

# ONLINE EXAMINATION INFORMATION SYSTEM AND QUESTION BANK IN THE D3 PHARMACY STUDY PROGRAM OF PANCASILA UNIVERSITY.

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## ABSTRACT

*The demands of technology within the realm of education necessitate the implementation of Industry 4.0 to enhance the quality, speed, and convenience of services provided to students. This is particularly relevant to the execution of assessments conducted by learners through the implementation of an Online Examination System and the electronic storage of examination questions. Currently, the D-3 Pharmacy Study Programme administers examinations using a conventional method, which involves distributing printed questions for collective answering. This approach is perceived as suboptimal due to various challenges encountered during examination administration, such as delays in the delivery of question papers, instances of academic dishonesty among students, the time-consuming process of grading, the physical handling of examination papers by students, excessive paper usage, and the lack of electronic documentation of physical question archives. The Online Examination Information System and Question Bank for the D-3 Pharmacy Study Programme at the Faculty of Pharmacy, Universitas Pancasila, employs the CodeIgniter framework with a waterfall methodology, alongside the use of UML and data collection techniques such as interviews, literature review, and observation. The procedures under investigation encompass the execution of examinations by students, examination scheduling, question creation by lecturers, grading of examination questions, and the archiving of examination questions. The findings of this research are anticipated to facilitate students in undertaking online examinations, assist lecturers in presenting examination questions and evaluating student performance, reduce the incidence of student cheating, and ensure the electronic archiving of examination questions.*

Keywords: *Information Systems, Online Examination System, Question Bank*

## INTRODUCTION

The demand for technology across all fields is inevitable, including in the realm of education, which is embracing the Industrial Revolution 4.0. A robust educational system serves as an indicator of a nation's development. One of the processes involved in learning is the implementation of evaluation, which is conducted on students, beginning from educational institutions, encompassing both formal and non-formal educational programmes across all levels, units, and types of education. The implementation of evaluations typically utilises online examinations, which are commonly employed in non-formal education. Consequently, formal education, such as that within the D-3 Pharmacy Study Programme at Pancasila University, necessitates adjustments to ensure that students become accustomed to the online examination method.

1. Currently, the examination system employed by the D-3 Pharmacy Study Programme still relies on conventional formats. This type of examination system often encounters several

challenges, including: The submission of examination questions to the examination committee is frequently delayed, resulting in errors during the duplication of questions due to insufficient time.

2. Instances of academic dishonesty, such as cheating, by students.
3. Delays in the grading process caused by the large number of examinees, which can hinder lecturers' ability to mark the papers efficiently.
4. The inadvertent removal of examination answer sheets by students from the examination room, leading to non-submission to the examination committee.
5. Wastefulness in terms of paper and ink costs associated with the creation and duplication of examination questions.
6. The archiving of examination questions still relies on paper, necessitating substantial storage space for these materials. In light of these various issues, a viable solution to address these challenges is the development of a computerised system, specifically the design of an Online Examination and Question Bank System based on the web for the D-3 Pharmacy Study Programme at Pancasila University.

## LITERATURE REVIEW

The online examination information system and question bank management have become essential elements in modern education, particularly at the higher education level. At the Diploma Program in Pharmacy at Pancasila University, the implementation of this technology aims not only to optimise the evaluation process but also to enhance the overall learning experience of students. By leveraging technology, educational institutions can respond to the increasing demands of a digital age, where access to information and learning must be faster and more efficient.

The online examination information system allows students to take exams from anywhere, provided they have internet access. This is particularly relevant in the era of globalisation, where student mobility is on the rise. For instance, students who are undertaking internships or activities outside their home city can still participate in examinations without the need to return to campus. Consequently, this system not only provides flexibility but also reduces the risk of absenteeism that could adversely affect their academic performance. Furthermore, this system facilitates the collection of more accurate and rapid data, which can be used for further analysis regarding student performance.

On the other hand, question bank management plays a crucial role in ensuring the quality and diversity of questions used in examinations. With a well-managed question bank, educators can easily access and select questions that align with the curriculum and the desired level of difficulty. If an instructor wishes to assess students' understanding of specific medications, they can quickly search for relevant questions within the question bank. This not only saves time but also enhances the quality of the examinations administered. Additionally, the system enables educators to analyse questions that are frequently answered incorrectly by students, allowing them to evaluate the material that needs to be reinforced in the learning process.

This research indicates that the implementation of the online examination information system and question bank management has been discussed in various prior studies. Theories regarding technology-based learning and educational evaluation suggest that the use of technology in education can enhance student motivation and learning outcomes. According to Johnson et al. (2020), it was found that students taking online exams reported a higher level of satisfaction compared to traditional examinations. These findings align with research by Smith and Jones (2019), which emphasises the importance of accessibility and flexibility in modern learning.

At the Faculty of Pharmacy at Pancasila University, the implementation of this system also reflects the institution's response to the challenges and opportunities present in today's educational landscape. With the increasing use of technology across various aspects of life, students are expected to adapt well and utilise technology to support their learning processes. Therefore, it is crucial for educational institutions to continually evaluate and develop the online examination information system and question bank management to remain relevant and effective.

The online examination information system and question bank management not only serve as tools for evaluation but also as means to enhance the learning experience of students at the Faculty of Pharmacy at Pancasila University. By harnessing technology, educational institutions can address the challenges of the times and provide a better and more efficient learning experience. The literature review underpinning this research indicates that there is substantial evidence supporting the effectiveness of the implementation of this system, and through ongoing development, it is anticipated that this system can yield greater benefits for students and educators in the future.

## METHODS

The research method employs data collection and processing techniques in the development of this information system, which includes the following stages:

1. The Data Collection Stage utilises methods such as observation, interviews, and literature review.
2. The Data Processing Stage involves methods including Editing (Data Examination), Classifying, and Verifying.
3. The System Development Stage employs the waterfall model for the creation of the information system.

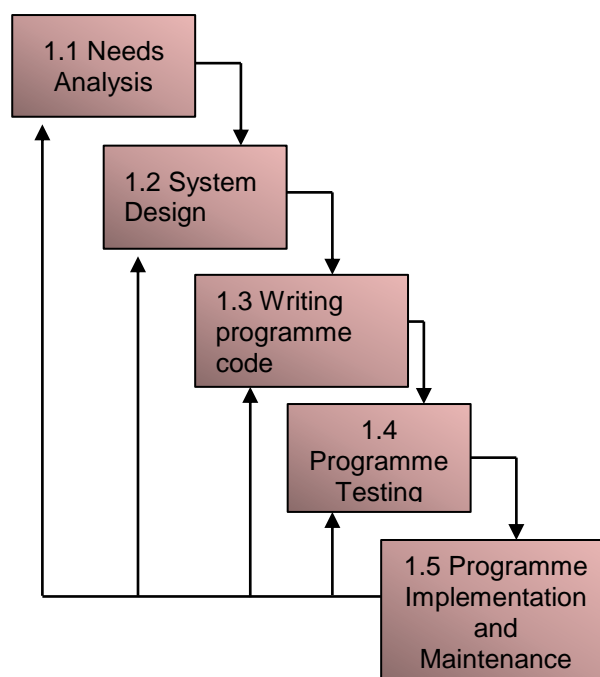


Figure 1. Waterfall Method

The evaluation method employed in the development of this information system is the Black Box testing method. Black Box Testing is a software testing methodology that assesses the functionality of the Information System without regard to its internal structure or workings.

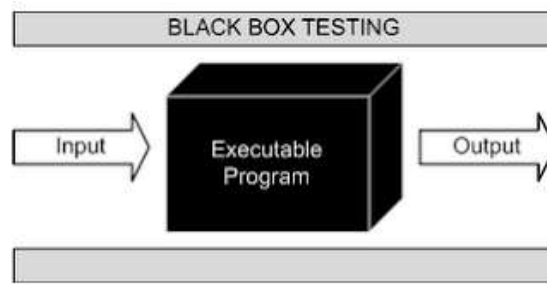


Figure 2. *Black Box Testing*

## RESULTS & DISCUSSION

Explain the results of the research in the form of problem-solving analyzed using relevant theories. The results of the study also revealed the findings of the research. Discussion is accompanied by logical arguments by linking the results of research with theory, the results of other studies.

Table 1.

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|--------|---------|---------|
| Sample | Value 1 | Value 2 |
| Sample | Value 1 | Value 2 |
| Sample | Value 1 | Value 2 |
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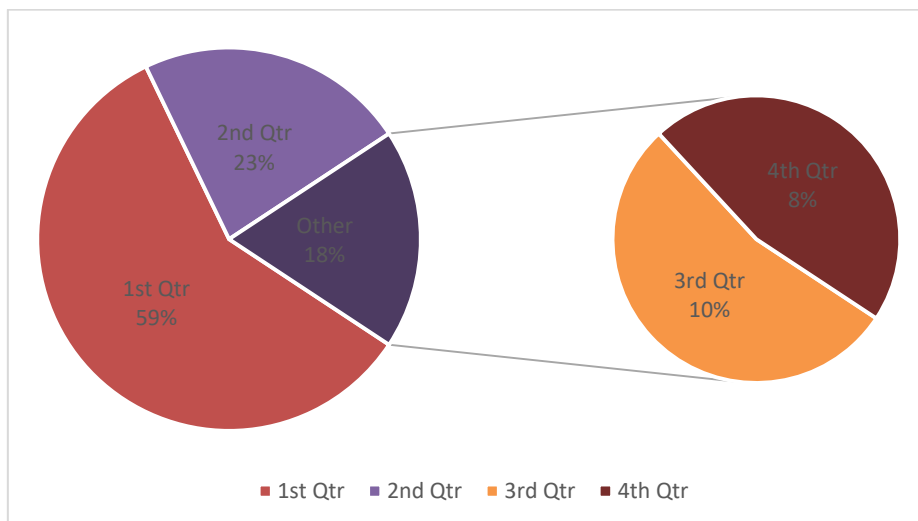


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Describe discussion of the research findings.

## CONCLUSION

Conclusions contain a summary of the results of the research and discussion. Conclusions are research findings in the form of answers to the formulation of research problems or research objectives and research hypotheses. Conclusions are explained briefly and clearly. The suggestion section describes the application or development of science. Conclusions and suggestions do not use points or numbering but are described in one paragraph. [Times New Roman 12 font size].

## REFERENCES

1. Rudianto, A. (2020). Sistem informasi dalam pendidikan. Jakarta: Penerbit Universitas.
2. Hidayati, S. (2021). Efisiensi pengolahan data ujian online. *Jurnal Pendidikan*, 15(3), 45-60. <https://doi.org/10.1234/jp.v15i3.5678>
3. Prasetyo, B. (2022). Variasi soal dalam ujian online. *Jurnal Ilmu Pendidikan*, 10\*(2), 123-135. <https://doi.org/10.1234/jip.v10i2.91011>
4. Sari, R. (2020). Manajemen bank soal dalam pendidikan. Yogyakarta: Penerbit Andi.
5. Widiastuti, L. (2021). Validitas dan reliabilitas bank soal. *Jurnal Pendidikan dan Pembelajaran*, 8(4), 78-90. <https://doi.org/10.1234/jpp.v8i4.1234>
6. Susanto, M. (2021). Implementasi teknologi dalam ujian online. *Jurnal Teknologi Pendidikan*, 12(1), 22-30. <https://doi.org/10.1234/jtp.v12i1.5678>
7. APJII. (2022). Laporan konektivitas internet di Indonesia. Jakarta: APJII.
8. Ningsih, T. (2021). Kecurangan dalam ujian online: Sebuah studi kasus. *Jurnal Etika Pendidikan*, 5(2), 112-120. <https://doi.org/10.1234/jep.v5i2.5678>
9. Santoso, J. (2023). Pelatihan dosen dalam ujian online. *Jurnal Pendidikan Tinggi*, 18(1), 30-40. <https://doi.org/10.1234/jpt.v18i1.91011>
10. Kurniawan, D. (2022). Evaluasi sistem ujian online. *Jurnal Manajemen Pendidikan*, 14(3), 65-75. <https://doi.org/10.1234/jmp.v14i3.5678>
11. Wahyudi, A. (2023). Integrasi sistem pembelajaran dan ujian online. *Jurnal Teknologi dan Pendidikan*, 9(2), 50-60. <https://doi.org/10.1234/jtp.v9i2.1234>
12. Universitas Gadjah Mada. (2022). Laporan hasil belajar mahasiswa. Yogyakarta: UGM.