

DEVELOPMENT OF LEARNING CONTENT CURATION SYSTEM MODEL ON ONLINE COURSES AT SYARIF HIDAYATULLAH UIN JAKARTA

Indra Munawar, Yudhi Munadi, Ahmad Suryadi, Widia Winata

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Email: indra@uinjkt.ac.id, yudhi.munadi@uinjkt.ac.id, ahmad.suryadi@umj.ac.id,
widia.winata@umj.ac.id

Abstract

Content curation is not just sorting or selecting teaching materials. The main challenge lies in how to determine the most appropriate learning content with learning outcomes. Therefore, to answer the problems above, learning designers need a learning content curation system model as a guide or reference. This study aims to develop a model of a learning content curation system that is devoted to being a guide in sorting and selecting teaching materials. The research questions in this development research are: 1) is the model developed in accordance with the conceptual framework? 2) Is the developed model feasible and can be implemented? Therefore, this research uses formative research methods. As a consequence, a series of formative evaluation techniques were used to collect the necessary descriptive and formative data. The formative evaluation includes expert test, one-on-one evaluation, and field test. This study was attended by 4 (seven) experts (experts in learning design and e-learning), and 25 lecturers as research subjects. After going through three stages of formative evaluation, namely the creation of a tentative model, the feasibility of the model and the effectiveness of the model, this model is declared in accordance with the conceptual framework for curating learning content, feasible and can be implemented. So that it can be used as a model in curating learning content for certain courses in online learning.

Keywords: instructional model; content curation; online learning, learning content curation system model

Introduction

The world is facing unprecedented challenges in the education system after the massive school closures mandated by UNESCO to maintain public health to contain the spread of COVID-19 (UNESCO, 2020). In collaboration with international organizations, private sector partners, and civil society, government agencies provide education remotely through a blend of technology to ensure the continuity of teaching and learning activities.

Deciding or improving a distance learning strategy is a sector-wide response to the education process resulting from unexpected school closures. This strategy should address conditions including equity, inclusion, and the need to ensure distance learning

design and delivery does not exacerbate existing educational and social equity. However, the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2020) suggests that a more comprehensive distance learning strategy should be guided by the need for effective and efficient mitigation with long-term goals. So that efforts to implement distance learning on a large scale at all levels of education provide valuable lessons and lay the groundwork for the long-term goal of building a more open, inclusive, and flexible education system after the pandemic is over.

The continuity of learning caused by the above causes the world of education to innovate on several aspects of the learning system design model. Experts (Kent L. Gustafson and Robert Maribe, 2002) define a model as a transformation from complex to simple. So that a process can be easy if a model has been made.

The rapid development of science and technology, primarily Information and Communication Technology (ICT), is influenced by internet technology and universal protocols commonly referred to as the worldwide web (www), which allows collaborative activities and widely shared information without being hindered by boundaries, territory and time (Dabbagh & Ritland, 2007). It is not surprising that today's information age is also known as the era of instant communication, where everyone can communicate easily, quickly, and relatively cheaply.

Since the last 10-15 years, the promising potential of ICT has influenced various aspects of human life, including education (Holmes & John, 2006). That's when terms emerged related to learning that applied information and communication technology with various terminology such as stand-alone courses, virtual classrooms, embedded knowledge, blended learning, mobile learning (Horton, 2012), networked-learning, computer-assisted learning, web-based instruction, computer-mediated learning, online learning (Littlejohn & Pegler, 2007). These terms refer to the concept of learning with the help of electronic technology, which is better known as e-learning. E-learning became popular around 2002, which later became a general term that overshadowed all the terms mentioned above that had appeared several years earlier (Littlejohn & Pegler, 2007).

The concept of e-learning is a term that all parties have not comprehensively understood. Its implementation is still controlled by vendors (entrepreneurs) of information and communication technology (Shank, 2015). The performance of e-learning which has the prospect of a predicted opportunity to soar, is not appropriate. The results showed that the implementation of e-learning in companies which was expected to reach 53% in 2003, was only adopted by 10-20% (Shank, 2015). Thus, e-learning still discussing the potential (promise) has not yet discussed the actual evidence (evidence) in implementation in the field.

In addition to its tremendous potential, the implementation of e-learning still has significant challenges. The challenge lies not in the variety of information and communication technologies that can be used but in designing the right combination of information and communication technology applications for specific learning processes. Littlejohn mentions it with the term design of blended e-learning (Littlejohn & Pegler,

2007). Like Littlejohn, Khan also defines e-Learning by explicitly including learning sentences that need to be designed well (well-designed learning environment) (Khan, 2011). This condition shows the importance of e-learning system design which can guide related parties in implementing effective e-learning. This is where the discipline of educational technology is cultivated. While many figures have tried to emphasize the role of learning system design in developing and implementing e-learning, among them are Khan through his book entitled "Managing e-Learning Strategies", Dabbagh & Ritland with his book entitled "Online Learning: Concept, Strategies and Application". , Horton through his book allowed "e-Learning by Design", Littlejohn & Pegler through his book entitled "Preparing for Blended e-Learning", (Somekh, 2007) with his book entitled "Pedagogy and Learning with ICT", and others .

The choice of information and communication technology, both offline and online, varies. Blended learning is conceptually not just a combination of face-to-face lectures and online lectures. However, it is more about the art of bringing together a variety of learning resources and appropriate learning activities where learning participants can interact and build ideas together (Littlejohn & Pegler, 2007). Littlejohn and Pegler's opinion emphasizes the concept of student-centered learning. Therefore, the challenge of doing blended learning is creating an active and constructive learning environment, where information and communication technology is the tool. The benchmark for blended learning design is for selecting and determining the correct information and communication technology according to specific needs and conditions.

Because blended learning is the art of bringing together various learning resources and appropriate learning activities where learning participants can interact and build ideas together in a proper way to make learning events happen optimally. So and Bonk argue that there are several essential questions in designing blended learning, namely, "What combinations are most relevant? When is online learning used? When is face-to-face learning used? How can the integration of the two achieve the learning objectives?" (So & Bonk, 2010). Lecturers often have difficulty in this regard because of a lack of knowledge and skills and the traditional learning mindset that has become their daily work (Su et al., 2005). The results of other studies also show the same thing. Keney concluded that integrating online and face-to-face learning is crucial for concocting blended learning (Kenney & Newcombe, 2011). Blended learning design is highly dependent on good planning and design from the lecturer/instructor (Sun & Chen, 2016).

At Syarif Hidayatullah State Islamic University Jakarta (UIN Jakarta), lecturers also experience difficulties in carrying out the blended learning process, in this case, face-to-face learning and online learning (in a network). The problems encountered are preparing and presenting teaching materials related to the courses being taught. In this study, the researcher mentions teaching materials in the learning process, namely learning content. Content or material is an essential curriculum component. Content concerns the answer to the question, "what is taught?". This content often goes unnoticed. That is, content is often left to educators' decisions or taken from an

abundance of textbooks, without linking it to educational goals, curriculum goals, or instructional goals. In online learning, the content that is often used is digital. Learning content is essential in education. Digital learning content in various materials presented in digital form; this content is intended to help students understand the material to be studied.

Therefore, Uwe's said ([Chaeruman, 2018](#)) lecturers who will carry out blended learning need a blended learning system design model that can be a reference in designing effective, efficient, and engaging online lectures. Connections on e-learning and blended learning that have existed to date, both books and scientific journal articles, still provide general guidelines and are oriented towards e-learning development in general.

Recent research results show that of the many studies on blended learning, 48% are related to learning models' development ([Drysdale et al., 2013](#)). The results of other studies on research published in reputable international journals show that very few studies are closely related to the development of blended learning design models. Halverson et al. classified research categories for developing blended learning design models into five categories: 1) framework model; 2) evaluation model; 3) design process models; and 4) learning content curation model. In the framework category or learning content curation model, only five models have been found that have been reported in international journals ([Halverson et al., 2014](#)). Thus, this shows that research on learning content curation models is one of the research themes, and not many learning content curation models have been developed.

Researchers found a learning content curation model dedicated explicitly to online learning in Indonesia itself, namely the Pedati Blended Learning System Design Model. The results of Uwes' research in developing a blended learning system design model ([Chaeruman, 2018](#)) show that PEDATI as a blended learning system design model can be declared feasible to be implemented (implementable).

A simple survey conducted by ([Simatupang et al., 2020](#)) states that 58% of respondents are ready to follow changes and support government directives to implement online learning, 42% of respondents are happy to use online learning media, 21% of respondents support this online learning system is implemented for the future, only 24% of respondents stated that online learning is effective in improving student learning outcomes.

Methods

This research aims to develop a design model for a learning content curation system that can be a reference for lecturers in curating learning content for online courses at UIN Jakarta.

Meanwhile, more specifically, this development research aims to: evaluate the feasibility of the developed learning content curation system model; evaluate the implementation of the extended learning content curation system model.

This research was conducted at UIN Jakarta. Ten (10) months after the research title was approved, the study was carried out from January 2021 to October 2021. The consideration for choosing this research location is because UIN Jakarta organizes the Online Learning System Program.

This study aims to develop a model. For this reason, in general, the research approach that is suitable for this research is development research. This research specifically aims to produce a design model of learning content curation or model development, so the relevant research is formative research methods.

Formative research emphasizes the formative evaluation process as the basis for making revisions during development. Therefore, two types of data are needed: qualitative and quantitative. Qualitative data is data obtained from the results of open questionnaires, interviews, or focus group discussions. This data was obtained from the effects of formative evaluations, including expert studies, one-on-one assessment, small group evaluations, and field trials.

The data used as the basis for analysis and revision in the development of this model were obtained from respondents consisting of experts (learning design experts and IT/elearning experts) and lecturers who developed online courses at UIN Jakarta.

The instrument used for this needs analysis is a questionnaire distributed to two research subjects.

Results and Discussion

A. Results of Model Development

1. Preliminary Research Results

This preliminary research activity was carried out at UIN Syarif Hidayatullah Jakarta. More specifically, primary research was conducted at the Central Academic and University Quality Assurance Institute, responsible for the quality of education and the implementation of learning programs at the University. As described in chapter III, the preliminary research aims to obtain information about the contextual overview of this development research, namely the Academic Information System (AIS). Specifically, the primary research aims to obtain information about the background, characteristics, implementation process, and learning issues and problems at AIS UIN Jakarta.

In achieving the objectives of this study, the researchers conducted an analysis of several University Academic documents, namely: 1) Academic Guidelines; 2) Report on the Implementation of Online Lectures at AIS for the Academic Year (TA) 2020/2021; and 3) Report on the Results of the FY Lecture Review. 2020/2021.

The results of the preliminary research show several research findings as follows:

a. Overview of UIN Syarif Hidayatullah Jakarta

Since the Academy of Religious Sciences (ADIA) establishment in 1957, Syarif Hidayatullah State Islamic University (UIN) Jakarta is now 64 years old. During this period, this educational institution fulfilled its mission as an educational institution and transfer of knowledge, as a research facility that supports developing science and

nation-building, and as a means of community service that continues to encourage programs to improve social welfare.

UIN Syarif Hidayatullah Jakarta has gone through various historical eras and is now one of the icons of Islamic universities in Indonesia. In summary, the history of UIN Syarif Hidayatullah Jakarta can be divided into several periods, namely; pioneer time, IAIN al Jami`ah faculty time, IAIN Syarif Hidayatullah Jakarta time, and UIN Syarif Hidayatullah Jakarta time. (UIN Syarif Hidayatullah, 2018)

b. Academic Information System (AIS) Services

The Center for Information Technology and Databases (PUSTIPANDA) of UIN Syarif Hidayatullah Jakarta continues to develop academic and educational systems and communication models for the academic community of UIN Syarif Hidayatullah Jakarta. One of them is the use of the "AIS" Academic Information System, an interactive lecturer-student learning tool where (a) students are free to choose course material according to the curriculum, including lectures and assignments from the lecturer. (b) lecturers can do this as a teaching activity based on the lecture reference frame (<https://ais.uinjkt.ac.id>) (Sagara, 2014).

The menus included in AIS are (a) Courses that contain a series of courses uploaded by lecturers and can be downloaded by students as educational resources (b) Faculties, meaning that all faculties and curricula at UIN Syarif Hidayatullah Jakarta are easy to navigate and also find material for students (c) internal links to facilitate access to significant links such as UIN, educational systems or others (d) internal links for lecturers and students.

Learning activities with others. Currently, there is a change in the role of lecturers and students in learning. The role of lecturers has changed from: (1) as a transmitter of knowledge, the primary source of information, material expert, and a source of all responses, to being a learning partner, trainer, employee, knowledge navigator, and learning partner; (2) from controlling and directing all aspects of learning to provide more alternatives and responsibilities for each student in the learning process. Meanwhile, the role of students in learning has changed, namely: (1) from passive recipients of information to active participants in the learning process, (2) from re-discussing knowledge to generating and transmitting knowledge, (3) from individual learning to cooperative learning. This form of role change is optimal when supported by an electronic-based learning system such as AIS.

c. AIS Development

Apart from being a system for campus administration services, AIS is also used as an electronic learning information system (e-learning). In simple terms, e-learning can be understood as a learning process that uses information technology in computers with telecommunications facilities (internet, intranet, extranet) and multimedia (graphics, audio, video) as the main media for delivering information. materials and interactions between lecturers (teachers/lecturers) and students (students/students).

From observations and interviews that have been tried with students, the cases experienced at this time are student descriptions at this time AIS only acts as an academic administrative service activity, not a facility for educational activities. The majority of students only look at grades, taking courses (KRS) has not yet reached the use of education. At the level of readiness of learning participants (students) in accessing AIS-based e-learning education. The case leads to (a) the heterogeneity of the input competencies (students), some come from areas that have not been reached by the internet, learning in SHS/Vocational High Schools (SMK) is not yet based on ICT, low student competence, supporting energy for SMA/Vocational High Schools (SMK) the availability of ICT is low (b) adapting to the educational process (AIS application) is low so that in the early process students face difficulties even though students do not face difficulties later. AIS is a meaningful medium in interactive education between lecturers and students at UIN Syarif Hidayatullah Jakarta.

d. AIS Problems and Challenges

The report on the implementation of Online Lectures at AIS UIN Syarif Hidayatullah Jakarta shows that AIS has problems with the online learning system, both in terms of regulations/policies and HR organizers (including lecturers), course development, teaching materials, and implementation. Regarding the ability of lecturers to curate learning content in online courses, in general, according to the report document, it still needs to be improved.

A common problem related to curating learning content in online courses is the difficulty of lecturers in sorting and selecting digital content. This can be seen from several indications as follows: 1) the content of the selected and used learning media is too monotonous and focuses more on text and visuals, has not used the potential of hypermedia and multimedia; 2) the learning path is still too monotonous, giving more instructions to students to read than doing learning activities as well as the principle of independent study; 3) have not been able to sort out and ensure synchronous and asynchronous educational technology that matches the objectives and learning strategies; and 4) the assessment of learning outcomes is still monotonous through objective tests with the number and quality that have not met the principles of good and correct testing.

Referring to the preliminary research results, the researcher concludes that in terms of curating learning content in online courses, lecturers need a straightforward guide on how to curate good learning content. Because online learning is a new thing for most lecturers. Therefore, UIN Jakarta requires a learning content curation system model in online courses as reference material in designing online lectures.

1. Results of Needs Analysis

Based on the case above, the researchers carried out a needs analysis that was more micro in nature, which focused more on the learning content curation system model for online courses in the context of UIN Jakarta. The purpose of the needs

analysis is to obtain data on the gap between the typical situation and the actual situation related to the knowledge and competence of lecturers in designing learning content curation in online lectures.

In this development research, researchers carry out a level 1 needs analysis according to Gupta (Gupta et al., 2014), known as knowledge and skills assessment. The needs analysis of this level, tested by the method of equalizing the perfect situation, is that the knowledge and expertise of the lecturers are linked to the curation of learning content in online lectures starting from formulating goals, designing curation strategies, sorting and determining media, and sorting and ensuring assessment of learning outcomes with actual conditions. . So that the gaps experienced from each aspect of the learning content curation system in online lectures at UIN Jakarta can be obtained.

The questionnaire used by the researcher is an instrument for conducting a needs analysis. Researchers distributed questionnaires on two subjects, namely the quality assurance team of UIN Jakarta (consisting of 3 people) and lecturers who are lecturers in 2020 or 2021 (a total of 5 people). In addition, the researchers carried out an analysis of the academic guide documents in conducting online lectures at UIN Jakarta. From the results of the questionnaire distribution, the following gaps are obtained:

Table 1
Knowledge and Skills Gap in Curation of Learning Content

No.	Ideal Conditions	Actual Conditions	Needs
1.	The AIS application has a learning content curation system model as a reference/guide in developing online courses.	<ul style="list-style-type: none"> The AIS application already has a guide for developing online courses, but it is still general and needs to be further refined. 93% of respondents stated the importance of specific guidelines for designing learning content curation. 	Develop a learning content curation system model to refine the existing guidelines.
2.	AIS applications have clear boundaries/definitions of the intended learning content curation	<ul style="list-style-type: none"> The AIS application has not issued clear boundaries/definitions of learning content curation in the context of AIS. 85% of respondents stated the need for 	Operational limitations on curating learning content in the context of Academic Information Systems.

Lecturer for online course development at UIN Syarif Hidayatullah Jakarta:			
		clear boundaries on the curation of learning content in the context of AIS	
3.	Have sufficient knowledge about curating learning content.	85% of respondents reported not having sufficient insight into curating upgrading content.	Operational limits regarding curation of learning content in AIS Apps
	Have sufficient insight and expertise in determining and formulating training outcomes that match the benchmarks for good and correct training outcomes.	73% of respondents reported that they did not have the insight and expertise in determining and formulating upgrading outcomes that matched good and correct formulation benchmarks.	The criteria for formulating learning outcomes are in accordance with the criteria for a good and correct formulation.
4.	able to select and ensure online and face-to-face learning activities are appropriate and following learning outcomes	73% of respondents reported that they do not have the expertise in sorting and ensuring that online and face-to-face learning activities are suitable for learning objectives	Criteria, guidelines and illustrations select and provide relevant online and face-to-face learning activities for upgrading achievement
5.	Able to select and select online and face-to-face learning tools suitable for learning objectives and resource conditions	73% of respondents stated that they relatively could not choose and determine the suitable online and face-to-face learning media according to the learning objectives.	Criteria and guidelines for selecting and determining appropriate online and face-to-face learning media
6.	Have the ability to compile (assembling) learning objects (learning objects) into a learning path (learning path) following learning principles.	84% of respondents reported that they have relatively no expertise in compiling learning objects into learning that follows the principles of online learning.	Guidelines and criteria for collecting a learning path following effective, efficient and exciting learning principles.
7.	Able to select and arrange appropriate learning content	82% of respondents reported that they relatively do not have the expertise in	Criteria and guidelines and criteria in

curation assessments following learning objectives.	sorting and managing learning content curation assessments that need improvement.	determining and compiling appropriate learning content curation assessments.
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Referring to the results of the needs analysis above, it can be concluded that in general, the learning content curation system model is a necessity. UIN Jakarta must have a learning content curation system model as a guide for lecturers who support online courses as a learning content curation system.

In addition, the results of the needs analysis as described, also provide a framework related to the needs for each component of the learning content curation system model. The needs of each component of the model are 1) the formulation of the operational definition of the learning content curation system in the context of UIN Jakarta; 2) guidelines and examples for curating good learning content; 3) guides and examples of selecting and determining online learning content that is relevant to the specified learning objectives; 4) guidelines and examples of selecting and determining the application of online learning content curation that is relevant to the predetermined learning objectives; This component of needs will be the basis for developing a tentative model, namely a draft model for the design of a learning content curation system for online learning at UIN Jakarta.

1. Results of Initial Model Design

The results of the preliminary research and needs analysis, as described above, provide direction and an overview of the development of the learning content curation system model. As explained in chapter III, the first step of informative research is to create a case or problem that can help generate a design theory (create a case that helps create the design theory). In this case, the researcher creates a learning system model based on the researcher's theoretical framework, experience, and intuition.

Therefore, armed with the experience of researchers who have been around for approximately 12 years in the field of ICT, e-learning and based on the existing theoretical framework, the researchers took the steps as described as follows:

Figure 1 Conceptual, Procedural and Physical Model of Initial Model Design

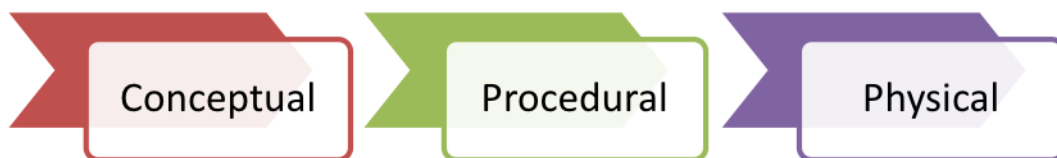


Table 2

Conceptual, Procedural and Physical Model of Initial Model Design		
Formative Research (Reigeluth, 2009)	Step 1: Creating a tentative model	Tentative model
Curation of Learning Content (Ponerulappan & Thilagavathy, 2016),	1. Formulating the Definition of Curated Online Learning Content	1. Formulation of the Definition of Curating Online Learning Content
Learning Content Curation Model (Bhargava, 2011)	2. Creating a Learning Content Curation System Design Model	2. Learning Content Curation System Design Model
Curation Flow	3. Develop guidelines and flowcharts and examples of Curation formulas	3. Content Curation Flow Guidelines for Online Learning
Learning Content Curation Practice	4. Develop a Practical Guide to Content Curation for Online Learning	4. A Practical Guide to Content Curation in Online Learning

Referring to the framework above, there are at least four components of the content curation system design model for online learning which are part of the tentative model design produced through this research. These three components can be explained one by one as follows:

a. Operational Definition Formulation of Online Learning Content Curation

The definition of online learning formulated by the researcher is based on the results of the researchers' synthesis of several concepts of content curation and online learning as follows:

Table 3
Synthesis of Definition of Content Curation on e-Learning

Concepts	Exptrs	Formulation
Content Curation	(Ponerulappan & Thilagavathy, 2016)	Content curation is the process of finding and collecting online content and presenting the best work in a structured manner.
	(Bhargava, 2011)	Content Curation is a term that describes the act of finding, grouping, organizing or sharing the best and most relevant content on a particular issue.
Online Learning	Stockley (2001)	E-learning is the delivery of learning, training or educational programs using electronic means such as computers or other electronic devices such as mobile phones in various ways to provide training, education or teaching materials.
	Naidu (2006)	E-learning, fundamentally, is an educational process that utilizes information and communication technology to bridge learning and learning activities both asynchronously and synchronous.
	Horton (2006)	E-learning is the use of information technology and computers to create learning experiences.

Based on the synthesis of several concepts of learning content curation as described above, it can be concluded that the weaknesses of online learning can be synergized or integrated with the advantages of content curation, and vice versa, and the main goal is to achieve optimal learning effectiveness.

a. Learning Content Curation System Model

The researcher created a content curation system model for online learning based on synchronous and asynchronous learning settings. Thus, the essential thing in designing a content curation system for online learning is formulating learning outcomes and mapping and organizing teaching materials/materials based on these learning outcomes. When the learning outcomes and materials have been well structured, the next important step is to select and determine which learning outcomes and subjects can be achieved with asynchronous learning activities and which can be achieved through synchronous learning activities. Thus, the researchers created a learning content curation system model that can be described as follows:

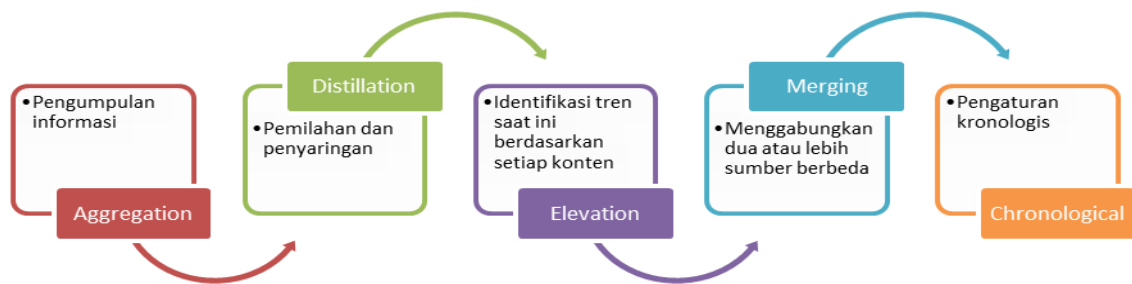


Figure 2 Learning Content Curation System Design Model

The Learning Content Curation System Design Model, as depicted in the picture above, can be explained as follows:

1) Information gathering (Aggregation)

The first method is called aggregation, and it is the most common way to study content curation. Aggregation involves gathering relevant information about a topic and storing it in one location. Simply put, aggregation collects and aggregates information for more accessible and on-demand access later.

An example of curating learning content through aggregation is an RSS feed that features learning videos on a topic. Websites that collect content from different niche blogs are also examples of combined curation.

2) Sorting and Filtering (Distillation)

Distillation is another process of curating learning content. Like aggregation, it also includes collecting and storing information. On the other hand, distillation requires sorting and filtering so that only the most relevant content is presented to students.

The amount of content on the web is almost unlimited. While they are searchable via Google, compiling them all would be an almost impossible task for any curator. Many online tools and applications are available that will help curators do this with ease. With the distillation process, curating learning content can be more accessible, especially if it is paired with a learning content curation tool. Some examples of

distillation include collecting and sorting content based on relevant keywords and hashtags on social media.

3) Elevation

The elevation is the most complex approach to learning content curation, as it incorporates the identification of current trends based on each content. The complexity and complexity in its application make this method much different from other methods. Using elevation to organize online learning content can be challenging. From a technology perspective, algorithms or programs must carefully analyze each piece of content, see things in the bigger picture, and improve specific trends.

There are several of these technologies available, and a perfect example of such technology is the Trending feature on Twitter. This robust automation analyzes all tweets and determines the trending topics over a certain period. If the lecturer did this manually, it would require more expertise and analytical skills. This complexity makes elevation the most complicated method of learning content curation. However, equipping lecturers with highly proficient curation skills with cutting-edge technology can provide much-needed excellence in online learning content.

In addition to lifting familiar trends, new ones may haven't been discovered and exploited. From a learning perspective, this may be a need for further learning, a new approach, or even a new trend in education.

4) Merging

Merging refers to the curation of learning content that combines two or more different sources. These sources are then used to generate new perspectives on a particular topic when combined. This method is concerned with merging various content sources, but the most important part is building on existing content to present the topic in a new light.

An example of incorporation is the use of wikis in learning. Wikipedia, for example, allows people to collaborate on specific topics via wikis. Thus, the resulting wiki is composed of different points of view by various individual contributors.

5) Chronological Settings (Chronological)

This is perhaps the easiest and most engaging way to approach learning content curation. Simply put, it contains content in a timeline. The chronological arrangement is simply combining and organizing content by date of publication.

The most exciting part of chronological curation is that the evolution of a particular topic can be easily tracked. More importantly, this method can also show how an understanding of a topic develops over time.

Take the term e-learning as an example. Information from the late 80's to the early 90's will most likely address it from the context of computer-based learning. Move forward a few years to the 2000s and the definition of e-learning will not be limited to computer-based learning, but will also include the integration of classroom technology.

Today, the term has become very broad to include computer-based learning, technology integration, and even applications, cloud and virtual reality.

a. Learning Content Curation Flow Guide

They are curating learning content, such as reading through reading, viewing or observing through visuals, observing through audio, watching through films and or animations, trying and practicing through simulations and games, and so on. All of that must be held in various types and forms of digital tools. This digital media content is called a learning object. Based on this, the researchers provide illustrations of different types and forms of digital media as follows:

Table 4
Digital Content Types and Formats

Activities	Media	Media Format
Read	Teks	doc, pdf, html, epub, dll.
See	Visual	jpeg, png, ppt, gif, dll.
Listen	Audio	mp3, mp4, wav, wma, midi, dll.
Listen and see	Video, Animation	dat. flv, mp3, mp4, wmv, swf, 3gp, dll.
Try and practice	Simulation and games	swf, mp3, mp4, wmv, dll.



Figure 0-1
Curation Content Learning Flow

The picture above shows the flow of learning content curation, which consists of 7 (seven) steps for curating learning content with the following description:

Referring to the curation system model that has been presented above, the research felt the need to develop a digital content curation flow in online learning. The curation flow model that the researcher developed can be described as follows:

1. Aggregation: This initial step refers to the search and collection of information from various sources regarding the theme that educators will present.
2. Screening: at this stage, educators sort and categorize data sets to target the most relevant pieces of information that will serve the needs of students appropriately according to learning outcomes.

3. Organizing: The educator cuts content to provide logic and structure at this stage. It aids learning by facilitating understanding.
4. Students from the data. 4. Conditioning/ Contextualization: this stage refers to increasing the value of content by adding our curator comments, titles, brief explanatory notes or overviews, further information, and tags. Contextualization helps learners gain more insight from the content presented to them so that it can be ensured that the message contains valuable information for educators, namely (a) how the content is relevant to the needs of students and comprehensive learning objectives, (b) how the information will help them in the workplace, and (c) what can be expected. Educators can also use this space to direct students to other sources for additional information.
5. Sharing: At this stage, educators share content that does not only mean posting blog posts or organizing training sessions to educate students. Content curation is most effective when educators share resources with the right groups of learners, at the right time when they are seeking information, and on channels, they can easily access.
6. Storing and Archiving: At this stage, educators need to store, catalog, and archive curated content for easy future reference. Curators must access this content if they wish to update information. Students should browse through a collection of data to quickly find what they are looking for. Tagging is essential. Then educators must have guidelines so that different content curators are on the same page when they name files or use certain words in contextual information.
7. Receive Feedback: At this stage, educators actively seek feedback from students. The insights educators have will help us provide more focused and meaningful content in the future.

Conclusion

The results of the research show that as a model of the learning content curation system in online courses, it can be declared feasible to be implemented (implementable). Several related indicators show this. The results of the expert study show that all experts (100%) state that the learning content curation system model in online courses developed is supported by adequate theoretical references, operational, logical and clear, and provides a framework as a model. A few experts suggest the need to be supported by varied examples.

The results of the rubric assessment at the field test stages 1, 2 and 3 showed an increase in the ability to curate learning content using the learning content curation system model in online courses. During the feasibility test (one-on-one evaluation, field tests 1 and 2), 33% of respondents could curate learning content with an excellent scale, 47.7% with a reasonable scale, and 25% with a poor ranking. After the learning content curation system model was revised and tested at the 3rd stage of the field test, it showed an increase in the respondents' ability in designing learning content curation, namely:

67.5% achieved excellent scale, 31.7% achieved good ranking and 0.8% achieved not good scale.

The results of the questionnaire show that the learning content curation system model developed has relatively high innovation characteristics, namely: 1) it has relative advantages (easy, simple, and logical); 2) compatible with the needs in designing content curation; 3) simple and easy to follow; 4) ability in designing observable content curation; and 5) can be tried on other colleagues. Thus, it can be concluded that the learning content curation flow as a learning content curation system model can be declared feasible and can be implemented. Therefore, curating learning content can be used as a reference in curating learning content in the context of UIN Jakarta.

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