

Developing Problem-Based Blended Learning Model for Syntax Course in Industrial Era 4.0

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Abstract—In this era, there are so many developed universities that provides Communication and Information Technology Based learning. The programs can be joined via online so that there is no longer a time and space limit for its users. Therefore, the lecture services are directed at implementing CIT online in the form of e-learning. In this study, the developed learning model is a blended Problem Based Learning for Syntax course. The purpose of this study is to describe the process of developing a problem-based blended learning model, the process of developing materials and teaching media, and explain the quality of the implementation of the model. This model utilizes teaching materials and media in synchronous and asynchronous encounter. The use of varied teaching materials and media is expected to improve the achievement of students' syntax competencies. The procedure focuses on (1) determination, (2) design and development, and (3) dissemination according to the development context and needs. The subjects of this study were 40 students of the Indonesian Literature S1 Study Program Class of 2018. This learning model developed through three stages, namely the planning, development and implementation stages. As a result, all components of the problem-based learning for Syntax course have been compiled in full for one semester.

Keywords— *blended learning; syntax; problem-based*

I. INTRODUCTION

For Indonesian Literature Study Program students, Syntax courses are compulsory subjects. This course examines Indonesian sentence structure by utilizing the concepts of phrases, clauses, and sentences through classroom, online, and field research activities to produce language analysis / study products and language research products to be presented in class discussions, exhibitions / majoring in majors, and used as an alternative source of further research references. That is what shows the central role of the Syntax course in language learning, especially Indonesian.

The development of a problem-based blended learning model is the first step towards online learning. Blended learning

is a combination of classroom learning and online learning. The form of learning activities is a combination of synchronous and asynchronous forms. In synchronous activities, learning is carried out under the direct guidance of lecturers both in class and by utilizing information and communication technology, while in asynchronous activities, learning is carried out independently or in groups without direct guidance from lecturers. Therefore, in blended learning variations in teaching materials and learning media are needed in accordance with the competency needs to be achieved by considering the needs of students. The variation of problem-based learning materials and media is expected to be able to improve the quality of students' competency achievement.

II. METHOD

The development model used in this study is the Recursive, Reflective, Design, and Development (R2D2) design model. Willis and Wright [9] state that the R2D2 procedure focuses on (1) determination, (2) design and development, and (3) dissemination which is modified according to the context of the development environment and needs. These three focuses are activities carried out during the research and development process. The implementation of each of these activities is not always linear, but circular. The focus of the determination took place at the analysis stage, the focus of the design took place at the planning stage, the focus of the development took place at the development stage, and the focus of dissemination took place at the stage of disseminating the results of product development that had been prepared.

III. RESULT AND DISCUSSION

The use of information and communication technology-based media in online learning has a positive impact on the learning process. The results of Bedrule-Grigoruta and Rusua's (2014) research show that the use of the internet, cell phones, social media, and the application of the latest information system enables two-way communication to take place better and more effectively. The results of Sasmito's [7] research that utilized Facebook as a learning medium also showed the same thing. However, the application of information and communication technology-based media must pay attention to the aspects of clarity of objectives, appropriate rules, techniques and mechanisms that are in accordance with user needs. It is quite instrumental in increasing satisfaction, motivation, and conformity to the needs of students [6]. The above studies show that variations in the use of media and teaching materials on online learning must be carried out to optimize learning outcomes of each individual user.

The results of Asteria's and Mulyono [3] research also showed that, in addition to variations in the material and learning media, the readiness of supporting infrastructure for online-based learning activities such as network bandwidth requirements, network speed, network connectivity consistency, database capacity, completeness and feature compatibility the interface with learning needs must also be carefully considered so that it does not hamper the implementation of online learning.

In this study the presentation of the main components of the subject of learning are developed based on Problem Based Learning (PBL). PBL is a model that challenges students as students to learn to learn, work together in groups to find solutions to real problems. Problems are used to link curiosity and analytical skills and initiative on lecture material. PBL prepares students to think critically and analytically, look for and use appropriate learning material / sources [8]. With PBL, students are faced with practical problems as a foothold in learning or in other words students learn through problems [5]. Students are required to solve problems with the knowledge and abilities they have.

This research was carried out in several stages, namely: analysis, planning, development, and evaluation.

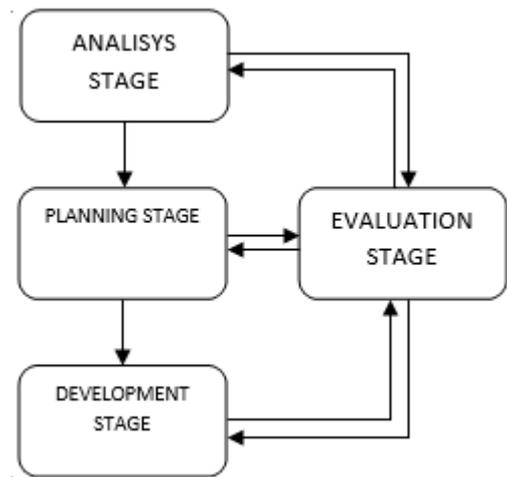


Fig. 1: Research Stages

Table 1: Blended-Syntax Course Storyline

Storyline Modul 1 : Learning Video				
Materials	Learning Outcome	Storyline	Communication Kinds	Evaluation
Syntax scope	Students are able to understand the scope and units of language in the field of syntax.	1. 1. An animated character introduces himself and presents two illustrative shows about the scope of syntax 2. 2. The narrator invites students to review both shows and conclude the scope of the syntax. 3. 3. Narrator shows with pictures about the object of syntactic research 4. 4. The narrator displays an animated picture of the profile of Indonesian literary graduates and asks students to mention the competencies that the profile must possess. 5. 5. Further explanation shows the importance of learning syntax as an important competency of professional candidates who are profiled.	Sound-equipped presentation, video, website link, journal link	Mind map

The concepts and functions of language units in the word syntax field	Students are able to master the concepts and functions of language units in the field of syntax.	<ol style="list-style-type: none"> The narrator presents a stopmotion about the concepts and functions of one language in the field of syntax. The Narrator presents a series of animated images about the scope and units of language in the field of syntax. 	Sound-equipped presentation, Tutorial video	Describing test
Storyline Modul 2 : Dialog-Based Learning Video				
Material s	Learning Outcome	Storyline	Communication Kinds	Evaluation
Sentence analysis based on the structure of its constituents	<ol style="list-style-type: none"> Students are able to identify the types of constituents in various sentences Identify the phrase based on its constituent categories Identifying the types of constituents in various sentences Identifying phrases based on their constituent categories 	<ol style="list-style-type: none"> The Narrator presents and explains the video which contains phenomena about the analysis of the sentence based on the structure of its constituents. The Narrator presents and explains videos that contain types of constituents in various sentences The narrator presents and explains videos that contain descriptions of phrases based on their constituent categories. The Narrator presents and explains the videos that contain factors that occur in the division of constituent categories The Narrator presents a learning video related to the sentence analysis model based on the structure of its constituents. 	Sound-equipped presentation, Tutorial video	10 questions of Subjective test

Activity	Learning Activity	Duration
Opening	<ul style="list-style-type: none"> Opening Introduction to the syllabus, learning activity, and evaluation system Discussion on the learning outcomes Lecturer explain the learning steps 	15'
Core	<ul style="list-style-type: none"> Lecturers make material presentations Students discuss materials Lecturers provide applied examples of material in real life in the form of stories or videos or case studies Lecturers raise critical thoughts to provoke student responses in the form of statements or questions. Students provide answers, reasons, and rationale Lecturers facilitate discussion, brainstorm, or question and answer, and Facebook groups or WhatsApp groups for this course Students form discussion groups, 	120,
Finish /Follow up	<ul style="list-style-type: none"> Students discuss to determine the conclusions of this meeting Lecturers carry out evaluation of meeting The lecturer presents the preparations of the next material Closing 	15'

Table 2 below shows the application of Maya Sincron method.

Table 2: Maya Sincron Method

Interactional Media	Note
Brief Explanation	<ul style="list-style-type: none"> Opening Course outline Course outline Evaluational method Syllabus Reference
Instructional	<ul style="list-style-type: none"> Instruction to atch the video, presentation and leading to the linked-related material
Digital Media	<ul style="list-style-type: none"> Video Presentation Related link to the video
Test	<ul style="list-style-type: none"> Students do the test Students check the test result Students revise their competence based on the test result
Group Assignment	<ul style="list-style-type: none"> Doing the group assignment Every group submit the assignment result on a presentation/paper form.

Operationally, problem-based syntactic blended lectures are based on the variety of learning methods or learning activities presented. The learning methods applied are learning methods or learning activities of Direct Synchronous, Virtual Synchronous, Asynchronous Mandiri, and Collaborative Asynchronous. Synchronous and asynchronous learning methods are based on the learning time between the instructor and the learner. Synchronous means learning time together, while asynchronous means time is not the same. The term Direct in this case means that learning takes place face to face, whereas Maya means learning takes place without face to face; Independent means to be done individually, whereas Collaborative means to be done in groups or by working together with other individuals other than the subjects of the course.

The application of Direct Synchronous learning methods or activities is based on the following procedure.

Social Media Group	<ul style="list-style-type: none"> • Lecturer decides the time and rules for Maya Sincronize (MS) in a form of social media like Facebook, Whatsaap, etc. • Lecturer and students do the MS using social media group • Discussion • Students bring the main issues related to the material in the group discussion forum • Lecturer immediately clarifies during discussions on social media if they find a misunderstanding • Students record the results of the discussion • Students check and reect the results of discussions based on references • Students draw conclusions and are taken to discussion forums • Each group of students compiles the minutes of the discussion • Each group sends the minutes to the lecturer email • The lecturer checks the evaluation of the quiz results and minutes of group discussions
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Those components of the problem-based learning for blended syntax course have been compiled completely for one semester study period. This course design can be viewed in the Vi-learn system.

IV. CONCLUSION

Problem-based learning for blended syntax course is developed in several stages, both at the design stage and at the implementation stage, namely the needs analysis and framework analysis phase, the design phase, the development stage, and the implementation phase. Based on the assessment, it can be stated that the components of the blended Syntax course have complete details of the material structure for one semester. Complete course completion. Each subject does not only contain information about indicators, but also contains information / brief descriptions of the subjects / sub-subjects. For each subject, links to various other sources have been provided. The language use is quite communicative. The use of various learning objects (text, images, audio, animation, simulation) is also in accordance with needs. A variety of learning objects have been adequately provided for all subjects. Clear visual display, easy to read text, graphics and chat are labeled adequate and free of visual disturbances.

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