

A Multi-Channel Academic Result Checking System for Tertiary Institutions

¹Akinbohun Folake, ²Ojajuni James Oluwatoyin, ³Ayileka Sina Michael, ⁴Balogun Emmanuel

^{1,2,3,4} Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria

Corresponding author's email: folakeakinbohun@yahoo.com

doi: <https://doi.org/10.37745/ejcsit.2013/vol14n6115>

Published September 28, 2026

Citation: Folake A., Oluwatoyin O.J., Ayileka S.M., Balogun E. (2026) A Multi-Channel Academic Result Checking System for Tertiary Institutions, *European Journal of Computer Science and Information Technology*, 14(6),1-15

Abstract: *Timely access to students' academic results remains a challenge in many tertiary institutions, particularly where students depend on physical notice boards or internet-based platforms. This study developed a Multi-Channel Result Checking System (MCRCS) to provide a more convenient and flexible approach to academic result dissemination. The system was developed using the Waterfall software development model and implemented with Hypertext Preprocessor (PHP) and My Structured Query Language (MySQL), with SMS (Short message Service) and email electronic mail) services integrated into the platform. The students' academic records are mapped to the students' phone numbers and emails. The MCRCS does not process or compute examination results; rather, it works with the existing Result Processing System (RPS), from which approved results are uploaded into the MCRCS database for dissemination. Two channels were provided for result access. SMS and email use push-based approaches to automatically deliver result notifications or relevant result information after the release of approved results. The system also provides administrative functions for uploading and managing results, generating reports, and monitoring dissemination activities. Controlled access was incorporated to protect students' academic records. System evaluation was designed to assess functional correctness, result accuracy, communication delivery. The developed system provides an alternative to single-channel result dissemination and demonstrates how SMS and email can be integrated to improve the accessibility and convenience of academic results in tertiary institutions. The approach can be adapted to other institutions with similar result dissemination challenges.*

Keywords: academic results, multi-channel checking system, SMS, email, application tier

INTRODUCTION

The rapid advancement of information and communication technology (ICT) has significantly changed the way academic information is managed and disseminated in tertiary institutions. Educational institutions increasingly rely on digital platforms to manage students' academic records and provide timely access to examination results. Online result-checking platforms have, in particular, improved the speed and convenience of accessing academic information compared with traditional approaches (Ajadi et al., 2022;

Agushaka et al, 2021; Ibrahim-Adedeji & Ebole, 2020). However, the effectiveness of such platforms largely depends on the availability and reliability of internet services (Okeke & Agbo, 2022). In many Nigerian tertiary institutions, poor network coverage, slow internet connections, and occasional unavailability of institutional websites continue to affect students' ability to access their results promptly (Adepoju & Adebayo, 2023; Badamosi et al, 2023).

Access to accurate and timely academic results is essential to students in tertiary institutions because examination results are required for academic progression, course registration, scholarship applications, graduation processing, and other academic decisions. Traditionally, many institutions in Nigeria disseminated examination results by displaying them on physical notice boards. Although this approach is relatively simple, it becomes inefficient when large numbers of students need to access their results at the same time. It may result in overcrowding, delays, confusion, and difficulties in locating individual results (Kijazi 2016).

The problem is further compounded when students have to travel to their institutions or visit cybercafés to access results through online portals. Such dependence on physical presence or internet-enabled facilities increases the time and cost associated with result checking. In addition, the release of examination results can lead to large gatherings of students around notice boards, particularly in institutions with substantial student populations. This situation demonstrates the need for alternative and flexible mechanisms through which students can obtain their academic results without depending entirely on physical notice boards or uninterrupted internet access (Olaniyan et al, 2015; Anyiam et al, 2020)

Several studies have attempted to address the challenges associated with students' access to academic results. Famutimi et al. (2014) developed a Multifactor Authentication Result Checker System using the Global System for Mobile Communications (GSM). The system focused on improving the security of result access through multifactor authentication. However, the system was primarily based on SMS and did not incorporate other communication channels, such as email, that could provide students with alternative means of accessing their results.

Akinmosin (2014) developed an Automated Student Result Management System using an Oracle database and reporting facilities. The system provided an automated approach to the management and presentation of students' results. Nevertheless, access to the system depended on an active internet connection, which can be problematic in locations where internet services are unreliable or unavailable.

Similarly, Adagunodo et al. (2009) proposed an SMS-Based Result Checking System that enabled students to obtain their examination results through mobile communication. The approach reduced students' dependence on physical notice boards and provided remote access to results. However, its functionality was restricted to SMS, without the integration of complementary channels such as email services.

Although web-based result portals have become increasingly common in Nigerian tertiary institutions, they have not completely eliminated the challenges associated with result dissemination. Students who experience poor internet connectivity may still have difficulty accessing online portals, while SMS-only systems may provide limited functionality and flexibility. These limitations suggest that relying on a single communication channel may not adequately address the diverse technological conditions experienced by students.

Publication of the European Centre for Research Training and Development -UK

The reviewed studies demonstrate that existing result-checking approaches have focused largely on individual technologies, including web platforms, SMS, or database-driven applications. While these approaches have contributed to improving access to academic results, there is limited emphasis on integrating multiple communication channels into a single result-checking framework. In particular, there is a need for a system that can maintain SMS and email as alternative channels when web access is inconvenient or unavailable.

This gap is particularly relevant in the Nigerian tertiary education environment, where differences in internet availability and network reliability can affect students' access to institutional online services. A multi-channel approach can therefore provide greater flexibility and resilience by allowing students to access their results through the communication channel that is most accessible to them.

To address these limitations, this study proposes a Multi-Channel Result Checking System (MCRCS) for tertiary institutions. The proposed system integrates two complementary channels such as SMS and email for the dissemination and checking of students' academic results. SMS offers an alternative for students who may have limited or unreliable internet connectivity. Email provides an additional channel through which students can receive their academic results electronically.

The integration of these channels is intended to reduce dependence on a single access mechanism and improve the availability of academic information. It can also reduce the need for students to travel to their institutions for the purpose of checking examination results. Furthermore, reducing physical gatherings around notice boards can contribute to a more orderly and efficient result dissemination process.

The main contribution of this study is the development of an integrated result-checking framework that combines SMS, and email services within a single system. Unlike approaches that rely exclusively on one communication channel, the MCRCS provides multiple access options and is designed to remain useful under varying network conditions. The system also incorporates authentication mechanisms to help protect students' academic information from unauthorized access.

The proposed system is particularly designed for the institutions where an integrated multi-channel result-checking platform has not previously been implemented. Its design therefore responds to a practical institutional need while providing a framework that could be adapted to other tertiary institutions with similar challenges.

The objective of this study is to design and implement a Multi-Channel Result Checking System (MCRCS) that enables students to access their academic results through SMS and email platforms. Specifically, the study aims to develop multiple result dissemination channels, and provide students with a convenient and reliable means of accessing academic information without depending exclusively on physical notice boards or continuous internet connectivity.

METHODOLOGY

This study presents the development of a Multi-Channel Result Checking System (MCRCS) for tertiary institutions. The study was carried out in the Department of Computer Science, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria.

Publication of the European Centre for Research Training and Development -UK

The methodology comprised requirements elicitation, system analysis and design, software implementation, testing, deployment, and evaluation. The Waterfall Software Development Model was adopted because the system requirements were identified before implementation and the development activities were completed through defined sequential stages.

The phases considered in the development of the MCRCS are presented below.

Data Collection

Data were obtained through a review of relevant literature and consultations with members of the Result Processing Committee involved in result-management activities at Rufus Giwa Polytechnic, Owo.

The principal data requirements identified were student matriculation number, name, faculty, department, academic session, semester, course codes, course titles, grades, grade points, GPA, CGPA, carry-over courses, telephone numbers, and email addresses.

Requirements Analysis

The requirements analysis identified two major categories of users: administrators and students. Administrators manage student records, courses, approved result uploads, reports, result publication, and communication activities. Students receive published result information through their registered telephone numbers and email addresses.

The MCRCS uses two PUSH-based dissemination channels. The SMS channel sends a concise result summary to the student's registered mobile number, while the email channel delivers a more detailed electronic result statement. These channels reduce dependence on physical result sheets and visits to institutional offices.

System Design

A three-tier client-server architecture was adopted for the MCRCS. The architecture separates presentation, application processing, and database functions while integrating external SMS and email services.

The presentation tier provides the interfaces used by authorised administrators to register students, manage courses, upload approved results, review broadsheets, publish results, and monitor notifications.

The application tier performs authentication, validation, result-file processing, student and course mapping, report generation, publication, queue processing, and communication with the SMS gateway and email server.

The database tier uses MySQL to store users, roles, students, courses, course registrations, scores, result summaries, and communication logs. Related records are connected through primary and foreign keys to support accurate retrieval and dissemination.

Result Integration and Dissemination

The MCRCS receives approved academic results from the institution's existing Result Processing System. The system does not perform examination result computation or compilation. Approved final results are

Publication of the European Centre for Research Training and Development -UK

uploaded through an Excel workbook after the institution's established processing and approval procedures have been completed.

After upload, the system validates the workbook, matches matriculation numbers and course codes with existing records, stores valid results, and presents the records for review. The HOD can then publish the approved results through email, SMS, or both channels. Communication logs are maintained for pending, sent, skipped, failed, and cancelled notifications.

Use Case Description

The use case model of the MCRCS, presented in Figure 1, illustrates the interactions between the administrator, student, and system. The administrator registers students, manages courses, uploads approved results, reviews result records, generates reports, initiates SMS and email dissemination, and monitors communication activities. Students receive published result information through their registered email addresses and mobile telephone numbers.

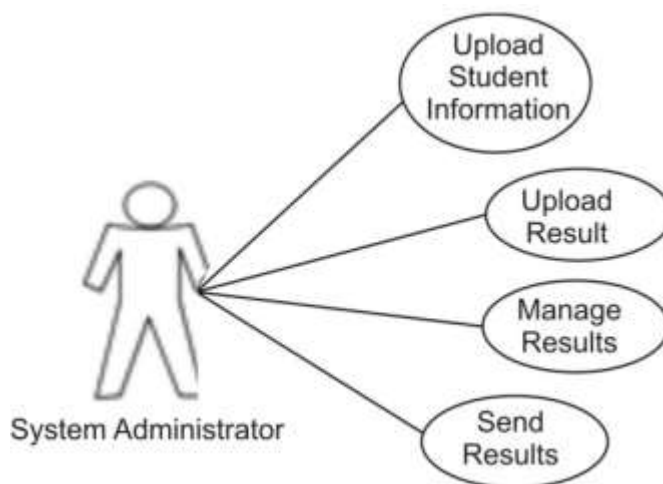


Figure 1: Use Case for MCRCS

Database

The database was designed to maintain relationships among students, courses, academic sessions, result records, users, and dissemination logs. The students table stores the matriculation number, name, email address, phone number, level, study option, department, and status. The matriculation number provides the principal reference used to match uploaded results with the correct student.

The courses table stores course code, title, unit, level, semester, department, study option, and lecturer. The course_registration table links a student to a course in a particular academic session. Each score record is linked to one course registration, thereby connecting the final score, grade, grade point, and internal remark to the correct student and course.

The result_summaries table stores total units, weighted points, SGPA, CGPA, publication status, and publication date for each student, session, and semester. The users and roles tables support authentication and role-based access for authorised personnel. The notification_logs table links communication records to students and result summaries and stores the channel, provider information, status, queue time, sent time, and failure details. Tables 1 to 8 are for course, course registration, result summaries, user, roles, notification_logs, student and score. They are presented below:

Table 1: Result Summaries

#	Name	Datatype	Length/Set	Unsigned	Allow NU..	Zero fill	Default	Comment	Collation	Expression
1	id	BIGINT		☒	☐	☐	AUTO_INCREME...			
2	student_id	BIGINT		☒	☐	☐	No default			
3	academic_sessi...	BIGINT		☒	☐	☐	No default			
4	semester_id	BIGINT		☒	☐	☐	No default			
5	total_units	DECIMAL	5,1	☐	☐	☐	0.0			
6	weighted_points	DECIMAL	8,2	☐	☐	☐	0.00			
7	sgpa	DECIMAL	3,2	☐	☐	☐	0.00			
8	cgpa	DECIMAL	3,2	☐	☐	☐	0.00			
9	is_published	TINYINT	1	☐	☐	☐	0			
10	published_at	TIMESTAMP		☐	☒	☐	NULL			
11	created_at	TIMESTAMP		☐	☒	☐	NULL			
12	updated_at	TIMESTAMP		☐	☒	☐	NULL			

Table 2: Role

#	Name	Datatype	Length/Set	Unsigned	Allow NU..	Zero fill	Default	Comment	Collation	Expression	Virtual
1	id	BIGINT		☒	☐	☐	AUTO_INCREME...				
2	name	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci		
3	guard_name	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci		
4	created_at	TIMESTAMP		☐	☒	☐	NULL				
5	updated_at	TIMESTAMP		☐	☒	☐	NULL				

Table 3: Course Registration Table

#	Name	Datatype	Length/Set	Unsigned	Allow NU...	ZeroFill	Default	Comment	Collation	Expression
1	id	BIGINT		☒	☐	☐	AUTO_INCREME...			
2	student_id	BIGINT		☒	☐	☐	No default			
3	course_id	BIGINT		☒	☐	☐	No default			
4	academic_sess...	BIGINT		☒	☐	☐	No default			
5	is_carryover	TINYINT	1	☐	☐	☐	0			
6	created_at	TIMESTAMP		☐	☒	☐	NULL			
7	updated_at	TIMESTAMP		☐	☒	☐	NULL			

Table 4: Students Table

#	Name	Datatype	Length/Set	Unsigned	Allow NU...	ZeroFill	Default	Comment	Collation	Expression
1	id	BIGINT		☒	☐	☐	AUTO_INCREME...			
2	matric_no	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci	
3	name	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci	
4	email	VARCHAR	255	☐	☒	☐	NULL		utf8mb4_unicode_ci	
5	phone	VARCHAR	255	☐	☒	☐	NULL		utf8mb4_unicode_ci	
6	level_id	BIGINT		☒	☐	☐	No default			
7	study_option_id	BIGINT		☒	☐	☐	NULL			
8	department_id	BIGINT		☒	☐	☐	No default			
9	user_id	BIGINT		☒	☒	☐	NULL			
10	status	VARCHAR	255	☐	☐	☐	active		utf8mb4_unicode_ci	
11	created_at	TIMESTAMP		☐	☒	☐	NULL			
12	updated_at	TIMESTAMP		☐	☒	☐	NULL			

#	Name	Datatype	Length/Set	Unsigned	Allow NU..	Zerofill	Default	Comment	Collation	Expression	Vi
1	id	BIGINT		☒	☐	☐	AUTO INCREME...				
2	code	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci		
3	title	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci		
4	unit	DECIMAL	3,1	☐	☐	☐	No default				
5	level_id	BIGINT		☒	☐	☐	No default				
6	study_option_id	BIGINT		☒	☒	☐	NULL				
7	semester_id	BIGINT		☒	☐	☐	No default				
8	department_id	BIGINT		☒	☐	☐	No default				
9	lecturer	VARCHAR	255	☐	☒	☐	NULL		utf8mb4_unicode_ci		
10	created_at	TIMESTAMP		☐	☒	☐	NULL				
11	updated_at	TIMESTAMP		☐	☒	☐	NULL				

Figure 5: Courses Table

#	Name	Datatype	Length/Set	Unsigned	Allow NU..	Zerofill	Default	Comment	Collation	Expression	Virtual
1	id	BIGINT		☒	☐	☐	AUTO INCREME...				
2	name	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci		
3	email	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci		
4	email_verified_at	TIMESTAMP		☐	☒	☐	NULL				
5	password	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci		
6	remember_token	VARCHAR	100	☐	☒	☐	NULL		utf8mb4_unicode_ci		
7	created_at	TIMESTAMP		☐	☒	☐	NULL				
8	updated_at	TIMESTAMP		☐	☒	☐	NULL				

Figure 6: Users table

#	Name	Datatype	Length/Set	Unsigned	Allow NU..	Zerofill	Default	Comment	Collation	Expression	Virtual
1	id	BIGINT		☒	☐	☐	AUTO INCREME...				
2	course_registration_id	BIGINT		☒	☐	☐	No default				
3	ca_score	TINYINT		☒	☐	☐	0				
4	mid_course_registration_id	TINYINT		☒	☐	☐	0				
5	total_score	TINYINT		☒	☐	☐	0				
6	grade	VARCHAR	3	☐	☒	☐	NULL		utf8mb4_unicode_ci		
7	grade_point	DECIMAL	3,2	☐	☒	☐	No default				
8	remark	VARCHAR	255	☐	☒	☐	NULL		utf8mb4_unicode_ci		
9	created_at	TIMESTAMP		☐	☒	☐	NULL				
10	updated_at	TIMESTAMP		☐	☒	☐	NULL				

Figure 7: Notification Logs Table

#	Name	Datatype	Length/Set	Unsigned	Allow NU...	Zero fill	Default	Comment	Collation	Expression
1	id	BIGINT		☒	☐	☐	AUTO_INCREMENT...			
2	student_id	BIGINT		☒	☐	☐	No default			
3	result_summar...	BIGINT		☒	☐	☐	NULL			
4	type	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci	
5	channel	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci	
6	provider	VARCHAR	255	☐	☒	☐	NULL		utf8mb4_unicode_ci	
7	provider_rvw...	VARCHAR	255	☐	☒	☐	NULL		utf8mb4_unicode_ci	
8	provider_status	VARCHAR	255	☐	☒	☐	NULL		utf8mb4_unicode_ci	
9	units_used	DECIMAL	10,2	☐	☐	☐	NULL			
10	status	VARCHAR	255	☐	☐	☐	No default		utf8mb4_unicode_ci	
11	failure_reason	TEXT		☐	☒	☐	NULL		utf8mb4_unicode_ci	
12	provider_respo...	LONGTEXT		☐	☒	☐	NULL		utf8mb4_unicode_ci	
13	queued_at	TIMESTAMP		☐	☒	☐	NULL			
14	sent_at	TIMESTAMP		☐	☒	☐	NULL			

Figure 8: Scores Table**Result Upload and mapping**

The result upload module provides a structured interface through which an authorised administrator uploads an approved Excel result workbook. The administrator selects the level, semester, and study option where applicable before selecting the file. The workbook contains student matriculation numbers, course codes, course titles, and approved final scores.

Before import, the system validates the file and reports unmatched students, unmatched courses, missing scores, invalid scores, duplicate rows, and previously stored results. Valid records are mapped to student profiles through the matriculation number and to course records through the course code. The uploaded result remains subject to HOD review before publication.

The mapping process connects each academic record with the student's registered email address and telephone number. This ensures that published result information is sent to the contact details belonging to the correct student.

SMS Result Dissemination

The SMS component provides a PUSH mechanism for result dissemination. After an approved result is published, the system retrieves the student's registered telephone number and prepares a concise message containing the academic session, semester, CGPA, and carry-over course codes. Where no carry-over exists, the message states that the student has no carry-over course.

The SMS request is sent to the integrated BulkSMSLive API. The provider processes the request and returns information used to record the communication status. SMS provides result access on basic mobile phones and does not require an internet connection.

Email Result Dissemination

Email was implemented as the second PUSH mechanism. After publication, the system retrieves the student's registered email address and generates a structured result statement containing the student's details, academic session, semester, course codes, course titles, grades, grade points, CGPA, and carry-over course codes where applicable.

The application submits the email through the configured mail server. The email channel provides sufficient space for a detailed result statement and allows the student to retain an electronic copy for future reference.

SYSTEM IMPLEMENTATION

The system was implemented as a result dissemination platform rather than a result computation system. Approved results generated through the institution's established Result Processing System are uploaded into the MCRCS for validation, storage, review, publication, and dissemination.

The application was developed as a web-based system using PHP and the Laravel framework for server-side processing, Livewire for interactive interfaces, MySQL for database management, and standard web browsers for access. BulkSMSLive was integrated for SMS delivery, while a configured email server supports electronic result delivery.

During result upload, the system validates the Excel workbook and maps each approved result to the corresponding student and course. After successful validation and review, the HOD initiates publication. Email and SMS jobs are queued separately, and their statuses are recorded in the notification log.

The following email and SMS result-checking interfaces are presented in Figures 2 to 5.

Email Result-Checking Interface

The email interface provides a detailed presentation of the published result. It displays the student's academic session, semester, course codes, course titles, grades, grade points, and CGPA. The email also contains a carry-over section. Where no course has grade F, the section displays "None".

RUFUS GWA POLYTECHNIC
Department of Computer Science
 Official Semester Result Notification

Dear ABUBAKAR ABDULBASIT ADINOYL,

Your semester result has been officially published. The result details are provided below.

Student name	ABUBAKAR ABDULBASIT ADINOYL
Matriculation number	P04/COM/2024/1932
Level	ND I
Academic session	2025/2026
Semester	First Semester

Course Results
OFFICIAL RESULT

COURSE	Grade	Points
AGR 001 General Agriculture	B/C	3.00
COM 111 Introduction to Computer	C/D	2.50
COM 112 Introduction to Digital Electronics	B/C	3.00
COM 113 Introduction to Computer Programming	D	2.25
COM 114 Systems for Computing I	C/D	2.50
COM 115 Computer Application Packages I	A	4.00
EED 120 Introduction to Entrepreneurship	C/D	2.50
ENG 101 Use of English	C	3.75
ENG 101 Oral English I	C/D	2.50
LIS 101 Use of Library	C/D	2.50
MTI 111 Logic and Linear Algebra	B/C	3.00

CUMULATIVE GPA:
2.78

Carryover Course
None
 No carryover course was recorded for this session.

If any information in this result appears incorrect, please contact the Department of Computer Science Exam Officer for clarification.

Computer Science multi-channel Result checking System
 Rufus Gwa Polytechnic, Doko, Ondo State
 This is an automated academic notification.

Figure 2: E-mail interface without carry-over course(s)

Where a student has outstanding courses, the email lists the affected course codes separately. This enables the student to identify the courses that require attention without relying only on the number of failed courses.

RUFUS GINA POLYTECHNIC
Department of Computer Science
 Official Semester Result Notification

Dear **Aminet Oluwakemi**,

Your semester result has been officially published. The result details are provided below:

Student name	Aminet Oluwakemi
Matriculation number	P04/COM/2024/1235
Level	ND I
Academic session	2025/2026
Semester	First Semester

Course Results
OFFICIAL RESULT

Course	Grade	Points
AGR 001 General Agriculture	F	0.00
COM 111 Introduction to Computer	F	0.00
COM 112 Introduction to Digital Electronics	BIC	3.00
COM 113 Introduction to Computer Programming	BIC	3.00
COM 114 Statistics for Computing I	C	2.75
COM 115 Computer Application Packages I	A	4.00
EED 126 Introduction to Entrepreneurship	F	0.00
GN8 101 Use of English	F	0.00
GN8 II Citizenship Education I	F	0.00
LIB 101 Use of Library	F	0.00
MTII 111 Logic and Linear Algebra	BIC	3.00

CUMULATIVE GPA
1.93

Carryover Courses
AGR 001, COM 111, EED 126, GN8 101, GN8 III, LIB 101
Courses with grade F are outstanding. Please contact the Course Officer or your academic adviser for guidance concerning carryover registration.

If any information in this result appears incorrect, please contact the Department of Computer Science Course Officer for clarification.

Computer Science multi-channel Result checking System
 Rufus Gina Polytechnic, Oke, Ondo State
This is an automated electronic notification.

Figure 3: E-mail interface with carry-over course(s)

Email Result-Checking Interface

The SMS interface is designed for simplicity and efficient delivery. It presents the academic session, semester, CGPA, and carry-over information in a compact format suitable for mobile devices.

Where the student has no carry-over course, the SMS states that no carry-over was recorded. This provides a clear summary of the student's academic status without requiring internet access.

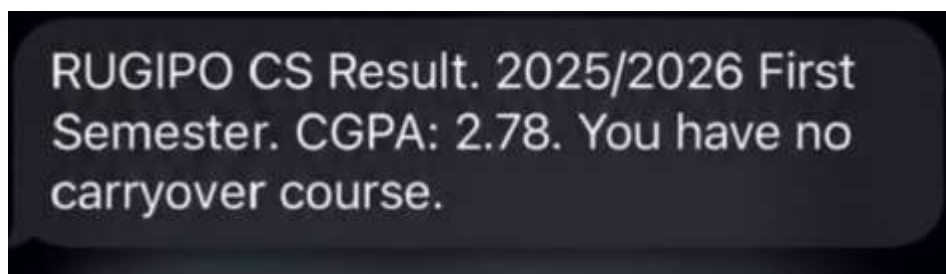


Figure 4: SMS interface without carry-over course(s)

Where a student has carry-over courses, the SMS lists the relevant course codes. The concise presentation allows the student to identify the outstanding courses directly from the message.

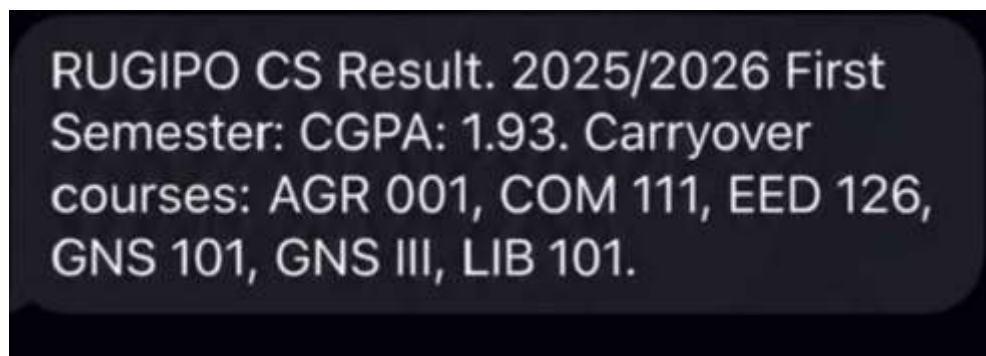


Figure 5: SMS interface with carry-over course(s)

Testing and evaluation were performed at unit and integration levels. Individual modules were tested independently before the result upload, validation, database mapping, review, publication, email delivery, SMS delivery, and notification monitoring functions were tested together as a complete system.

Testing/Evaluation was performed at both the unit and integration levels. Individual modules were initially tested independently to identify the functionality of the proposed system whether it meets the expected requirements. The modules were subsequently integrated and tested as a complete system.

CONCLUSION

This study designed and implemented a Multi-Channel Result Checking System to improve how students access their academic results in tertiary institutions. The system was developed to address the limitations

Publication of the European Centre for Research Training and Development -UK

associated with traditional result dissemination through notice boards and dependence on a single internet-based platform.

The developed system works with the institution's existing Result Processing System (RPS), from which approved results are uploaded into the MCRCS database for dissemination. It provides two complementary channels: SMS and email. SMS and email provide push-based notifications or result information after the release of approved results. This arrangement gives students alternative means of accessing academic information, particularly when internet connectivity is unreliable or unavailable.

The system also provides administrative functions for result uploading, student record management, report generation, and monitoring of result dissemination. Authentication and controlled access were incorporated to protect students' academic records and ensure that results are made available only to authorized users.

Overall, the study demonstrates that integrating SMS, and email into a single result dissemination platform that can provide a practical and flexible approach to academic result access. The proposed system can reduce reliance on physical result displays, improve convenience for students, and support more efficient result dissemination by tertiary institutions. Its design can also be adapted and extended to other institutions with similar academic information management challenges.

ACKNOWLEDGEMENT

The authors sincerely appreciate the Tertiary Education Trust Fund (Tetfund, 2026 IBR intervention), Nigeria for providing financial support for this study. The authors also acknowledge the support and cooperation of the management of Rufus Giwa Polytechnic, Owo, particularly the Computer Science Department, for providing the necessary institutional support and environment for the successful implementation of the study. The authors are grateful to all individuals who contributed directly or indirectly to the completion of this work.

REFERENCES

- Adagunodo, E. R., Awodele, O., & Idowu, S. (2009). SMS user interface result checking system. *Issues in Informing Science and Information Technology*, 6, 101–112. <https://doi.org/10.28945/1045>.
- Adepoju, O. O., & Adebayo, F. A. (2023). Mobile technology and academic service delivery in higher education: A Nigerian perspective. *African Journal of Educational Technology*, 11(1), 67–79.
- Agushaka, J. O., Ezugwu, A. E., Ofem, P. O., Adetula, E. O., & Eke, C. I. (2021). Examination management portal for tertiary institutions: A case study of Federal University Lafia. *FULafia Journal of Science and Technology*, 1(1), 82–90.
- Ajadi, O. T., Okunola, O. A., & Balogun, A. O. (2022). The role of internet technology in enhancing academic performance in Nigerian tertiary institutions. *Journal of Information Technology and Education*, 19(2), 45–56.
- Akinmosin, A. O. (2014). Automated students' result management system using Oracle database, forms, and reports. *Journal of Information Systems and Technology Management*, 11(1), 45–56.
- Anyiam, O. O., Anyiam, F. N., & Okengwu, U. O. (2020). An enhanced result processing and checking system for public universities using 2FA and TOTP. *International Journal of Engineering Research & Technology*, 9(2). <https://doi.org/10.17577/IJERTV9IS020111>.

Publication of the European Centre for Research Training and Development -UK

- Badamasi, Z. T. M. I., Kawu, A. A. I., Ibrahim, I. A., & Bawa, M. I. (2023). Usability evaluation of mobile USSD-SMS interactive result checking system for resource-constrained settings (MIRCS) using System Usability Scale (SUS). *Sinkron: Jurnal dan Penelitian Teknik Informatika*, 8(2). <https://doi.org/10.33395/sinkron.v8i2.12383>.
- Famutimi, R., Ozichi, E., Abiodun, A., & Ishaya, G. (2014). *Development of a multifactor authentication result checker system through GSM*. Obafemi Awolowo University Institutional Repository.
- Ibrahim-Adedeji, K. B., & Ebole, A. F. (2020). Enhancing web-based students' results and transcripts computation in a hybrid system. *Computer Engineering and Intelligent Systems*, 11(1). <https://doi.org/10.7176/CEIS/11-1-04>.
- Kijazi, A. (2016). Enhancing students' academic records management systems using short message service gateway. *Business Education Journal*, 2(1), 1–12. <https://doi.org/10.54156/cbe.bej.2.1.86>.
- Olaniyan, O. L., Ibiyomi, M. A., Fakoya, J. T., Abiona, A. A., & Eworo, A. E. (2025). Design and implementation of a secure and scalable SMS-based academic results notification system. *Global Journal of Scientific Research*, 13(12), 1127 onward.
- Okeke, T. C., & Agbo, R. C. (2022). Challenges of online result dissemination in Nigerian universities. *Journal of Higher Education Management*, 10(4), 89–98.
- Sahu, G. K., Sahu, P., & Sahu, P. K. (2021). Student result management system. *International Journal of Advanced Research in Computer and Communication Engineering*, 10(4). <https://doi.org/10.17148/IJARCCE.2021.10480>.