

# Mobile-Based Feedback System for Undergraduates, Academic and Administrative Staff of Higher Education Institutes in Sri Lanka

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**Abstract** - Student feedback is one of the good practices in Quality Assurance (QA) in Higher Education. At present, most of the Higher Education Institutes (HEIs) collect feedback for different purposes, such as lecturer evaluation by students and course evaluation by lecturers. A paper-based questionnaire is a method mostly used to collect feedback, which has many issues as it is costly, inefficient, erroneous and ineffective. Unlike other similar types of systems, the mobile-based feedback system maintains anonymity, collects results, generates reports and provides output. Further, the system is an eco-friendly and user-friendly platform for users and is available twenty-four hours and all round the year. The system is developed using Android studio, Android SDK, and NetBeans. The server-side language is Java and the database is based on cloud technology.

**Keywords:** *student feedback, quality assurance, higher education*

## I. INTRODUCTION

Student Feedback is one of the good practices of Quality Assurance in Higher Education. At present, most of the Higher Education Institutes (HEIs) collect feedback for different purposes lecturer evaluation by students, course evaluation by lecturers, institute quality, etc. A paper-based questionnaire is a method used to collect feedback mostly. The method has many issues: costly, inefficient, erroneous, and ineffective.

The number of undergraduates is kept on increasing and limited staff to collect student feedback from all faculties. The response rate is low and takes a long time to issue feedback outcomes are the main issues of the current

system. Thus, there is an urgent need for an automated feedback management system for any HEIs.

The objectives of the system are to enhance the efficiency of the feedback process, to provide better decision-making capability for the management of the HEIs to improve the quality in the institute while reducing printing cost and storage space.

## II. LITERATURE REVIEW

Several similar types of systems during the literature review have been identified during the literature review.

There is a web-based feedback collecting system that provides an automatic generation of feedback from students and there are view panels to view outcomes of the feedback (Rahman, et al., n.d.). This research's main objective is to create a unique and useful "online student feedback system" with exceptional quality and services that differentiate it from another system. It provides feedback to students to evaluate teachers as per categories like always, poor, usually, very often, sometimes. Student can provide their perception about a teacher by this feedback system. This system will provide a result report to students given feedback. In his system, users are broadly classified into four categories, those are Admin, student, faculty.

There was a Student Feedback System delivered via the student staff interface as an online system that acting as a Service Provider. (PRAKASH, et al., n.d.) This system web-based feedback system provides student feedback about teachers,

feedback result of each teacher (staff), generate automatically feedback result reports and provide feedback result view panel to the principal. In the proposed system is generally used by four kinds of users. Those are students, staff, and head of department, principal.

There was another online student feedback system collecting feedback from the students and provides the automatic generation of feedback (ABHINAV, 2018). The student can give feedback in the online system by answering a set of multiple-choice questions. It has three kinds of users Student, Teacher, Administrator.

The main aim of the Online Feedback System for Educational Institutions to better evaluation of faculty performance using semantic web technology was to provide students' feedback online Students give feedback online using a standard designed form (Sivasankari, et al., 2016). The proposed system security was included, the result of which the feedback is only visible to authenticated users and generating useful feedback reports according to given feedback. There were five kinds of users. Those are student, admin, faculty, Head of department, and principal.

The student-Faculty Evaluation System was a LAN-Based student faculty evaluation system for Lady of Fatima University" which is all about how the students will evaluate their professor by using the computer (Enriquez, 2011). It will give the school and the student an easy way of evaluating the faculty members maximizing the school facilities. All the information given by the students will be treated with the utmost confidentiality. Automatically generate the feedback result reports. There were five kinds of users in this system: student, faculty, guidance, HR, and Dean. The scope of this system is intended for in-depth evaluation and analysis of the existing manual procedure of student evaluation.

There were two online feedback collection systems, one system is intended to collect the feedback from users of the Information Technology and Communication (ITC) wing of the National Institute of Technology, Calicut (SREEJITH, 2004). The second part of the project is to develop an online feedback collection

system for collecting feedback about the faculty from the students. This system has three user levels. The user means the student/faculty who has the access to the services provided by ITC.

The purpose of the Mobile-based Student Feedback system was very useful to maintain feedback reports by the administrator and provides to give feedback for the teaching of a lecturer by the student in a mobile-based system online (P, 2019). Evaluates the answer given by the students based on the feedback which will be given by a number 1 to 5. Provides an overall report of the feedback helping the students to give suggestions about where a faculty is lagging. This mobile system has generally three modules, those are admin, student, and management.

Zonka Feedback offers feedback forms and customer satisfaction surveys in various formats (Anon., n.d.). The solution can be utilized by hotels and other hospitality businesses, spas and salons, retail chains, banks, health care or any other consumer-oriented business. The feedback forms are fully customizable to match the branding of the company and employ rating scales, pre-defined templates, and a form builder. Zonka was available to collect feedback using Tables, Websites, Email, and SMS. Zonka software analysis the feedback result with graphs. And provide feedback notifications to users. The drawback is that Zonka has limited to certain questions, therefore users must pay to add more questions to the survey. Oftentimes making it inaccessible for individual entrepreneurs and small businesses.

Survey Monkey is online survey software that helps to create and run professional online surveys. It has several templates. (Anon., n.d.) Survey Monkey is limited to some questions, if the user needs more questions to add to the survey, then the user has to pay for it. The survey can be administered/sent to users via several ways – e-mail, web link, Facebook, embed link on the web page, link via Twitter, and website pop-ups. The big drawback is that SurveyMonkey is very expensive, oftentimes making it inaccessible for individual entrepreneurs and small businesses.

When review these related works, can find some limitations. Some systems have only limited functionalities, and some related works were not fully completed systems.

The summary of the literature review is shown in below table 1.

Table 1. Summary of Literature Review

Similar System	Key findings
Online student feedback system (Rahman, et al., n.d.).	<ul style="list-style-type: none"> <li>• Registration</li> <li>• Can insert, delete and update student</li> <li>• Student feedback about lecturer</li> <li>• Generate reports and can view reports by relevant people</li> </ul>
Student staff feedback system (PRAKASH, et al., n.d.)	<ul style="list-style-type: none"> <li>• Registration</li> <li>• Can insert, delete and update questions of the feedback</li> <li>• Student feedback about lecturer</li> <li>• Generate reports and can view reports by relevant people</li> </ul>
Online Feedback System for Educational Institutions for Better Evaluation of Faculty's Performance Using Semantic Web (SW) Technology (ABHINAV, 2018)	<ul style="list-style-type: none"> <li>• Registration</li> <li>• Can insert, delete and update questions, users</li> <li>• Student feedback about subjects</li> <li>• Generate reports and can view reports by relevant people</li> </ul>
Mobile Based Student Feedback System (Sivasankari, et al., 2016). The proposed	<ul style="list-style-type: none"> <li>• Student feedback about staff members</li> <li>• Generate reports</li> <li>• Can view reports by relevant people</li> </ul>
Student online feedback system (Enriquez, 2011).	<ul style="list-style-type: none"> <li>• Registration</li> <li>• Can insert, delete students and teachers</li> <li>• Student feedback about lecturers</li> <li>• Generate reports</li> </ul>
Zonka feedback software (Anon., n.d.).	<ul style="list-style-type: none"> <li>• Zonka software analysis the feedback result with graphs.</li> <li>• Provide feedback notifications to users.</li> <li>• Zonka has limited to certain questions</li> </ul>
Survey Monkey (Anon., n.d.)	<ul style="list-style-type: none"> <li>• Survey Monkey has limited to certain questions</li> <li>• Analysis happens in real time</li> </ul>

	and analysis the feedback result with graphs.
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### III. RESEARCH METHODS

At present, the Internal Quality Assurance Units (IQAU) of the HEIs are collecting feedback for different matters such as teacher evaluation by students, course evaluation by lecturers, student feedback on institute quality. The sample (N=400) of the study consists of undergraduates, academic and administrative staff of the HEIs as they are the main stakeholders of the Feedback Process. The primary data was collected through semi-structured interviews face to face interviews and questionnaires from the selected sample. Secondary data was collected based on the existing feedback forms in different matters.

Similar systems or research help to understand the domain of the system and implement user requirements in the same manner with less variance (Publish, 2009). The requirements for the mobile-based feedback system are collected during the literature review by observing similar types of systems and fact-finding techniques.

This system is technically feasible as most of the students, academic staff, and administrative staff has a smartphone. The system is developed using android studio, Android SDK, and NetBeans. The server-side language is Java and database based on cloud technology. The mobile-based feedback system was developed using the waterfall methodology as requirements are clearly defined.

Iterative waterfall methodology is used during the development of the system as some functions may change later based on the user requirements. Therefore, future modifications can do accordingly.

### IV. RESULTS AND DISCUSSION

#### A. System Design

The mobile-based feedback application provides the login interface to each user. Students can log in with a unique id, other users can log in with a username and password. After the completion of the student login, they can provide feedback according to each feedback category.

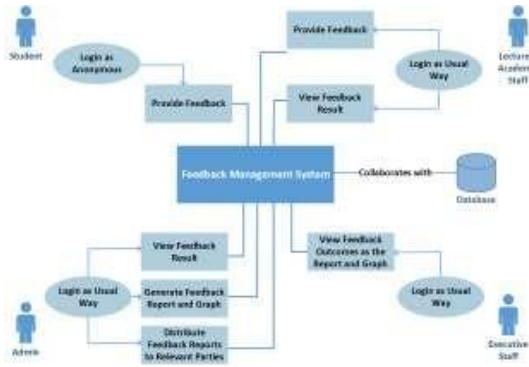


Figure 1. System Overview Diagram of Feedback System

Also, after the completion of the academic staff login, they can provide feedback according to their feedback categories and view their feedback result. In the standalone system, the administrator can view feedback results of all feedback categories, generate reports and graphs according to the result and distribute the reports to relevant people in the institute. The administrative staff people can log and view each feedback result reports to review.

**B. System Development**

In addition, the mobile-based feedback system generates different types of reports, graphs, and notifications. The following figures indicate some user interfaces of the mobile-based feedback system.



Figure 2. Login Screen



Figure 3. Student Login Page



Figure 4. Academic Staff Home Page



Figure 5. Batch Rating Form



Figure 6. Course Evaluation Form



Figure 9. Lecturer Evaluation Form



Figure 7. Student Login Page



Fig. 10. Library Evaluation Form



Figure 8. Student Home Page



Figure 11. Admin Home Page

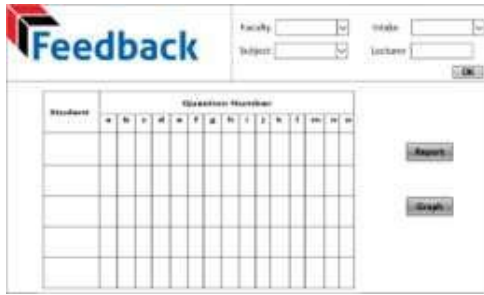


Figure 12. View Feedback and Generate Report

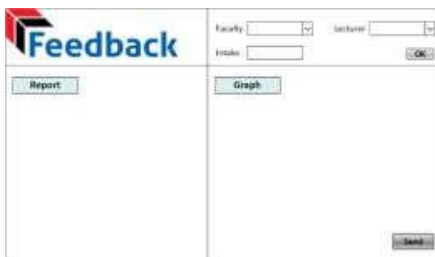


Figure 13. Distribute Result Reports



Figure 14. Administrative Staff Home Page

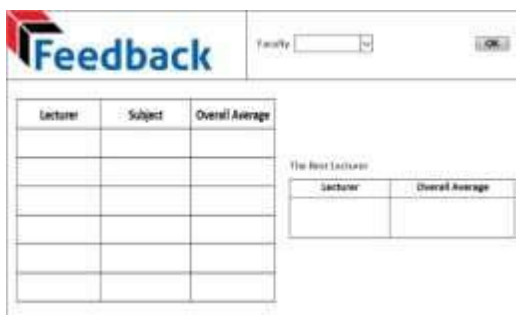


Figure 15. View Feedback Result Reports

The mobile-based feedback system is designed in order to reduce the limitations of the manual feedback system in the institute.

Through the mobile-based feedback system, undergraduates, academic and administrative staff can provide their feedback according to the respective category easily. Especially, undergraduates can provide feedback through the unique id which provides anonymity. Through the system, the IQAU can analyze the outcome easily and generate appropriate reports and graphs. Further, the relevant administrative staff can review those outcome reports and make decisions accordingly.

## V. CONCLUSION

Most of the HEIs spent considerable amount of money on the manual feedback process annually to duplicate required feedback forms. This limitation eliminated by mobile based feedback system.

The application attractive enough to collect and store feedback forms from any number of users. (Refnwrite, 2017). The mobile-based feedback system provides an eco- friendly, user-friendly platform for the relevant stakeholders to provide feedback on lecturer evaluation, course evaluation, and feedback on institute quality with 24/7/365. This app is also provided a facility to analyze the data and present the outcome efficiently and effectively. Further, the feedback app enhances the quality of the IQAU and campus as well (Samuels, 2018).

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## ACKNOWLEDGEMENT

My sincere thanks go to my final project supervisor Ms. Samantha Wickramasinghe and Research Methodology Lecturers, Mr. Sunesh Hettiarachchi for their constant support during the development of the app and developing the paper as Co-Authors.

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Ms. Samudika Mendis graduated from the Horizon Campus in 2020 with the first class of BSc. (Hons) in Information Technology degree and developed the Mobile-based Feedback System to fulfill the requirement of the final year project. Currently, she is working as a Quality Assurance (QA) Engineer. Further, she was an

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Ms. Samantha Wickramasinghe completed her MSc in IT (Cardiff Metropolitan, UK), BIT (UCSC). Currently working as a Senior Lecturer in IT at Horizon Campus. She has more than seven years of teaching experience and twelve years of experience in Quality Assurance (QA) in Higher Education. She published twenty-four papers related to IT and QA and currently reading for the DBA (Lincoln University College, Malaysia). She is a member of the Computer Society of Sri Lanka.



Mr. Sunesh Hettiarachchi has more than 16 years of industry experience in the Software Industry including 6 years of managerial experience. He is working as a part-time visiting lecturer and conducting lectures and supervision for undergraduate and postgraduate levels. Nearly eleven (11) papers related to the Business Management and IT are published at National and International Conferences. Further, he is currently reading for the DBA (Lincoln University College, Malaysia). He is a member of ACS