

THE USE OF BLENDED LEARNING MODELS IN LANGUAGE COURSES AS SCIENTIFIC COMMUNICATION: SURVEY STUDY ON STUDENT RESPONSE TO ELEMENTARY SCHOOL TEACHERS

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Abstract

Purpose of the study: This research aims to analyze student responses on the use of blended learning models in language courses as scientific communication at the department of primary school education teachers, Education science faculty of Universitas Negeri Jakarta.

Methodology: The research engages a descriptive method with a quantitative approach. The data collection technique is carried out by using a questionnaire. Before doing hypothesis testing, the research use questionnaire items analysis using the Rasch model analysis. Furthermore, descriptive statistics analysis is carried out after analyzing questionnaire items. The study revealed that students have a positive response to the use of blended learning models in language courses as scientific communication.

Main Findings: The descriptive result also showed that the learning process using the blended learning model is more effective than conventional learning with face-to-face systems or with e-learning systems. The level of effectiveness is supported by the strengths of the blended learning model that the courses, assignments, and assignments can be carried out outside school hours.

Applications of this study: The level of effectiveness is supported by the strengths of the blended learning model that the courses, assignments, and assignments can be carried out outside school hours. Besides, students can search for information and solve the problem with their own initiative.

Novelty/Originality of this study: The application of blended e-learning can also change students' habit to always feel enthusiastic and diligent in learning. The implementation of blended learning provides various alternative learning models that can be used by teachers in delivering material so that it has implications for improving the quality of language lectures as a means of scientific communication. The use of the blended learning model is used to make students usual to technology properly and understand that instead of entertainment, technology can also enrich knowledge as well as learning materials.

Keywords: *Blended Learning, Language as Scientific Communication, Primary School Education, Rasch Model Analysis, Assignments, E-learning Systems.*

INTRODUCTION

The development of science and information technology has changed the paradigm from conventional learning to education-based technology (Rachmadtullah et al., 2019; Sumantri & Rachmadtullah, 2016 & Tamte et al., 2015). In this era, almost all human activities use high technology devices that will help them to finish their work. It is including learning activities in formal, informal, and non-formal institutions. The use of technology has to integrate all learning activities in every subject in schools. It means that teachers must be able to implement high technology in learning and teaching activity (Computers, 2013; Gusnardi, 2019, Sudarsana et al., 2019; Sari et al., 2019 and Scherer et al., 2019).

Nowadays, e-learning based education has become the latest trend and even plus point to the education institution (Sergis, 2014). Yet, the implementation of the e-learning based method is only a role as the supporting media instead of conventional learning. One of the main factors is infrastructure problems, especially the availability of internet networks and low bandwidth quality with relatively high prices. Besides, the lack of quality control over e-learning education methods such as the inability of students to manage time and process information independently becomes another issue for e-learning education providers. One alternative way of the e-learning system that is widely used today is the blended learning model (Humaira et al., 2019; Law et al., 2019). Blended learning is a learning method that combines a class-based learning system (face to face) and e-learning method, which means that there is support in the learning process so that interactive and learning benefits can be achieved optimally. This model enables online resource users, especially web-based users, to learn without leaving face-to-face learning. This approach can be made by doing direct teaching in real-time or as the center of knowledge.

The studies related to the use of a blended learning model have been conducted. One of them is the study conducted by Yu & Du (2019) and Bataineh et al (2019) that revealed the positive effect of the use of blended learning models on

students' motivation for English courses. Moreover, [Kudryashova et al., \(2016\)](#) stated that blended learning makes students easy to communicate through online media. It is supported by an effective combination of how teachers deliver material, teaching methods, different learning styles, and open for communication among all sections involved in training. However, the study related to the use of blended learning in a language course is still rarely found. Therefore, Language is the key to open science and knowledge. By using the Language, students can master science and technology. Even though *Bahasa* has a role as a tool of unity, it has not been able to act as an introduction to knowledge. This requires us to translate all the science books in the world into Language. For this reason, learning models using blended learning can be used as an alternative to innovative learning models.

Many reviews relate to the use of a blended learning model from the experts. They stated that blended learning is a learning model that is supported with effective combination from how to deliver material, teaching style, and learning style. It also involves open communication between all the participants in the training, including teachers and students ([Rasmitadila et al., 2020](#)). The advantages of blended learning are not only as learning method but also as the element of social interaction between teachers and students ([Banyen et al., 2016](#); [Dikshit et al., 2016](#); [Rachmadtullah & Sumantri, 2018](#); [Rachmadtullah et al, 2019](#) & [Rasmitadila et al., 2019](#)).

The implementation of a blended learning model should be supported by various studies, so the percentage of each learning model can be known. The blended learning model gives the best chance to learn from transition class to e-learning system ([Boelens et al, 2017](#); [Ridwan et al, 2020](#) and [Yao, 2019](#)). The use of a blended learning model is one of the solutions to adjust students' learning style and teacher teaching style ([Lim et al, 2020](#); [Rachmadtullah et al., 2020](#) and [Saputra et al., 2020](#)). This becomes more important because the process of material transformation from the teachers to the students needs to be precise based on the learning goal. This study is expected to have a positive impact on language courses as scientific communication because it gives simplicity in delivering material of the course. In addition, the implementation of blended learning provides various alternative learning models that can be used by teachers in delivering material so that it has implications for improving the quality of language lectures as a means of scientific communication. Furthermore, the use of the blended learning model is used to make students usual to technology properly and understand that instead of entertainment, technology can also enrich knowledge as well as learning materials. The research objective to analyze student response on the use of blended learning models in language courses as scientific communication at the department of primary school education teachers, Education science faculty of Universitas Negeri Jakarta.

LITERATURE REVIEW

Blended Learning

The term blended learning comes from two words, blended and learning. Blend means "mixture, together to improve the quality so it gets better" (Collins Dictionary), or the formula to align the combination of something ([Heinze & Procter, 2010](#)). Learning means learning patterns that contain elements of mixing or merging between one pattern with another ([Rasheed et al, 2020](#)). What is mixed? [Mosa \(2006\)](#) stated that the mixture is from two main elements that are classroom lessons and online Learning ([Mosa, 2006](#)). Blended learning as 'learning that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning, and founded on transparent communications amongst all parties involved with courses'.

In the development, the popular term is Blended Blended e-Learning instead of blended learning. This term is a current issue in education in the development of globalization and technology. Blended e-Learning issues are difficult to define because this sounds unfamiliar and new. ([Evans et al, 2019](#) and [Munro et al., 2018](#)). Even though it is difficult to define the definition of blended e-learning, but some experts who researched Blended Blended e-Learning and mentioned the concept of Blended e-Learning ([Yao, 2019](#)). Besides, the study from [Sharpen et.al \(2006\)](#) found that "Institutions that have developed with their own language, definitions or typology of blended practice". Basically, there are three basic stages of blended learning models that refer to I.C.T. based learning, as Grant Ramsay proposed (1) seeking of information, (2) acquisition of information, and (3) synthesizing of knowledge.

The stages of seeking of information, including searching for information from various information sources available in I.C.T., critically choosing the sources of information providers based on relevant content, validity content or reliability, and academic clarity. Teachers act as experts who provide suggestions and advice to limit students from the pile of potential information in I.C.T. ([Tamte et al., 2015](#)). Blended learning represents a clear advantage to create a learning experience that gives the right way at the right time and right place for each person. Blended learning becomes a truly universal and global boundary and brings groups of learners together across different cultures and time zones. In this context, blended learning can be one of the most significant developments in the 21st century ([Garrison & Kanuka, 2004](#); [Oliver & Trigwell, 2005](#)). Blended learning is the combination of various different learning media (technology, activity, and various event) to create optimum learning programs to the students that are specific ([Li et al, 2019](#); [Yigzaw et al., 2019](#)). The term blended itself means that traditional learning that is supported by other electronic devices. Blended learning program uses the various form of e-learning; it might be combined that focus on the instructor and other direct formats ([Alsalhi et al, 2019](#) and [Cherry, n.d.](#)).

Based on literature review, it can be concluded that Blended Blended e-Learning is a combination of the blended e-learning approach in the form of web-based instruction, video streaming, audio, synchronous and asynchronous communication in the blended e-learning system of N.G.O.s with learning traditional "face-to-face" methods that also include teaching, learning theory, and pedagogic dimensions.

Language as Scientific Communication

Language is the most effective means of communication to convey ideas, thoughts, intentions, and goals to others. In addition, Language is one aspect of cultures. As one of the manifestations of culture, Language has a very important role in human life. In every culture, Language is a basic element found in society. The diversity of languages in society, both in a broad scope (international), and national languages ([Fahrurrozi et al., 2020b](#); Fahrurrozi et al., 2019 and [Zulela, et al., 2017](#)).

Good and correct language skills are an absolute requirement for scientific activities. Without mastering good grammar and vocabulary, it will be difficult for scientists to be able to communicate the ideas to other people. Scientific work is a collection of statements that convey information about knowledge and ways of thinking in obtaining that knowledge. In order to express information and ways of thinking, a scientist is demanded to be able to master the correct use of spelling and punctuation and be able to make effective sentences ([Kassim, 2013](#) and [Zulela et al., 2017](#)). Through Language as a means of communication, scientists not only convey information, ideas, or knowledge but also must include arguments that demand the clarity of vocabulary and logic of grammar. Charlton Laird in Jujun said that grammar is a tool in using the logical and creative aspects of mind to express meaning and emotions by using certain rules. This means that grammar mastery must be owned in scientific communication ([Saputra et al., 2020](#)). Scientific communication requires clear language skills. This means that the words used must be expressed explicitly to prevent misunderstanding of meaning. That is why in scientific communication often found definitions of the words used. This is because the communicant does not give a different meaning or definition from the meaning intended by the communicator. Scientific work in the form of writing must use a variety of formal languages that meet the rules of standard grammar ([Azizah et al., 2015](#) and [Fahrurrozi, et al., 2020](#)). This is to avoid imprecision or ambiguity of meaning. Scientific problems usually involve things that are abstract or conceptual that are difficult to find analogous to real situations. By expressing this, writers' language skills are needed so that ideas can be expressed carefully without misunderstanding of meaning ([Fahrurrozi et al., 2020a](#)). As a student who wants to become a prospective elementary school teacher, it is required to master the Language as a means of scientific thinking. This is demonstrated by one's ability to convey ideas, concepts, or information through good grammar and the right vocabulary. In using Language as a means of scientific communication, emotional tendencies must be avoided. In addition, a scientist has to pay attention to the formats of writing scientific papers such as footnotes or bibliography. If everything has been mastered, then a scientist will be able to communicate well.

METHODOLOGY

Research design

This research engaged descriptive methods with a quantitative approach. Descriptive analysis is data analysis that describes the data in real condition. The quantitative research approach is engaged because it involved the research data in the form of numbers. This research aims to explore facts about perceptions of elementary school teacher candidates regarding the use of Blended Learning Models in language courses as scientific communication ([Creswell, 2008](#)).

Participants

The participants in this research are the candidate of primary school teachers in Universitas Negeri Jakarta. The participants are selected by using a purposive sampling technique by establishing special characteristics that suitable for the objectives of the study so that it is expected to answer the research problem. The participants are the students in the fourth semester and have been taking language courses as scientific communication. There are 60 students that consist of 40 female students, and 20 male students are involved as the participants in this research.

Research Procedure

The research procedure starts from (1) Conceptual stages, such as formulating and identifying problems, reviewing relevant literature, defining theoretical frameworks, formulating hypotheses. (2) Design and Planning Phase (selecting research designs, identifying the population studied, specializing methods for measuring research variables, designing sampling plans, ending and reviewing research plans, carrying out research, and making revisions). (3) Creating instruments and collecting research data (4) Empirical Phase (collecting data, preparing data for analysis) collecting research data that has been carried out in the field. (5) Analytical Phase (analyzing data and calculating the results of research data), processing, and analyzing research data. Data that has been collected from the field is processed and analyzed to get conclusions, including conclusions from the results of testing the research hypothesis. (6) Dissemination Phase, designing research results. In the final stage, to make the research readable, the results of the study are arranged in the form of conclusions based on the findings of the research.

Instrument

The instrument used in this study is the instrument that has been modified from the development of the Alwen Bentri instrument. The instrument questions are explained in the following Table 1:

Table 1: Instrument of the Use of Blended Learning

| Dimensions | Indicators | Statements |
|--|--|---|
| The readiness of the students to take the blended learning assessment | The readiness of the students to take online learning assessment | 1) I take part in online discussion activities |
| | | 2) I am able to do online tasks |
| | | 3) I am actively involved in learning activities in online learning |
| | | 4) I take an online quiz |
| | | 5) I attend discussion activities in class |
| Readiness of students' devices to follow the blended learning assessment | The readiness of the students to take the face-to-face assessment in the classroom | 6) I am actively involved in learning activities in class |
| | | 7) I access e-learning (online learning) page on my computer/laptop |
| | | 8) I access e-learning (online learning) page on my mobile phone |
| | | 9) I use a laptop every time I study in the classroom |
| | | 10) I optimize mobile phones while studying in class |

Data analysis technique

The data analysis technique in this research is used to answers the questions that are formulated based on quantitative descriptive research, which uses a questionnaire research method. Before the hypothesized data were tested, this research conducted a questionnaire analysis using *Rasch Model* analysis with the WINSTEPS Rasch Software. The analysis conducted is the person measure and item measure. After analyzing the item questionnaire tested with the *Rasch Model*, the next step was to test statistically descriptive using STATCAL software (Statistical Calculator) (<https://statcal.com> and <https://statcal.org>).

RESULTS/FINDINGS

Result

The results of this study explain how students' perception in using the Blended Learning Model in language course as scientific communication is presented as follows in Figure 1:

INPUT: 30 Person 10 Item REPORTED: 30 Person 10 Item 3 CATS MINISTEP 4.5.3
 Person: REAL SEP.: 1.45 REL.: .68 ... Item: REAL SEP.: .71 REL.: .33

Person STATISTICS: MEASURE ORDER

| ENTRY NUMBER | TOTAL SCORE | TOTAL COUNT | MEASURE | MODEL S.E. | INFIIT MNSQ | ZSTD | OUTFIT MNSQ | ZSTD | PTMEASUR-CORR. | AL-EXP. | EXACT OBS% | MATCH EXP% | Person |
|--------------|-------------|-------------|---------|------------|-------------|-------|-------------|-------|----------------|---------|------------|------------|--------|
| 1 | 39 | 10 | 4.51 | 1.07 | 1.01 | -.29 | .78 | .08 | .25 | -.19 | 90.0 | 90.0 | 01M |
| 6 | 38 | 10 | 3.67 | .81 | .79 | -.27 | .74 | -.31 | .59 | -.24 | 80.0 | 80.0 | 06M |
| 9 | 38 | 10 | 3.67 | .81 | .82 | -.21 | .83 | -.13 | .51 | -.24 | 80.0 | 80.0 | 09F |
| 20 | 38 | 10 | 3.67 | .81 | 1.25 | .63 | 1.47 | .92 | -.33 | -.24 | 80.0 | 80.0 | 20F |
| 26 | 38 | 10 | 3.67 | .81 | 1.07 | .30 | .97 | .14 | .15 | -.24 | 80.0 | 80.0 | 26F |
| 24 | 37 | 10 | 3.10 | .71 | .75 | -.66 | .71 | -.72 | .68 | -.25 | 80.0 | 72.1 | 24F |
| 3 | 36 | 10 | 2.64 | .66 | .88 | -.39 | .88 | -.35 | .41 | -.25 | 70.0 | 64.3 | 03F |
| 5 | 36 | 10 | 2.64 | .66 | .88 | -.39 | .88 | -.35 | .41 | -.25 | 70.0 | 64.3 | 05F |
| 8 | 36 | 10 | 2.64 | .66 | .88 | -.39 | .88 | -.35 | .41 | -.25 | 70.0 | 64.3 | 08F |
| 13 | 36 | 10 | 2.64 | .66 | .84 | -.52 | .85 | -.50 | .47 | -.25 | 70.0 | 64.3 | 13F |
| 23 | 36 | 10 | 2.64 | .66 | .88 | -.39 | .88 | -.35 | .41 | -.25 | 70.0 | 64.3 | 23F |
| 25 | 35 | 10 | 2.23 | .63 | 1.41 | 1.59 | 1.49 | 1.77 | .68 | -.25 | 50.0 | 58.3 | 25F |
| 27 | 35 | 10 | 2.23 | .63 | 1.51 | 1.93 | 1.59 | 2.07 | .54 | -.25 | 30.0 | 58.3 | 27M |
| 4 | 34 | 10 | 1.83 | .63 | 1.27 | 1.01 | 1.35 | 1.17 | -.54 | -.24 | 30.0 | 58.9 | 04F |
| 18 | 34 | 10 | 1.83 | .63 | 1.20 | -.79 | 1.29 | .99 | -.41 | -.24 | 50.0 | 58.9 | 18F |
| 29 | 34 | 10 | 1.83 | .63 | .79 | -.76 | .76 | -.78 | .47 | -.24 | 70.0 | 58.9 | 29F |
| 2 | 33 | 10 | 1.43 | .64 | .88 | -.25 | .87 | -.24 | .12 | -.22 | 70.0 | 65.6 | 02F |
| 7 | 33 | 10 | 1.43 | .64 | .88 | -.23 | .86 | -.26 | .11 | -.22 | 70.0 | 65.6 | 07F |
| 28 | 33 | 10 | 1.43 | .64 | 1.19 | .62 | 1.31 | .89 | -.61 | -.22 | 70.0 | 65.6 | 28F |
| 11 | 32 | 10 | 1.00 | .67 | .77 | -.40 | .79 | -.33 | .01 | -.22 | 80.0 | 72.8 | 11F |
| 12 | 32 | 10 | 1.00 | .67 | .64 | -.75 | .61 | -.80 | .33 | -.22 | 80.0 | 72.8 | 12F |
| 10 | 31 | 10 | .52 | .70 | 2.31 | 1.90 | 2.36 | 1.94 | .25 | -.21 | 50.0 | 77.9 | 10M |
| 30 | 31 | 10 | .52 | .70 | 1.12 | -.39 | 1.09 | .34 | .71 | -.21 | 70.0 | 77.9 | 30M |
| 15 | 30 | 10 | .01 | .72 | .05 | -2.83 | .05 | -2.86 | .00 | -.22 | 100.0 | 80.0 | 15F |
| 16 | 30 | 10 | .01 | .72 | 2.98 | -2.34 | 3.07 | 2.37 | .29 | -.22 | 100.0 | 80.0 | 16F |
| 17 | 30 | 10 | .01 | .72 | .05 | -2.83 | .05 | -2.86 | .00 | -.22 | 100.0 | 80.0 | 17F |
| 19 | 30 | 10 | .01 | .72 | .05 | -2.83 | .05 | -2.86 | .00 | -.22 | 100.0 | 80.0 | 19M |
| 21 | 30 | 10 | .01 | .72 | 1.07 | .32 | 1.11 | .37 | .07 | -.22 | 80.0 | 80.0 | 21F |
| 22 | 30 | 10 | .01 | .72 | .05 | -2.83 | .05 | -2.86 | .00 | -.22 | 100.0 | 80.0 | 22F |
| 14 | 29 | 10 | -.51 | .71 | 1.44 | .85 | 1.47 | .88 | .20 | -.24 | 70.0 | 78.2 | 14F |
| MEAN | 33.8 | 10.0 | 1.74 | .71 | .99 | -.1 | 1.00 | -.1 | | | 71.7 | 71.8 | |
| P. SD | 3.0 | .0 | 1.37 | .09 | .59 | 1.3 | .63 | 1.4 | | | 18.3 | 8.9 | |

Figure 1: Output of Person Measure Using Rasch Model Analysis

Sources: WINSTEPS Rasch Software Result (2020)

Based on Figure 1 of the Output of Person Measure with Rasch Model analysis, the data on the perceptions of students in primary school teacher education department in using Blended Learning Model in language subjects as scientific communication through detailed log it information from each individual. Students who have the highest level of quality of learning tools are 01M with a measured value (logit) is 4.51, while the perception of students in primary school teacher education department in using the Blended Learning Model in languages as scientific communication who have the lowest device quality is 14F with a measured value (logit) is -0.51.

Person: REAL SEP.: 1.45 REL.: .68 ... Item: REAL SEP.: .71 REL.: .33

Item STATISTICS: MEASURE ORDER

| ENTRY NUMBER | TOTAL SCORE | TOTAL COUNT | MEASURE | MODEL S.E. | INFIIT MNSQ | ZSTD | OUTFIT MNSQ | ZSTD | PTMEASUR-CORR. | AL-EXP. | EXACT OBS% | MATCH EXP% | Item |
|--------------|-------------|-------------|---------|------------|-------------|-------|-------------|-------|----------------|---------|------------|------------|------|
| 9 | 93 | 30 | 1.30 | .39 | 1.24 | .97 | 1.31 | 1.13 | .30 | .53 | 73.3 | 70.8 | q9 |
| 6 | 99 | 30 | .39 | .39 | 1.08 | .39 | 1.13 | .55 | .27 | .55 | 53.3 | 70.8 | q6 |
| 2 | 101 | 30 | .07 | .40 | .92 | -.26 | .92 | -.21 | .82 | .55 | 80.0 | 71.5 | q2 |
| 10 | 101 | 30 | .07 | .40 | .92 | -.26 | .92 | -.21 | .82 | .55 | 80.0 | 71.5 | q10 |
| 3 | 102 | 30 | -.09 | .40 | 1.06 | .31 | 1.10 | .43 | .66 | .55 | 76.7 | 71.8 | q3 |
| 5 | 102 | 30 | -.09 | .40 | 1.03 | .21 | 1.09 | .40 | .39 | .55 | 70.0 | 71.8 | q5 |
| 8 | 103 | 30 | -.25 | .40 | 1.11 | .49 | 1.09 | .39 | .39 | .55 | 60.0 | 72.1 | q8 |
| 1 | 104 | 30 | -.41 | .41 | .43 | -2.91 | .37 | -2.76 | .83 | .55 | 86.7 | 72.3 | q1 |
| 7 | 104 | 30 | -.41 | .41 | 1.28 | 1.12 | 1.20 | .74 | .30 | .55 | 60.0 | 72.3 | q7 |
| 4 | 105 | 30 | -.58 | .41 | .88 | -.43 | .91 | -.19 | .55 | .55 | 76.7 | 72.9 | q4 |
| MEAN | 101.4 | 30.0 | .00 | .40 | .99 | .0 | 1.00 | .0 | | | 71.7 | 71.8 | |
| P.SD | 3.3 | .0 | .51 | .01 | .23 | 1.1 | .24 | 1.0 | | | 10.1 | .6 | |

Figure 2: The Output Level of Item Measure Using Rasch Model Analysis

Sources: WINSTEPS Rasch Software (2020)

Based on the output of item measure using Rasch Model analysis in Figure 2, the indicator items regarding students' perception in using the Blended Learning Model in the language course as scientific communication that viewed as the most difficult for students to do is in item q9, with a total score of 93 and a measure score (logit) of +1.30. At the same time, the indicator items regarding students' perception in using the Blended Learning Model in the language course as scientific communication that is viewed as the easiest for students to do is in item q4, with a total score of 105 and a measure score (logit) of -58. Next, one of the features of Rasch's analysis with Winstep is the existence of a map that illustrates the distribution of subject abilities and the distribution of the level of item difficulty with the same scale. This map is called the Wright Map, which is a person-item map. To see the item map, this map has the right side and the left side where the side on the left side is the distribution of subject abilities, while on the right side is the distribution of items. From this map, it can be seen that in general, the questions regarding students' perception of using the Blended Learning Model in the language course as scientific communication are more difficult when compared to the subject's abilities. It can be seen in the following Figure 3:

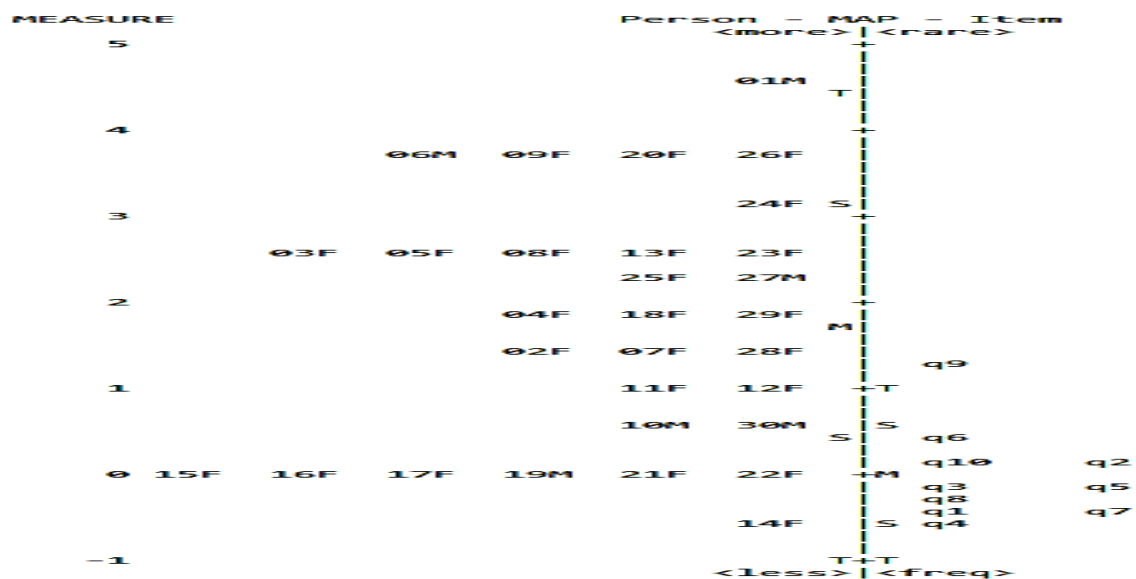


Figure 3: Person Map Item on Students' Perception in Using the Blended Learning Model in the Language Course as Scientific Communication

Sources: WINSTEPS Rasch Software (2020)

Based on the data obtained through the Wright map in Figure 3, we can observe the distribution of students' abilities in answering each statement on the Blended Learning Model co-commissioner in the scientific communication language course. how to read the output from WINSTEPS Rasch Software regarding Person Map Item on Students' Perception in Using the Blended Learning Model in the Language Course as Scientific Communication can be explained, namely, The left side shows the distribution of data based on the order of students who have the highest positive perception quality or belief about the Blended Learning Model in the language course as scientific communication that is 01M to students who have the perception of the Blended Learning Model. While on the right of the picture shows the distribution of the level of difficulty in the indicator of the most difficult items, that is item q9 (I use a laptop every time I study in class) to an easy one, that is item q7 (I access the e-learning page (online learning) on a computer/laptop). or it can be interpreted that the distribution in the image to the left is the distribution of the question numbers on the positive instrument, while the distribution on the right is the number of instrument items considered difficult by the respondent.

After obtaining the results of students' perception of in using the Blended Learning Model in the language course as scientific communication through Rasch model analysis, then obtained the results of calculations through descriptive statistics as follows in Table 2:

Table 2: Descriptive Statistics

| | | Total |
|----------------|---------|--------------------|
| N | Valid | 30 |
| | Missing | 0 |
| Mean | | 33.80 |
| Median | | 33.83 ^a |
| Mode | | 30 |
| Std. Deviation | | 3.044 |
| Variance | | 9.269 |
| Minimum | | 29 |
| Maximum | | 39 |
| Sum | | 1014 |

a. Calculated from grouped data.

Sources: STATCAL software Result (2020)

Based on the descriptive statistics Table 2 on the perceptions of students in primary school teacher education department in using Blended Learning Model in language subjects as scientific communication, it obtained minimum value is 29, the maximum value is 39, Sum value is 1014, Mean value is 33.80, standard Deviation value is 2,044 while the variance value is 9,269. Then, the calculation of frequency distribution can be seen in the following Table 3.

Table 3: Frequency Distribution

| Participation | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------------|------------------|----------------|----------------------|---------------------------|
| female | 24 | 80.0 | 80.0 | 80.0 |
| Male | 6 | 20.0 | 20.0 | 100.0 |
| Total | 30 | 100.0 | 100.0 | |

Sources: STATCAL software Result (2020)

Based on the Frequency Distribution in Table 3 on the perceptions of students in primary school teacher education department in using the Blended Learning Model in language subjects as scientific communication, it is known that female response participation Frequency value is 24 valid Percent value is 80% and Cumulative Percent value is 80.0. While male participation gender frequency value is 6, the Valid Percent value is 20% and the Cumulative Percent is 100. The Frequency Distribution Chart is a figure in the following Figure 4.

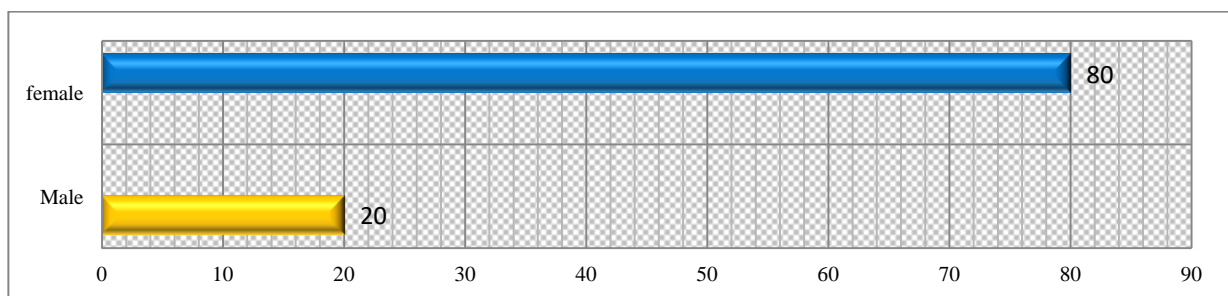


Figure 4: Graphic of Frequency Distribution

Sources: STATCAL software Result (2020)

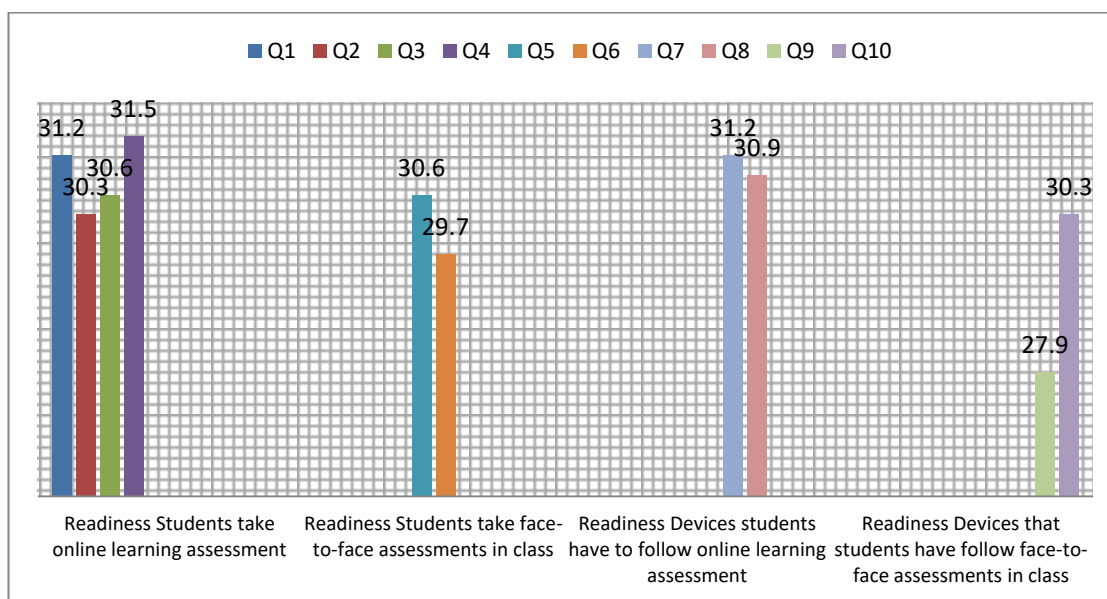


Figure 5: Graphic of Percentage Result the Perceptions of Students in Primary School Teacher Education Department in Using Blended Learning Model in Language Subjects as Scientific Communication

Sources: STATCAL software Result (2020)

Based on the data presented in Figure 5, the data obtained from the indicator: Students' readiness to take an online learning assessment with questions Q1; I participated in an online discussion activity is 31.2, which can be categorized as good. While in Q2, I am able to do online assignments is 30.3, which can be categorized well. In Q3: I am actively involved in learning activities in online learning gained 30.6. Then, in Q4, I take online quizzes gained 31.5, which can be categorized as good. On the indicator: Students' readiness to take face-to-face assessments in class with the question Q5; I followed the discussion activities in class is 30.6 can be categorized well, while in Q6, I was actively involved in learning activities in class is 29.7. On indicator: students' device readiness to follow online learning assessment with the questions Q7; I access the e-learning (online learning) page on a computer or laptop is 31.2, which can be categorized as good, while in Q8; I access the e-learning (online learning) page on the mobile phone is 30.9, which can be categorized as good. On the indicator students' device readiness to follow face-to-face assessment in class, with the question Q9 questions; I use a laptop every time I study in class is 27.9, which can be categorized as good while in Q10; I optimize the mobile phone while studying in class gained 30.3, which can be categorized well.

FINDINGS

Blended learning is a learning model that combines face-to-face learning and e-learning system. This model has the strengths and weaknesses that need attention from the teachers when implementing it. The basic difference between blended learning and conventional learning is in conventional learning; the learning activity is only emphasized on face-to-face learning that requires teachers to control the class and become the teaching media that develop thinking and listening aspect. Otherwise, the blended learning model combines face-to-face learning with science and technology-based approach. Based on this analysis, it can be concluded that the percentage of the students' perception in the primary school teacher education department in using the Blended Learning Model in language subjects as scientific communication is categorized as good. It is also supported from interview result relate to how students' opinions use the Blended Learning Model in language course as scientific communication:

Learning using the Blended Learning Model makes it easy for students to get information on learning materials from modules and teaching materials that have been prepared, and the learning time is very flexible. Learning does not have to be face to face. In the process of evaluating, the results can be known directly (Informant 1).

The use of the Blended Learning Model has a positive impact on students. It makes students are more familiar with online-based learning technology. Learning activities can be done elsewhere so that time can be more efficient. It makes learning activities become easier, because with this learning students can be more cheerful and save energy.

Based on the findings, it can be assumed that students' perception of using a blended learning model in language courses as scientific communication obtained a positive response. It is in line with the findings of research conducted by [x] suggesting that the use of the model Blended Learning or more familiar called E-learning giving flexibility in choosing the time and place to access lessons. Relevant research results further explain that this learning method might be a good solution to meet market needs, where face-to-face learning methods are difficult because of time and place constraints, reduced operational costs, and participants can determine their own pace of learning, not bound by time but still must

have a commitment, according to (Ridwan et al., 2020). Blended learning is learning approaches that integrate face-to-face traditional Learning and distance Learning using online learning resources and a variety of communication options that can be used by teachers and students. Implementation of this approach allows the use of online learning resources, especially web-based ones, without leaving face-to-face activities. With the implementation of Blended Learning, Learning becomes more meaningful because of the diversity of learning resources that might be obtained. Thus, Blended Learning can be interpreted as a learning process that utilizes a variety of approaches. The approach taken can utilize various types of media and technology (Borba et al., 2016). In simple terms, it can be said that blended learning is learning that combines face-to-face (conventional learning, where between educators and students interact directly with each other, each can exchange information about learning materials) and independent learning (learning with various modules which have been provided) as well as an independent online study (Wang et al., 2016, Humaira, et al., 2019 and Evans et al., 2019).

Blended learning is the most appropriate solution for the learning process, to answer not only learning need problems, but also the learning style. Blended learning is a learning facility that combines a variety of ways of delivery, teaching models, and learning styles, introducing various choices of media dialogue between the facilitator and students. Learning by using internet media or by distance learning is not a primer in learning because there is no interaction between teacher and student. In Teaching and Learning Activities, especially Indonesian language lessons, the main learning process is carried out in most schools and colleges in Indonesia (Graham, 2016 and Kurniaman, et al, 2018). However, face-to-face teaching and learning activities tend to make students bored and less active. For this reason, it is necessary to have learning innovations by applying the concept of Blended Learning. The implementation of a blended learning model more broadly should be supported by various studies, so the percentage of each learning model can be known. Blended Learning provides the best opportunity for learning from class transition to e-learning. Blended learning involves class (or face-to-face) and online learning (e-learning). This method is very effective for adding efficiency to classroom instruction and allowing increased discussion or reviewing information outside the classroom.

CONCLUSION AND FUTURE WORK

The descriptive result also showed that the learning process using the blended learning model is more effective than conventional learning with face-to-face systems or with e-learning systems. The level of effectiveness is supported by the strengths of the blended learning model that the courses, assignments, and assignments can be carried out outside school hours. The learning place is not only in one class or in one time, obtain many material resources, student-centered, the combination of teacher and media in delivering the material and develop thinking, creativity, and students' collaboration.

LIMITATION AND STUDY FORWARD

This research uses the Rasch Model analysis tool, where the measurement only focuses on infit and outfit while the variable prediction ability is more precise with the Structural Equation Modeling approach with the Reflective method.

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Fahrurrozi was responsible for the paper preparation and corresponding to the publisher. Ratna Sari Dewi as suggestions for data analysis and discussions for findings. Reza Rachmadtullah, Murtono, and Iva Sarifah were responsible for data collection and paper formatting. For Dessy Wardiah as language editing. All authors are contributed to this study.

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