

Blended Learning Model Implementation in the Normal, Pandemic, and New Normal Era

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ABSTRACT

The Covid-19 pandemic has made all of us stay at home while learning needs to continue. The only option is to take advantage of an online platform for learning, but the sudden implementation leaves everyone unprepared. This unpreparedness can be seen before us, not only in one or two schools but throughout several regions in Indonesia. The very important components of the online learning process need to be improved and improved. The pandemic is the right momentum for the world of education to make new breakthroughs, by utilizing online platforms in every teaching and learning process. Blended learning is the main choice that has been recommended by the government and experts in the field of education. Responding to this, it is necessary to apply learning innovations, one of which is by re-formulating the various existing blended learning implementation models, in order to obtain an appropriate formula applied to normal, new normal and pandemic conditions. This article tries to provide the right formula to answer these problems. The resulting formula is the result of a synthesis analysis of various blended learning implementation models. The models that are synthesized are: 1) e-learning implementation model; 2) Level of implementation of blended learning; 3) Composition of blended learning implementation; 4) Blended learning implementation model in various institutions; 5) Implementation Model of internet-based blended learning; 6) Implementation Model of web-based blended learning; 7) Implementation Model of ICT-based blended learning; and 8) Blended learning interaction model.

Keywords: *e-learning, blended learning, normal, pandemic, and new normal*

1. INTRODUCTION

Indonesia will enter its golden era with the momentum "Demographic Bonus". Demographic bonus is a condition when the population of productive age (15 to 64 years) is greater than the population of non-productive age. In 2030 - 2045 Indonesia is predicted to experience a demographic bonus period in which the population at productive age is greater than the unproductive age, reaching 64% of the projected total population of around 297 million people. In order for Indonesia to reap the maximum benefits from the demographic bonus it must be balanced with an increase in quality in terms of education and skills, in the face of labor market openness.

This commitment was further reinforced by the issuance of Presidential Instruction No. 9 of 2016 [1] concerning Revitalization of Vocational Schools in the framework of Improving the Quality and Competitiveness of Indonesian Human Resources, which instructs 12 Ministers, all Governors, and the Head of the BNSP (National Professional Certification Board) to take the necessary steps in accordance with their duties and functions respectively, and to synergize with other stakeholders to revitalize SMKs to improve the quality and

competitiveness of Indonesian HR. In this case, the Ministry of Education and Culture is of course the main sector in the effort to follow up Presidential Instruction No. 9/2016, to immediately make a road map for developing Vocational High Schools.

The challenge to improve the quality of competitiveness of human resources in the 21st century is very important. The Global Competitiveness Index (GCI) report related to Indonesia's competitiveness in 2019, which was just released by the World Economic Forum (WEF), dropped to 50th from 45th position last year [2]. The US-based Partnership for 21st Century Skills (P21) [3], identified the competencies needed in the 21st century, namely "The 4Cs" - communication, collaboration, critical thinking, and creativity. These competencies are important to be taught to students in the context of core subject areas and 21st century themes. In the 21st century the era of the industrial revolution 4.0 is certainly the learning methods provided to students need to adjust to the era. The implementation of blended learning is very suitable to face the challenges of Indonesia in the 21st Century and prepare a learning environment for achieving 21st century competencies as stated by the OECD (Organization for Economic Co-operation and Development) [4]

Wednesday (11/3/2020) Director General of the World Health Organization (WHO) officially announced the Corona virus (COVID-19) as a pandemic, in less than three months, Covid-19 has infected more than 126,000 people in 123 countries, from Asia, Europe, US, to South Africa. The World Health Organization (WHO) asks the Indonesian government to immediately announce Corona's national emergency. This COVID-19 pandemic has triggered fear and panic, including in the educational environment, especially after the central government established social and physical distancing policies to large-scale social restrictions (PSBB) in order to break the spread of the epidemic.

In order to prevent the spread of corona virus disease (COVID-19), the Minister of Cultural Education (Mendikbud) through the Minister of Education and Culture Circular Letter No. 3 of 2020 concerning Prevention of COVID-19 in the Education unit, called for the implementation of teaching and learning activities (KBM) to be conducted online [5] Employees, educators, and lecturers are also encouraged to carry out work, teach or give lectures from home. During the COVID-19 pandemic the online learning process consisted of: (1) Virtual face-to-face via video conferencing, teleconferences, and / or group discussions on social media or messaging applications. In virtual face-to-face meetings, there is a direct interaction between educators and students; (2) Learning Management System (LMS). LMS is an integrated online learning management system through applications. Learning activities in the LMS include registration and account management, mastery of the material, completion of assignments, monitoring of learning outcomes, engaging in discussion forums, consultations and examinations / assessments. Examples of LMS include virtual home learning classes, google classroom, teacher's room, zenius, edmodo, moodle, LMS seamolec, and so on.

During the COVID-19 disaster emergency, educators are required to be more creative in providing online learning material by making learning videos in the form of tutorials uploaded on Youtube, maximizing the use of LMS (Learning Management System), Google Classroom, WhatsApp Group and video conferencing applications like Zoom, Google Meet and Webex. The point of all of that is communication, where educators must still pay attention to the development of their students by ensuring the right to education continues to run even with technology intermediaries.

Sudden changes in learning patterns are not easy to do, challenges arise as long as the learning patterns are implemented. The results of a survey conducted by the Indonesian Child Protection Commission (KPAI) and the Federation of Indonesian Teachers Unions (FSGI) towards educators and students related to distance learning training (PJJ) during the epidemic. The survey results show that; (1) As many as 73.2% of respondents assumed the task of educators as long as PJJ was classified as heavy, the rest, 26.8%, were taken the other way around, on the other hand, as many as 55.5% at least liked the task of making videos, followed by answering questions in numbers many

(44.5%), summarize the material chapter (39.4%), and summarize the questions from the printed book before giving answers (25.6%) [6]; (2) Around 81.8% of respondents accepted that educators only gave assignments and rarely explained the material, discussed, gave questions, answered, disagreed, amounting to 79.9% of respondents stated, no one opposed the educator with students when PJJ was running, wanted give and collect assignments, the remainder, 20.1%, are received otherwise [6]; (3) As many as 77.6% of educators prefer to give assignments and be understood, it can be interpreted as more educators about the aid program to PJJ with the help of activities [7]; (4) As many as 8% of educators who succeeded in implementing brave learning before the COVID-19 pandemic, and as many as 52.8% said they had done brave learning. This "ever" assumes one and two times teaching bold "[7]; (5) During the implementation of PJJ many educators used social media and applications on mobile phones, such as WhatsApp, line, and Instagram to be the most used and very popular brave media used "83.4% whereas the app was not intended for online learning; the second highest is Google class as much as 45.3%, while Zoom comes in third which is 17.6% "[8]; (6) As many as 44.0% of educators learning success of their students are not friends with online learning. As many as 27.9% of educators accept not having the required equipment In addition, 26.7% of educators still lack the need for bold learning applications, about 20.8% of educators complain of limited time, and around 14.6% of educators receive needed material a lot [9].

The survey results indicate that the main problem of PJJ is educators who prefer to give assignments and evaluations, this can be interpreted educators emphasize assessment activities on PJJ compared to meaningful learning activities, this may be forced to do educators due to lack of mastery of online learning applications or patterns think that traditional learning that has been a daily occupation often makes it difficult for educators to implement PJJ, not because of the lack of knowledge and skills they have. The method that is crammed with the assignment of students is what makes PJJ unattractive, because the assessment is done by measuring the discipline and responsibility of students in the collection of assignments, and actually by looking at the results of the survey students are more expected to have direct interaction with educators in online learning activities, then what stands out in the implementation of PJJ is the use of social media, this is more because its use is customized to be carried out daily for both educators and students, even though social media is not intended as an online learning application.

The COVID-19 pandemic is the right momentum for the world of education in order to make new breakthroughs, by utilizing technology in every teaching and learning process (KBM). Minister of Education and Culture invites all parties to work together to present solutions to the pandemic COVID 19. After more than two months since the appeal was submitted, the Government will enact the idea of "New Normal" as a new chapter in addressing the COVID-19 outbreak. Entering the new normal period in

the middle of the Covid-19 pandemic where schools in the green zone may hold face-to-face learning in class.

Joint Decree of the Minister of Education and Culture Number 01 / KB / 2020, Minister of Religion Number 516 of 2020, Minister of Health Number HK.03.01 / Menkes / 363/2020, and Minister of Home Affairs of the Republic of Indonesia Number 440 -882 from 2020, concerning Organizational Guidelines Learning in the Academic Year 2020/2021 and the Academic Year 2020/2021 in the 2019 Corova Virus Pandemic Period (Covid-19) [10].

The guide explains that face-to-face learning in educational units that meet readiness is carried out in stages, beginning with a transition period of two months. If safe, continue with the new habit with class conditions for primary and secondary education: keep a minimum distance of 1.5 m and a maximum of 18 students / class. The number of days and hours of study with the shift group learning system (shift) is determined by each education unit according to the situation and needs.

Blended learning is the main choice that has been recommended by the government and experts in the field of education, blended learning is considered to provide convenience in learning activities, generally blended learning is understood as a learning method which combines traditional methods with modern methods. Blended learning is a learning model that has been done by many experts, blended learning is preferred over traditional classes because blended learning provides satisfaction [11]. With blended learning can improve students' mastery of concepts and student performance [12]. Researchers previously stated that blended learning increased the independence of students' learning skills [13], Blended learning gave better results compared to conventional methods, students who graduated using blended learning reached 88%, whereas in conventional learning only reached 63% [14], blended learning increases learning outcomes greater than conventional learning [15], this is reinforced by research findings that find that blended learning can improve learning outcomes equal to or higher than learners who study conventionally or fully online, despite the level success varies between disciplines [16].

Researchers have previously provided evidence that shows that blended learning produces a stronger sense of community among learners than traditional learning [17]. The researchers suggest that interaction between students and interactions between students and educators is a key factor in the learning process of students and is an important element in creating effective learning experiences [18] [19]. The results of research in America show that blended learning is very effective, compared to other learning, blended learning is 30% better, 40% shorter time, and 30% cheaper cost [20]

Blended learning if implemented properly and correctly, then there are at least three benefits that can be obtained, namely: 1) increasing learning outcomes through distance education, 2) increasing ease of learning so that students become satisfied in learning through distance education, and , 3) reducing learning costs [21]. At least three things are the strong reasons for the use of blended learning [22], [23] namely being able to (1) improve pedagogical aspects,

(2) increase students' flexibility and access to the learning process and learning resources, and (3) improve financing efficiency [24].

Seeing his extraordinary abilities, the application of blended learning still has big challenges. One of the challenges is not located in what information and communication technology is used, but lies in how to combine the use of technology and appropriate learning methods to create an active and constructive learning environment, where information and communication technology becomes the means for making learning events occur optimally Therefore, it is deemed necessary to develop a blended learning model by trying to provide a formula in combining the application of the right information and communication technology in the right format for the right person at the right time in the Vocational High School education environment, so that the implementation of learning can run flexibly and efficient in accordance with certain conditions and competencies to be achieved both under normal conditions, pandemics, and under new normal conditions..

2. METHOD

The method used in writing this article is a literature study, where this research begins by trying to examine how blended learning is applied in various institutions, how internet, web and ICT-based blended learning is applied, how the level and composition of its implementation, and interaction models that can be used. Next, perform a synthesis analysis by trying to integrate two or more elements to produce a blended learning implementation model that can be applied in normal, pandemic and new normal conditions.

3. LITERATURE AND DISCUSSION

3.1. E-learning Implementation Model

Education that builds the competence of "21st Century Learning Learning" is a 21st century learning framework that requires students to have skills, knowledge and abilities in the fields of technology, media and information, learning skills, innovation, and life skills. In realizing 21st century skills, innovations in learning are also needed, both related to approaches, models, media, strategies and others. One model that is currently quite potential is e-learning learning. One of the implementation of learning in realizing 21st century skills is the emergence of the concept of e-learning in the learning process.

Rashy [25], argues that e-learning in its application creates a learning experience, not a discrete one but is a continuum, in its implementation it can be carried out with various models, namely: (1) adjunct model: In this model

e-learning is used to support the learning system face to face in class. This model can be regarded as a traditional model plus because the existence of e-learning is only as enrichment or supplementation, examples of assignments given by educators to students to look for information on the internet to support learning activities in class, (2) Mixed / blended model: This model placing e-learning into an inseparable part of learning. For example learning theory is carried out online, while practical learning is carried out face-to-face so that a little or a large portion of e-learning, in face-to-face learning, the whole process is blended learning. In its application blended learning the relevance of the subject matter which can be done online and which can be done face-to-face is an important consideration factor in adjusting to the learning objectives, learning material, characteristics of students and existing conditions, and (3) Full online model / fully online: This e-learning model is used for the entire learning process starting from the delivery of learning materials, learning interactions, to evaluation of learning there is no face to face at all, the characteristic of this model is the occurrence of collaborative learning online. For example, learning material in the form of learning videos uploaded to the internet, or learning linked through hyperlinks to other sources in the form of text or images.

3.2. Models of Blended Learning Implementation

Blended learning is generally defined as learning that combines face-to-face and online instruction. Littlejohn and Pegler [26] define blended learning as learning that combines traditional approaches in the form of face-to-face classes and online learning approaches. Furthermore blended learning is a new method of learning which includes face-to-face and online learning that combines traditional learning with activities using computer media through the use of tablets, smart phones, and other technologies where this will attract more interest from students than face-to-face learning advance course or online learning [27].

Blended learning is an effort to utilize synchronous learning activities, such as face-to-face interactions with educators and collaborative work with peers as a complement to asynchronous learning activities carried out individually by students [28], this is confirmed by Piskurich [29] that blended learning is a combination of components from aspects of synchronous and asynchronous learning with the aim of achieving maximum learning effectiveness. Synchronous learning is a learning process that occurs simultaneously at the same time between learners and tutors / educators / lecturers, although it does not have to occur in the same place [26]. There are two types of synchronous learning, namely face-to-face learning in the classroom and online learning. Face-to-face learning in class, such as practice in a

laboratory, presentation or group discussion in class. While online learning (live), such as audio / video conferencing, chat and others. Asynchronous learning is a learning activity that allows different learners to experience the same teaching material at different times and places [30]. Asynchronous learning there are categories namely virtual and independent collaboration. Virtual collaboration such as online discussion forums, mailing lists, e-mails, etc., while independent asynchronous simulations, online tests, searching material, and so on.

3.2.1. The level of implementation of blended learning

The level of implementation of blended learning can be categorized into three types namely enabling, enhancing, and transforming [24] as described below; (1) Enabling is blended learning aimed at increasing access and convenience of students in following a learning. An example of this type of learning is blended learning to increase flexibility for students or blended learning aimed at providing opportunities for obtaining the same learning environment for the various strategies used, (2) Enhancing is blended learning that allows changes in pedagogical aspects but not radically in changing the way teaching and learning happens. Examples of this learning are face-to-face learning complemented by online learning resources, (3) Transforming is blended learning that allows for a radical pedagogical transformation. This learning example is a problem-based learning model which is a combination of face-to-face activities with various computer mediated activities that direct students to actively construct knowledge through dynamic interactions.

3.2.2. The composition of the implementation of blended learning

One of the obstacles in the application of blended learning is the fact that the composition of time is not yet right so that learning outcomes can be achieved maximally. At present the time allocation for face-to-face learning is greater than online learning. Kenney & Newcombe [31], stated that blended learning had a composition of 30% for face-to-face and 70% of the presentation of material online. While Allen [32] provides a clear categorization of blended learning, traditional learning, web facilitated and online learning based on the percentage of content delivered online and face to face.

According to Allen; 0% is traditional learning with content sent not online, delivered in written or oral form. 1 to 29% of learning uses web facilities to facilitate face-to-face learning activities, can be done using a course management system (CMS) / learning management system or web pages, for example to post syllabus, learning

materials and questions / exam materials. 30 to 79% is learning that combines online and face-to-face (blended) systems, the proportion of content substance uses online, sometimes using online discussion, and sometimes using face-to-face meetings. and 80 to 100% is learning that most or even entirely uses online systems. This type does not use face to face at all.

3.2.3. The model of implementing blended learning in various institutions

There are many blended learning models that have been developed, Horn and Staker [33] classifying some of the best models for conducting blended learning effectively and systematically, which are the most frequently used models of the various instructional models available. These models are; (1) Rotation model is a combination of online learning with face-to-face rotation. This model changes from traditional learning to change or experience a shift to online learning, from independent learning to traditional face-to-face learning with educators, Implementation of this model consists of: station rotation, lab rotation, flipped classroom, and individual rotation, (2) flex model, is a model by sending material and learning through the internet, but with the supervision of educators in the classroom. This model is a flexible online learning model, educators provide flexible support according to the needs of students through tutorials and small group sessions, group projects, and personal guidance, (2) the self blend model, is a model where students choose their learning independently, but it is done in the same learning environment. This model uses online learning only a small part of learning activities, students choose their own form of online learning to complement face-to-face learning, and (4) enriched virtual model, a model where content delivery and learning online and face-to-face meetings when needed and only as a supplement. This model is a development of a fully online school, then develops a blended program to give students face-to-face school experience. Learning time is divided between attending school teaching and distance learning.

3.2.4. Model of implementing internet-based blended learning

Haughey & Anderson [34], regarding the development of blended learning revealed that there are three possible models in the development of internet-based learning systems, namely the web course model, web centric course, and web enhanced course. The development model is explained as follows; (1) Web course model, internet usage model for educational purposes, in which students and educators are completely separate and there is no need for face-to-face contact. All teaching materials, discussions, consultations, assignments, exercises,

examinations, and other learning activities are fully delivered via the internet, (2) Web centric course model, internet usage model that combines distance learning and face-to-face (conventional). Some material is delivered via the internet, and some through face-to-face, while the functions are complementary. In this model educators can provide instructions to students to learn subject matter through the web that has been made. Students are also given directions to look for other sources from relevant websites. In face-to-face sessions, students and educators discuss more about the findings of material that has been learned through the internet, and (3) Web enhanced course model, internet utilization model to support the improvement of the quality of learning done in class, the function of the internet is to provide enrichment and communication between students and educators, fellow students, group members, or students with other resource persons. Therefore the role of educators in this case is expected to master the technique of finding information on the internet, guiding students to find and find sites that are relevant to learning material, present material on the web that is interesting and desirable, serving guidance and communication via the internet, and skills other needed.

3.2.5. Web-based blended learning implementation model

The development of blended learning is very dependent on the ability of educators and the availability of technology infrastructure that supports it, while in terms of students whether the technology is accessible or not, are there additional costs they have to bear? Bonk & Dennen [35] propose ten levels of integration (use) of web use technology, including; (1) Marketing syllabus via the web, learning managers (lecturers / educators) introducing subjects and learning objectives via the web, (2) Student exploration of web resources, the role of educators or prospective educators using the web to obtain sources and products / learning materials and educator development through the web, for example by visiting e-laboratories, e-journals, e-news, etc., (3) Student generated resources published on the web, products and materials obtained through exploration on the web are then developed to be presented in learning to enrich students' knowledge and skills, (4) Resources on the web, educators or instructors packaging learning material through the web and learning using other blended learning materials. For example, handouts, papers, overview of subject matter, assignments, (5) Re-purpose web resources, educators take one subject that is presented more fully through the internet as a developed blended learning model. Including a learning system that uses the web, (6) Substantive and graded web activities, students participate in their friends to use the web more in learning and development of learning, for example displaying written works on the web, through group discussions all of which meet the subject requirements, (7) Curling activities extending beyond class, students are asked to work or communicate with

peers, practitioners, educators, and / or experts outside their learning activities, usually via computer conferences, (8) Web as alternative delivery system for residents student, the web is used as a means to disseminate information and efforts to overcome the problems faced in relation to the teaching profession, and the web is used as a means of disseminating information to a wide audience, especially about education, (9) laughing education Even through the web, it is used by various educators around the world by making learning methods, especially educator education, (10) Cources fits within loger programatic web initiative, educational developers both government and private develop the educational program as a whole through ICT and offer it widely to all people in all countries.

3.2.6. Model of implementation of ICT-based blended learning

In addition to the development model for internet and web usage above, there is also a development model for the use of ICT in learning. Educators can refer to the model from Harmon & Jones [36] which provides an explanation of the five levels of ICT use in learning, namely; (1) Level-1 Information, at this level learning materials are not too much presented through ICT, but are limited to materials that are information to support the learning process and even tend to be administrative and learning rules. For example the syllabus, lesson schedule, and also provided a place to store information for educators, (2) Level-2 Supplemental, at this level have started to include learning materials, but their nature is still limited, not yet outlining the complete learning content, the material presented is the main just anyway. For example learning materials for educators are presented through power point presentations, acrobat readers, and html files that have been placed on the web to be provided and revised by educators, (3) Level-3 Essential, at this level almost all learning material is provided on the web . Learning activities of educators and students will not run well if they do not use web facilities. Thus, there is already a dependence on the use of ICT in learning where between educators as learners and learning managers use ICT infrastructure better, (4) Level-4 Communal, at this level combines face-to-face patterns in the classroom or online web use. Likewise with the presentation of learning material presented in a direct way in the classroom and presented online. In this pattern the independence of educators is expected to find and develop learning material by attending the subject matter they master and material about education, and (5) Immersive Level-5, at this level of learning takes place virtually. The entire contents of learning material is presented online. This level sees learning starting from recruitment, learning process, evaluation system, and graduation being held virtually.

3.2.7. Blended learning interaction model

The most important and fundamental thing in developing a learning model that uses online technology as a medium and source of learning, is interaction. In this social learning theory known as the learning community, a learning community is a community in which there are people who carry out mutual learning activities either intentionally or unintentionally. So building an online learning community is building a platform of interaction between community members so that a mutual learning process takes place. Through this interaction, it is expected that the construction process of knowledge and skills as explained in the theory of social constructivism. In the world of formal learning community education can be built using social media and LMS (Learning Management System) applications. Moore in Anderson [37] mentions three forms of interaction, namely students with students, students with educators and students with learning resources. The form of interaction is presented in Figure 1 below:

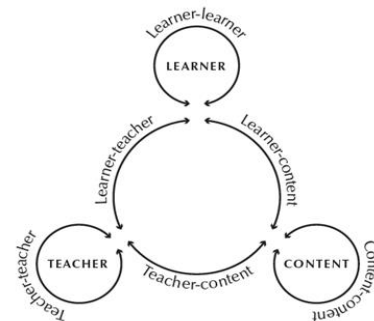


Figure 1. Anderson's online learning interaction patterns

The interaction scheme illustrates three components of the system, namely students, educators and learning resources (content) that interact with each other. Furthermore Anderson and Gerison [37] add 3 (three) other forms of interaction, namely educators with educators, educators with learning resources and learning resources with learning resources. The pattern of interaction can be seen in the following scheme.



Figure 2. Patterns of interaction between Anderson and Gerison's online learning

The interaction patterns above illustrate the online learning model with an online collaboration approach and independent study. On the left side of the picture illustrates an online learning model with a collaborative approach, it is shown that there are interactions between students and students synchronously and asynchronously, and general learning such as online classes that shows the interaction between educators and students. While on the right side of the picture shows the online learning model of independent study, it shows the direct interaction between students and the material. The interaction of educators with the material on the right side of the picture shows the activities of educators focused on the preparation of the syllabus, learning material and planning of learning activities. Through this interaction, educators can monitor, compile, and update material and learning activities that will be carried out.

The interaction between material and material shown in the picture above is a new interaction model in education that appears along with the rapid development of information and communication technology. Through the online learning model a learning material can be programmed so that it can automatically interact with other learning material resources for enrichment and

renewal of its contents. While the interaction between educators and other educators is organized so that online learning can be guaranteed for other educators and material.

3.3. Blended learning in the normal, pandemic, and new normal era

Based on the study above clearly illustrated that when we build an online learning as a learning system, it means we build a learning community. In this system, the more interactions presented, the more learning opportunities there will be. To be able to do this, we need a formula that can be used as a reference for determining interactions in building a learning community where each community member can learn from one another that is relevant to be applied under normal, pandemic and new normal conditions. The development of this formula is based on Anderson's interaction pattern [37] which combines cones of Edgar Dale's experience [38]. The formula can be described as follows:

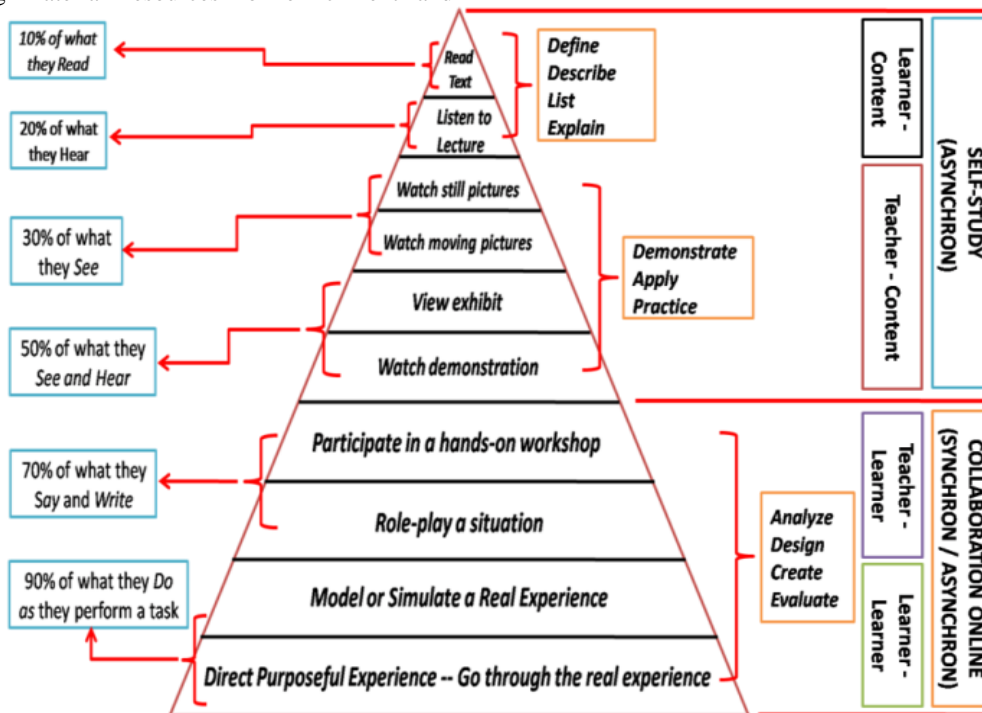


Figure 3. Patterns of online learning interactions developed

The picture above, explains the interactions in learning activities that have a range from independent learning to collaboration. The higher the level of participation made by participants, the higher the level of learning that occurs. If the learning program is only from reading the text, the students will only collect about 10%. If only listening through audio, students will master about 20%. If only learning by seeing through visuals, students will collect

about 30%. If learning actively in a learning activity, students will master about 50%. If learning by modeling and applying directly, students will collect about 70%. If learning by applying and doing in real challenges, students will achieve around 90%.

Based on these explanations, consideration can be made in selecting and determining independent learning strategies or online collaboration. To learn independently students

simply read, listen, watch, see, and pay attention, in a particular learning activity asynchronous. While online collaboration can be done by holding activities that ask active participants in learning activities, trying, practicing and playing a role against any particular conversation. This can be done by synchronous and asynchronous depending on the learning objectives to be obtained asking for direct or indirect practice assistance. If direct practice is requested it must be synchronized, otherwise learning activities can be carried out asynchronously. It can also be denied that independent learning can be applied in

pandemic conditions while collaborative learning can be applied in new normal conditions.

Based on the learning implementation models stated above, it can be proposed that this learning implementation model has characteristics and contexts that are different from each other. The following analysis of the synthesis of the implementation of various models of the implementation of blended learning to be applied to a variety of normal, new normal and pandemic conditions, as in the table below;

Table 1. Analysis of the implementation of the blended learning model grouped according to normal, new normal and pandemic conditions

Category	Normal	New Normal	Pandemic
Implementation of e-learning (Rashty, 1999)	Model <i>adjunct</i>	Model <i>blended</i>	Model <i>fully online</i>
The level of implementation of blended learning (Graham, 2006: 10-12);	<i>Enabling</i>	<i>Transforming</i>	<i>Enhancing</i>
The composition of the implementation of blended learning (Allen, 2007)	1 to 29 %	30 to 79%	80 to 100%
The model of implementing blended learning in various institutions (Horn and Staker, 2012)	Model <i>flex</i>	Model <i>rotation</i>	Model <i>enriched virtual</i>
Model for implementing internet-based blended learning (Haughey & Anderson, 1998)	Model <i>web enhanced course</i>	Model <i>web centric course</i>	Model <i>web course</i>
Model of Web-based blended learning (Bonk & Dennen, 1999)	<i>Cources resources on the web</i>	<i>Substantive and graded web activities</i>	<i>Curces activities extending beyound class</i>
Model of ICT-based blended learning (Harmon & Jones, 2000: 125),	<i>Supplemental</i>	<i>Communal</i>	<i>Immersive</i>
Interaction model blended learnig (Anderson, 2008: 61)	Educator - Students (Community of Inquiry)	Students - Students (Online Collaboration)	Learners - Material (Learn to be independent)

From table 1 above we can formulate a blended learning implementation model that can be applied in a variety of conditions. Under normal conditions, a blended learning implementation model can be applied with an adjunct-flex model, at the enabling - supplemental level, internet and web use at the web enhanced course level and cources resources on the web with a composition of 1-29%, using the inquiry community interaction model. In the new normal conditions can apply blended learning with the blended-rotation model, at the level of transforming - communal, the use of the internet and the web at the level of the web centric course and substantive and graded web activities, with a composition of 30-79%, using an online collaboration interaction model. Whereas in a pandemic condition it can implement blended learning with a fully

online - enriched virtual model, at the level of Enhancing - Immersive, the use of the internet and the web at the web course level and curving activities extending beyound class with a composition of 80-100%, using a model of independent learning interaction.

4. CONCLUSION

The choice of the implementation model of blended learning is very dependent on the conditions that occur. In a pandemic condition with a fully online - enriched virtual model, where material, assignments and assessments are all presented online. This can be done by educators using google classroom and Learning Management System (LMS), for practical activities can be done with a simulator or virtual laboratory, In the new normal

condition with the blended - rotation model, where teaching material, assignments and assessments are partly presented online, some face to face. Teaching material which is factual knowledge, conceptual knowledge and simple physical skills can be learned independently in a network. While teaching materials that require teacher guidance such as practice in the laboratory can be done face-to-face. It's just that in the new normal condition educators and students must comply with the safety protocol. There must be a distance between educators and students and between students. If under normal conditions with the adjunct-flex model, in this condition learning activities are presented as usual but still must pay attention to safety protocols,

REFERENCES

- [1] Presidential Instruction No. 9 of 2016 concerning Revitalization of Vocational High Schools in the framework of Improving the Quality and Competitiveness of Indonesian Human Resources.
- [2] Agustiyanti. (2019). "Peringkat Daya Saing Indonesia Turun, Makin Tertinggal dari Malaysia" <https://katadata.co.id/berita/2019/10/10/peringkat-daya-saing-indonesia-turun-makin-tertinggal-dari-malaysia>. Diakses pada tanggal 18 Januari 2020
- [3] Griffin, P., McGaw, B. and Care, E. (eds). (2012). *Assessment and Teaching of 21st Century Skills*. Dordrecht, NL, Springer
- [4] OECD. (2006). *21st Century Learning Environments*.
- [5] Surat Edaran Nomor 3 Tahun 2020 Tentang Pencegahan COVID-19 pada Satuan Pendidikan
- [6] CNNIndonesia.com (2020, 27 April). Survei KPAI: Guru Tak Interaktif selama Belajar dari Rumah. Diakses 25 Mei 2020, dari <https://www.cnnindonesia.com/nasional/20200427160228-20-497716/survei-kpai-guru-tak-interaktif-selama-belajar-dari-rumah>
- [7] Sindonews.com (2020, 28 April). Survei KPAI-FSGI: Guru Masih Mengejar Penuntasan Kurikulum dalam Pelaksanaan PJJ. Diakses 25 Mei 2020, dari <https://nasional.sindonews.com/read/10239/144/survei-kpai-fsgi-guru-masih-mengejar-penuntasan-kurikulum-dalam-pelaksanaan-pjj-1588061060>
- [8] Timesindonesia.co.id (2020, 28 April). Survei KPAI : 50% Guru Masih Mengejar Target Pencapaian Kurikulum. Diakses 25 Mei 2020, dari <https://www.timesindonesia.co.id/read/news/268187/survei-kpai--50-guru-masih-mengejar-target-pencapaian-kurikulum>
- [9] Detiknews.com (2020, 28 April). Survei KPAI-FSGI: 56% Guru Keluhkan Kuota Internet Saat Belajar di Rumah. Diakses 25 Mei 2020, dari <https://news.detik.com/berita/d-4994654/survei-kpai-fsgi-56-guru-keluhkan-kuota-internet-saat-belajar-di-rumah/2>
- [10] Keputusan Bersama Menteri Pendidikan Dan Kebudayaan, Menteri Agama, Menteri Kesehatan, Dan Menteri Dalam Negeri Nomor 01/KB/2020, 516, HK.03.01/MENKES/363/2020, 440-882 Tahun 2020. Tentang Panduan Penyelenggaraan Pembelajaran Pada Tahun Ajaran 2020/2021 Dan Tahun Akademik 2020/2021 Di Masa Pandemi Corona Virus Disease 2019 (COVID-19).
- [11] Melton, B., Helen.G & Joanne C.F. (2009). Achievement and Satisfaction in Blended Learning versus Traditional General Health Course Designs. *International Journal for the Scholarship of Teaching and Learning*. p 1-13
- [12] Bawaneh, S.S. (2011). The Effects Of Blended Learning Approach On Students' Performance: Evidence From A Computerized Accounting Course. *Interdisciplinary Journal of Research in Business* Vol. 1, Issue. 4, April 2011.p 43-50.
- [13] Akgunduz, D., & Akinoglu, O. (2016). The effect of blended learning and social media-supported learning on the students' attitude and self-directed learning skills in science education. *Turkish Online Journal of Educational Technology*.
- [14] Mendez, J. A., & Gonzales, E. J. (2011). Implementing motivational features in reactive blended learning: Application to an introductory control engineering course. *IEEE Transactions on Education*, 54(4), 619-627.
- [15] Rivai, Veithzal, Murni, dan Sylviana. (2009). *Education Management*. Rajawali Pers: Jakarta.
- [16] Heinze, A. (2008). *Blended learning : An interpretive action reseach study*. Disertasi doktor, tidak diterbitkan, University of Salford, Salford, UK
- [17] Rovai, A & Jordan H. (2004). Blended Learning and sense of community: a comparative analysis with traditional and fully online graduate coustses. *International Review of Research in Open and Distance Learning*, 5 (2).

- [18] Dewey, J. (1938). *Experience and education*. New York: Collier MacMillan.
- [19] Comey, W.L. (2009). *Blended Learning and the Classroom Environment: A Comparative Analysis of Students' Perception of the Classroom Environment across Community College Courses Taught in Traditional Face-to-face, Online and Blended Methods*. (Disertation). The Faculty of The Graduate School of Education and Human Development of The George Washington University in partial fulfillment of the requirements for the degree of Doctor of Education
- [20] Rusman, Kurniawan, D., Riyana, C. (2011). *Pembelajaran Berbasis Teknologi Informasi dan Komuni-kasi. Mengembangkan Pro-fesionalisme Guru*. Jakarta: Raja Grafindo Perkasa.
- [21] Dodon, Yendri. 2011. *Blended Learning : Model Pembelajaran Kombinasi E-Learning Dalam Pendidikan Jarak Jauh*.
- [22] Graham, C. R., Allen, S., & Ure, D. (2003). *Blended learning environments: A review of the research literature*. Unpublished manuscript, Provo, UT.
- [23] Graham, C. R., Allen, S., & Ure, D. (2005). *Benefits and challenges of blended learning environments*. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (pp. 253–259). Hershey, PA: Idea Group
- [24] Graham, C. R. (2006). *Blended learning systems: definition, current trends, and future directions*. Dalam C. J. Bonk & C. R. Graham (Eds.), *The Handbook of Blended Learning*:
- [25] Rashty, D. 1999. *E-Learning Process Models*. (Online). Diakses 8 Mei 2020 dari https://rashty.com/articles/eLearning_Process_Models.pdf.
- [26] Littlejohn, Allison dan Chris Pegler. (2007) *Preparing for Blended E-Learning*. Oxon: Routledge
- [27] Capone, R., De Caterina, P., & Mazza, G. (2017). *Blended Learning, Flipped Classroom and Virtual Environment: Challenges and Opportunities for The 21st Century Students*. Procee-dings of EDULEARN17 Conference, (pp. 10478-10482). Barcelona, Spain.
- [28] Howard, L., Remenyi, Z., & Pap, G. "Adaptive Blended Learning Environment". 9th International Conference on Engineering Education, July 23 - 28, 2006. Nashville, TN 37235: Vanderbilt University, Institute for Software Integrated Systems.
- [29] Pituch, K. A., dan Lee, Y.-k. (2004). *The Influence of System Characteristics on eLearning Use*. *Computers & Education*
- [30] Smaldino, S., Russell, J., Heinich, R., Molenda, M. (2005). *Instructional Technology and Media for Learning*. Ed. Ke-8. New Jersey: Person Merrill Prentice Hall.
- [31] Kenney, J., & Newcombe, E. (2011). *Adopting a Blended Learning Approach: Challengers Encountered and Lessons Learned in an Action Research Study*. *Journal of Asynchronous Learning Networks*. 15 (1): 45-57.
- [32] Allen, IE, Seamen, J. & Garret, R. (2007). *Blending in: The extent and promise of blended education in the United States, USA: The Sloan Consortium*
- [33] Staker H and Horn Michael B. (2012). *Cassifying K-12 Blended Learning*, Diakses 30 Mei 2020 dari <https://www.christenseninstitute.org/wp-content/uploads/2013/04/Classifying-K-12-blended-learning.pdf>
- [34] Haughey, M. dan Anderson, T. 1998. *Networking Learning: The Pedagogy of the Internet*. Montreal: Cheneliere/ McGraw-Hill
- [35] Bonk, C.J. & Dennen, V.P. (1999) *Teaching on the Web: with a little help from my pedagogical friends*. *Journal of Computing in Higher Education*, 11(1), 3-28.
- [36] Harmon, A. D & Jones, T. S. 2005. *Elementary education: A reference handbook*. California: ABC-CLIO, inc.
- [37] Anderson, T. (2008). *The theory and practice of online learning*. Edmonton: AU Press, Athabasca University.
- [38] Dale, Edgar (1969, p.108). *Audio-Visual Methods in Teaching*, 3rd ed., Holt, Rinehart & Winston, New York,