HIGHLIGHTING LEARNING COMMUNICATION IN THE INDUSTRIAL ERA 4.0 USING VCLASS MEDIA IN NURDIN HAMZAH UNIVERSITY COMMUNICATION SCIENCE STUDY PROGRAM

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Abstract: The current era of education is influenced by the industrial revolution 4.0, in which the cyber system is a type of learning environment that uses digital technologies. The learning process takes place by utilizing communication technology that can carry out all work activities through applications that can help them online. One of the applications used is a virtual class (Vclass), with virtual class lecturers and students can carry out learning activities anywhere. Through these applications, lecturers can deliver learning materials in various forms, such as videos, PowerPoint presentation documents (PPT), scientific journal links, electronic books (ebooks), etc. However, implementing online learning still has several obstacles because lecturers cannot meet face-to-face to monitor the learning process, so the expected results are not as desired. The purpose of this study is to describe how learning communication in the industrial era 4.0 describes the obstacles and barriers to online learning. This research uses a qualitative approach with descriptive methods, data collection using observation, interviews, and documentation techniques. The number of samples is ten people. The results of the analysis show that learning communication efforts are carried out using virtual class (Vclass) media, namely: Social presence, Cognitive load, Visualization, and interaction type. At the same time, the obstacles and barriers are that the learners cannot manage time appropriately to complete learning tasks and the limitations of using learning materials independently to understand lecture material.

Keywords: Learning Communication, V Class Media, Industrial Era 4.0

Abstrak: Era pendidikan saat ini dipengaruhi oleh revolusi industri 4.0 yang bercirikan pemanfaatan teknologi digital dalam proses pembelajaran yang dikenal dengan sistem siber (cyber system), proses pembelajaran berlangsung dengan pemanfaatan teknologi komunikasi yang dapat melakukan semua aktivitas pekerjaan melalui aplikasi yang dapat membantu mereka secara online, salah satu aplikasi yang digunakan adalah virtual class (Vclass), dengan virtual class dosen dan mahasiswa dapat melakukan aktivitas belajar dimana saja, lewat aplikasi tersebut dosen dapat menyampaikan materi pembelajaran dalam berbagai bentuk seperti video, dokumen presentasi power poin (PPT), link jurnal ilmiah, electronic book (ebook) dan lain sebagainya. Namun pelaksanaan pembelajaran secara online tersebut masih memiliki beberapa kendala karena dosen tidak bisa bertatap muka secara langsung untuk memmonitoring proses pembelajaran sehingga hasil yang diharapkan tidak sesuai dengan keinginan. Tujuan dari penelitian ini adalah mendekripsikan bagaimana komunikasi pembelajaran di era industri 4.0, mendekripsikan kendala dan hambatan pembelajaran online. Penelitian ini menggunakan pendekatan kualitatif dengan metode deskriptif, pengumpulan data menggunakan teknik observasi, wawancara, dan dokumentasi. Jumlah sampel 10 orang. Hasil analisis menunjukkan bahwa upaya komunikasi pembelajaran dilakukan menggunakan media virtual class (Vclass) yaitu: Social presence, Cognitive load, Visualisasi, tipe interaksi. Sedangkan kendala dan hambatan adalah para pembelajar tidak mempelengola waktu secara tepat untuk menyelesaikan tugas pembelajaran dan keterbatasan menggunakan materi pembelajaran secara mandiri untuk memahami materi perkuliahan.

Keywords: Komunikasi Pemelajaran, Media V Class, Era Industri 4.0
I. Introduction

Universities are required to be able to design and implement innovative learning processes\(^1\). Innovative learning can be done with recovery learning through information technology applications that can be used online; innovative learning can be done with e-learning with modern teaching and learning support content\(^2\). Lecturers can deliver exciting and contextual lecture material with a variety of; lecturers and students can also discuss and exchange ideas through chat columns to convey various issues currently being discussed.

Students currently studying in Higher Education must be prepared to become skilled, flexible, and resilient learners\(^3\), namely learning that is flexible and adaptive to changes that occur\(^4\). Learning on campus should, in theory, offer opportunities and challenges for the development of creativity, productivity, personality, and student needs, as well as independence in seeking and finding knowledge through the realities and dynamics of the field, such as ability requirements, real-world problems, social interaction, collaboration, self-management, performance demands, targets, and accomplishments\(^5\).

Learning communication is how a person communicates a concept or idea to others to implement information effectively and efficiently in learning. William I. Gordon identified four functions: (a) social communication function, (b) expressive communication, (c) ritual communication, and (d) instrumental communication function. Communication principles include respect, empathy, audibility, clarity, and humility. Effective communication in learning is very influential in achieving goals\(^6\).

Learning communication is carried out using information technology media based on internet networks. Learning communication is essential to determine the success or failure of education. The academic achievement of each graduate is also influenced by the interaction pattern and communication system applied by the teaching staff. In the teaching and learning process, most of it occurs in the process of communication, both in interpersonal and personal relationships\(^7\). The use of word ‘communication’ indicates transferring something from one object or person to another. The ‘communication’ also means the distribution of information using both one-way and two-way.

Communication is a bridge to establish interaction between individuals and groups; sending messages between individuals and groups can be received directly without a time difference although the place is far apart. The learning process as interaction and communication is directed to help develop all the potential, skills, and positive characteristics students possess\(^8\).

The advantages of virtual classes include high mobility, low price, and more interactivity (between users/students, users/students with the program, and users/students with other resource persons/assistant lecturers). However, the

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\(^7\) Ibid.,
\(^8\) Ibid.,
implementation of online learning still has some obstacles because learners cannot manage time appropriately to complete learning tasks, there are limitations to using learning materials independently to understand lecture materials, unstable signals due to weather influences, and students’ limited internet access (limited quotas).

This study intends to highlight how lecturers should communicate to deal with the difficulties of online learning and the benefits and drawbacks of online learning for students and lecturers at the Nurdi Hamzah University campus.

II. Virtual Classroom
A virtual classroom is one of the learning methods based on communication technology platforms; this method can be done in various ways: synchronous, asynchronous, and hybrid. First, synchronous learning can be done using communication technology devices that allow lecturers and students to interact simultaneously; in the implementation of this learning, they can interact online using communication technology platforms; they can relate to each other and work together as the learning process is carried out in the classroom face-to-face. Moore (1993) defines interaction in learning environments as incorporating communication between students and instructors, students and content, and students with other participants. A synchronous virtual classroom allows lecturers, instructors, and students to interact and work together in real time.

Synchronous e-learning can be implemented by combining the advantages of direct interaction and utilization of virtual technology. Synchronous e-learning uses electronic technology devices, especially computers, and the Internet. Learning is presented with application commands directly, in real-time, and scheduled. The advantages of virtual classes include high mobility, low price, and more interactivity (between users/students, users/students with the program, and users/students with other resources/lecturers). Interactivity allows users of communication technology devices to interact and build reciprocal relationships and cooperation between media users. Learning using asynchronous communication can increase the interactivity of students.

Second, the asynchronous e-learning based is flexible, which means this learning process still uses a communication technology platform. Learning resources, however, can be found in various formats, including audio/video, handouts, articles, and PowerPoint presentations. Students can access these formats.

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13 Panji Novantara, M. T., Muhammad, A., & Md, A. Implementasi E-Learning Berbasis Virtual Class Dengan Menggunakan Metode Synchronous Learning Pada Pembelajaran Di Universitas Kuningan, pp.18 -19
Highlighting Learning Communication in The Industrial Era 4.0 Using Vclass Media 
in Nurdin Hamzah University Communication Science Study Program

whenever they want, wherever they are, and according to their available time. Additionally, a hybrid learning strategy integrates two or more methodologies and approaches to learning in order to accomplish the learning process objectives.

This research uses qualitative interpretive methods with a natural approach to the subject which is divided into three stages. The first stage is pre-research; at this stage, the researcher has conducted a literature study and pre-observation to collect initial data about the learning applied at the Nurdin Hamzah University FISIPOL campus. In the second stage, the researcher finds research problems by conducting observations and interviews with lecturers and students to explore the information needed as research data. The third stage is to analyze the data and continue by conducting focus group discussions (FGDs) and workshops to present the findings of the initial research data.

It is to prove whether or not the conclusions made through triangulation verification are correct. The research in Jambi City involved several stakeholders who could provide data about the research problem. Data were collected by observations directly in the field. Furthermore, conducting interviews so that researchers can obtain sufficient data. Data were analyzed using an interactive model through data reduction, presentation, and conclusion drawing.

III. Learning Communication in the Industrial Era 4.0 Using Vclass Media

Virtual classes or interactive media as a learning tool are common in the industrial revolution era 4.0. Due to interactive media, students and the media offered by Jessica and Ahmad may engage or take active action. In the period of the industrial revolution 4.0, interactive media design, like Virtual Classes, is the education solution. According to Likanen in Suharsaputra, Djamarah, to improve productivity, we need to address the key issues of innovative performance, the application of new technologies, reengineering organizations, and developing the necessary skills. The implementation of new technology, organizational engineering, and skill development can all be examples of innovative performance, which in the context of people also demonstrates the person's creativity in discharging his roles and responsibilities. This refers to the creative implementation of teachers' educational roles and responsibilities. One of the learning tools that lecturers and teachers utilize to aid in the learning process is interactive multimedia. To accomplish learning objectives, Djamarah claims that the media can be any tools used as a communication route.

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It contrasts with Rohani and Surya\textsuperscript{22}, who view media as a learning tool essential to all learning activities\textsuperscript{23}. Additionally, he contends that media encompasses anything that can be perceived and serves as a medium, means, or tool for communication (as well as the teaching and learning processes). Several analysts concur with Rohani and Singgih's media assessment\textsuperscript{24}: a) The term "media" refers to a tool that transmits information; it runs between the communicator and the communication. b) The term "media" refers to all mediums through which ideas are disseminated and ultimately communicated to their intended audience. Therefore, "media" refers to any tangible item conveying motivating messages appropriate for learning, such as print and electronic media (movies, videos). Rivai emphasizes this by saying that the media is a channel since it has essentially increased or prolonged the human ability to feel, hear, and see within the confines of distance, space, and time\textsuperscript{25}.

Higher education institutions often solely employ online learning tools for course materials and sending out assignments, including email is one of the applications used in online learning media. Students often need help in obtaining course materials taught by lecturers. Using technology in learning media is one solution to overcome these problems. Online learning media is a tool or learning intermediary that is not done face to face but uses stages that can help the composition of teaching and learning carried out even though it is far away\textsuperscript{26}.

Online learning resources serve as a bridge connecting professors and students for educational exchanges. A website-based program called a learning management system makes it easier to organize, implement, and evaluate distance learning. Lecturers and students can utilize the learning management system's integrated platform for resources, delivery, and learning management. The software hub for the implementation of e-learning is the learning management system. The learning management system must support a variety of content delivery methods. The appropriate, effective, and efficient use of the learning management system model created is a crucial factor in online learning via e-learning, and the learning has limitations in addition to use\textsuperscript{27}.

Learning systems used as learning media can aid in achieving educational objectives. Meetings in person and over the phone can be used to assess instructors’ awareness of how well their students have grasped the topic. If everything can be done in the classroom, lecturers' limits in offering learning explanations and chances for students to discover more information are restricted. This can be overcome if instructors and students share the same understanding of how to use the Virtual Class program\textsuperscript{28}. For lecturers to use online learning to support classroom learning and for students to understand how to explore as much

information as possible through the use of Virtual Class applications in the learning process as well as classroom learning, there must be a common perception and equal ability to use the Virtual Class application. It is intended that using a Moodle application transformed into a Virtual Class application will provide an online learning environment comparable to a classroom setting and learning classes and instructors and students may use and comprehend this VClass.

IV. Results
Learning Communication in the Industry 4.0 Era

Both offline and online learning processes depend heavily on communication. Successful communication will result in a good understanding of both parties. Both lecturers and students need to recognize that two-way communication is required for pleasant learning to occur in the classroom. Students will offer input regarding what their professors have said after they have discussed the evolution of education concerning their scientific discipline.

As a result of the abrupt shift from face-to-face instruction, VClass learning currently suffers from implementation flaws and barriers since it has yet to make all necessary preparations. In reality, professors and students need to put in more effort to prepare as much as possible for integrating online learning. For instance, the lecturer’s lack of preparation has prevented the transition from offline to online learning when delivering learning materials. Finally, the student’s physical or psychological incapacity to adapt to spending extended periods in front of a laptop or smartphone while learning. The boredom is entirely different when they are required to attend live lectures.

Learning communication in Era 4.0 will be more advantageous with VClass for students outside Jambi and those with jobs. Students living outside the city without having to attend lessons or go to the city of Jambi can continue their education in their home villages. Then, students who have worked do not need permission to attend lectures from their bosses. They can work while they learn. Therefore, it has no impact on how they perform at work. In addition to convenience, introducing online lectures also has disadvantages. One of the challenges in establishing online lectures is Internet access Learning communication in Era 4.0 will be more advantageous with VClass for students outside of Jambi and those with jobs. Students living outside the city without having to attend lessons or go to the city of Jambi can continue their education in their home villages. Then, students who have worked do not need permission to attend lectures from their bosses. They can work while they learn. Therefore, it has no impact on how they perform at work. In addition to convenience, introducing online lectures also has disadvantages. One of the challenges in establishing online lectures is unstable Internet access and the limited internet data plans owned by students.

Advantages and Disadvantages of Online Learning from the Perceptions of Lecturers and Students

Online learning using virtual classes has advantages and disadvantages, both from the perspectives of lecturers and students. The data collected was taken randomly from 6 students and three lecturers. When viewed from the views of lecturers, five views arise related to Vclasses, namely: 1) Ease in controlling student attendance in the Vclass room; 2) Lecturers can determine or set attendance hours so that students have the freedom to schedule when they take attendance; 3) It is very effective when giving grades where lecturers only need to enter grades; the VClass application calculates the final amount; 4) Task collection is increasingly controlled, making it easier for lecturers to check, give assessments, and go green; 5) Makes it more accessible for lecturers and students to have direct communication interactions.

Lecturers usually take attendance every day according to the lecture schedule. This differs from the use of attendance in VClass, where lecturers can do it at the beginning of the meeting and then set it for the next meeting until the 16th meeting, so there is no need to take attendance every day. Another respondent also gave the view that:

“Effective, VClass attendance can be set for a particular time, making it easier for students to fill out the attendance at any time until it is closed. Lecturers can set the date or dateline for submitting assignments while also controlling them and also providing direct assessment.”

The timing of a student’s presence in a VClass session can be adjusted for the benefit of the class or the convenience of the students. This ease of use extends to the submission of assignments and the awarding of grades in addition to the taking of attendance. It will be simpler for lecturers to determine if assignments are submitted on time if students submit them online. Students that put much effort into their tasks will surely profit from time appropriateness. Furthermore, lecturers merely enter the MID term, assignment, and final term scores when assigning grades; the VClass application then automatically calculates the final points. Some lecturers have differing opinions about the employment of VClass.

"Yes, it is very effective because collecting assignments through VClass is one way to reduce the use of paper or paperless in collecting assignments, and it can be checked quickly whether students who submit assignments meet the deadline. VClass is a Moodle-based learning platform whose features are designed to be used as an online learning management system. This makes it easier for lecturers and students to interact virtually, including sharing materials for the assessment process.”

The previous claim demonstrates how using VClass to submit assignments might enhance sustainability. Large volumes of paper will be used less when assignments are turned in online. The VClass can help keep nature’s delicate

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30 Interview with respondent A
31 Interview with respondent B
32 Interview with respondent C
balance. This application has been carefully built to assist lecturers or teachers in performing their responsibilities as teachers and educators. When there are no restrictions on signals or internet data plans (quotas), lecturers and students can engage effectively.

In addition, lecturers have also reported several drawbacks or obstacles, such as the following: 1) some lecturers are still unfamiliar with the features of VClass; 2) occasionally, students' names are listed, but they do not sign up for the courses offered, and vice versa; occasionally, students sign up for the courses offered but their names do not appear in the application; and 3) there are no obstacles. An interview with respondent A says that provide more training to lecturers so that they can use all the features and functions of Vclass to the fullest.

Some lecturers need to familiarize themselves with the functionalities of the VClass application, necessitating further training. Senior lecturers or lecturers who rarely utilize the program in classroom instruction are the primary target audience for this training. It will be simpler for lecturers to manage their VClass class circumstances if they are familiar with the features of the VClass application. The administration of final exams, class discussions, assignments, attendance, and Q&A sessions will be simple for the lecturers. In the final exam application, they can use some currently available features. Exam questions can be made on features with direct assessment procedures, meaning that students can instantly learn their test results through the features the professor has chosen after the exam. Another respondent also mentions:

"The application is good but needs to be improved in terms of synchronizing data between students, operators or those related to technical Vclass."  

Data synchronization between campuses frequently presents challenges, not just at the Nurdin Hamzah but also at other campuses. Lecturers became confused by inconsistencies between VClass data, contract data, and data in Forlap Dikti. Both assigning and awarding grades to students are tough for lecturers.

"Student's name is not listed (if there is), the student does not contract the course, making it difficult for lecturers to synchronize data and provide an assessment at the end of the absence."  

"Students listed in VClass are still not listed in other data synchronization sections. So, it takes time for lecturers to check whether this student is active in VClass but not active in other forlap applications or face-to-face."  

Some lecturers claim that using VClass's capabilities was simple for them. Lecturers who are used to using online applications in the classroom typically have no problems. This group typically works as junior instructors who frequently use learning tools to streamline their tasks. An interview respondent says that he has no obstacles and it is very effective.

In addition to the convenience and obstacles faced by lecturers, this is also experienced by students. There are several conveniences or benefits felt by students in using this VClass application, namely students feel: a) ease in understanding the subject.

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33 Interview with respondent A  
34 Interview with respondent C  
35 Interview with respondent B  
36 Interview with respondent A  
37 Interview with respondent C
matter before the recovery begins; b) the existing features are not difficult to understand; c) students can take attendance anywhere; d) ease in accessing materials and assignments from lecturers.

“Very helpful with the existence of v-class, because it is very useful for us as students to access materials and so on”\(^{38}\).
“I think it is effective, because all students can access absences wherever they are”\(^{39}\).
“Very effective, there are no obstacles”\(^{40}\).

The explanation above shows that all respondents from students could use the VClass application easily. They feel helped in using VClass; the features offered are straightforward to understand by them. This occurs because students are Generation Z members whose lives revolve around mobile devices and who therefore have no trouble using online applications. This aligns with the views of respondents E and F, who did not experience difficulties and felt very effective and helped by this VClass application.

In addition to the convenience faced by students, several points of obstacles are faced, including a) the occurrence of cheating when doing attendance; b) adding features to convert or reduce the size of data or files that do not yet exist.

“My suggestion is to improve the attendance in VClass so that students who do not attend lectures do not commit fraud in filling out absences in v-class\(^{41}\).”

“Hopefully VClass also provides a special room to directly press assignments in word or pdf form\(^{42}\).”

An interesting interpretation from the aforementioned is that some students who are conscientious in college and conscientious about taking attendance on time feel irritated by their peers who are loose and frequently late. They can take attendance at anytime and anywhere. Of course, this could hinder conscientious students and help those who need to put more effort into their studies or attendance. Therefore, in this situation, the lecturer must comprehend and set limits on the number of hours of attendance and when to begin and stop attendance.

In addition, some features must be added so that students have no difficulty sending assignments. Large assignment sizes or file sizes are difficult to upload, so the file must be compressed before it can be uploaded. However, if VClass has a compress application, this may be avoided; when the file is uploaded, information that our file is huge is provided, and then automatically clicks on the file to compress. The VClass functionality still needs to show this convenience.

V. Closing
Human life revolves around family, society, school, or government communication. Since communication affects millennials or Generation Z, it is crucial in the 4.0 era. In the 4.0 era, this communication will develop and change much more, moving closer to 5.0. This communication will continue to evolve and alter in the 4.0 era, which is currently moving towards 5.0. Website applications that are still being

\(^{38}\) Interview with respondent A & C
\(^{39}\) Interview with respondent B & D
\(^{40}\) Interview with respondent E & F
\(^{41}\) Interview with respondent A & B
\(^{42}\) Interview with respondent E & F
developed allow various fields of education to interact and will keep doing so for Indonesian education to keep pace with the growth of education in other nations.

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