Nursing Competency Test Guidance Training For Nursing Students In The Nursing Department By Implementing The Ruang Ukom Application

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Abstract.

The National Nursing Competency Examination (UKOM) is a crucial requirement for obtaining a Registration Certificate (STR) for professional nursing practice in Indonesia. Despite its importance, many nursing students face challenges in preparing for the exam, particularly in understanding case-based questions, applying critical thinking, and accessing effective learning support. This community service program aimed to improve students' readiness for UKOM by implementing a digital-based training and guidance strategy using the Ruang Ukom application at the Nursing Department of Jambi University. A blended learning approach was employed, combining face-to-face sessions, small group mentoring, and independent practice using the application. The Ruang Ukom platform featured interactive case-based questions, real-time feedback, exam simulations, and learning progress tracking. A total of 86 students participated, divided into intervention and mentoring groups. Quantitative analysis showed a significant increase in knowledge scores, with the mean pre-test score of 104.84 rising to 160.22 in the post-test. The intervention also enhanced students' confidence, exam readiness, and critical thinking skills. The program encouraged digital transformation in academic guidance and demonstrated that integrating technology into nursing education can effectively support competency development. This model has potential for broader application and sustainability in preparing future nursing graduates for professional certification.

Keywords:*UKOM; nursing competency; digital learning; Ruang Ukom; student readiness and blended learning.*

I. INTRODUCTION

The National Competency Exam for nursing profession students is an important step to ensure the quality of nursing graduates in Indonesia. Passing this competency exam is the main requirement for obtaining the Registration Certificate (STR) as a legally recognized professional nurse in the country[1]. However, evaluations of the exam's implementation have shown that there are still significant challenges faced by students, particularly in terms of academic and psychological readiness, as well as their ability to answer case-based clinical questions critically and comprehensively. The pass rate for the competency exam among nursing students over the past two years has shown a fluctuating trend[2].This indicates an urgent need for systematic, structured, and technology-based interventions to improve students' readiness in facing competency exams. The main issues faced by our partners, namely Nursing students and the Nursing Department as the institution providing professional education, can be described as follows:

1. Low Level of Student Readiness in Facing the Competency Examination Students often experience difficulties in understanding question patterns, analyzing clinical scenarios, and choosing the correct answers based on the national nursing competency standards.
2. Limited Effective Media and Guidance Strategies Conventional guidance methods (face-to-face meetings, lectures, and limited discussions) are less able to address the adaptive and personalized learning challenges that students need in preparing for the competency exam.
3. Suboptimal Utilization of Digital Technology The use of digital media and educational applications has not yet been maximized in the competency exam guidance process. In fact, today's generation of students is more responsive to technology-based learning approaches.
4. Limited Access to High-Quality and Calibrated Practice Questions Students face difficulties in accessing questions that resemble the national competency exam questions in terms of format, cognitive level, and case context.

Based on this situational analysis, there is a need for strengthened interventions in the form of training and intensive guidance for nursing students, supported by educational technology through the Ruang

Ukom Application. This application is an online learning platform specifically designed to help nursing students face the national competency examination, by providing case-based practice questions, automatic scoring features, performance analysis, and exam simulations..

II. METHODS

The implementation of these community service activities is systematically designed to address two main problem areas:

1. Improving the quality of nursing education in preparation for competency tests.
2. Implementing digital technology in learning and guidance systems.

Solution Implementation Steps: Implementation activities are divided into three major stages:

(a) Preparation Stage,

(b) Implementation Stage, and

(c) Evaluation and Sustainability Stage.

A. Preparation Phase (Weeks 1–2) Objective: Prepare all resources, materials, and coordinate with partners.

Steps:

- Coordination with the department head, competency test supervisor, and laboratory administrator.
- Survey student readiness, including access to digital devices and training needs.
- Socialization of community service activities to all nursing students and relevant lecturers.
- Development of training materials: questions, guidance modules, and tutorials on how to use the Ruang Ukom application.
- Scheduling application-based training and guidance sessions.

B. Implementation Phase (Weeks 3–8) The solution is implemented in two main intervention areas:

AREA I: Education – Improving Student Readiness for Competency Tests. Steps:

BIDANG II: Teknologi – Penguatan Digitalisasi Pembelajaran dan Bimbingan Langkah-langkah:

Ruang Ukom Application Usage Training for Students

- Hands-on practice: creating an account, answering questions, reviewing feedback, tracking progress.
- Students are given a target of completing a minimum of 100 questions per week. 3. Small Group Guidance (Cluster Mentoring)
- Students are divided into small groups (5–6 people).
- Each group is mentored by one lecturer and one student assistant.
- Guidance is conducted online and offline using application questions. 4. Competency Test Simulation
- A simulation is conducted using questions from the application that reflect real-life exam conditions.
- The simulation results are used to evaluate student readiness.

C. Evaluation and Sustainability Phase (Weeks 9–10) Steps:

Evaluation of Program Implementation and Sustainability: Implementation evaluation will be conducted using quantitative and qualitative approaches:

• Quantitative: Measurement of pre- and post-test results, simulation scores, and application usage logs by students and lecturers.

• Qualitative: Interviews and reflections from lecturers, students, and department heads. Program sustainability will be ensured through:

• Integration of digital guidance modules into the department's academic system.

• Establishment of peer mentoring among final-year and junior-year students.

• Department commitment to continue using the Ruang Ukom application as a permanent part of the competency test guidance process.

III. RESULTS AND DISCUSSION

To assess the effectiveness of the training and guidance intervention using the *Ruang Ukom* application, a pre-test and post-test design was implemented. The objective was to measure the improvement in students' knowledge and readiness for the National Nursing Competency Exam (UKOM) after participating in the structured program. The assessment was conducted using a series of case-based questions aligned with the national nursing competency standards.

Table 1. Differences in Knowledge Before and After the Service

	PRE	POST
Mean	104,84	160,22
Minimum	49	108
Maximum	160	175
95% Confidence interval of Mean	96,53 - 113,16	155 - 165,43
Mean ± Std.	104,84 ± 29,53	160,22 ± 18,51

The statistical results indicate a notable increase in students' knowledge after the intervention. The mean score for the pre-test was **104.84** with a standard deviation of **±29.53**, while the post-test mean score increased to **160.22** with a standard deviation of **±18.51**. The minimum and maximum scores also improved, from **49–160** in the pre-test to **108–175** in the post-test.

Fig 1. implementation of activities

The 95% confidence interval for the pre-test mean was **96.53 – 113.16**, and for the post-test mean was **155.00 – 165.43**, clearly indicating a statistically significant improvement. These findings support the effectiveness of the blended learning model combined with technology-assisted preparation in enhancing nursing students' knowledge and exam preparedness.

Discussion

The results of this study demonstrate that structured guidance using the *Ruang Ukom* application significantly improved the academic readiness of nursing students to face the National Competency Exam (UKOM). Several key points emerged from this intervention that are worth discussing in depth, especially in relation to educational strategies, digital transformation in learning, and student engagement.

1. Impact of Digital-Based Training on Knowledge Enhancement

One of the most critical outcomes of this intervention was the considerable increase in students' knowledge scores after using the *Ruang Ukom* application. This finding is aligned with previous research suggesting that digital platforms equipped with interactive, case-based, and adaptive content can

significantly boost cognitive learning outcomes in healthcare education[3]. The use of the application allowed students to engage with UKOM-style questions regularly, which helped them become familiar with the exam structure, question patterns, and critical thinking approaches necessary for success[4].

Unlike traditional methods that rely heavily on passive learning through lectures or limited question discussions, the *Ruang Ukom* platform encouraged active learning. Students were required to answer a minimum of 100 questions per week, review automated feedback, and track their learning progress. This continuous practice model, supported by immediate corrective feedback, aligns with educational theories that emphasize repetition and reinforcement in skill mastery[5].Furthermore, the blended learning model—combining in-person sessions, group mentoring, and digital modules—catered to diverse learning styles. Students who were more comfortable with self-paced digital learning could maximize the application features, while those needing peer or mentor support could benefit from small group discussions. This flexibility likely contributed to the overall effectiveness of the intervention[6].

2. Strengthening Critical Thinking and Clinical Reasoning

A major barrier to UKOM success identified in prior evaluations was students' difficulty in analyzing clinical scenarios and selecting the correct responses based on national competency standards. The intervention addressed this gap by focusing on case-based questions that simulate real clinical conditions, thereby improving students' critical thinking and clinical decision-making skills[7].Through repeated exposure to such questions, students were trained not just to memorize content but to apply nursing knowledge in a problem-solving context. The application supported this process by presenting rationales for each answer, which facilitated deeper understanding and reflection[8, 9]. Additionally, the inclusion of test simulations resembling actual UKOM exam conditions further trained students to think under pressure, manage time, and approach complex cases methodically[10].The improvement in test scores also reflects the effectiveness of this training in fostering higher-order cognitive abilities—a crucial aspect of professional nursing competence. This outcome suggests that integrating clinical reasoning exercises into digital learning tools can be a powerful approach to competency-based education in nursing[11].

3. Facilitating Learning Through Structured and Personalized Guidance

Another success factor in this intervention was the implementation of structured mentoring through cluster-based small groups. Each group consisted of 5–6 students mentored by a lecturer and a senior student assistant. This structure allowed for more personalized attention, peer-to-peer learning, and timely feedback from mentors[12].This component was particularly valuable in maintaining student engagement and accountability throughout the program. It ensured that students were not left to navigate the application alone but had consistent support in interpreting feedback, setting learning goals, and overcoming difficulties in understanding complex material. Personalized learning support is especially important in preparing for high-stakes assessments like UKOM, where anxiety and academic stress can impact performance[13].Moreover, the guidance model empowered lecturers by providing them with insights into student progress through the application's monitoring features. Lecturers could identify students who were struggling and intervene appropriately, enhancing the overall efficiency of the guidance system[14].

4. Promoting Digital Transformation in Academic Systems

The implementation of the *Ruang Ukom* application represents a significant step toward digital transformation in the academic culture of nursing education at Jambi University. Prior to this initiative, technological tools were underutilized in exam preparation, despite students' high responsiveness to digital learning formats. The success of this intervention underlines the need for academic institutions to embrace digital innovations not only in teaching but also in mentoring and assessment strategies[15].By integrating this application into the academic workflow, the program aligned with broader educational reforms that advocate for digital literacy, technology-enabled assessment, and competency-based learning. It also established a replicable model that can be institutionalized for future cohorts, ensuring sustainability and continuous improvement in UKOM preparation.[16] The commitment of the nursing department to embed digital modules and peer mentoring systems into the formal academic framework is a positive indicator of long-term impact. This institutional support will help normalize the use of educational technology in professional preparation and encourage innovation in teaching practices.

5. Addressing Challenges and Future Recommendations

Although the outcomes of the intervention were largely positive, several challenges emerged that warrant attention in future implementations. Some students initially encountered technical difficulties in navigating the application, especially those unfamiliar with digital learning platforms. This highlights the need for ongoing digital literacy training and user-friendly design in educational applications[17]. Furthermore, maintaining motivation and consistent participation over a 10-week program required substantial effort from both students and mentors. This suggests that future iterations of the program should incorporate gamification elements, rewards systems, or more dynamic content updates to sustain engagement[18, 19].In terms of evaluation, while quantitative improvements in knowledge were well-documented, qualitative data from interviews and reflections revealed additional insights. Students reported increased confidence, improved time management, and reduced exam-related anxiety. Lecturers noted that the platform improved communication and allowed them to track progress more effectively. However, both groups emphasized the importance of continuous system improvements and regular updates to the question database to ensure relevance and accuracy[20, 21].

Based on these observations, several recommendations can be made:

- **Expand access** to the *Ruang Ukom* application beyond final-year students to include earlier cohorts, allowing for progressive competency development.
- **Integrate training modules** on how to maximize application features, especially for less digitally literate students.
- **Encourage collaborative content development** involving educators, clinicians, and alumni to ensure the question bank remains up-to-date and clinically relevant.
- **Establish feedback loops** between students, mentors, and developers to enhance user experience and application functionality.

IV. CONCLUSION

In conclusion, the structured guidance and training intervention using the *Ruang Ukom* application significantly enhanced nursing students' preparedness for the National Competency Exam. The intervention proved effective in improving knowledge levels, strengthening critical thinking skills, promoting digital transformation in academic systems, and enhancing the quality of mentoring.The increase in test scores from pre- to post-intervention, coupled with qualitative feedback from participants, demonstrates the potential of digital educational tools in transforming nursing education. As the healthcare field continues to evolve, preparing future nurses through innovative, technology-enhanced strategies will be key to ensuring competency, professionalism, and patient safety.Sustained commitment from academic institutions, continuous evaluation of program effectiveness, and responsive development of educational technology will be essential in scaling this model. The *Ruang Ukom* initiative has laid a strong foundation for such progress, and with continued refinement, it can serve as a benchmark for national efforts to strengthen nursing education in Indonesia.

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