



Innovation Model for Information and Communication Technology Curriculum Development

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Abstract

The Covid-19 virus (pandemic) in Indonesia has resulted in students studying through e-learning in order to reduce the acceleration of the spread of the Covid-19 virus. The spread of the Corona virus has caused several significant losses to our country, namely Indonesia, especially in the economic sector, and has spread to the education sector. Covid-19 has also drastically changed the learning model, from conventional learning to online learning, from face-to-face to now only via applications, which are affected from elementary school (SD) to university level. In online learning activities, students at the Selatpanjang Islamic College utilize the Google Classroom, Google Meet and E-learning applications as a form of innovation in the field of education.

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INTRODUCTION

Along with the advancement of science, society has undergone many changes in every aspect. One of these changes is in the world of education. Global technological advancements have influenced and driven efforts to renew all aspects of life, including economics, politics, culture, and the arts, and even education. The world of education should implement positive innovations for the advancement of education and schools. Innovations should not only be in the curriculum and infrastructure, but also comprehensive innovations using information technology in educational activities. Educational technology can transform conventional learning methods into more modern, interactive, and enjoyable ones for students, resulting in a more focused and integrated knowledge transfer. Through the creative use of information and communication technology (ICT) innovations, educators can employ a variety of learning methods.

There are many elements that are an important part of the education system, one

of which is the curriculum. The curriculum is essentially a set of subjects and educational programs provided by an educational institution that contains lesson plans that will be given to students in one period of education (Sudrajat et al., 2020). Based on Law No. 20 of 2003) concerning the National Education System (SISDIKNAS), it states that the curriculum is a set of plans and arrangements regarding the objectives, content, and learning materials as well as methods used as guidelines for organizing learning activities to achieve certain educational goals.

Curriculum change is inevitable, as an effort to anticipate changing times and the ever-evolving demands of society. Conversely, if the curriculum remains unchanged while the world continues to evolve, education will be left behind and unable to meet societal demands and needs. Educational development must go hand in hand with the changes and social dynamics of society itself. Therefore, innovation is essential in education, particularly in addressing issues that hinder the educational process.

The process of innovation arises because there is a problem that must be addressed, and efforts to overcome this problem through innovation (often referred to as "renewal," although this term is not synonymous with innovation). This innovation must be the result of original, creative, and unconventional thinking. Its application must be practical, containing elements of comfort and convenience. All of this arises as an effort to improve the situation/condition faced with the problem (Prastyawan, 2011).

Curriculum innovation also depends on societal dynamics, so changes in society have implications for educational change. Change in education is essential, and maintaining unpopular educational innovations will harm both students and the curriculum structure. Educational innovation can also emerge when a new stance is taken regarding curriculum development that is relevant to societal needs, rendering the old educational innovation system irrelevant to societal conditions. Curriculum change is a common practice for governments, and maintaining the existing curriculum will be detrimental to society itself. Referring to educational principles, the most relevant curriculum innovation to current conditions is a competency-based curriculum.

The emergence of the COVID-19 virus, or coronavirus, originating in Wuhan, China, has impacted various sectors, including education. The education sector in Indonesia has also been affected, leading the government to issue a stay-at-home order for all levels of education. Teaching and learning are conducted online from home, including at the university level. Implementing online lectures certainly involves various aspects, such as media and significant changes to the learning method system and facilities obtained through tuition payments. Online learning is the use of the internet in the learning process, with students studying online or having the flexibility of their own learning time; they can study anytime, anywhere. Students can communicate with teachers or lecturers using various applications, such as classrooms, video conferencing, telephone or live chat, Zoom, or via WhatsApp groups.

This learning is an educational innovation to address the challenge of the availability of different learning resources. The success of a learning model or medium depends on student characteristics; all literature on e-learning indicates that not all students will succeed in online learning. According to Cusmiati (2021), Muhammadiyah University of Mataram and several other campuses in West Nusa Tenggara, including those implementing distance learning with an online learning system, have advantages and disadvantages. One advantage is a more flexible class schedule. Meanwhile, one disadvantage is the ineffectiveness and ineffectiveness of delivering material with lecturer support to students.

The results of research conducted by Putri, (2021) entitled "Students' Adaptation Strategies in Implementing Online Lectures During the Covid-19 Pandemic" are the obstacles faced by students in implementing the online lecture system, namely external and internal obstacles, as well as the use of online lecture applications and adaptation strategies carried out by students in implementing the system in dealing with online lectures, strategies in making online assignments, strategies in online group work, and strategies in online guidance.

The results of a study conducted by Martha Wijayanengtias entitled "Surabaya Students' Perception of Online Lectures (in The Context of The Covid-19 Outbreak)" stated that online lectures during the pandemic were good for preventing the spread of the COVID-19 virus, with the note that informants felt dissatisfied in terms of the number of assignments and facilities that were considered inadequate. While two other informants felt that online lectures were merely a formality because the explanation of the material was reduced and only assignments were given.

The research findings suggest that e-learning programs are an innovation in today's education landscape, but students are dissatisfied and find them less helpful in teaching. Given these challenges, the researcher is interested in conducting a study on "The Effectiveness of Online Learning for Islamic Religious Education Students During the Covid-19 Pandemic." The subjects were Islamic Religious Education students at the Nurul Hidayah Selat Panjang Islamic Boarding School.

METHODS

This paper aims to discuss the Innovation Model for Information and Communication Technology Curriculum Development. The author uses library research, namely writing carried out through the collection of data and information as well as necessary materials derived from libraries, whether in the form of regulations, journals, books or other sources. This research is included in qualitative research, namely research using a naturalistic approach to seek and find definitions or understanding of phenomena in a specific setting (Tohirin, 2012).

RESULT AND DISCUSSION

Understanding Online Learning

The terms online learning and online learning are used interchangeably. Daring is an Indonesian term, while online is an English term. According to the Big Indonesian Dictionary (KBBI), online means "networked," connected via a computer network, the internet, and so on (Ministry of Education and Culture, 2020). Online learning differs from distance learning. Online learning can be used for distance learning, but not all distance learning must be online (Kusumawardhani, 2021). Online learning is the use of the internet to access materials, interact with materials, instructors, and other learners, and receive support during the learning process, with the goal of acquiring knowledge, developing understanding, and developing from the learning experience (Nabila, 2020).

Online learning can be categorized into two categories:

1. Synchronous Learning
With synchronous online learning, learners engage in online learning with the instructor via streaming video and audio simultaneously. In this case, the instructor has previously agreed upon a learning time. The instructor can interact directly with students and answer questions as they arise.
2. Asynchronous (Collaborative) Learning
Learners can participate in online learning at their own time, which means the instructor will not be able to respond directly to questions. In this case, the flexibility of time is very evident.

The advantages of online learning for students (Usman, 2020) include:

- a. Obtaining additional material from Google Scholar, newspapers, articles, journals, and YouTube.
- b. Easier access to materials.
- c. Assistance with accessing paid materials from the Faculty.
- d. Online learning materials are presented in the form of audio and video, tutorial simulations, text, and images.

- e. The online learning process is interactive through applications and media.
- f. The applications and media used can support the online learning process.
- g. Online learning produces good learning outcomes.

Several challenges were also faced in implementing online learning during the COVID-19 pandemic. Table 2 shows the challenges of implementing online learning (Lestariyanti, 2020), namely:

1. Access to internet signals or networks. This is closely related to Indonesia's geographical conditions, which also affect the reach of provider signals or networks. Indonesia consists of a total of 17,000 islands with a length of 5,106 km from west to east, or one-eighth of the earth's surface. This geographical condition presents a challenge for Indonesia in establishing stable and high-quality internet connections evenly.
2. Another challenge is the cost of purchasing internet data.
3. Another challenge for online learning is educator creativity. In implementing online learning, educators or lecturers are required to be able to design and use a variety of models, methods, strategies, and techniques.

Curriculum

A curriculum is a set of plans and arrangements regarding objectives, content, and learning materials, as well as the methods used as guidelines for organizing learning activities to achieve specific educational goals (Nurlaeli, 2020). According to Idi, (2016) there are several types of curriculum: (1) a separated subject curriculum, (2) a correlated curriculum, (3) a broad fields curriculum, and (4) an integrated curriculum.

According to Hasan Langgulung in the journal *Al-Afkar* (2014), there are four main components of the curriculum (Idi, 2016):

- a. The goals to be achieved by education.
- b. The knowledge, information, data, activities, and experiences from which the curriculum is formed.
- c. The teaching methods and techniques used by teachers to teach and motivate students to lead them in the direction desired by the curriculum.
- d. The assessment methods and techniques used to measure and assess the curriculum and the outcomes of the educational process planned by the curriculum.

The curriculum is a crucial element of the national education system. In education, the curriculum is a tool for achieving educational goals. Without an appropriate and precise curriculum, it will be difficult to achieve the desired educational goals and objectives. As a crucial tool for achieving these goals, the curriculum should be designed in an adaptive, responsive, and visionary manner, in line with the demands of the future (Akmal & Mundiri, 2018).

A school curriculum contains three components: objectives, content, and strategies. There are two types of objectives contained in a school curriculum:

- a. Curriculum objectives
 - 1) Overall school objectives
As an educational institution, a school has a number of objectives it wishes to achieve, described in the form of knowledge, skills, and attitudes that students are expected to possess after completing the school's entire educational program.
 - 2) Objectives to be achieved in each field of study
Each field of study in a school curriculum also has a number of objectives it wishes to achieve. These objectives are also described in the form of knowledge, skills, and attitudes that students are expected to possess after studying a particular field of study at a particular school.
- b. Curriculum Content
Consists of learning materials programmed to achieve predetermined educational objectives.
- c. Media (facilities and infrastructure)

As an intermediary in learning to explain the curriculum so that it is easier for students to understand.

- d. Strategy
Refers to the approach, methods, and teaching techniques used.
- e. Learning Process
This component is crucial because it is hoped that through the learning process, changes in student behavior will occur as an indicator of the success of curriculum implementation.
- f. Evaluation
Evaluation (assessment) can determine how objectives are being achieved.

The curriculum concept adopted by curriculum developers will significantly influence the curriculum design. Therefore, it can be said that curriculum concept and design are closely related. Curriculum design represents the curriculum concept. Various curriculum concepts have been proposed by experts, leading to a variety of curriculum designs. To design or create an appropriate curriculum design, it is necessary to understand the definition of design itself, curriculum design, and appropriate design models to be used according to the desired educational goals (Akmal & Mundiri, 2018).

The essence of curriculum change is closely related to issues of reform, innovation, and movement. The process and stages of change are closely related to development, diffusion, dissemination, planning, adoption, implementation, and evaluation (Lase, 2015).

Innovation

Innovation is the introduction of new things, renewals, or discoveries based on existing or previously known things, whether in the form of ideas, methods, or tools. Furthermore, innovation is an idea, practice, method, or method that is observed and perceived as new to an individual or society. Innovation is a specific, novel, and thoughtful change, with the hope of improving problem-solving.

In the context of learning technology, innovation here means utilizing the latest technology, both software and hardware, in the learning process. The management of Islamic Religious Education (PAI) learning must be innovated and developed in line with the times, so that it remains up-to-date and attracts students from the millennial generation from time to time. The use of information technology in Islamic Religious Education (PAI) learning must be continuously implemented and developed as a learning resource that serves as a learning reference, both for educators and students. Educators can also deliver learning materials by uploading internet files, then students can access and download the materials at any time, whenever and wherever they are (Anwar, 2019).

Innovation or innovation can be achieved through two paths: discovery and invention. Discovery is an invention that already exists but is unknown to the public. Invention is a completely new discovery, meaning a product of human creation. The object or thing discovered is truly something that never existed before (Fatimah et al., 2021).

Curriculum Innovation

Curriculum innovation is defined as an update in the curriculum, or something considered new, implemented to solve educational problems. Understanding curriculum innovation will greatly assist in the implementation of learning principles in educational institutions, as curriculum innovation is inseparable from the success of education. According to the book "Educational Innovation" by Sa'ud (2015) (in Fatimah et al., 2021), the problems of curriculum innovation are closely related to the principles of curriculum development, namely relevance, flexibility, continuity, practicality, and effectiveness. Everett M. Rogers outlined several characteristics of innovation that can influence the speed of adoption, as follows: First, relative advantage; Second, compatibility; Third, complexity; Fourth, trialability; and Fifth, observability.

Several factors that demand innovation in curriculum and learning are as follows:

1. The development of science has resulted in technological advances that impact the social,

- economic, political, educational, and cultural life of the Indonesian nation.
2. The rapid rate of population explosion, which has led to a significant imbalance in educational capacity, space, and facilities.
3. The soaring public aspirations for a better education, while opportunities are very limited.
4. The perceived decline in the quality of education, which has not been able to keep pace with developments in science and technology.
5. The lack of effective organizational tools, and the lack of a fertile atmosphere within society to bring about the changes demanded by current and future circumstances.
6. The lack of relevance between educational programs and the needs of a developing society.
7. Limited funding.

Curriculum innovation strategies are implemented to achieve educational goals. There are four curriculum innovation strategies: facilitative strategies, re-educative strategies, persuasive strategies, and power strategies (Fatimah et al., 2021).

CONCLUSION

The curriculum is a crucial element in achieving national education goals, its existence established by legislation as public policy. The context of curriculum innovation is necessary to ensure the curriculum remains the spirit of education. Several challenges and issues arise when initiating and implementing innovation. Curriculum development is a profession highly sought after by society, particularly in the field of education. Curriculum development is a challenging task and requires specific qualifications and skills.

To break the chain of transmission of Covid-19, or the pandemic, within the university environment, the Islamic Religious Education Study Program at STAI Nurul Hidayah Selatpanjang has implemented online learning as a solution. As we know, the current pandemic has begun to subside. It's possible that a new type of pandemic will emerge, and humanity will innovate again in all fields, including technology. Online learning is effective in addressing this challenge, enabling lecturers and students to interact in virtual classrooms that can be accessed anywhere and anytime. Online learning can foster independent learning and increase student motivation. However, there are drawbacks to online learning: students are not properly supervised during the learning process. Weak internet signal and high data costs pose challenges to online learning. However, online learning can reduce the spread of Covid-19 in universities.

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