Analysis of Needs in The Development of Website-Based E-Modules for Self-Study

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Abstract:

The goal of this series of articles is to examine the necessity for developing Islamic religious education e-modules in higher education. The phase of needs analysis is the most crucial in the development of models, materials, or learning mediums. When instructional designers conduct research before formulating plans, developing materials, or putting them into action, they save a lot of money, time, and effort. Rowntree's research and development process has been modified with Hannafin and pack models in this study. For the purpose of analyzing the writer's needs utilizing the survey approach. This study used a sample of 50 students. Students demand online learning material, according to the results of the needs analysis. Students prefer learning that includes simulations and hands-on experience. Expected content includes a detailed discussion of the topic matter. Today's media include power point presentations and the utilization of educational materials. The existence of a computer laboratory is heavily supported by technology in the faculty of science and technology. It is required to build e-module learning materials based on the results of the needs analysis. Because e-module learning materials may help students learn independently and can be accessed anywhere and at any time, they were chosen. This needs analysis is part of the e-module creation research for Higher Education courses in Islamic Religious Education.

Keyword: Need Analysis, Develop, E-Module, Website, Self Study

INTRODUCTION

The current state of technology has an impact on all sectors. The field of education is no exception. With the rapid advancement of technology. The current learning process is not constrained by time or space. Learning can take place everywhere and at any time. The availability of learning resources is also a significant factor in the learning process. Learning materials are all learning materials (both information, tools, and texts) that are organized in a systematic way to offer a comprehensive unit of learning objectives that students will master and apply in the learning process.(Rahmadani et al., 2018) Learning materials can assist pupils in learning on their own. Learning materials are designed to transmit messages from lecturers to students during the learning process in order to stimulate students' thoughts, feelings, interests, and willingness to learn.(Serevina & Sari, 2018) Audio, booklets, brochures, e-books, flipcharts, games, journals, leaflets, multimedia interaction (MMI), mock-ups, electronic modules, power points (PPt), vide-os, and web-based learning are examples of learning tools that enable ICT-based learning (WBL).(Rahmadani et al., 2018) Learning materials and learning media can be combined to provide the best possible learning outcomes. Modules are one type of learning material that can be used with internet media. The module is a type of learning resources that includes information and worksheets to help students think critically, analyze, and solve problems.(Nuswowati & Purwanti, 2018) Modules, which were previously printed learning resources, have been turned into electronic form, giving rise to a new term: electronic modules, or e-modules.(Winatha & Abubakar, 2018)

E-modules are information and communication technology (ICT) modules with interactive qualities, such as ease of navigation, display of graphics, music, video, and animation for variety, and feedback through certain formative assessments or quizzes.(Wahyu Istuningsih, Baedhowi Baedhowi, 2018) An e-module is a logically organized collection of digital learning materials.(Kurniasari et al., 2018) In other words, an electronic module is a source of independent learning that is organized systematically, interactively, and dynamically into a specific learning unit, which is presented in an electronic format, where each learning activity is linked by a link as a navigation that encourages students to interact more with the program, and is supplemented by the presentation of video tutorials.(Sari et al., 2018) By offering students with engaging movies and activities, e-modules are excellent in enhancing students' sophisticated cognitive skills.(Afifah et al., 2018) As a result, specially designed learning materials that may be integrated with technology are required for the learning process. Technology innovation must take place in the classroom.(Yasa et al., 2018) The examination of many aspects of the material to be generated in accordance with the media utilized is required for the integration of learning materials into technology. Needs analysis is a crucial step in the development of learning systems, models, media, and the most significant learning material. Needs Analy-sis is the process of obtaining data that will be used to produce learning materials that will satisfy the needs of certain groups of pupils.(Miftahul Khair Nur Ali Mubar, 2015) Requirement analysis is crucial in the production of instructional materials and instructional design. The aim and substance of learning or learning material designed are determined by a requirements analysis (Macalister, 2012). (Shen et al., 2019) Needs analysis is a set of activities that collects information on students, their needs, desires, and the learning environment.(J.Hannafin & L.Peck, 1988)

The phase of needs analysis is the most crucial in the development of models, learning materials, or media. The development designer will assess what pupils require and what type of learning is acceptable, and students will be taught learning content. In the learning process,

it's critical to define and analyze target needs.(Onlinecourses, 2013) Learning designers can save a lot of money, time, and effort by conducting an analysis phase before creating a development plan or even implementing it. We must study four factors in order to complete the analysis phase, including students (where they are, their skills, and their needs). Making instructional goals and learning objectives of analysis, as well as developing learning analysis to give the essential processes and presenting opportunities to acquire and use new information in learning (how to measure achievement of objectives.) The desired learning objectives must be stated clearly.

Developing student competences and abilities in today's educational system is a difficult challenge for any teacher.(Cavus Alfiya et al., 2020) As science and technology improve, instructors should acquire competencies based on scientific advancements and new technology. With the advancement of technology, the use of technology in all areas of education has proven to be highly effective in influencing student motivation during the learning process.(Ozcinar, 2020) As a result, educational innovation in higher education is not solely a matter of the university world's internal affairs, particularly all aspects of mutual support for the fulfillment of quality education through a mix of theory and practice as well as higher-order thinking.(Köpeczi-Bócz, 2020) As a result, any preparation or development requires analy-sis from a variety of sources, including teachers, students, and stakeholders.

This needs analysis reveals whether new learning systems, models, media, and learning materials are required. decide what education organizers, users or learners, and stakeholders require. Because needs analysis is the initial stage in the development of any learning system or product, this article will focus on this step of the process. e-modules for Islamic religious education courses are being developed. This research is part of one of the stages in the development of Islamic religious education e-module learning materials at the Universitas Nahdlatul Ulama Lampung's Faculty of Science and Technology.

RESEARCH METHOD

The Hanafiin and Pack model is integrated with the Rowntree model in this article's research and development approach. In addition, subject analysis, student analysis, learning objectives analysis, media analysis, technology analysis, and circumstance analysis are all part of the Hanafin and Pack model mixed with the Rowntree model's analysis of needs. The researcher then collects data for a needs analysis using a survey methodology. A questionnaire was used to collect data. The authors of this study assessed 50 samples drawn at random.

Figure 1. Model Procedural Development e-module adaptation Model Rontree and Hannafin and Peck
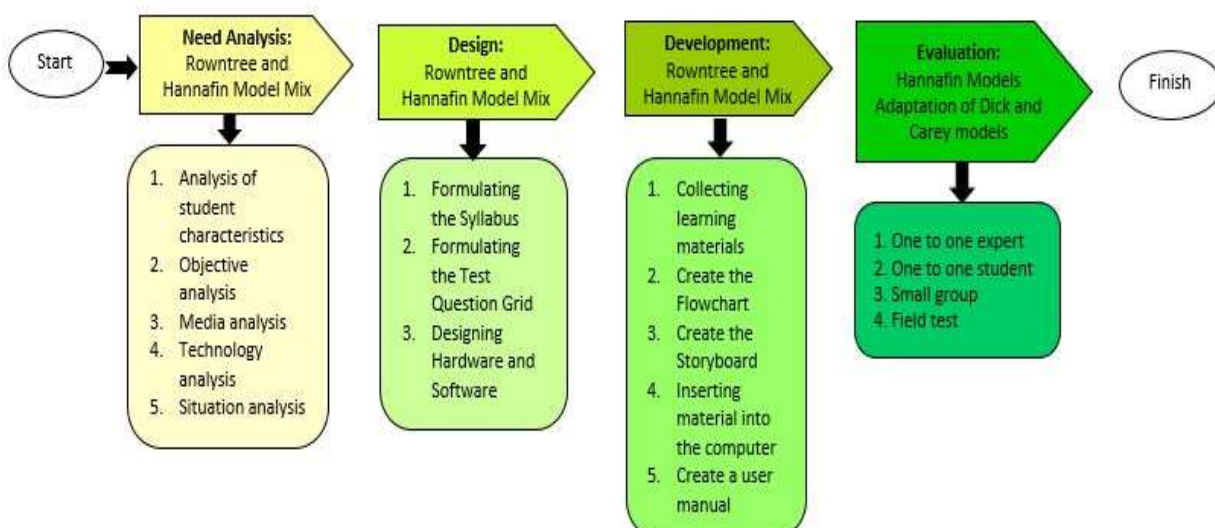
RESEARCH RESULTS AND DISCUSSION

1. Results

The following are the findings and discussion from the study of the necessity for the establishment of Islamic Education e-modules at tertiary institutions:

Table. 1. Results of Needs AnalysisNeeds

No	Analysis	Findings
1.	Analysis of Islamic Religious Education Courses	• Islamic religious education is one of the general compulsory courses (MKWU) that all students in the first semester, namely semester 1 or semester 2, must take at Nahdlatul Ulama University Lampung's Faculty of Science and Technology. • Islamic religious education courses are worth 3 credits. According to the instructors who support the course, it is deemed inadequate with a credit value of three. This is due to the fact that the content of Islamic religious education courses is so extensive that lecturers frequently run out of time when delivering topics. • Lecturers make use of educational materials.
2.	Student Analysis	• In 2018, 180 students were enrolled in the Faculty of Science and Technology; in 2019, 243 students were enrolled. • The Faculty of Science and Technology is the student's first school, with 40% of students coming from Senior High School, 50% from Vocational High School, and 10% from MA/Islamic Boarding School. • At the previous level of study, students were given Islamic religious education materials. • Students desire access to online learning materials so they may study whenever and wherever they want.
3.	Analysis of Learning Outcomes	• Until now, lecturers who assist courses have not developed learning outcomes that are based on student characteristics. • Failure to create a competency map for each lesson. • Student expectations for learning materials: 50% of students want material that is aligned with learning objectives, 38% of students want material that provides a more complete description of the ongoing process, and 12% of students want material that is aligned with teaching materials.
4.	Examining Learning Media	• For learning materials, powerpoint, whiteboard, and textbooks were used. • PAI courses are taught to students through the media. Lecturers' materials account for 52% of teaching materials, 30% of the internet, and 18% of library books. • 70% of students require learning resources that include a video example dissertation, whereas 30% do not. • Media is popular among students. Video is 44 percent, text is 22 percent, graphics are 16 percent, animation is 12 percent, and sound is 6 percent.

		• Multimedia-based learning resources are liked by 84 percent of pupils and disliked by 16 percent.
5.	Technology Analysis	• There are a few computer labs available, although they are limited. • The Faculty of Science and Technology, Nahdlatul Ulama University, Lampung, has an e-learning website, but only for certain disciplines like special study programs.
6.	Examine the situation of	The following are examples of situations that aid the learning process in religious education classes: • Students have the ability to use electronic devices or media. • Laptops and smartphones are available to students. • The university provides a computer lab where students can learn using computers. • Seventy percent of students want to use online learning materials for PAI courses, whereas thirty percent don't. • Eighty percent of pupils think online learning materials motivate them, while twenty percent say no. • When it comes to completing assignments, students rely on 70% of the internet, 20% of lecture materials, and 10% of library books for references.

Discussion

Based The existing challenges, as shown in the above explanation of the results of the needs analysis, include: a shortage of time to present material in Islamic religious education classes. Because 90% of pupils attend public schools like SMA and SMK, their ability to comprehend religious knowledge needs to be improved. Students also demand online learning tools including dissertations and videos to help them understand the material, as well as the ability to study autonomously. The learning objectives have not been developed in accordance with the demands of the students. Not every course includes a competency map. For learning materials, powerpoint, whiteboard, and a textbook were used.

In addition, there is a computer lab available in the faculty of science and technology for technology that helps the learning process, however it is limited. The Faculty of Science and Technology, Nahdlatul Ulama University, Lampung, has an e-learning website, however only for certain disciplines like special study programs. However, there is no online learning system or e-learning for Islamic religious education courses. As a result, instructors continue to use lecture, debate, and question-and-answer learning methods in the classroom. Furthermore, pupils have fundamental abilities in the field of information technology, which aids the learning process in religious education courses. Laptops and smartphones are available to pupils. The university has a computer lab where students can learn using computers.

Based on the aforementioned data on needs analysis, it can be determined that traditional methods are being employed in the learning process, and learning materials are not tailored to meet the needs of students. As a result, the learning process has not operated smoothly, effectively, or efficiently. As a result, online learning materials for individual study must be developed so that learning becomes feasible, effective, and efficient. It is critical to examine data from multiple sources at this stage so that the e-module may be developed later in accordance with the needs of the user. In addition, needs analysis saves time and money for

developers. So that the outcomes of learning developers' work might be as effective and efficient as possible.

CONCLUSION

According to the findings of the requirements analysis research, the teaching materials that need to be developed in Islamic Education courses at the Universitas Nahdlatul Ulama Lampung's Faculty of Science and Technology are learning resources in the form of electronic modules (e-modules). The e-module was chosen because it allows students to learn both with and without the help of educators. And it may be used anywhere, at any time. E-modules are instructional materials that are packaged systematically, interactively, and dynamically into a specific learning unit and presented in an electronic format, with each learning activity linked by a link as a navigation that makes students more interactive with the program, complemented by the presentation of video tutorials, animations, materials, and other multimedia. This requirements analysis is part of one of the stages in the development of Islamic religious education e-module learning materials at the Universitas Nahdlatul Ulama Lampung's Faculty of Science and Technology.

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