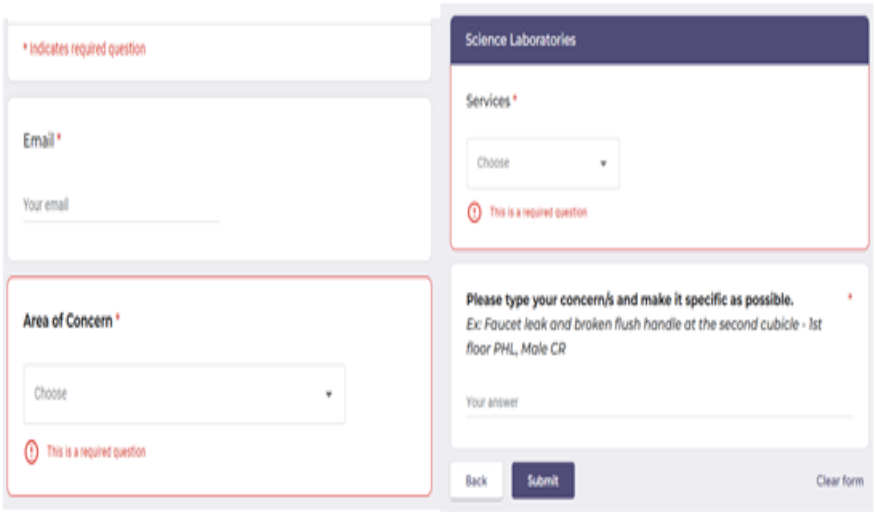

Figure 1. Sample Screenshot of EC Link

The next phase of the research is the Act stage, where launch and promotion of the system took place. QR Codes were posted strategically in the University to ensure visibility. A video tutorial and infographics on how to use the system step by step were also disseminated via email blasts and group chats of the stakeholders.

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Figure 2. Sample QR Codes Posted in Strategic Location

Figure 3. Email Sent to the Community

Figure 4. Video Tutorial Shared to the Community

The third phase is observed, where collection and monitoring of feedback and responses were executed. Designed survey questions were floated via Google forms and data were collected and analyzed. The foregoing table summarizes the responses of the participants.

	Student		
Evaluation	**Mean**	**Std. Deviation**	**Verbal Interpretation**
The system was easy to access.	3.9231	1.00185	Fairly Satisfactory
The interface was clear and easy to navigate.	4.0321	.98163	Fairly Satisfactory
It was easy to submit feedback or report a concern.	4.0288	1.02185	Fairly Satisfactory
The categories of services were clearly defined.	4.0449	.98766	Fairly Satisfactory
The instructions were easy to understand.	4.1603	.85995	Fairly Satisfactory
I felt confident using the system without additional help.	3.9103	.98132	Fairly Satisfactory
The system responded quickly without errors or delays.	3.7244	1.11738	Fairly Satisfactory
I received acknowledgement or follow-up after submitting feedback.	3.7917	1.03237	Fairly Satisfactory
Overall	**3.95195**	**0.998001**	**Fairly Satisfactory**

Table 3. Evaluation Result for Student

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The evaluation employed a structured feedback collection approach using Google Forms during the "observe" phase, representing a systematic effort to gather quantitative user experience data. Table 3 shows the evaluation result from the students, their responses reveal a generally positive but measured assessment of the system. The satisfactory to very satisfactory ratings across all stakeholder groups are consistent with recent studies showing that user-centered system design enhances stakeholder engagement and satisfaction in campus service platforms (Bashir et al., 2021). This variation likely reflects diverse technological competencies, usage patterns, and expectations among students.

Evaluation	Teaching Staff		
	Mean	Std. Deviation	Verbal Interpretation
The system was easy to access.	4.6667	.48507	Very Satisfactory
The interface was clear and easy to navigate.	5.0000	.00000	Very Satisfactory
It was easy to submit feedback or report a concern.	4.6667	.48507	Very Satisfactory
The categories of services were clearly defined.	5.0000	.00000	Very Satisfactory
The instructions were easy to understand.	5.0000	.00000	Very Satisfactory
I felt confident using the system without additional help.	4.6667	.48507	Very Satisfactory
The system responded quickly without errors or delays.	4.3333	.48507	Fairly Satisfactory
I received acknowledgement or follow-up after submitting feedback.	3.6667	.48507	Fairly Satisfactory
Overall	**4.625013**	**0.303169**	**Very Satisfactory**

Table 4. Evaluation Result for Teaching Staff

Teaching staff demonstrated remarkably high satisfaction levels, with multiple perfect 5.0 scores and extremely low standard deviations (0.00-0.49). This consensus suggests the system aligns well with faculty workflow requirements and teaching staff appreciate the system's design for their specific use cases.

	Non-Teaching Staff		
Evaluation	**Mean**	**Std. Deviation**	**Verbal Interpretation**
The system was easy to access.	5.0000	.00000	Very Satisfactory
The interface was clear and easy to navigate.	5.0000	.00000	Very Satisfactory
It was easy to submit feedback or report a concern.	5.0000	.00000	Very Satisfactory
The categories of services were clearly defined.	5.0000	.00000	Very Satisfactory
The instructions were easy to understand.	5.0000	.00000	Very Satisfactory
I felt confident using the system without additional help.	5.0000	.00000	Very Satisfactory
The system responded quickly without errors or delays.	4.5714	1.13389	Very Satisfactory
I received acknowledgement or follow-up after submitting feedback.	4.1429	1.46385	Fairly Satisfactory
Overall	**4.625013**	**0.303169**	**Very Satisfactory**

Table 5. Evaluation Result for Non-Teaching Staff

Despite the smaller sample size, non-teaching staff showed unanimous satisfaction across most criteria. Their perfect 5.0 scores on usability metrics suggest the system effectively serves its functions and aligns with the non-teaching staff's needs.

	Summary of Evaluation		
Evaluation	**Mean**	**Std. Deviation**	**Verbal Interpretation**
The system was easy to access.	3.9852	.99541	Fairly Satisfactory
The interface was clear and easy to navigate.	4.1039	.97798	Fairly Satisfactory
It was easy to submit feedback or report a concern.	4.0831	1.00841	Fairly Satisfactory
The categories of services were clearly defined.	4.1157	.98272	Fairly Satisfactory
The instructions were easy to understand.	4.2226	.85619	Fairly Satisfactory
I felt confident using the system without additional help.	3.9733	.97706	Fairly Satisfactory
The system responded quickly without errors or delays.	3.7745	1.10580	Fairly Satisfactory
I received acknowledgement or follow-up after submitting feedback.	3.7923	1.01983	Fairly Satisfactory
Overall	**4.006325**	**0.990425**	**Fairly Satisfactory**

Table 6. Summary of Evaluation Result

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XIII Issue VI June 2026

Table 6 summarizes the evaluation from the three groups of users, accessibility and navigation, consistently scoring high scores for system access (3.92-5.00) and interface navigation (4.03-5.00), this indicates successful implementation of user-centered design principles. The low standard deviations suggest these elements work well across different user types and technical skill levels. The strong performance in service categorization (4.04-5.00) and instruction clarity (4.16-5.00) demonstrates effective information architecture. This suggests the researchers successfully anticipated user mental models and organized content accordingly. Notably, system responsiveness and acknowledgment of feedback were rated slightly lower, mirroring trends in digital service adoption challenges identified in campus-based reporting systems (Zhang & Chen, 2022). Response times and error handling represent the most significant improvement areas across all user groups.

The last phase is replan, where refinement of the system and processes for long-term integration were observed. Based on the feedback gathered in the survey, questions, suggestions, comments, and recommendations were collected. These served as the basis for the researchers in the enhancement of the developed system. Table 6 summarizes the said feedback from the participants.

Summary of Feedback
Nothing much, it is still usable and that's what matters.
EC Link was not accessible
Kindly do please improve the system to be better... Thank you.
It's okay for now, but there's definitely room for improvement.
Some features aren't working properly, but overall it's still functional.
Had trouble accessing some parts of the system, please check.
The system works, but it could be more user-friendly.
Appreciate the effort, but I hope future updates will address the issues.
Loading was slow at times, but I managed to complete the task.
No major issues, but smoother navigation would be great.
Thank you. Just please ensure all links and pages are accessible next time.
Usable, but a bit frustrating due to technical glitches.
Hope improvements are on the way. It's functional but needs enhancements.

Table 7. Summary of Feedback

Table 7 summarizes feedback of users who demonstrated commitment to the system while clearly articulating improvement needs. Their balanced perspective and acknowledging functionality while requesting enhancements, provides a roadmap for development priorities that could significantly improve user satisfaction and system adoption. These help the researchers to identify the possible improvement of the system to ensure long-term success and user satisfaction.

Improvement in this system is integrated based on the suggestions of the users including the following:

1. The system link has been distributed to all users via their registered email accounts.
2. The link has been restructured to ensure all pages load and function correctly.
3. The system was redesigned with accessibility in mind, ensuring ease of access for all users.
4. Activating the email response receipt feature in Google Forms to confirm submission is integrated. Zhou et al., 2022 study mentioned the importance of automated feedback in increasing user confidence and strengthening communication between users and administrators.

CONCLUSION

The following conclusions were drawn from the study.

1. The implementation of the system is driven by the goal of fostering a culture of transparency, shared accountability, and continuous improvement in the University's service delivery. By integrating

technology, feedback mechanisms, and service management into a unified monitoring strategy, this project directly supports the University's broader commitment to Organizational Excellence and stakeholder satisfaction.

2. The evaluation results from students, teaching staff, and non-teaching staff indicate a generally positive evaluation of the system. All participant groups evaluated Fairly Satisfactory or Very Satisfactory that the system was accessible, user-friendly, and functionally clear. The teaching and non-teaching staff expressed a high level of satisfaction, with consistent responses of "Very Satisfactory" across most criteria. Students also responded favorably, though with slightly more variability in their ratings, especially in areas such as system responsiveness and receiving follow-up after submitting feedback. Overall, the system is deemed satisfactory and effective in its current form. However, feedback suggests that improvements can be made, particularly in enhancing system responsiveness and ensuring consistent acknowledgment or follow-up to user concerns.

3. Feedback suggestions were systematically collected, organized, and analyzed. The insights gathered from this process were used as the foundation for enhancing the system's functionality, interface, and overall user experience. These improvements aimed to address specific concerns raised by users and ensure the system better meets their needs.

RECOMMENDATIONS

Based on the conclusions of the study, the following recommendations were hereby forwarded.

1. Ensure Reliable Access via QR Code By regularly testing the QR code to confirm that it links to an active and functioning Google Form. In the study of Pereira et al., 2021, it highlighted that inaccessible links can disrupt user engagement and limit feedback collection, therefore ensuring reliable access to the system link is recommended.

2. Review and Improve the Form Based on Feedback Another recommendation is the periodic evaluation of the system to reflect user suggestions and changing needs. Moreover, Nguyen & Du, 2020, mentioned that adaptive forms improve response quality and user satisfaction, therefore periodic evaluation is highly recommended.

3. Plan for Future System Scalability and Integration As user engagement grows, recommendations for upgrade to a more robust feedback and monitoring platform that supports data integration, analytics, and scalability. Scalable systems allow organizations to manage larger volumes of feedback efficiently and adapt to changing institutional needs (Patel & Bansal, 2021).

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