

Developing learning method on post-graduated program: a blended learning based on web-blog and print technology design

Wahyuddin Naro^{a*}, Universitas Islam Negeri Alauddin Makassar, Sultan Alauddin Gowa, 92113, Indonesia,
<https://orcid.org/0000-0001-5391-3506>

Achmad Abubakar^b, Universitas Islam Negeri Alauddin Makassar, Sultan Alauddin Gowa, 92113, Indonesia,
<https://orcid.org/0000-0001-5414-5908>

Ahmad Yani^c, Universitas Islam Negeri Alauddin Makassar, Sultan Alauddin Gowa, 92113, Indonesia,
<https://orcid.org/0000-0002-5047-412X>

Kurniati^d, Universitas Islam Negeri Alauddin Makassar, Sultan Alauddin Gowa, 92113, Indonesia,
<https://orcid.org/0000-0001-7063-8972>

Muhammad Majdy Amiruddin, IAIN Parepare, Amal Bakti No. 08 Soreang, Parepare, 91131 Indonesia,
<https://orcid.org/0000-0001-7950-1729>

Abdul Syatar, Universitas Islam Negeri Alauddin Makassar, Sultan Alauddin Gowa, 92113, Indonesia,
<https://orcid.org/0000-0002-7349-2312>

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Abstract

This research aims to produce a blended learning model combined with teaching materials that integrate traditional, online, electronic, or digital sources. It uses Research and Development method with the Dick and Carey model. Data collection was conducted through interviews, observations, documentary studies, questionnaires, and tests, while analysis was performed qualitatively. The data obtained were analyzed by condensation, presentation, and verification. The design of Ulumul Qur'an at UIN Alauddin Makassar postgraduate was determined from the learning process and results. Traditional learning involved the use of syllabus sources, including RPS, textbooks, as well as learning media, such as libraries, whiteboards, markers, and erasers. Students were given assignments, examples, and checklist instruments. Moreover, the learning process employed digital sources and media, such as LCDs, laptops, and PowerPoint presentations. Online sources included information search engines, such as Google, and the use of e-mail for assignment submissions. The implementation of Ulumul Qur'an is supported by the development of a blended learning model, using a weblog and printed materials.

Keywords: Blended Learning, Web-Blog, Ulumul Qur'an, Online;

* ADDRESS FOR CORRESPONDENCE: Wahyuddin, Naro, Universitas Islam Negeri Alauddin, Sultan Alauddin, Gowa, 92113, Indonesia
E-mail address: wahyuddin.naro@uin-alauddin.ac.id / Tel.: +6282199999171

1. Introduction

Several Islamic universities have currently developed a learning methodology that utilizes multiple resources, including printed materials, such as textbooks, modules, student worksheets, and hand Mid-Test (Indrawari & Habiburrahman, 2019). However, these resources are not effectively utilized because their content and constructs are not developed based on students' needs, curriculum, and updated research (Jailani & Hamid, 2016). The learning evaluation is often used separately from the content, failing to meet the set curriculum standards. Websites and internet-based resources are sometimes affected by connection problems, delayed access, and limited storage (Taufiq, Sutrio, A, Sahidu, & Hikmawati, 2018). For this reason, internet-based learning still needs significant improvement. Also, the learning that relies entirely on printed materials appear outdated, especially textbooks published decades earlier (Arif Rahman & Dkk, 2019). Combining printed and online (blended) materials creates pleasant learning conditions, a solution in minimizing the disparities in education quality (Banggur, Situmorang, & Rusmono, 2018).

Education has been implemented in various ways, including face-to-face learning and virtually through the Internet. According to Muhammad Yaumi (Yaumi & Damopolii, 2017), there are various forms of learning sources in higher education implementation. Diverse traditional resources, including printed materials, such as modules and textbooks, as well as various visual, audio-visual, video, multimedia, and online educational media, increase students' learning motivation. In the micro-level, technological progress has not yet reached Islamic education courses, such as *ulumul hadith*, *hadith tarbawi*, *ulumul Quran*, and Islamic education (Supriadi, 2015). In *the ulumul Qur'an* course, blended learning development combines traditional and online sources for strategic momentum. It should provide innovation or renewal of various learning resources, especially with design courses, where almost all of the material positively impacts innovation. Therefore, traditional sources based on print technology need digital development to create engaging learning.

The use of television, radio, and newspaper broadcasts improves student learning achievement (Yuliana, 2016). Similarly, online learning resources, such as Information and Communication Technology (ICT), fundamentally changes students' and educators' interaction patterns, as well as the learning process and outcomes (Azhariadi, Desmaniar, & Geni, 2019). The digital resources have accelerated the development of learning systems, as well as innovation of presentation methods in the traditional classroom and online settings (Manrique & Manrique, 2011). Web-blogs is an effective interaction medium built on traditional classroom Mid-Testide. It increases knowledge and creates a pleasant learning atmosphere (Lin & Hooft, 2008).

Irshad Ali et al. reviewed a more specific approach to the use of web-blogs in learning. According to Ali & Byard (2013), web-blogs improve writing skills, enhance student-lecturer dialogue skills, and increase students' learning interest. This supports Daniel Churchill's findings regarding the use of web-blogs' to publish articles, group work exercises, check each other's work, create collaborative projects, and manage digital portfolios (Churchill, 2009).

Understanding the advantages of web-blogs and designing asynchronous learning that supports lecture implementation on *ulumul Quran* courses minimizes quality education imbalances. According to Michael Simonson et al. (Yaumi & Damopolii, 2019), the term synchronous is commonly used in distance learning systems. It is a learning approach conducted simultaneously (live) in different places through teleconferencing systems. In synchronous learning, students from different places are connected to the telecommunications system. Contrastingly, asynchronous learning is conducted at different times and

places. This approach includes websites, web-blogs, and various models involving online tools to provide learning materials.

2. Research Method

In this study, Research and Development (R & D) approach was used to develop and validate educational products (Silalahi, 2018). The model developed should be more efficient, objective-realistic, and involve real-life matters. This research produces a blended learning model combined with teaching materials that integrate traditional, online, electronic, or digital sources.

The research was conducted in 3 stages; The initial stage was a needs analysis to determine the gap between the expectations and the actual occurrences. The gap is called need and equals the desired actual status (Arwildayanto et al., 2018). The needs analysis creates goals to be integrated into teaching material products.

The second stage involved designing a learning system based on information and communication technology. The type of technology was selected based on the needs analysis results. Moreover, the goals, materials, and various sources, including the learning strategies, were formulated. This leads to a prototype, a functional version of a learning unit whose process was not tested for effectiveness and efficiency (Yaumi & Damopolii, 2017). The third stage involved performing validation and trials, in which the prototypes were tested. This process included expert validation, small and large groups, and field trials. Therefore, online learning products are created, including web-blogs, digital sources, such as audio and video, and instructional manuals. The online learning material is printed for reference in face-to-face learning.

This research was conducted at the Postgraduate Program at Alauddin State Islamic University in Makassar, Indonesia. The blended learning development is devoted to the Ulumul Qur'an course. Data were obtained from the latest credible journals, books, and other sources to support research completeness. Ulumul Qur'an course is studied in all classes at the postgraduate level, both master and doctoral programs

3. Result and Discussion

3.1 Blended Learning Need Analyses

Blended learning combines all components facilitating the learning process (Desy & Setyoko, 2017). The development of website-based blended learning methods facilitates lectures and helps determine material sources, and online discussion. In the Ulumul Quran course, it started in 2018 to enhance lecture efficiency and effectiveness.

Preliminary observations showed the need for innovation in the lecture process with mixed media and learning resources for objective realization (Hasmunarti, Bahri, & Idris, 2018). In general, time limitations should match the use of facilities in learning (Widiastuti, 2019). Postgraduate blended learning is a combination of face-to-face, computer (offline), and internet-based learning (Muwallidah, Sedyati, & Ani, 2018). Lecture activities in postgraduate courses involve developing blended learning that combines traditional and online sources to form a strategic momentum. This enhances the innovation or renewal of various learning resources and the development of design courses. Almost all the materials positively impact innovation.

Covid-19 has recently disrupted conventional learning activities (Sadikin & Hamidah, 2020). As a pragmatic solution during the Covid-19 Pandemic, the blended e-learning system was independently conducted without significant obstacles (Retnaningsih, 2020). There was sufficient readiness for blended learning in the Ulumul Qur'an course since 2018 because innovation was implemented before Covid-19 outbreak.

Blended learning is ready for postgraduate students' use due to the availability of facilities. Students should be provided with internet cards to learn at their respective residences during the Covid-19 pandemic. It integrates face-to-face online learning through the widely used material sources from internet web-blogs.

Blended learning is applicable with a combination of time allocations, starting from 100% face-to-face online because of the enhanced access to web-blog since 2018. This suits the needs of postgraduate students with other responsibilities. The collaborative, interactive, and effective use of information and communication technology develops the learning abilities of postgraduate students. The information obtained from lecturers of Ulumul Qur'an courses provides opportunities for postgraduate students to use web-based learning media blogs, such as the internet, to access lecture material. Web-based blog learning media help lecturers in conveying information and transferring knowledge to postgraduate students. Also, students must search for the information on lecture material by reading and watching videos on the web blog.

The application of blended learning, integrated with a web blog, could solve the problems related to Ulumul Qur'an courses. It increases the mastery of basic concepts about the sciences of the Qur'an. The development of blended learning integrated with the web blog strategy simplifies work for lecturers, making postgraduate students more independent in the learning process. The learning sources problem could be properly and efficiently solved by focusing on the present state of the Covid-19 pandemic.

The learning progress of Ulumul Quran Data at Postgraduate UIN Alauddin Makassar was collected through passive participation, observation, and document study. Observations were made on the UQ course's learning process, using 9 events developed by Gagne (2005). These events include attracting attention, conveying learning objectives, apperception, providing stimulation, preparing learning instructions, and developing performance. Other events include providing feedback, measuring competency achievement, providing enrichment, and follow-up activities.

Document study involved analysis of assignments, textbook reports, and semester learning plans. Assignments consisted of writing papers, class discussions, and paper presentations. Book reports comprised an introduction, book content, analysis, content criticism, summary, and conclusions. Also, the documents relating to RPS were reviewed for their relationship with the control filled in by the lecturers during the learning implementation.

The learning events were divided into initial, middle, and final activities. The activities consist of learning the steps and resources used.

Table 1. Learning Process UQ

Learning Steps	Media and Sources	Method
A. Pre-activities		
1. Attracting the audience	1. Human Source	Preach, debriefing
2. Revealing the study purposes	2. Syllabus and Semester Learning Plans (RPS)	Preach
3. Apperception	3. Books and Journals	Preach
B. Main Activities		
1. Stimulating Learning	1. Laptop, LCD, RPS, Whiteboard, stationary, dan Penghapus.	Simulation, Preach, Debriefing
2. Preparing Direction	2. RPS, Books, articles, E-mail, LCD, and Laptop	Preach, debriefing
3. Developing Performance	3. LCD and Laptop, articles, library	Presentation and discussion
4. Providing Feedback instrument	4. Articles, Laptop and LCD	Preach and debriefing
C. Post Activities		
1. Measuring students' achievement	Articles: assignment, E-mail, Textbook	Preach
2. Monitoring and evaluating		Preach and debriefing

The table above shows that traditional learning sources are very dominant, though several digital and online materials exist. Learning resources and traditional media include syllabus, RPS, textbooks, libraries, whiteboards, markers, and erasers. Moreover, there are assignments and a checklist instrument to qualitatively analyze the paper assessment. The sources and digital media include an LCD laptop to present material sourced from the PowerPoint Presentation. Online sources only utilize information search engines, such as Google and e-mail, for assignment submissions. The methods applied in UQ learning include lectures, questions and answers, simulations, presentations, and discussions.

Students have accessed various sources to enhance communication, including printed and non-printed materials. These include electronic materials and equipment, as well as social media. In this study, electronic leaning materials or e-resources are accessed online and digitally, such as e-books, e-journals, and web-blogs. Electronic equipment is a digital medium used to send learning resources, including e-mails and mailing lists, while social media is used to share information, assignments, and views between students and lecturers. The social media used in learning are Facebook, SMS, BBM, Line, WeChat, and WhatsApp.

Electronic learning materials, also called online sources, are accessed electronically and online to enrich printed materials. Social media is an interactively connects students to discussing, sharing opinions, or exchanging messages related to learning. Electronic equipment is a medium of sending

letters and storing the tasks completed by students. In this research, electronic equipment is also called electronic mail.

The Outcome of UQ learning uses more qualitative values and the final score is given qualitatively. The analysis focused on the documents used in the assessment. As previously explained, the documents used as analysis material in this study included assignments for paper preparation and presentation, textbook reports, and semester learning plans. Paper preparation involves writing systematics based on the Postgraduate environment, the content, including language quality, the power of analysis and criticism of various views, originality, as well as a list of reputable and updated references. Documents related to paper presentations are assessment instruments used by each group of students for presentations before their colleagues and lecturers. Furthermore, the book report, which is the student's assignment, is an analyzed written document. It includes an introduction, the book's contents comprising of the title, content coverage, analysis of each criticism, and conclusion. Another document is the RPS on the UQ course, used as a general learning guide. The document analysis results are illustrated in the following table:

Table 2 Analyses Outcome

Documents	Assessment Object	Assessment Criteria
Articles	Writing Style	90 – 100 = A
	Article substance	80 - 89 = B
	Issue	65 - 79 = C
	Critical View	50 - 64 = D
	Originality	49 > = E
	References	
Presentation	Delivery Method	
	Communication Style	
	Issue	
	Mastery Level	
Assignment Report	Introduction	90 - 100 = A
	Substance	80 - 89 = B
	Book Title	65 - 79 = C
	Material Coverage	50 - 64 = D
	Analyses	49 > = E
	Critical View	
	Closing	
Semester Learning Plans	Pre-Activities	
	Main Activities	
	Post Activities	

From Table 2, the data on learning outcomes sourced from documents show that the assessment of dominant papers is conducted traditionally in scoring, accompanied by several important notes on errors in letters, words, and sentences. Most of the paper presentations were not assessed, though some lecturers applied qualitative assessment. Book reports are only found in certain classes, indicating that their assessment is not included. The suitability between the RPS and the topics studied is generally appropriate, as stated in the lecture control.

The lecturers were not sufficiently detailed in conducting examinations, especially for the quality of papers related to originality. This is evidenced by the low originality reflected in the results of a paper written by a student in the UQ course for the Nuzulul Quran material.

There is a gap between UQ learning resources and students' needs to use digital and online sources. Consequently, students are free to use these sources regardless of copyright infringement and plagiarism. This is in line with the following expression by one of the Postgraduate Learning technology lecturers,

According to my experience in applying paper-based learning, around 80% of students practice plagiarism in writing papers, especially those related to a massive collection of online sources from blogs, Scribe, among others. Papers are presented manually without being tracked and searched online. Instead, most students avoid sending papers online and only submit them in printed form (Muhammad Yaumi, Interview on 23 July 2018).

This statement shows that the live classroom paper presentations have caused many copyright violations and plagiarism among students. It means that the learning implementation shows an online instrument's urgent need to check students' works to their lecturers.

A related expression was made by a lecturer in the Islamic Education Management Information System, after using Turnitin software to detect the results of plagiarism committed by students.

Every time students submitted their assignments for each presentation session, the Turnitin software revealed a 40-80% plagiarism from their paper. Manual submission of assignments without online checking is very consequential, resulting in poor students' papers (Muhammad Yusuf T, interview 23 July 2018).

The two statements show that the implementation of traditional learning, which relies on students' printed papers, is no longer reliable. The implementation of learning should combine traditional, digital, and online activities. Consequently, the learning implementation, paper assignments, and available reports positively impact quality results.

3.2 A Blended Learning Design

Various weaknesses in the implementation of learning in UL courses necessitates the development of UQ learning through a weblog. It is aimed at facilitating students to learn and easily access various resources. Lecturers easily track students' writings online all over the world.

This weblog design was developed based on the display construct, color, accessibility, language, and display menu. The menu was selected by tracking various learning sources using weblogs or other websites. Moreover, the views of various experts in learning technology were sought. From the ingredients of these various sources, the blog view menu includes the homepage, modules, e-books, e-journal, RPS, discussion forums, learning videos, quizzes, mid and final tests. The naming order was based on 4 main aspects, including general information about the blog on the homepage, learning resources, learning implementation, and learning evaluation.

3.2.1 Homepage

This section presents the general information about the weblog, including the welcome greeting to the site, using the weblog, and the actual phenomena in connection with lectures. The complete general information is presented as follows.

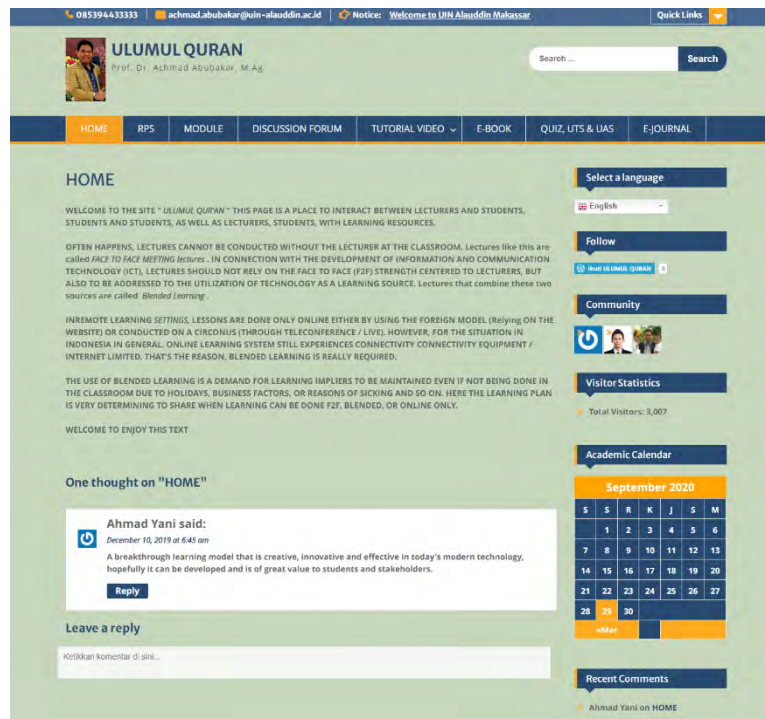


Figure 1. Homepage

The welcome statement is contained in the first paragraph on the purpose of developing this weblog. As stated above, the interaction is multidirectional, between lecturers and students, among fellow students and lecturers, as well as students and learning resources.

The statement shows reliance on face-to-face learning in the classroom. There is no learning when the lecturer is not in the classroom, something that happens in almost all classes. By designing a weblog, learning is conducted even in the absence of a lecturer in the classroom.

The third paragraph explains how distance learning is entirely conducted in cyberspace without physical classroom meetings. This practice is widely implemented in developed countries with adequate Internet technology and connectivity. However, blended learning implementation is most suitable in developing countries, including Indonesia.

The last paragraph emphasizes the implementation of blended learning, as carried out in this weblog. This means that face-to-face learning is still carried out, and other tasks are performed online. When lecturers cannot physically meet students in the classroom, learning continues as usual through online meetings.

3.2.2 Learning Modules

Modules are independent teaching materials systematically arranged to support the learning implementation. The module in this weblog consists of 14 topics stored online. Students directly access and download it in their computers. Additionally, this module has the content that supports the implementation of online discussions.

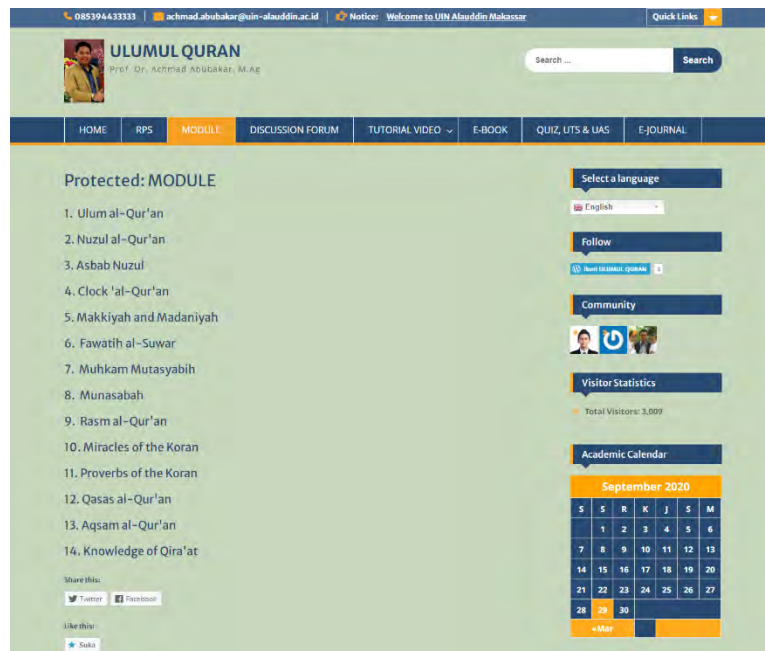


Figure 2. Module

The main references are compiled from the module. However, in writing papers, students are free to refer to other references from various written sources. The writing procedure must follow the postgraduate writing technique of UIN Alauddin Makassar. This is discussed in detail with the lecturer during the initial meeting in the classroom, and presentation of the syllabus, RPS, and lecture contracts.

The module has 14 topics, usually divided among students. Also, the module contains the topic of the paper they write at each discussion. In case the number of students is 14, each of them gets one discussion topic. However, when the number of students is small, they get more than one topic and write more than one paper. This often results in low paper quality and increased plagiarism because students experience difficulty dividing their time to study and write papers.

3.2.3. Electronic Books

Electronic books (E-books), are obtained via the Internet network and directly downloaded by students on blog sites. Most books were obtained through the book-fi site, using <http://linkis.com/en.bookfi.net/9Qyff>, linked to a weblog.



Figure 3. Electronic Books

In this UQ course, electronic books are used as additional references for reading and studying when writing papers, as well as for other assignments, such as book reports. Students are required to download books online and seek lecturer approval to make reports. As a result, plagiarism is reduced when students learn to looking for references online. This is because they have several references to be accounted for through writing.

3.2.4 Electronic journals

Similar to E-books, electronic journals are accessed online through weblogs. Several reputable journals have been selected to be linked to the UQ weblog. The journals were taken from Sinta Dikti with the criteria of Sinta 1 and 2. Sinta 1 shows a well-known indexation institute, indexed by Scopus. At the same time, Sinta 2 is a national journal that occupies category A and the appearance in the following weblog.

Students track the number of recent research results published in journals, helping them read the latest references to add to their insight and scientific knowledge. Also, the students learn to produce high quality writing with all sources of scientifically justified findings.

In the UQ course, reading journals is an academic activity performed routinely by students. Every meeting involves sharing on the tracking journal writings to equip and update students on the latest global developments in science and theories.

The electronic journals selected in this site are of high reputation. Though there exist many other sources, only 10 journals are listed in this weblog (only 9 can be seen). However, students are to free search for themselves because they are equipped with basic knowledge about sourcing from electronic journals.

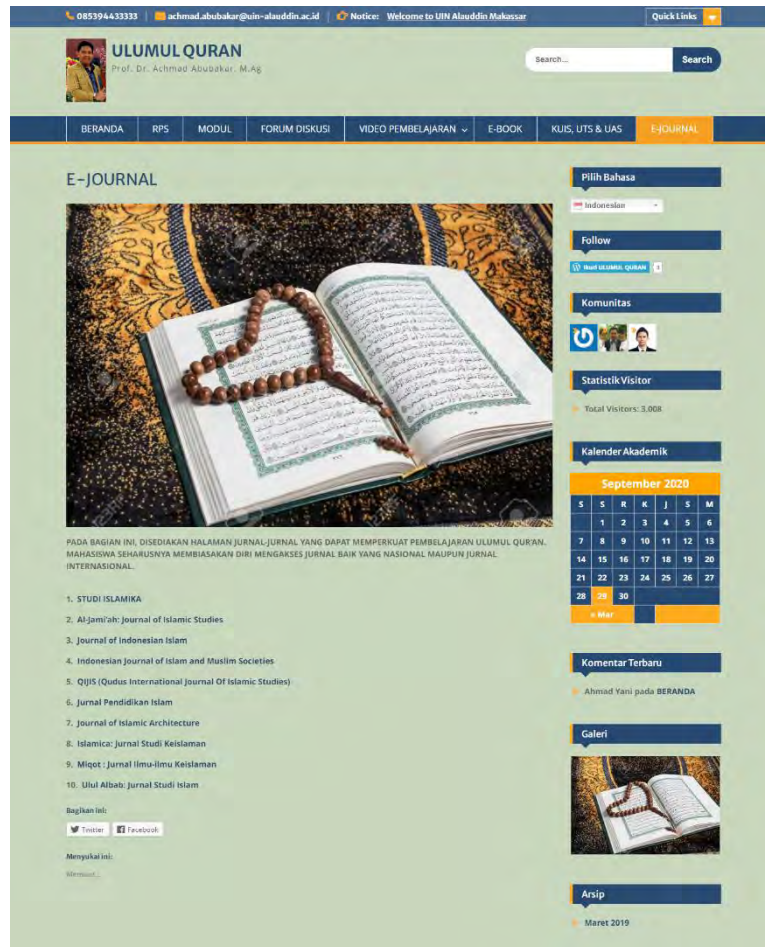


Figure 4. Electronic Journal

3.2.5 Semester Learning Plan (RPS)

In this weblog, the RPS appears in fifth place, not that it is not used as the main guide. Nevertheless, this placement is related to the previously described order. Usually, the RPS has been well structured, with the only fundamental difference in terms of its accessibility. In the case of in-class learning, students have to wait for the RPS distributed by the lecturer but access it whenever and wherever they want in this web blog. Students must obtain this RPS even before the initial meeting. This is because all lecture agendas and implementation, materials, and methods are explained through the RPS. That is why students must use RPS as a guide in each learning implementation.

Minggu ke	Kompetensi akhir yang diharapkan	Bahan kajian (materi ajar)	Bentuk pembelajaran	Kriteria penilaian (Indikator)	Bobot Nilai (%)
1	Mahasiswa mampu deskripsi masalah dan Kontak Perkelakuan, serta orientasi tema-tema seminar	- Deskripsi Masalah - Proses pembelajaran - Evaluasi Pembelajaran	Ceramah	Mendemoni persiapan sebelum kuliah tatap muka serta kewajiban laporan hasil kuliah tatap muka	
2	Setelah proses pembelajaran, mahasiswa diharapkan dapat menyajikan Ulumul Qur'an sebagai ilmu	Ulumul Qur'an sebagai Ilmu Penguasaan membuat masalah, seminar, ceramah		Mahasiswa Mampu: - Menemukan permasalahan tentang Ulumul Qur'an sebagai Ilmu melalui kajian literatur. - Menyajikan permasalahan Ulumul Qur'an sebagai Ilmu melalui literatur dalam bentuk masalah. - Mengkomunikasikan pemahamannya dalam seminar masalah.	40 % 30 % 30 %
3	Nuradil Qur'an	Definisi Ulumul Qur'an Ayat-ayat tentang Nuradil Qur'an Penguasaan membuat masalah, seminar, ceramah		Mahasiswa Mampu: - Menemukan permasalahan tentang Nuradil Qur'an - Menyajikan permasalahan tentang Nuradil Qur'an dalam bentuk tulisan masalah. - Mengkomunikasikan pemahamannya dalam seminar masalah.	40 % 30 % 30 %

Figure 5. Semester Learning Plan

3.2.6 Discussion Forum

This is the Online Discussion Forum (FDO) conducted by students. It involves the active participation of silent and seemingly passive students in the traditional classroom. In this FDO, students are required to answer and highlight the views of others. Therefore, the rules given to students are that each group should present a template that organizes the FDO. Moreover, each group must send the answer one post. Each student in the group must then respond to 3 answers from friends, group answers, and individual responses in the group, at least 3 posts. The more responses posted by students, the more good grades they attain. In contrast, fewer and less standard student responses result in lower grades.

Students are highly enthusiastic and motivated to learn through online discussions because they get responses from their colleagues within a short time. Hence, they conduct online discussions and apply them to each face-to-face classroom lesson.

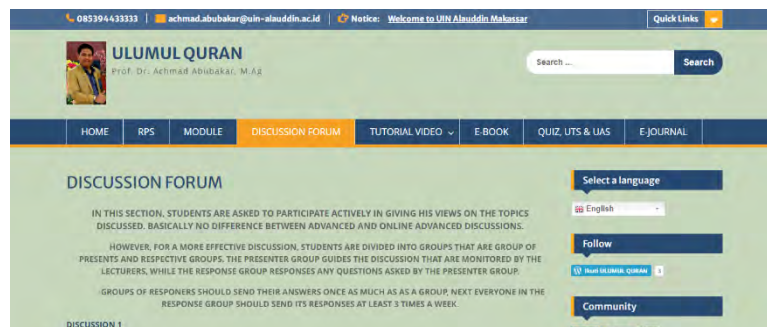


Figure 6. Discussion Forum

3.2.7 Learning Videos

Learning videos in UQ courses are of great interest to students. They access this video directly from YouTube, which is linked to the weblog site. Videos are developed from real lectures in face-to-face classrooms, besides videos specifically designed for learning needs.

The video ranges between 8-15 minutes long and does not bore the students. However, students must watch this lecture video because it contains a quiz regarding its content. Furthermore, students practice uploading and downloading other videos relevant to UQ learning.

This weblog video is a combination of lecture results deliberately documented with special settings for learning needs. Fundamental differences exist between the two types of videos in question. Lecture documentation results are very long because they are subdivided according to the subject. The second type of video is based on the lecture material accuracy with a specific time duration set in UQ learning. The videos are accessed via links, including <https://www.youtube.com/watch?v=ebWZNoVYjdY>; <https://www.youtube.com/watch?v=m61nTRD2zGM>, among others. The video link enables students to access the learning material on YouTube. Hence, students do not need to search for learning material online on YouTube because it is connected directly to the weblog site.



Figure 7. Learning Videos

3.2.8 Quiz, Mid Test, and Final Test

In face-to-face classroom learning, evaluation is always conducted to determine the objectives achieved. In the UQ course delivered through this weblog, all evaluations are conducted online to simplify lecturers' and students' comprehension.

Evaluation could be easily conducted by lecturers because it connects to the weblog and google form software in designing existing tests. The advantage is that for a multiple-choice test, students' scores are seen immediately without manual checking. However, for an essay test, the lecturer needs time to review. Students easily take the test because it is conducted via a cellphone or laptop according to the specified time limit. Hence, the implementation is very efficient and effective.



Figure 8. Test

3.3 Validity and Trial

Material Expert Validation and Model feasibility of the blended learning model was tested using the content or material, and model validator. The content or material validator and model were selected to validate and assess the developed model. Validation is conducted using the material expert assessment instrument and a 3-stage model in Ulumul Quran Postgraduate Program. This validation is aimed to see whether the product to be developed is feasible for application. The stage I validation obtained a score of 71.88%, categorized as needing further revision. Stage II validation obtained a higher score of 93.75%, categorized as feasible. However, there is something that must be revised again. In stage III validation, the score obtained was 100.00%, categorized as feasible for implementation with no need for further revision. The model validator is a postgraduate lecturer at UIN Alauddin Makassar. This validation aims to see whether the product to be developed is feasible for application. In stage I validation, the score obtained was 58.33%, categorized as needing to be revised again. The stage II validation obtained a score of 95.83%, categorized as feasible with a need for certain revisions. In stage III validation, the score obtained was 100, 00%, categorized as feasible for implementation with no need for further revisions.

3.3.1 Limited Trial Results

3.3.1.1 The attractiveness of the blended learning model

The recapitulation of the average questionnaire response to the attractiveness of the blended learning model shows that, at the stage of the limited group trial, students responded with an average score of 83. 56%. These results were obtained from questionnaires distributed to 12 students. Therefore, the results are categorized as very interesting in limited trials and could be continued with broad trials.

3.3.1.2 The effectiveness of the blended learning model

The results of the paired sample t-test with the help of SPSS version 22 software show the effectiveness of the blended learning model in the following table.

Table 3. Statistical Results with Paired Samples in a Limited Trial of Paired Samples Statistics

		Mean	N	Std. Deviation	
Pair 1	Pretest	70.50	12	8.051	2.324
	Posttest	79.83	12	2.758	,769

Table 3 shows that the average pretest score of students was 70.50. In the post-test, the average score of students was 79.83. It indicates an increase in student learning outcomes after using the blended learning model. This is because an increase in learning outcomes indicates the effectiveness of the blended learning model.

3.3.1.3 The efficiency of the blended learning model

Efficiency is measured by comparing the time used in economic learning KD systems and payment instruments. The interview results show that the time used is less than the period specified in the syllabus. The target time specified in the syllabus is 12x45 minutes or 4x meetings. It means that using the blended learning model shortens the learning time to 9x45 minutes or 3x meetings. The remaining available time is 3x45 minutes, or the teacher uses one meeting for enrichment.

3.3.2 Extensive Trial Results

3.3.2.1 The attractiveness of the blended learning model

The blended learning model's attractiveness was obtained from a questionnaire distributed to students after extensive trials. The results of students' responses to the blended learning model were obtained from this limited trial. Based on the recapitulation of the average attractiveness questionnaire response to the blended learning model in the limited group trial stage, students responded with an average score of 86.43%. The results obtained from questionnaires distributed to 35 students were categorized as very interesting.

3.3.2.2 The effectiveness of the blended learning model

The results of the paired sample t-test with the help of SPSS version 22 software show the effectiveness of the blended learning model in the following table.

Table 4. Statistical Results with Paired Samples in Extensive Trial of Paired Samples Statistics

		Mean	N	Std. Deviation	
Pair 1	Pretest	72.51	35	8.194	2.324
	Posttest	80.23	35	3.993	,675

Table 4 shows that the average score of students at the pretest was 72.51. The post-test average student score was 80.23. This shows an increase in student learning outcomes after using the blended learning model. An increase in learning outcomes indicates that the blended learning model is effective.

3.3.2.3 Efficiency of the blended learning model.

Efficiency was measured by comparing the time used in Ulumul Quran learning at UIN Alauddin Makassar Postgraduate Program. The results obtained from interviews with teachers of economics subjects show that the time used is less than the period specified in the syllabus. The target time specified in the syllabus is 12x45 minutes or 4x meetings. This means that using the blended learning model shortens the learning time to 9x45 minutes or 3x meetings. The remaining time available is 3x45 minutes, or the teacher uses one meeting for enrichment.

4. Conclusion

Based on the results and discussion, this study makes several conclusions. First, the initial research was conducted to obtain information on students' needs to design a blended-based learning model. This involved observing the learning tools used by the UIN Alauddin Postgraduate Ulumul Quran Study Program, such as semester catch-up plans and evaluation designs. Second, a blended learning-based Ulumul Quran Post-graduate UIN Alauddin learning program is developed by combining web-blog and printed materials. Third, the validation of the content or material and the learning model in stage I are not feasible for implementation and needs several revisions. The stage II validation is feasible for testing, though several revisions are needed. The stage III validation is categorized as feasible for testing without revisions. The results regarding the attractiveness of the blended learning model were shown by the average student questionnaire responses. These results range between 81% -100% values, with a very interesting category. Furthermore, the results on the effectiveness of the blended learning model are indicated by students' pretest and post-test learning outcomes. These results were analyzed using a different paired t-test sample. The results showed that the post-test and pretest scores of 80, and 72, respectively. Therefore, the blended learning model effectively achieves learning objectives. The research results regarding the blended learning model's efficiency is shown by the time difference between the classical and blended learning models. The shorter duration recorded implies that students understand the material presented.

There are several suggestions for developing a blended learning model. For instance, it should be integrated with other online services, such as Moodle, Schoology, or google classroom. The development of a web blog on Quran lectures should be tested by experts from internal and external parties on campus. There should be an integration with video conferencing on content or material on the web blog. Also, adequate digital references should be completed, especially on books and reputable journals

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