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Demystifying Educational Demands: Analyzing the Needs for the Online Comprehensive Test Application at Islamic University

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ABSTRACT

This study aims to identify the needs for developing an online comprehensive test application at one of the Islamic universities in Indonesia. The needs assessment includes target situation analysis, user needs analysis, reality analysis, and gap analysis. This is a descriptive quantitative research involving 135 examiners and students who are taking comprehensive examinations from all four faculties at IAIN Bone as samples. Sampling technique used a stratified random sampling. Questionnaires and interview techniques were utilized for data collection, followed by a descriptive analysis. The findings reveal several weaknesses in the comprehensive test system. These include the lack of integration among all faculties, partial implementation, a highly flexible exam schedule, a paper-based test administration method, a lack of standardized instrument development, and suboptimal utilization of comprehensive test results for mapping student competencies. To conclude, it is necessary to develop an online comprehensive test application which is expected to be able to make the implementation of the comprehensive test at IAIN Bone more integrated, programmed, and effective.

Keywords: *Need Analysis, Online Comprehensive Test, Online-Based Assessment*

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INTRODUCTION

Comprehensive tests often fail to fulfill their role as a tool to assess students' competencies comprehensively in a university. A similar problematic situation also occurs at IAIN Bone. The comprehensive test has not optimally mapped the graduates' competencies at IAIN Bone. The expected comprehensive test, intended as an evaluation target for improving the quality of education and teaching at IAIN Bone, has not been fully maximized in its implementation.

The implementation of comprehensive tests at IAIN Bone is still paper-based. Currently, there are no standardized criteria established for assessing students' comprehensive tests. Faculty examiners have varying perspectives on the assessment standards for comprehensive tests. Moreover, its implementation is not integrated; it remains largely partial. Each faculty designs and develops comprehensive tests according to their respective needs.

On the other hand, in an ideal context, comprehensive tests should effectively measure students' abilities in understanding course materials within their chosen field.

Therefore, the results of comprehensive tests should be utilized to map students' competencies and formulate policies for improving the quality of education and teaching in higher education. It's this gap in conditions that has motivated researchers to develop a comprehensive test model in line with the intended standards.

An online web-based comprehensive test model presents an alternative solution to minimize these issues. The similarity observed between supervised paper-based exams and computer-based practice assessments indicates that online testing holds potential as a viable substitute for conventional paper-and-pencil examinations (Clark et al., 2020). Furthermore, online exams offer numerous advantages, including ease of administration and data processing (Susilowati & Hidayat, 2018), time efficiency, simplified grading, and reduced opportunities for cheating (Golden & Kohlbeck, 2020). These results align with Shraim's (2019) study, affirming that the advantages of online exams in comparison to traditional paper-based assessments encompass the dependability of grading and increased efficiency regarding time, effort, and financial resources expended in the examination process. With the many advantages it offers, the transition from manual paper-based testing to an online system has become a current trend in education (Halamish & Elias, 2022).

Several previous studies have developed online exam instruments, whether web-based, Android-based, or CBT (computer-based test) (Indra et al., 2019; Sundari & Izzati, 2020; Wardhana et al., 2015). However, there's a limited number of studies that focus on developing online comprehensive test applications at the university level. Moreover, research specifically focusing on the development of online comprehensive test applications preceded by a need analysis remains scarce to date.

Need analysis, commonly referred to as a needs assessment, serves as the foundation for program improvement or development (Saragih, 2014). Needs analysis is essential for developing tests, evaluating teaching strategies, and designing learning materials, media, and activities (Diana & Mansur, 2018). In this research context, the needs analysis is crucial for describing the initial requirements necessary to improve the existing exam system so that the developed improvement program can operate effectively (Alfian, 2019) and align with students' needs as users. Additionally, needs analysis is needed to identify discrepancies between the ideal conditions (expected target) and the actual implementation of comprehensive tests at IAIN Bone. As Nurjannah (2018) stated, needs analysis is necessary to discover shortcomings in existing programs for subsequent improvement.

Conducting a needs analysis plays a vital role in the development of online assessments for various reasons. It enables the recognition of distinct requirements and preferences of the intended audience, ensuring the customization of assessment tools to align with their levels and purposes (Wong et al., 2022). It further helps in assessing the readiness or preparedness of faculty members and pinpointing crucial focus areas to enhance the successful execution of online assessments (Si et al., 2021).

This research emerges as a thorough response to and complement of the limitations encountered in previous studies, with its uniqueness lying in its focus on needs analysis for the development of a comprehensive online test application. The significance of conducting a needs analysis in the context of this research becomes more pronounced considering that the development of a comprehensive online test application must align with the specific needs and characteristics that may differ in the environment of Islamic universities in Indonesia. Needs analysis becomes crucial for identifying and understanding the initial requirements desired by stakeholders, including faculty and students. By detailing these initial requirements, the research aims

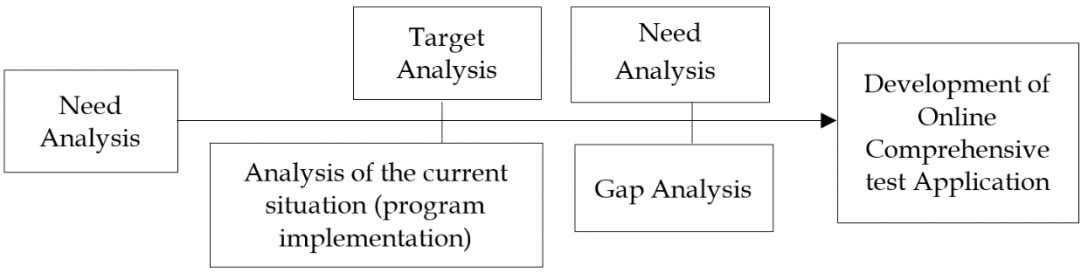
to provide a strong and relevant foundation, leading to the development of an online testing application that is not only technologically advanced but also contextually relevant and pedagogically aligned with the unique educational environment in Indonesia. Thus, this research aims to identify and describe the initial requirements for developing an online comprehensive test application in an Indonesia Islamic university.

METHOD

This is descriptive quantitative research that analyzes and describes the needs for the development of an online comprehensive test application at IAIN Bone as one of the state Islamic universities) in South Sulawesi, Indonesia. The study involved 152 participants, comprising 12 examiners and 140 students who were participants in the comprehensive test from four faculties at IAIN Bone. Students involved in this research were at least in their 7th semester and had taken the comprehensive test. Subject selection of students utilized the technique of proportionate stratified random sampling, which involves dividing the population into strata and then selecting samples proportionally at random from each stratum (Taherdoost, 2016).

The needs analysis framework in this research encompasses the analysis of the target situation, user needs analysis, real-world situation analysis (program implementation), and gap analysis. These aspects of analysis are elaborated as follows: (1) Analysis of the target situation involves an analysis of the ideal situation or target expected from the implementation of comprehensive tests. (2) User needs analysis refers to personal information about the users or the parties who utilize the comprehensive test system, in this case, referring to the students taking the exam and the examiners. (3) Real-world situation analysis (program implementation) entails an analysis of the implementation of comprehensive tests at IAIN Bone, as it has been traditionally carried out. (4) Gap analysis refers to the significant differences or gaps between the ideal/target conditions expected and the current reality/conditions of comprehensive test implementation at IAIN Bone. This section also outlines the shortcomings of the existing comprehensive test system. The analytical framework used in this study is based on the need analysis theory proposed by Lowi (Miyake & Tremarco, 2005), which can be visualized as shown in Figure 1.

Figure 1. Framework of the development needs analysis for online comprehensive test application



Forms. The questionnaire used was a mixed-method questionnaire, combining open and closed-ended questions. Closed-ended questions were answered using a Likert scale (ranging from 1-5). The questionnaire consisted of two categories: (1) Questionnaire for faculty members, comprising 21 statements related to the analysis of the target situation, analysis of the current situation (program implementation), and gap analysis. (2) Questionnaire for students, containing 12 questions related to user needs analysis and the analysis of the current situation (program implementation).

In addition to using questionnaires as the primary instrument, the researcher also employed a semi-structured interview technique to gather supplementary data. As Sava (2012) pointed out, the need analysis method can be conducted by combining survey methods using questionnaires with interview techniques. Through interviews, the researcher delved deeper into the information provided by five faculty members and five students regarding the four aspects of need analysis established beforehand.

The collected data was subsequently analyzed descriptively. Questionnaire data was processed and analyzed using Microsoft Excel with quantitative descriptive techniques, including percentages and data categorization on a five-point scale. Furthermore, data from the interviews were qualitatively analyzed in three stages: data reduction, data presentation, and drawing conclusions (Huberman & Miles, 2019).

RESULT AND DISCUSSION

The needs analysis for the development of the online comprehensive test application in this research consists of four aspects of analysis: analysis of the target situation, analysis of the reality (program implementation), gap analysis, and user needs analysis. Below are the research main findings related to these four aspects, based on both questionnaire responses and interviews.

Target Analysis

The first aspect of the analysis is the expected target, which includes the input, process, and output of the implementation of the online comprehensive test system at IAIN Bone. Indicators within the input sub-aspect are related to the development of assessment instruments and the quality suitability of the instruments that will be used in the comprehensive test system. The process sub-aspect includes scheduling and exam execution methods, while indicators within the output sub-aspect involve transparency of exam results, the interpretation of exam results, and the utilization of comprehensive test results concerning their function in mapping student competencies. The results of the questionnaire data analysis, which contains faculty members' responses regarding the target aspect, are presented in Table 1.

Table 1. Questionnaire data for the target analysis aspect

No	Indicators	Percentage (%)	Categories
Input			
1	Standardization of instrument development	100.00	Very high
2	Feasibility Instrument	100.00	Very high
Process			
3	Clarity of exam schedule	97.15	Very high
4	Comprehensive test implementation among faculties	92.37	Very high
5	The examination method (online)	95.78	Very high
Output			
6	Transparency of exam results	89.50	Very High
7	Interpreting and utilizing exam results to the fullest extent possible	100.00	Very high

The research findings indicate that all respondents provided positive responses. This is based on the analysis of questionnaire data (Table 1), which shows that all target indicators fall into the "very high" category. In fact, on three input and output target indicators, all faculty examiners agreed. They expressed strong agreement that the instruments should be developed through a standardized process, ensuring that the

comprehensive test test instruments produced meet the criteria for subsequent implementation in the field.

This aligns with the basic theory of instrument development, which states that a test instrument must meet several essential characteristics to be considered a good measuring tool, namely the ability to generate accurate data and information. The key characteristics referred to are validity and reliability (Cohen et al., 2017; Mardapi, 2008; Taherdoost, 2016). To meet these validity and reliability standards, it's necessary to follow the steps of test development according to standards. These steps include defining the purpose of instrument preparation, determining the material coverage and item specifications, compiling item indicators, composing instrument items, content validation, revision based on validator suggestions, test trials, conducting analyses (reliability, difficulty level, and discrimination power), and assembling the instrument (Retnawati, 2016). Azwar (2016) also emphasizes that tests should have objective result interpretation, be conducted according to standardized procedures, and be relatively easy to use (economical and practical).

Furthermore, all respondents also expected that the output of the comprehensive tests conducted at IAIN Bone should not merely be final scores for individual test takers. Instead, comprehensive tests should ideally serve as a tool to map the competencies of prospective IAIN Bone graduates. This is reinforced by the opinion of one of the faculty examiners (PMR) from the interview, as follows.

Researcher (R)	:	"*How should faculty examiners and the program/faculty/institution view the results of these comprehensive tests?*"
PMR	:	"*Ideally, the results of the exam should not conclude when students receive grades like A, B, and so on. Instead, faculty examiners should be able to assess, evaluate, and interpret the meaning of those scores. We should go back to the purpose of comprehensive tests, which should be used to map student competencies before they graduate. Here, we have three levels of comprehensive tests - institutional, faculty, and program-specific. So, the analysis of exam results should ideally be used by the program/faculty/institution to determine policies.*"

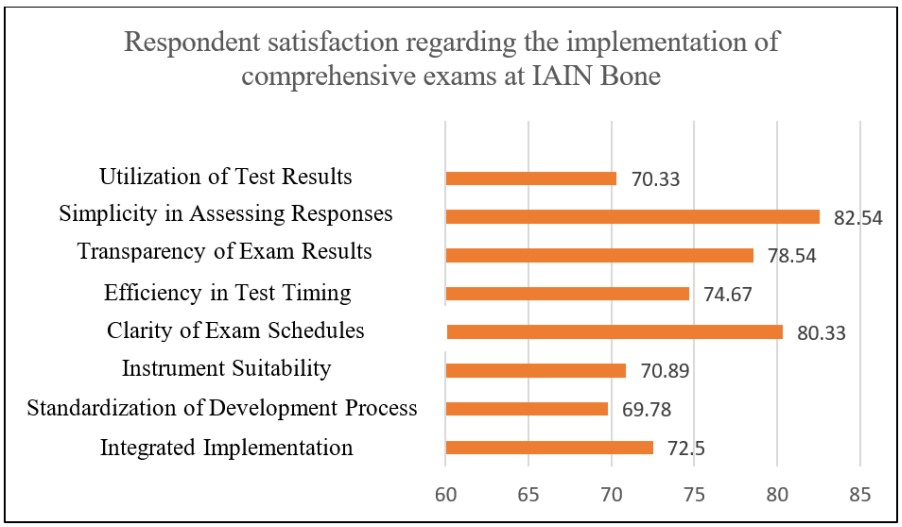
According to Mardapi (2008), the test results need to be interpreted and acted upon. Interpreting the results of the exam is essential to evaluate the achievement of cognitive competencies of students who take comprehensive tests. The evaluation results can then serve as a basis for decision-making by the faculty/institution leadership to enhance the quality of education at IAIN Bone.

Analysis of the Reality (Program Implementation)

After identifying the expected targets of the comprehensive test implementation at IAIN Bone, the next step is to analyze the current reality or the current conditions of the comprehensive test system. The analysis of questionnaire results on this aspect is presented in Figure 2.

The data in Figure 2 shows that the average satisfaction of the respondents falls within the percentage range of 69 - 83%. Among the eight measured indicators, five of them have percentages below 75%, indicating they are in the "moderate" to "low" categories. These five categories are related to the development process of exam instruments, the suitability of exam instruments, the utilization of exam results, the lack of integrated exam administration, and the efficiency of exam timing.

Figure 2. Aspect of Program Implementation Analysis



To gain deeper insights into the implementation of comprehensive tests at IAIN Bone, interviews were conducted with students who have experienced the comprehensive test. The research findings highlight issues related to the scheduling of comprehensive tests at IAIN Bone. According to interview results, students perceive that the scheduling of comprehensive tests is very flexible and heavily dependent on faculty examiners' availability. Comprehensive tests are not conducted simultaneously and are not well-scheduled. Faculty examiners are given a two-week window for exam administration, and sometimes, they exceed this time frame. Examiners have the flexibility to set the exam schedules. As a result, students must adapt to the schedules of three different examiners.

To confirm the issue related to the comprehensive test scheduling, interviews were conducted with faculty examiners. Some responses about what common challenges they experienced during the comprehensive test the conducted, are following:

Researcher (R) : "*Based on your opinion, what are the common challenges you often experienced in the implementation of comprehensive exams?*"

MY : "*Time issue. It's not simultaneous. For example, this week I test 3 people. The next week, there are 5 more people. Shortly after, there are additional participants. In my opinion, the timing schedule is not effective. Moreover, since I provide essay questions, it takes a lot of time to check.*"

AH : "*Clarity of exam schedule. I usually only know about my testing schedule when students contacts me, and sometimes, I receive testing schedules multiple times with a small number of students. Even, I ever tested just one person. Actually, if the students are scheduled for a simultaneous exam, the time I spend would be more efficient.*"

Based on the results of the semi-structured interviews, it was revealed that the clarity of schedule and testing time efficiency also became an issue. The implementation of non-simultaneous and repeated exams is considered highly ineffective by the examiners. It will take time to conduct the exam and review the results if the comprehensive test is conducted repeatedly with a small number of participants in each

session, even just one person. Besides, the implementation of comprehensive tests at IAIN Bone has not been carried out in an integrated manner; it remains highly fragmented. Each faculty designs and develops comprehensive tests according to their respective needs.

Faculty examiners NR, Z, and AH separately stated that it is common for several faculty examiners to assess the same exam subject, but the questions given during the assessments are different, both in terms of material coverage and difficulty level. This issue aligns with the statement of some students interveiwed. The interview results of one student (YY- a student from the Faculty of Tarbiyah in the 8th semester) are presented as follows.

Researcher (R)	:	"*How do you find the questions given by the examiners? Do all examiners use the same set of questions?*"
YY	:	"*The difficulty level of the exam questions depends on the examiner. For example, I and my friend DS will both take the comprehension test for Thematic Learning course. The questions I receive will likely be more challenging because I was examined by Ms. NR, while my friend was examined by Ms. AH.*"

The results of these brief interviews indicate that the quality of the test items in the instruments used is suboptimal. There is no consistency in the questions or instruments among examining lecturers, even though they are assessing the same course. Issues related to the suitability and instrument standarization were affirmed by statements from all faculty examiners who were interviewed, such as in the following interview fragments:

Researcher (R)	:	"*Based on your opinion, are the instruments used already standardized?*"
AH	:	*"No, we assess not only the courses we teach. For instance, I am a mathematics lecturer, but I also assess Indonesian language, science, and social studies. Although we have discussed which subject areas need to be assessed, I believe the processes and instruments in place are not standardized at all. In reality, the difficulty levels and specific content tested by different examiners vary."*
NR	:	*"Non-uniform test formats and questions. Some instructors conduct written exams with multiple-choice and essay questions, while others opt for oral exams. Sometimes, I hear complaints from students that my exams are more challenging compared to other examiners for the same subject. Surely, this is a critical issue that needs to be addressed."*

All the interview faculty examiners admitted that the development of comprehensive test instruments at IAIN Bone can be considered non-standardized. For example, the development of comprehensive test instruments is not based on the learning objectives and indicators agreed upon by all faculty examiners in a particular subject. Instrument development also does not involve stages of suitability testing, such as validation and reliability estimation. Most importantly, there is no alignment of perceptions among faculty examiners from the four faculties in the same subject. For instance, the course "Methodology of Islamic Studies," which is, in principle, an institution-level exam subject assessed across all faculties, should be created based on an outline agreed upon by all faculty examiners from the four faculties through a Focus

Group Discussion (FGD). In reality, this standardization phase has not been implemented, and instrument development is not done in an integrated manner.

In line with what was revealed by faculty informants, interviews with twelve students also indicated similar issues. Seven out of the twelve student interviewees expressed that there are instances when faculty examiners do not provide a clear exam outline. MHF, one of students stated that issue as in the following interview fragment:

Researcher (R)	:	"*Based on your experience, do the examiners provide any guidelines/indicators before giving the comprehensive test?*"
MHF	:	"*Do you mean, like an outline as a guideline about what topics will be assessed?*"
R	:	*"Yes."*
MHF	:	"*There are lecturers who provide a guideline, and there are those who do not. Some also provide a guideline, but the material coverage is too extensive, so sometimes we are confused about what to study for the exam."*

The interview with MHF indicates that one of the challenges felt by students is the lack of clarity regarding the material to be assessed. Some lecturers provide material that is too extensive, and there are even those who do not provide an outline. This ultimately confuses students preparing for the comprehensive test as they are uncertain about what topics need to be studied.

In terms of the exam format, the comprehensive test system at IAIN Bone is paper-based. Based on interviews with faculty members and students, it is evident that exams are given directly by faculty examiners, either orally or in the form of exam sheets containing essay questions. Regarding the grading or evaluation system, DS and YY (students from the Faculty of Tarbiyah) revealed that most faculty members provide final grades on the grade list without showing corrected answer sheets. As a result, students do not receive feedback on their mistakes and deficiencies written on their answer sheets. In theory, providing feedback is important in an exam. Giving feedback can have a positive impact on the learning experience of test-takers (Kher et al., 2002).

Gap Analysis

Gap analysis refers to the process of identifying discrepancies or gaps between the ideal conditions (expected target) and the actual conditions (reality). Based on the analysis results of the target aspect and the reality aspect (implementation of comprehensive tests) mentioned earlier, research findings indicate that the implementation of online comprehensive tests at IAIN Bone has several weaknesses, which are summarized in the following Table 2.

Table 2. Gap analysis result

No	Indicators	Target	Reality (Program Implementation)
1	Standardization of instrument development	Following standard instrument development procedures Reaching a consensus among team members in establishing a blueprint for a single exam subject	The process has not standardized yet Instrument development does not involve a Focus Group Discussion (FGD) to align the perceptions of team

			members creating questions for a particular exam subject.
2	Feasibility Instrument	Meets the feasibility criteria: valid and reliable.	Failed to complete the validation testing and reliability estimation phase.
3	Clarity of exam schedule	Well-organized and properly scheduled exam implementation.	Exam execution is not well-scheduled, it is still very flexible, depending on the availability of the exam.
4	Comprehensive test implementation among faculties	Comprehensive test implementation is carried out in an integrated manner among faculties	Comprehensive test implementation across faculties is still partial and not fully integrated
5	The examination method	Paperless (online)	Paper-based test
6	Transparency of exam results	Students can have immediate access to their exam outcomes.	Often, instructors directly provide final grades without revealing students' exam results.
7	Interpreting and utilizing exam results to the fullest extent possible.	Student exam scores are interpreted, analyzed, and the results can be utilized by the lecturers/ study programs/ faculties/ institutions to map student competencies.	The exam results have not been optimally utilized.

User Needs Analysis

The analysis of user needs (comprehensive test participants at IAIN Bone) is provided in Table 3 below.

Table 3. Questionnaire data on the user needs analysis aspect

No	Indicators	Percentage (%)	Categories
1	Clarity of the Exam Material Coverage	89.32	Very high
2	Availability of Exam Blueprints	90.57	Very high
3	Alignment of the Exam Blueprints with the Exam Items (Questions)	85.68	Very high
4	Clarity of the Exam Timing	87.25	Very high
5	Transparency of Exam Results	82.67	Very high
6	Conducting exams online (using an mobile phone/laptop)	95.82	Very high

Based on the data presented in Table 3, all user needs indicators are in the very high category with percentage values above 80%. This indicates that all respondents expect the implementation of the comprehensive test system at IAIN Bone to meet at least these six indicators (Table 3).

One of the main things needed by students is the clarity of the exam material coverage. The exam material or sub-material is outlined in the form of an exam question grid so that participating students can clearly understand the content/material that will be tested. All interviewed students expressed the same thing, stating that the examiners should provide a clear exam question grid to help them study in a focused manner in preparation for the exam.

Furthermore, the 12 interviewed students are very enthusiastic about the possibility of comprehensive tests at IAIN Bone being scheduled and paperless (online). This comes from the issue that students often face when adjusting their schedules with examiners. Given that comprehensive tests are conducted for three different courses, each with different examiners, scheduling is a challenge. Exams are held separately, based on each examiner's schedule.

The data from the questionnaire analysis also revealed that all respondents have electronic devices such as Android smartphones/tablets and/or laptops that would allow them to access online exams if the comprehensive test system were converted from a paper-based test to a computer-based test. All student informants reported that they are familiar with the use of mobile devices and/or laptops. They also expressed that they are comfortable with paperless exam formats, as the college entrance exams they took before were computer-based tests.

The needs analysis conducted in this research is an essential stage because it will serve as the basis and reference for decision-making regarding the sustainability of the current comprehensive test system at IAIN Bone. The findings from this needs analysis will be a consideration of whether the comprehensive test system at IAIN Bone is deemed effective and worthy of retention, or if there is a need for improvements in the identified areas of weakness. This is consistent with the rationale expressed by previous researchers that, to develop online tests or computer-based tests, a needs analysis is essential to understand the specific requirements of the target audience, such as students, as mentioned by Ganefri et al. (2017). This also ensures that the assessment instruments align with the needs of the students and the learning outcomes expected by the university (Wong et al., 2022).

The analysis of the four aspects of need analysis provides an overview of the type of exam that students expect and need. Students need a well-scheduled exam system with clear subject matter/sub-material and a clear exam question indicators that will help them prepare as best as possible for the exam. From the target aspect, the comprehensive test system is expected to be integrated in its implementation across faculties.

The weaknesses identified in the implementation of comprehensive tests in this research will serve as the basis for improving the existing exam system at IAIN Bone. Examining the results of the gap analysis, it is clear that an online exam system is needed to minimize the gaps and weaknesses of the current comprehensive test system at IAIN Bone. One relevant form of system improvement is the conversion of the comprehensive test pattern from a paper-based test to a paperless (online) exam. In other words, the analysis results from the four aspects of need analysis will serve as a reference for the development of an online comprehensive test application at IAIN Bone.

The major findings of this research are the results of the needs analysis indicating that the implementation of comprehensive tests needs to be transformed from a paper-based assessment format to an online-based assessment. These findings are in line with previous studies that claim higher education is currently shifting towards online testing, where traditional paper assessments are gradually being replaced with online

assessments (Devisakti & Muftahu, 2022). Many universities in Indonesia are already adopting online exam systems (Pamungkas, 2017; Yunita et al., 2021). Additionally, numerous developing countries have initiated investigations into technology-based assessment systems (Huda et al., 2020). However, not all studies reveal the consistent results. In an university India, online exams have not received a positive response. Many universities are reluctant to conduct online exams and continue to rely on traditional approaches that do not achieve the desired results (Sharma et al., 2021). Key issues raised include the technological incompetence of students and teachers, along with a lack of trust in technology infrastructure.

Various studies show that the transformation of exams from traditional way (paper-based tests) to online systems has had very positive results (Osabutey et al., 2022). Online assessment eliminates the inconvenience due to rudimentary, traditional clinical assessments, for example, the need for examination halls, printed paper, and accommodation (Joshi et al., 2020). The implementation of online exams is considered more efficient in terms of time and cost (Afriansyah & Pratama, 2020; Shraim, 2019; Suwarna, 2017). In line with this, the use of paper-based tests is expensive and less accurate and provides minimal information on the required competencies (Suwarna, 2017). An online exam system can also make exam administration and data processing easier (Susilowati & Hidayat, 2018) and can minimize errors in grading and cheating during exams (Indra et al., 2019; Utami et al., 2023).

Furthermore, one of the findings in this study emphasizes the importance of a clear exam schedule. Through online tests, this can certainly be accommodated. A clear schedule of the assessment dates and times is crucial for both formative and summative assessment methods (Dogan et al., 2020). It is important to share the test schedule with students and ensure easy access as part of a strong assessment plan. In addition, employing online tests will aid examiners in effectively and efficiently assessing a large number of students taking the comprehensive exams. Utilizing online assessments can alleviate the workload of educators when it comes to evaluating the large number of students (Nicol, 2007).

Furthermore, with an online exam system, exam results and feedback can be known directly by test participants. This contradicts with traditional paper-based assessments, which tend to provide results and feedback to test participants. One significant drawback of paper-based assessments is their time-consuming nature, which often leads to delayed feedback for students (Cham & Cochrane, 2020). Online assessments offer instant feedback, which aids in enhancing the learning experience when contrasted with traditional paper-based tests (Alruwais et al., 2018). These advantages are in line with the needs and goals of the comprehensive test implementation at IAIN Bone.

Based on the findings of this research, supported by theories and empirical evidence from previous studies indicating a positive impact of implementing online exams, it is becoming increasingly clear that this transition holds significant advantages. The use of online exams not only eliminates the inconveniences associated with traditional clinical assessments, such as the need for examination halls, printed paper, and accommodation but is also considered more efficient in terms of both time and cost. In this context, the development of an integrated online-based comprehensive exam system becomes crucial. This approach not only aligns with a global trend in education but also offers a practical solution to meet the specific needs and goals of implementing comprehensive exams at IAIN Bone. This result is consistent with previous studies suggesting that students demonstrate better performance when engaging in online

assessments compared to traditional paper-based assessments, providing vital evidence for influencing policy decisions aimed at formalizing the integration of online assessments in the university (Osabutey et al., 2022).

The findings of this study have significant implications for the enhancement of the comprehensive test system at IAIN Bone and can contribute to broader improvements in educational assessment practices. The identified weaknesses in the current implementation of comprehensive tests underscore the importance of transitioning from a paper-based to an online exam system. The study suggests that such a shift could lead to a more integrated, standardized, and efficient assessment process. The clarity of exam schedules, subject matter coverage, and the provision of a clear exam question grid emerge as critical elements that could be addressed through the implementation of an online comprehensive test application. Furthermore, the study highlights the enthusiasm among students for a paperless (online) exam system, emphasizing the potential benefits of increased flexibility and accessibility.

The implications extend beyond IAIN Bone, serving as a reference for other educational institutions seeking to improve their assessment methods. The positive outcomes associated with online exam systems, as evidenced by studies on other universities in Indonesia, suggest that the proposed changes could lead to improved efficiency, reduced costs, and enhanced learning experiences for students. The study advocates for the adoption of modern assessment practices in alignment with technological advancements.

While the study yields valuable insights into the needs and experiences related to online assessments, it is essential to acknowledge some limitations. Firstly, the research is conducted within the specific context of a particular institution, potentially limiting the generalizability of findings to broader educational settings. Secondly, the study predominantly focuses on the perspectives of faculty (examiners) and students, and future research could benefit from incorporating the views of other stakeholders, such as administrators or technical support personnel. To address this, future research could adopt a multi-institutional approach involving a broader range of stakeholders in diverse educational environments.

Furthermore, in the development of online comprehensive tests based on needs analysis, further research is needed to explore students' satisfaction and experiences with online assessments. This research can investigate factors influencing student preferences, perceived benefits, and challenges associated with online testing. Examining these elements thoroughly will not only improve the design of online comprehensive tests but also provide crucial insights to enhance the overall user experience, supporting the effective implementation of digital assessment practices in education.

CONCLUSION

Based on the results of the analysis and discussion, it can be concluded that the implementation of comprehensive tests at IAIN Bone still has several weaknesses. These weaknesses include the non-standardized development of exam instruments, exam instrument quality that doesn't meet the required standards, the partial and non-integrated nature of the exam administration among faculties, a lack of proper scheduling, inadequate time efficiency during exam administration, and the suboptimal utilization of exam results for competency mapping. The analysis of user needs indicates the need for a comprehensive test model that can address these identified weaknesses. An appropriate exam model in this context is an online comprehensive test. Therefore,

the results of the need analysis in this study serve as the basis and reference for developing an online comprehensive test application. With an online exam system, the administration of comprehensive tests at IAIN Bone is expected to become more integrated, systematic, and effective in fulfilling its primary function as a tool for mapping student competencies.

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AUTHOR CONTRIBUTION STATEMENT

AHD played a significant role in conceptualizing the study, collecting relevant data, drafting the original content, and translating the manuscript into English, while SS contributed to the project by conducting thorough reviews and providing valuable editing input to enhance the overall quality of the work.

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