



(RESEARCH ARTICLE)



AN AUTOMATED GRADING SYSTEM IN THE ASSESSMENT OF STUDENTS' LEARNING IN THE DIVISION OF QUEZON CITY

Christine N. Abrugar *

Master in Education Management, Open University System, Graduate Studies, Polytechnic University of the Philippines, Sta. Mesa, Manila, Philippines.

* Corresponding Author

World Journal of Advanced Research and Reviews, 2026, 31(2), 1212–1228

Publication history: Received on 14 July 2026; revised on 20 August 2026; accepted on 22 August 2026

Article DOI: <https://doi.org/10.30574/wjarr.2026.31.2.2191>

Copyright © 2026 Author(s) retain the copyright of this article. This article is published under the terms of the Creative Commons Attribution License 4.0

ABSTRACT

This study determined the usefulness and ease of use of the ZipGrade application as an automated grading system in the assessment of students' learning in the Division of Quezon City. A descriptive-survey research design was employed involving 92 junior high school teachers from selected public secondary schools who utilized the ZipGrade application during School Year 2024-2025. Data were gathered through a validated researcher-made questionnaire and analyzed using percentage, mean, and Kruskal-Wallis test. Findings revealed that respondents assessed the ZipGrade application as very useful in checking test papers (4.83), keeping and monitoring student records (4.74), providing accurate data (4.78), and giving immediate feedback (4.57). Likewise, the application was assessed as very easy to use in checking test papers (4.91), monitoring student records (4.81), providing accurate data (4.67), and giving immediate feedback (4.66). Significant differences in usefulness were found only when respondents were grouped according to frequency of use ($p = 0.006$), while no significant differences were observed in ease of use across respondent profiles. The study concludes that the ZipGrade application is an effective and user-friendly automated grading system that enhances assessment efficiency, accuracy, learner monitoring, and feedback delivery. Continued utilization and institutional support are recommended to maximize its benefits in educational assessment.

Keywords: ZipGrade, Automated grading system, Educational assessment, Technology acceptance model, Student learning, Digital assessment.

1 INTRODUCTION

Assessment is a vital component of the teaching-learning process as it provides evidence of learners' achievement, identifies learning gaps, and supports instructional decision-making. As educational systems increasingly emphasize accountability, data-driven instruction, and learner-centered learning, schools face challenges in ensuring efficient, accurate, and timely assessment. To address these challenges, educational institutions have integrated technology into assessment practices to improve learning outcomes and teaching effectiveness (Department of Education, 2015).

Technological advancements have transformed traditional assessment methods into technology-assisted systems. While Optical Mark Recognition (OMR) tools and online assessment platforms improved scoring and data management,

their implementation is often constrained by high costs, infrastructure requirements, internet access issues, and technological limitations, particularly in public schools.

In response, mobile-based assessment tools such as the ZipGrade application have emerged as practical and cost-effective alternatives. ZipGrade enables teachers to use smartphones or tablets to scan and score multiple-choice tests, generate item analyses, track learner progress, and provide immediate feedback (ZipGrade LLC, 2026). Its affordability, accessibility, and ease of use have contributed to its growing adoption among educators.

Previous international studies reported that ZipGrade enhances assessment efficiency, learner engagement, and feedback delivery while reducing teachers' workload (Arora & Al-Hattami, 2024; Garcia & Garcia, 2026). Similarly, Philippine studies found that the application is useful for examination checking, item analysis, student progress monitoring, accurate data generation, and timely feedback (Calis & Calis, 2022; Estarez et al., 2023). Other local studies also highlighted the role of digital assessment tools in improving record management, instructional planning, administrative efficiency, and evidence-based decision-making (Baticulon et al., 2021; Alipio, 2021; Dela Cruz & Ramos, 2022; Villanueva & De Leon, 2023).

Despite these positive findings, most existing studies focused on the usability, accuracy, efficiency, and acceptability of ZipGrade. Limited research has examined its effectiveness in supporting instructional decision-making and assessing students' learning outcomes in large urban public-school settings such as the Division of Quezon City. There is also limited empirical evidence regarding its contribution to learner monitoring, assessment quality, feedback mechanisms, and evidence-based instruction.

Given the challenges faced by public-school teachers, including large class sizes, extensive assessment requirements, and time-consuming manual checking of examinations, affordable and user-friendly assessment technologies are needed. Thus, this study aimed to determine the usefulness and ease of use of the ZipGrade application in assessing students' learning and its contribution to improving assessment practices, feedback delivery, instructional decision-making, and learner performance monitoring.

2 THEORETICAL FRAMEWORK

This study is anchored on the Technology Acceptance Model (TAM) developed by Davis (1989). TAM explains technology adoption through two primary constructs: Perceived Usefulness (PU), or the extent to which a technology improves job performance, and Perceived Ease of Use (PEOU), or the degree to which a technology is free from effort.

According to TAM, perceived usefulness and perceived ease of use influence users' attitudes toward technology, which subsequently affect their behavioral intention and actual use of the technology. Recent studies continue to support the applicability of TAM in educational technology adoption, emphasizing that technologies perceived as useful and easy to use are more likely to be adopted and sustained by educators (Galimova et al., 2024; Or, 2024; Marian et al., 2025).

In this study, TAM provides a framework for understanding teachers' adoption of the ZipGrade application. The application's capability to automate test scoring, provide item analyses, monitor student progress, and deliver immediate feedback reflects perceived usefulness (Calis & Calis, 2022; Garcia & Garcia, 2026). Its smartphone-based, user-friendly design reflects perceived ease of use, making it accessible even to teachers with limited technical expertise (Calis & Calis, 2022; Estarez et al., 2023). Consequently, teachers who perceive ZipGrade as useful and easy to use are more likely to adopt and continuously utilize it in their assessment practices (Galimova et al., 2024; Or, 2024).

2.1 Conceptual Framework

The study utilized an Input-Process-Output (IPO) Model based on the Technology Acceptance Model.

The input component of the study focuses on the respondents' profile and their assessment of the Zipgrade application. The respondents' profile includes age, sex, level of education, years of service, class size handled, device utilized to access the Zipgrade application, and frequency of use of the Zipgrade application. To be examined by the respondents are the usefulness and ease of use of the Zipgrade application's automated assessment of students' learning from checking test papers, keeping and monitoring students' progress, providing accurate data, and giving immediate feedback.

The process consists of designing and constructing assessment instruments for the usefulness and ease of use of the Zipgrade application, validating and pilot testing these instruments, and gathering and analyzing data.

The study's output is a data-driven Proposed Action Plan to Enhance the Implementation and Utilization of the Zipgrade application as an Automated Grading System, objectively derived from the appraisals made by the high school teachers currently using the Zipgrade application.

The feedback will inform stakeholders of the results and recommendations of the study and endorse the proposed action plan to advance the continuous improvement of teachers' knowledge and skill in educational technology, beginning with the utilization of the Zipgrade application as an effective and efficient automated tool for assessing students' learning.

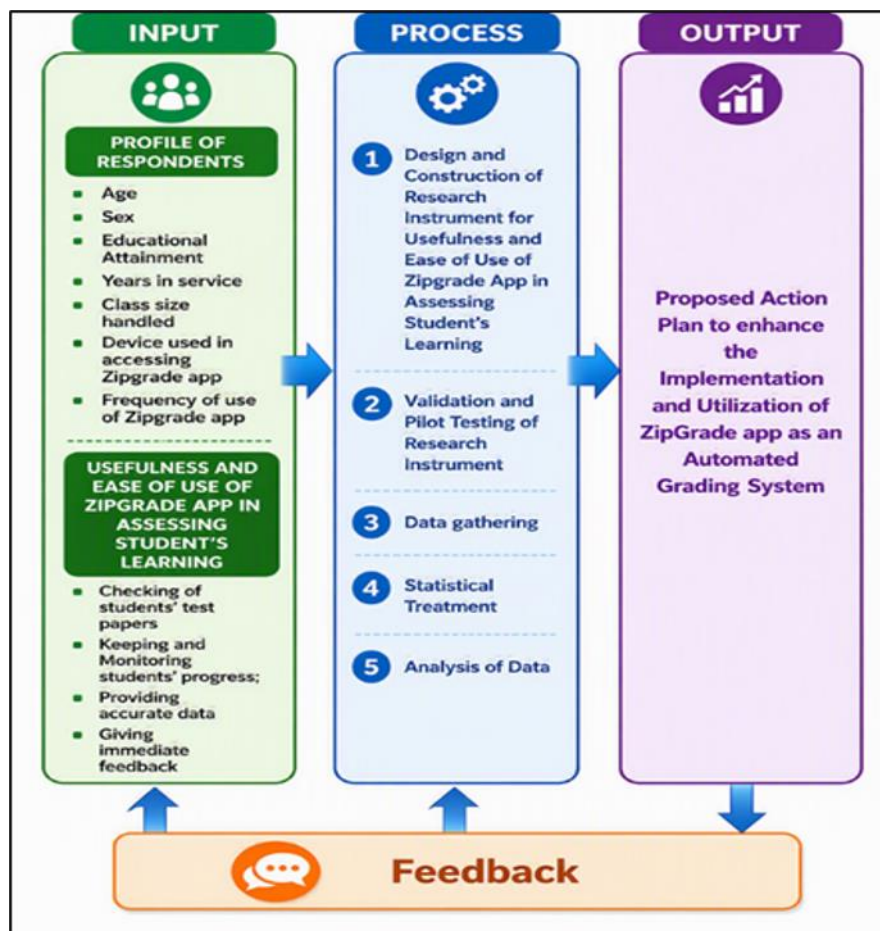


Figure 1: Schematic Presentation of the Conceptual Framework

2.1.1 Research Design

This study employed a descriptive-survey research design to determine the usefulness and ease of use of the ZipGrade application as an automated grading system in the assessment of students' learning in the Division of Quezon City. Descriptive research is appropriate for describing the characteristics, perceptions, attitudes, and experiences of a particular group without manipulating any variables. It allows researchers to determine what exists and the extent to which a phenomenon occurs in a specific setting (Hassan, 2024; McCombes, 2023). The descriptive-survey approach was deemed suitable because the study sought to gather and analyze teachers' perceptions and experiences regarding the use of the ZipGrade application in their classroom assessment practices (Hassan, 2024; Singh, 2026).

2.2 Study Population, Sample Size, and Sampling Technique

The target population consisted of 120 junior high school teachers from selected public secondary schools in the Division of Quezon City who actively used the ZipGrade application in assessing students' learning. These teachers represented the population of interest because of their direct experience in utilizing the application for classroom assessment.

Using Cochran's formula for finite populations, a sample size of 92 respondents was determined and considered sufficient to represent the population at a 95% confidence level and 5% margin of error. A proportional allocation procedure was applied across the participating schools, as shown below.

Table 1: Population and Sample Size

District	Name of Public School	Population of ZipGrade Users	Sample Size
District I	San Francisco High School	10	8
District II	Batasan Hills National High School	70	54
District V	San Bartolome High School	40	30
Total		120	92

The study utilized simple random sampling, a probability sampling technique that gives every member of the population an equal chance of being selected. After determining the required sample size, the list of eligible teachers from the three participating schools was encoded in Microsoft Excel. Random numbers were generated using the RAND() function, and respondents were selected based on the sorted random numbers and the proportionately allocated sample size. This procedure helped ensure objectivity, reduced selection bias, and enhanced the representativeness of the sample (Creswell & Creswell, 2018; Taherdoost, 2016).

2.3 Respondents of the Study

The respondents of the study were 92 junior high school teachers from San Francisco High School, Batasan Hills National High School, and San Bartolome High School in the Division of Quezon City. The respondents varied in terms of age, sex, educational attainment, years in service, class size handled, device used to access the ZipGrade application, and frequency of use of the application. Their experiences and perceptions served as the primary source of data for evaluating the usefulness and ease of use of the ZipGrade application in assessing students' learning.

2.4 Research Instrument

Data were collected using a researcher-made questionnaire developed by the researcher in consultation with the thesis adviser. The instrument was constructed based on the Technology Acceptance Model and relevant literature on educational technology and assessment. Three expert teachers from different schools and districts reviewed and validated the questionnaire to ensure content validity.

To establish reliability, the instrument was pilot-tested among 30 teachers from Quezon City High School, District IV, who were not included in the actual study. The reliability analysis yielded a Cronbach's alpha coefficient of 0.99, indicating excellent internal consistency and reliability.

The questionnaire consisted of two sections:

Section A. Respondent Profile

- This section gathered demographic and professional information, including: Age
- Sex
- Educational attainment
- Years in service
- Class size handled
- Device used to access the ZipGrade application
- Frequency of ZipGrade application use

Section B. Assessment of the ZipGrade Application

- This section contained 40 benchmark statements designed to assess the usefulness and ease of use of the ZipGrade application in terms of:
 - Checking students' test papers
 - Keeping and monitoring students' progress
 - Providing accurate data
 - Giving immediate feedback

Responses were measured using a five-point Likert scale, as shown below.

Table 2: Five-Point Likert Scale with Verbal Interpretation and Descriptive Meaning

Scale	Range	Verbal Interpretation	Description
5	4.21–5.00	Strongly Agree	Very useful/Very easy to use
4	3.41–4.20	Agree	Useful/Easy to use
3	2.61–3.40	Somewhat Agree	Undecided
2	1.81–2.60	Disagree	Not useful/Difficult to use
1	1.00–1.80	Strongly Disagree	Very useless/Very difficult to use

2.5 Data Gathering Procedure

Prior to data collection, ethical clearance was obtained from the Polytechnic University of the Philippines Research Ethics Committee. Approval to conduct the study was likewise secured from the Schools Division Superintendent, school heads, and department heads of the participating schools through formal letters of request.

After obtaining permission, printed questionnaires were personally distributed by the researcher to the selected respondents. The purpose of the study, instructions for answering the questionnaire, and assurances of confidentiality and anonymity were clearly explained. Respondents were given adequate time to complete the questionnaire at their convenience without interruption of their teaching duties.

Completed questionnaires were collected on the same day whenever possible. The researcher checked each questionnaire for completeness and consistency before encoding the responses into a spreadsheet for data processing and statistical analysis.

2.5.1 Ethical Considerations

Prior to data collection, a letter requesting permission to conduct the study was submitted to the appropriate authorities. Participants were provided with a clear explanation of the study's objectives and procedures. They were informed that their identities would remain confidential, participation would be entirely voluntary, and all information gathered would be used solely for research purposes. Informed consent was obtained from all participants before their involvement in the study.

Participation in the study was not expected to involve any risks, adverse effects, or discomfort because of the nature of the research. The survey instrument used was brief and designed to minimize any potential burden on participants. Based on the study's design and methodology, no adverse events were anticipated, and participants were not expected to experience any harm or injury as a result of their participation. Since the study posed no known risks, no compensation for injuries was provided. However, participants were informed that they could withdraw from the study at any time should they feel uncomfortable or have concerns regarding their participation.

Although participants did not receive any direct benefits from taking part in the study, the findings were expected to contribute to a better understanding of the usability and effectiveness of ZipGrade in student assessment. The results may help improve educational assessment practices and provide valuable insights for educational institutions. Furthermore, participants contributed to the advancement of knowledge in this field of study.

There were no costs associated with participation in the study. Participants were neither required to pay any fees nor incur any expenses. Similarly, no monetary compensation or incentives were offered for participation. Their involvement was entirely voluntary, and their willingness to contribute to the research was greatly appreciated.

The study did not involve vulnerable populations such as children, individuals with disabilities, or other groups requiring special protection. All participants were adults who possessed the capacity to provide informed consent and voluntarily participate in the research. Consequently, no additional provisions for vulnerable subjects were necessary.

2.6 Statistical Analysis

The collected data were summarized, analyzed, interpreted, and presented using the following statistical tools:

2.6.1 Percentage

Percentage was used to describe the demographic profile of the respondents, including age, sex, educational attainment, years in service, class size handled, device used, and frequency of ZipGrade application use.

$$P = \left(\frac{n}{N} \right) 100\%$$

Where:

P = Percentage

n = Number of respondents in a category

N = Total number of respondents

2.6.2 Mean

The weighted mean was used to determine the respondents' assessment of the usefulness and ease of use of the ZipGrade application.

$$\bar{x} = \frac{\sum x}{n}$$

Where:

$\bar{x}$ = Mean

$\sum x$ = Sum of responses

n = Total number of respondents

2.6.3 Kruskal-Wallis Test

The Kruskal-Wallis test was employed to determine whether significant differences existed in respondents' assessments when grouped according to profile variables. This non-parametric statistical test is appropriate for comparing three or more independent groups.

Where:

H = Kruskal-Wallis test statistic

N = Total sample size

R_i = Sum of ranks for group i

n_i = Sample size for group i

A significance level of 0.05 was used in testing the hypotheses.

3 RESULTS AND DISCUSSION

This chapter presents the findings, analyses, and interpretations of the data gathered from 92 junior high school teachers who use the ZipGrade application in the Division of Quezon City.

3.1 Profile of the Respondents

Table 3: Frequency and Percentage Distribution of Respondents According to Age Bracket

Age Bracket	Frequency	Percentage (%)
54 years old and above	11	11.96
44–53 years old	26	28.26
34–43 years old	24	26.09
24 years old and below	31	33.70
Total	92	100.00

Most respondents were aged 24 years old and below (33.70%), followed by those aged 44–53 years old (28.26%) and 34–43 years old (26.09%). Only 11.96% were aged 54 years and above. This indicates a relatively diverse age distribution, suggesting that respondents possess sufficient professional and technological competencies to evaluate the ZipGrade application. These findings are supported by Tondeur et al. (2017) and UNESCO (2023), who emphasized that digital competence and technological readiness influence teachers' ability to integrate and evaluate educational technologies.

Table 4: Frequency and Percentage Distribution of Respondents According to Sex

Sex	Frequency	Percentage (%)
Male	25	27.17
Female	67	72.83
Total	92	100.00

Female teachers dominated the sample (72.83%), while male teachers comprised 27.17%. This finding reflects the predominance of women in the teaching profession. While sex did not necessarily determine perceptions of ZipGrade, previous studies suggest that technological confidence and digital experiences may influence technology acceptance (Scherer et al., 2020; Or, 2024).

Table 5: Frequency and Percentage Distribution of Respondents According to Educational Attainment

Educational Attainment	Frequency	Percentage (%)
Doctorate	2	2.17
Master's Degree	21	22.83
Bachelor's Degree	69	75.00
Total	92	100.00

Most respondents held bachelor's degrees (75%), followed by master's degree holders (22.83%). Only 2.17% had doctoral degrees. This suggests that respondents possessed adequate academic preparation to evaluate instructional technologies. Rodillas (2023), Uerz et al. (2018), and Marian et al. (2025) noted that educational attainment positively influences teachers' readiness and confidence in adopting technology.

Table 6: Frequency and Percentage Distribution of Respondents According to Years in Service

Years in Service	Frequency	Percentage (%)
More than 10 years	43	46.74
6–10 years	24	26.09
2–5 years	21	22.83
Less than 2 years	4	4.35

Total	92	100.00
-------	----	--------

Nearly half of the respondents (46.74%) had more than ten years of teaching experience. This indicates that the study largely reflects the perspectives of experienced teachers. According to Galimova et al. (2024) and UNESCO (2023), experienced educators often evaluate technology based on its efficiency, usefulness, and contribution to teaching and assessment practices.

Table 7: Frequency and Percentage Distribution of Respondents According to Class Size Handled per Section

Class Size	Frequency	Percentage (%)
More than 50 students	35	38.04
21–50 students	55	59.78
Less than 20 students	2	2.17
Total	92	100.00

Most respondents handled classes with 21–50 students (59.78%), while 38.04% managed classes with more than 50 students. These findings indicate that respondents largely teach moderate to large classes where efficient assessment tools are particularly important. Singh et al. (2024), Gonzales (2025), and Dullano (2023) emphasized that teachers managing larger classes tend to value technologies that reduce workload and improve efficiency.

Table 8: Frequency and Percentage Distribution of Respondents According to Device Used

Device Used	Frequency	Percentage (%)
Mobile Phone	73	79.35
Laptop	12	13.04
Tablet	7	7.61
Total	92	100.00

Most respondents used mobile phones (79.35%) to access ZipGrade. This indicates that the application is primarily utilized through smartphone-based workflows. Previous studies by Denoyelles et al. (2023), Calis and Calis (2022), and Nikou and Economides (2019) highlighted the accessibility, portability, and convenience of mobile devices in assessment activities.

Table 9: Frequency and Percentage Distribution According to Frequency of Use

Frequency of Use	Frequency	Percentage (%)
At all times	49	53.26
Sometimes	43	46.74
Total	92	100.00

More than half of the respondents (53.26%) reported using ZipGrade regularly, while 46.74% used it occasionally. This finding suggests that teachers perceive the application as useful and practical enough for repeated use. Olalude (2024) and Marian et al. (2025) noted that regular technology usage is strongly influenced by perceived usefulness and ease of use.

3.2 Usefulness of the Zipgrade application in the assessment of students' learning

Respondents rated ZipGrade as Very Useful in checking students' test papers (Composite Mean = 4.83). Saving time received the highest rating (4.96). The findings indicate that teachers perceive the ZipGrade application as an effective and user-friendly assessment tool that enhances efficiency in evaluating student performance. This is supported by Calis and Calis (2022), who found that the application significantly reduces the time and effort required to check test papers by allowing teachers to quickly scan response sheets and generate results. Similarly, Gonzales (2025) noted that teachers are more likely to adopt and consistently use educational technologies that improve productivity and simplify professional responsibilities. The positive evaluation of the ZipGrade application may therefore be attributed to its

ability to reduce workload, increase efficiency, and provide reliable results. Furthermore, Garcia and Garcia (2025) found that technology-based assessment tools improve the effectiveness, accuracy, and convenience of classroom evaluation. Their study emphasized that digital assessment applications help teachers manage assessment tasks more efficiently while ensuring timely and accurate feedback on student performance

Table 10: Mean Distribution of the Respondents' Assessment of the Usefulness of the Zipgrade application in terms of Checking Students' Test Papers

Benchmark statement	Mean	Verbal Description
1. Less effort is exerted to check students' test papers	4.92	Very useful
2. Saves time in checking students' test papers	4.96	Very useful
3. Checks students' output at the lowest cost	4.77	Very useful
4. Checks students' test papers accurately anywhere and at any time	4.74	Very useful
5. Delivers accurate scores of test results	4.75	Very useful
Composite Mean	4.83	Very useful

Legend: "Very useless (1.00 – 1.80)", "Useless (1.81 – 2.60)", "Undecided (2.61 – 3.40)", "Useful (3.41 – 4.20)", "Very useful (4.21 – 5.00)."

Table 11: Mean Distribution of the Respondents' Assessment of the Usefulness of the ZipGrade application in terms of Keeping and Monitoring Students' Records

Benchmark statement	Mean	Verbal Description
6. Keeps students' records for a longer period.	4.79	Very useful
7. Secures students' records	4.82	Very useful
8. Keeps track of students' progress.	4.68	Very useful
9. Identifies students' improvement.	4.58	Very useful
10. Retrieves the student's record anywhere and anytime	4.83	Very useful
Composite Mean	4.74	Very useful

Legend: "Very useless (1.00 – 1.80)", "Useless (1.81 – 2.60)", "Undecided (2.61 – 3.40)", "Useful (3.41 – 4.20)", "Very useful (4.21 – 5.00)."

Respondents found ZipGrade Very Useful in keeping and monitoring student records (Composite Mean = 4.74). The findings indicate that the ZipGrade application is highly useful for managing and monitoring student records. This is supported by Calis and Calis (2022), who noted that the application enables teachers to efficiently manage assessment records, maintain student information, and retrieve results through a smartphone-based platform. Their study found that teachers regarded ZipGrade as a reliable tool for organizing and tracking student performance. Similarly, Estarez et al. (2022) found that the application assists educators in generating reports, calculating scores, and systematically maintaining assessment data, making it easier to organize records and monitor student progress. In the same way, Dullano (2023) emphasized that digital assessment technologies support efficient data storage, record management, and learner progress tracking by providing secure and accessible student records. These findings support the composite mean of 4.74 ("Very Useful"), indicating that the ZipGrade application is an effective tool for organizing data, safeguarding records, and monitoring students' academic progress.

The application was rated Very Useful in providing accurate data (Composite Mean = 4.78). The highest-rated indicator was easy access to the results of the item analysis of test scores (4.92). The findings suggest that the ZipGrade application is a highly useful assessment tool for generating accurate and objective student performance data. This is supported by Garcia and Garcia (2026), who found that digital assessment technologies enhance evaluation accuracy by providing reliable performance data, item analysis reports, and objective assessment results, enabling teachers to identify students' learning needs and make informed instructional decisions. Similarly, Gonzales (2025) discovered that educators highly value assessment technologies that provide accurate, accessible, and data-driven information, as these tools support effective student performance analysis and evidence-based teaching practices. In the same way, Tuan et al. (2025) emphasized that technology-enhanced assessment systems improve educational decision-making by delivering timely, reliable, and objective data on student achievement. Their study showed that item analysis and competency-based performance tracking help teachers identify learning gaps and implement appropriate interventions. These findings support the composite mean rating, indicating that the ZipGrade application is a very

useful assessment tool for providing accurate performance data, facilitating item analysis, identifying least-mastered competencies, and objectively monitoring students' learning outcomes.

Table 12: Mean Distribution of the Respondents' Assessment of the Zipgrade Application in Assessing Students' Learning according to Usefulness in terms of Providing Accurate Data

Benchmark statement	Mean	Verbal Description
11. Easy access to the results of the item analysis of test scores	4.92	Very useful
12. Harvest data that is free from errors.	4.66	Very useful
13. Gain truthful data and unbiased interpretation.	4.71	Very useful
14. Determine the least mastered competencies among the students.	4.88	Very useful
15. Gives definitive data on students' performance anytime and anywhere	4.72	Very useful
Composite Mean	4.78	Very useful

Legend: "Very useless (1.00 – 1.80)", "Useless (1.81 – 2.60)", "Undecided (2.61 – 3.40)", "Useful (3.41 – 4.20)", "Very useful (4.21 – 5.00)."

Table 13: Mean Distribution of the Respondents' Assessment of the Usefulness of Zipgrade application in terms of Giving Immediate Feedback

Benchmark statement	Mean	Verbal Description
16. Obtains accurate feedback on students' performance	4.58	Very useful
17. Secures the confidentiality of student feedback	4.70	Very useful
18. Promptly forwards feedback to students	4.50	Very useful
19. The student receives easy-to-understand feedback	4.58	Very useful
20. Provides focused feedback to students anywhere and anytime	4.50	Very useful
Composite Mean	4.57	Very useful

Legend: "Very useless (1.00 – 1.80)", "Useless (1.81 – 2.60)", "Undecided (2.61 – 3.40)", "Useful (3.41 – 4.20)", "Very useful (4.21 – 5.00)."

Respondents perceived ZipGrade as Very Useful in giving immediate feedback (Composite Mean = 4.57). Secures the confidentiality of student feedback received the highest rating. The findings indicate that the ZipGrade application is a highly useful tool for providing timely and accurate assessment feedback. This is supported by Arora and Al-Hattami (2024), who found that educational assessment applications are practical and efficient in delivering immediate access to assessment data and feedback, thereby supporting student learning and enhancing the evaluation process. Similarly, Calis & Calis (2022) noted that the ZipGrade application enables teachers to quickly process test results and efficiently communicate assessment outcomes through its user-friendly features, ensuring accuracy and convenience. In the same way, Estarez et al. (2023) found that the application assists teachers in rapidly calculating scores, generating reports, and sharing assessment information. Their study emphasized that the application's ability to provide quick, accurate, and organized feedback supports more effective monitoring of student performance and learning development. These findings suggest that the ZipGrade application is a very helpful assessment tool that facilitates timely feedback, accurate dissemination of assessment results, protection of student privacy, and the promotion of learning and academic progress,

3.3 Ease of Use of the Zipgrade application in the Assessment of Students' Learning

The application was rated Very Easy to use for checking test papers. Respondents particularly agreed that it was easy to learn (4.93). The findings indicate that the ZipGrade application is highly user-friendly and easy to use in classroom assessment. This is supported by Calis and Calis (2022), who found that teachers viewed ZipGrade as a simple evaluation tool that functions effectively on smartphones and requires no advanced technical skills. Their study highlighted that the application's intuitive interface and straightforward procedures make checking test papers faster and more convenient. Similarly, Estarez et al. (2023) reported that teachers considered the ZipGrade application highly accessible because it simplifies the processes of scanning answer sheets, calculating scores, and generating reports. The study emphasized that its clear instructions and easy navigation contribute to its effective use in classroom assessment. These findings support the present results, in which all indicators were rated as "Very Easy," suggesting that ZipGrade is easy

to learn, understand, and use when evaluating students' test papers. The positive ratings further imply that its user-friendly design encourages regular use by teachers, thereby enhancing the efficiency of assessment practices.

Table 14: Mean Distribution of the Respondents' Assessment of the Ease of Use of Zipgrade application in terms of Checking Students' Test Papers

1. Easy to understand the app's instructions for checking students' test papers	4.89	Very easy
2. Easy to follow the app's instructions for checking test papers.	4.92	Very easy
3. It is convenient to use the app to check the test papers	4.91	Very easy
4. Suitability of the app for checking test papers	4.91	Very easy
5. Easy to learn the proper use of the application for checking test papers	4.93	Very easy
Composite Mean	4.91	Very easy
1. Easy to understand the app's instructions for checking students' test papers	4.89	Very easy

Legend: "Very Difficult to Use (1.00 – 1.80)", "Difficult to Use (1.81 – 2.60)", "Neutral / Neither Easy nor Difficult (2.61 – 3.40)", "Easy (3.41 – 4.20)", "Very easy (4.21 – 5.00)."

Table 15: Mean Distribution of the Respondents' Assessment of the Ease of Use of the Zipgrade application in terms of Keeping and Monitoring Students' Records

Benchmark statement	Mean	Verbal description
6. Easy to understand the app's directions for keeping and monitoring students' records	4.82	Very easy
7. Easy to follow the app's directions for keeping and monitoring students' records	4.83	Very easy
8. Convenient to use the app for keeping and monitoring students' records	4.82	Very easy
9. Appropriateness of the app in keeping and monitoring students' performance	4.77	Very easy
10. Easy to learn the proper use of the app in keeping and monitoring students' records	4.82	Very easy
Composite Mean	4.81	Very easy

Legend: "Very Difficult to Use (1.00 – 1.80)", "Difficult to Use (1.81 – 2.60)", "Neutral / Neither Easy nor Difficult (2.61 – 3.40)", "Easy (3.41 – 4.20)", "Very easy (4.21 – 5.00)."

Teachers considered ZipGrade Very Easy to use in maintaining and monitoring student records (Composite Mean = 4.81). The findings indicate that the ZipGrade application is easy to use and effective for managing student assessment data. This is supported by Estarez et al. (2023), who found that teachers viewed the ZipGrade application as a user-friendly assessment tool that enables them to monitor student performance, generate reports, and organize data efficiently. The study emphasized that its straightforward interface and simple procedures allow teachers to manage student information with minimal difficulty. Similarly, Arora and Al-Hattami (2024) found that users perceived educational applications as convenient, accessible, and easy to use. Their findings suggested that applications with clear instructions and simple features improve the efficiency of storing and retrieving information, thereby enhancing overall usability. These studies support the view that the ZipGrade application's simplicity and accessibility contribute to its effectiveness in classroom assessment and data management.

Table 16: Mean Distribution of the Respondents' Assessment of the Ease of Use of the Zipgrade application in terms of Providing Accurate Data

Benchmark statement	Mean	Verbal description
11. It is easy to understand the app's directions in providing accurate data on an individual student or a class's performance	4.68	Very easy
12. Easy to follow the app's directions for supplying error-free data on individual students' or class performance	4.68	Very easy

13. It is convenient to use the app to provide faultless data about the individual student's or class's record of performance	4.64	Very easy
14. Suitability of the app in providing precise data on individual students' or class performance	4.62	Very easy
15. It is easy to learn the proper use of apps in providing relevant data about the individual student's or class performance	4.71	Very easy
Composite Mean	4.67	Very easy

Legend: "Very Difficult to Use (1.00 – 1.80)", "Difficult to Use (1.81 – 2.60)", "Neutral / Neither Easy nor Difficult (2.61 – 3.40)", "Easy (3.41 – 4.20)", "Very easy (4.21 – 5.00)."

Respondents perceived the application as Very Easy to use when providing accurate data (Composite Mean = 4.67). The findings indicate that the ZipGrade application is an effective and user-friendly tool for generating accurate scores, reports, and student performance data. This is supported by Estarez et al. (2023), who found that teachers viewed the application as an efficient assessment tool that enables the easy production of correct scores, reports, and performance data. The study emphasized that its user-friendly interface allows teachers to quickly access, organize, and manage assessment information. Similarly, Calis and Calis (2022) reported that teachers considered the ZipGrade application a reliable and easy-to-use assessment tool that delivers accurate results without requiring advanced technical skills. According to their study, the application's simple features help teachers efficiently generate and analyze student performance data, thereby supporting informed instructional decision-making.

Table 17: Mean Distribution of the Respondents' Assessment of Ease of Use of Zipgrade Application in terms of Giving Immediate Feedback

Benchmark statement	Mean	Verbal description
16. It is easy to understand the app's directions for providing direct feedback to students	4.63	Very easy
17. It is easy to follow the app's directions for providing direct feedback to students.	4.63	Very easy
18. It is convenient to use the app to provide urgent feedback to students	4.65	Very easy
19. Appropriateness of the app in providing immediate feedback to students	4.65	Very easy
20. It is easy to learn the proper use of the app in giving instant feedback to students	4.72	Very easy
Composite Mean	4.66	Very easy

Legend: "Very Difficult to Use (1.00 – 1.80)", "Difficult to Use (1.81 – 2.60)", "Neutral / Neither Easy nor Difficult (2.61 – 3.40)", "Easy (3.41 – 4.20)", "Very easy (4.21 – 5.00)."

Teachers rated ZipGrade as Very Easy for giving immediate feedback (Composite Mean = 4.66). The findings indicate that the ZipGrade application is highly effective in providing timely and accessible assessment feedback. This is supported by Estarez et al. (2023), who found that the application enables teachers to quickly generate scores and assessment reports, allowing students to receive results immediately. The study emphasized that its user-friendly interface helps teachers deliver organized and timely feedback, thereby improving the assessment process. Similarly, Arora and Al-Hattami (2024) reported that users perceived educational applications as practical and easy to use, particularly for accessing and sharing assessment data. Their findings suggest that applications that provide rapid and accessible feedback enhance both student learning and teacher effectiveness. In the same way, Nikou and Economides (2019) noted that smartphone-based assessment applications are valuable tools for delivering prompt feedback due to their accessibility, ease of use, and mobility. Their study highlighted that mobile assessment technologies enable teachers to provide timely performance information, helping students identify their strengths and areas for improvement. These findings support the view that the ZipGrade application is an effective tool for delivering immediate, organized, and meaningful feedback that promotes learning and assessment efficiency.

3.4 Significant difference in the usefulness of the Zipgrade application assessed by the respondents when grouped according to their profiles

The results show that respondents' assessments of the usefulness of ZipGrade did not significantly differ according to age, sex, educational attainment, years in service, class size handled, or device used ($p > 0.05$). However, a significant difference was found according to frequency of use ($p = 0.006$). This indicates that teachers who use ZipGrade more frequently tend to perceive its usefulness more positively. The findings indicate that teachers generally perceive the ZipGrade application as a practical, efficient, and user-friendly assessment tool. This is supported by Estarez et al.

(2022) and Rodillas et al. (2023), who found that regular use of the application improves assessment practices by simplifying test checking, score computation, report generation, and data management. Their studies also suggest that continued use helps teachers become more proficient and confident in performing technology-assisted assessment tasks. Similarly, Alwadi et al. (2021) emphasized that positive perceptions of an educational technology's usefulness, ease of use, and ability to enhance productivity contribute to its successful adoption. According to their research, educators are more likely to consistently use digital assessment tools when these tools reduce workload, improve efficiency, and provide accurate assessment results. Collectively, the findings of Estarez et al. (2022), Rodillas et al. (2023), and Alwadi et al. (2021) suggest that teachers are more likely to accept and sustain the use of the ZipGrade application when they perceive it as easy to use, beneficial to their assessment tasks, and capable of improving the quality and effectiveness of classroom evaluation.

Table 18: Kruskal-Wallis Test: Significant Difference of the Respondents' Assessment of the Usefulness of the Zipgrade Application in Assessing Students' Learning

Profile Variable	p-value	Decision	Interpretation
Age	0.366	Fail to Reject H_0	Not Significant
Sex	0.202	Fail to Reject H_0	Not Significant
Educational Attainment	0.411	Fail to Reject H_0	Not Significant
Years in Service	0.543	Fail to Reject H_0	Not Significant
Class Size Handled	0.490	Fail to Reject H_0	Not Significant
Device Used	0.262	Fail to Reject H_0	Not Significant
Frequency of Use	0.006	Reject H_0	Significant

3.5 Significant difference in the usefulness of the Zipgrade application assessed by the respondents when grouped according to their profiles

Table 19: Kruskal-Wallis Test: Significant Difference of the Respondents' Assessment of the Ease of Use of the Zipgrade Application in Assessing Students' Learning

Profile Variable	p-value	Decision	Interpretation
Age	0.720	Fail to Reject H_0	Not Significant
Sex	0.397	Fail to Reject H_0	Not Significant
Educational Attainment	0.162	Fail to Reject H_0	Not Significant
Years in Service	0.543	Fail to Reject H_0	Not Significant
Class Size Handled	0.733	Fail to Reject H_0	Not Significant
Device Used	0.327	Fail to Reject H_0	Not Significant
Frequency of Use	0.120	Fail to Reject H_0	Not Significant

The results indicate no significant differences in respondents' assessments of the ease of use of the ZipGrade application across all profile variables ($p > 0.05$). Regardless of age, sex, educational attainment, years in service, class size, device used, or frequency of use, teachers consistently perceived ZipGrade as easy to use. These findings are supported by Garcia and Garcia (2026), Rodillas et al. (2023), Schorr (2023), and Figà-Talamanca et al. (2022), who reported that well-designed educational technologies are generally perceived as user-friendly across diverse groups of educators.

4 CONCLUSION

In this study, 92 junior high school teachers evaluated the ZipGrade application's utility and usability in evaluating students' learning. The majority of the responders were female educators who led classes of 21 to 50 pupils, had over ten years of teaching experience, had bachelor's degrees, and frequently used ZipGrade on their phones. Over 50% of those surveyed said they frequently used the app. These profile traits served as the foundation for comprehending how teachers from various professional and demographic backgrounds felt about the application.

The study mainly concentrated on four important aspects of the ZipGrade application's utility: verifying exam results, storing and tracking students' progress, delivering precise statistics, and providing prompt feedback. Teachers evaluated ZipGrade as "Very Useful" across all parameters, according to the results. The ability to reduce time and effort when reviewing test papers, safely save and retrieve student records, produce accurate assessment data and item analyzes, highlight least-mastered competencies, and give students fast feedback was especially valued by respondents. These results show that ZipGrade greatly improves classroom assessment procedures' efficacy, efficiency, and correctness.

The study also addressed the ZipGrade application's usability. The program was consistently evaluated by respondents as "Very Easy" to use across all assessment features, according to the findings. When assessing exams, maintaining student records, creating assessment reports, evaluating performance data, and giving prompt feedback, teachers found the tool to be simple to understand, use, and navigate. The application's positive assessment was influenced by its easy-to-use interface and unambiguous instructions, indicating that users with different degrees of technological proficiency can use it successfully.

The study also looked into whether respondents' evaluations varied based on their professional and demographic traits. Teachers' opinions of ZipGrade's usefulness did not significantly change according to age, sex, years of service, educational attainment, class size handled, or device utilized, according to statistical research. Teachers that use the tool more frequently may have a greater awareness for its advantages, though, as usage frequency had a substantial impact on judgments of usefulness. There appears to be widespread agreement about ZipGrade's usability and accessibility, as evidenced by the lack of significant discrepancies in respondents' evaluations of the application's usability across all profile factors.

Overall, the study found that ZipGrade is an extremely practical and easy-to-use digital assessment tool that facilitates effective test checking, precise data management, methodical record keeping, student progress tracking, and prompt feedback. Regardless of the demographics and professional backgrounds of teachers, its efficacy seems to be broadly acknowledged, making it a useful tool for classroom evaluation.

The study's recommendations for future approaches include bolstering ZipGrade's implementation through training initiatives, technical assistance, and professional development programs from the Department of Education and school administrators. By offering suitable devices and financing for application subscriptions, schools may encourage adoption even further. Future researchers are urged to look into how ZipGrade is used in various educational settings, look into other elements that influence technology adoption and long-term use, and investigate more expansive uses of digital assessment systems and automated grading technologies. These approaches could improve teaching, learning, and assessment procedures as well as the incorporation of technology-based assessment tools.

4.1 Proposed Action Plan to Enhance the Implementation and Utilization of Zipgrade Application as an Automated Grading System

This action plan is recommended to guide teachers in improving their skills, particularly in the use of the Zipgrade application as an automated grading system for the assessment tool. It outlines key goals, strategies, and actions to support better teaching practices and student learning outcomes.

Objectives	Activities/ Strategies	Persons Involved	Time Frame	Source of Fund	Success Indicator
Strengthen teachers' competence	Conduct orientation and refresher training on Zipgrade application	DepEd Officials, School Heads, Teachers	June-July	MOOE/ School Funds	100% of teachers trained
Enhance technology-based assessment skills.	Conduct capability-building workshops.	School Heads, ICT Coordinators, Teachers	August	MOOE/ INSET Funds	Improved proficiency
Provide resources	Acquire devices and maintain subscriptions.	DepEd Officials, School Heads	September	School Funds/LGU/PTA	Devices and subscriptions available

Promote regular utilization	Encourage use in quizzes, tests, and exams.	School Heads, Teachers	Whole Year	School Funds	Increased utilization
Improve record management	Use Zipgrade application reports for tracking progress.	Teachers	Quarterly	School Funds	Updated student records
Strengthen data-driven decisions	Conduct LAC sessions on assessment data.	School Heads, Dept. Heads, Teachers	Quarterly	LAC Funds/ MOOE	Data used for interventions
Enhance timely feedback	Provide immediate assessment results.	Teachers	Whole Year	School Funds	Prompt feedback provided
Increase learner awareness	Discuss results and guide students.	Teachers, Students	Quarterly	School Funds	Students identify strengths and weaknesses
Monitor implementation	Conduct monitoring and evaluation.	DepEd Officials, School Heads, Teachers	Midyear and Year-end	School Funds	Improved implementation
Promote research	Encourage action on research on Zipgrade application	Teachers, Researchers, School Heads	Whole Year	BERF/Research Funds	Research outputs generated

4.2 Expected Outcome

Enhanced utilization of the Zipgrade application through improved teacher competence, technological support, effective record management, accurate data analysis, and timely feedback.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Acknowledgments

The author gratefully acknowledges the Polytechnic University of the Philippines, the Schools Division Office of Quezon City, participating school administrators, and all teacher-respondents who contributed to the completion of this study.

Funding Source

The researcher personally financed all aspects of this study. No external funding was obtained from any government agency, private institution, organization, or sponsor. The researcher maintained full responsibility for the design, implementation, analysis, and reporting of the research findings.

Disclosure of conflict of interest

The author declares no conflict of interest regarding the publication of this study.

Statement of ethical approval

Ethical approval was obtained from the Polytechnic University of the Philippines Research Ethics Committee (UREC Code: 625-0030).

Statement of informed consent

Participation was voluntary and informed consent was secured from all respondents before data collection.

REFERENCES

- [1] Department of Education. Policy guidelines on classroom assessment for the K to 12 Basic Education Program. DepEd Order No. 8, s. 2015. Pasig City: Department of Education; 2015.

- [2] ZipGrade LLC. ZipGrade grade sheet scanner user guide and features [Internet]. 2026 [cited 2026 Aug 20]. Available from: <https://www.zipgrade.com>
- [3] Arora B, Al-Hattami A. Technological tool for formative assessment in higher education: ZipGrade. *Can J Learn Technol*. 2024;50(2):1-18.
- [4] Garcia RM, Garcia LV. Perceived efficiency, accuracy, and workload impact of ZipGrade in secondary education. *Int J Digit Assess*. 2026;18(1):102-118.
- [5] Calis JR, Calis MT. Usability and effectiveness of ZipGrade application as a digital assessment tool among public school teachers. *J Technol Educ Stud*. 2022;14(2):45-58.
- [6] Estarez CL, Ramos EM, Santos RV. Utility, accuracy, and performance tracking using smartphone-based optical mark recognition in basic education. *Philipp Educ Assess J*. 2023;15(1):33-49.
- [7] Baticulon RE, Alberto NRI, Baron MBC, et al. Barriers to online learning in the time of COVID-19: a national survey of medical students in the Philippines. *Med Sci Educ*. 2021;31(1):615-626.
- [8] Alipio M. Predicting academic performance, feedback satisfaction, and instructional efficiency using digital assessment platforms in public secondary education. *Int J Educ Res Open*. 2021;2:100078.
- [9] Dela Cruz AM, Ramos FO. Mobile-assisted assessment tools and administrative workload reduction among secondary teachers in basic education. *Asian J Educ Technol*. 2022;11(3):89-102.
- [10] Villanueva KJ, De Leon MR. Evidence-based instruction and rapid data analytics via mobile grading systems in urban public schools. *J Educ Meas Eval*. 2023;12(1):40-55.
- [11] Davis FD. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Q*. 1989;13(3):319-340.
- [12] Galimova A, Sadykova G, Kayumova A. Re-examining the Technology Acceptance Model in modern K-12 classrooms: workload reduction and instructional efficacy. *Comput Hum Behav*. 2024;151:108012.
- [13] Or C. Demographic invariance and technological self-efficacy in TAM-based digital tool adoption. *J Comput Assist Learn*. 2024;40(3):889-904.
- [14] Marian D, Popescu A, Ionescu C. Sustained utilization of digital assessment tools among in-service teachers: a TAM-based structural model. *Educ Inf Technol*. 2025;30(1):211-230.
- [15] Hassan M. Descriptive research design: methods, applications, and data analysis. New York: Academic Press; 2024.
- [16] McCombes S. Descriptive research design: definition, methods, and examples [Internet]. Scribbr; 2023 [cited 2026 Aug 20]. Available from: <https://www.scribbr.com>
- [17] Singh S. Research methodology in educational sciences. New Delhi: Educational Publishers; 2026.
- [18] Creswell JW, Creswell JD. Research design: qualitative, quantitative, and mixed methods approaches. 5th ed. Thousand Oaks (CA): SAGE Publications; 2018.
- [19] Taherdoost H. Sampling methods in research methodology: how to choose a sampling technique for research. *Int J Acad Res Manag*. 2016;5(2):18-27.
- [20] Tondeur J, Van Braak J, Ertmer PA, Ottenbreit-Leftwich A. Understanding the relationship between teachers' pedagogical beliefs and technology use in education: a systematic review. *Educ Technol Res Dev*. 2017;65(3):555-575.
- [21] UNESCO. UNESCO ICT competency framework for teachers. Version 3.0. Paris: UNESCO; 2023.
- [22] Scherer R, Siddiq F, Tondeur J. The technology acceptance model in teacher education. *Comput Educ*. 2020;149:103777.
- [23] Rodillas MC. Assessment competencies and digital readiness among secondary school teachers in technology-assisted evaluation. *Philipp J Teach Educ*. 2023;19(2):77-93.
- [24] Uerz D, Volman M, Kral M. Teacher educators' competences and conditions for preparing student teachers to use technology. *Teach Teach Educ*. 2018;69:116-123.
- [25] Singh A, Kumar R, Patel V. Automated grading systems in large class environments. *Assess Eval High Educ*. 2024;49(2):215-231.
- [26] Gonzales PA. Reducing teacher administrative burden through automated assessment systems. *Educ Manag Adm Q*. 2025;31(2):145-161.

- [27] Dullano JA. Educational technologies for assessment management and learner monitoring in secondary schools. *Philipp J Educ Technol*. 2023;12(2):55-72.
- [28] Denoyelles A, Seilhamer R, Chen B. Mobile learning in higher education and basic education settings. *Comput Educ*. 2023;194:104689.
- [29] Nikou SA, Economides AA. Mobile-based assessment: a systematic review of literature. *Comput Educ*. 2019;128:312-327.
- [30] Olalude FO. Smartphone familiarity, user experience, and long-term adoption of educational applications in basic education. *J Res Technol Educ*. 2024;56(2):178-194.
- [31] Tuan NA, Le VH, Tran DT. Reliability and scoring accuracy rates of mobile OMR applications compared to manual grading methods. *Comput Educ J*. 2025;16(1):54-68.
- [32] Alawadi A, Al-Emran M, Shaalan K. Optical mark recognition: advances, difficulties, and limitations. *IEEE Access*. 2021;9:120512-120525.
- [33] Schorr K. Digital readiness, teacher confidence, and the perception of technology value in classroom assessments. *Technol Pedag Educ*. 2023;32(4):489-505.
- [34] Figa-Talamanca L, Giambona F, Porcu M. Gender differences and technology acceptance models in digital assessment frameworks. *Educ Technol Res Dev*. 2022;70(4):1421-1440.