

Article

Development of Blended-Learning-Based Semester Credit System Implementation Model to Improve Learning Service

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Abstract: This study aims to describe the implementation of online learning that is applied today, and to develop a blended learning model as a strategy to provide student services according to the diversity of potential, needs, interests, and learning speeds. This study used research and development design. Several stages were carried out, namely, conducting literature studies, planning, organizing, mapping basic competencies, carrying out learning activities, reporting, and dissemination. The preliminary research samples included 10,466 students, and the samples for the blended learning model trial included 144 students through random sampling. The results showed that many students were happy to study at home, whereas others were happy to study at school. The facilities to support online learning at home were sufficient. The online learning presented by the teachers was quite interesting and most parents support it. Based on these findings, a blended learning model was developed. The results of the model trial show that blended learning is very useful and there is a significant increase in student learning outcomes. The blended learning model is very effective at supporting online learning. It can provide optimal services to students according to their talents, interests, and abilities. For that, a special strategy is needed and the cooperation of all the elements of the school. The development of an IT-based management system is very helpful in monitoring the progress of students and increasing the awareness of teachers and parents in overseeing the success of learning. The blended learning model in high school can be one of the models for schools that implement a semester credit system.

Keywords: model; semester credit system implementation; blended learning; learning services



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1. Introduction

The learning process of the semester credit system (SKS) is not something new in the education system. In developed countries, such as the United States and European countries, SKS has long been applied. In higher education institutions (universities) in Indonesia, the learning process using credits has been implemented since the late 1970s or early 1980s. In middle-level educational institutions, SKS has also been known and applied by certain high schools in several cities, including in Malang, namely, SMA PPSP IKIP Malang, several decades ago. However, then this system was not very popular at the high school level. Since the 2008 academic year, credits have been appointed to be applied at the high school level. Students at the high school level have different potentials, learning speeds, and interests; this is a fact that cannot be ignored. It seems that this credit system is starting to be used and many are increasingly realizing that it has certain advantages, both in the learning process and in motivating students to pursue learning achievements and complete their studies in a faster time than in the package system that has been applied thus far. The semester credit system is a system of administering educational programs in which students determine their learning load and subjects to be followed every semester in the education unit. The study load of each subject in the semester credit system is stated

in semester credit units. The learning load of one credit includes one hour of face-to-face learning, one hour of structured assignments, and one hour of unstructured independent activities. The demand for innovation in learning directs learning in schools to link the components of information technology in the curriculum material presentation system because blended learning is a new option in Indonesia.

1.1. Blended Learning Model

Blended learning is the development of e-learning, namely a learning model that combines e-learning systems with traditional face-to-face learning. In its implementation, blended learning combines various physical and virtual sources. Blended learning combines the aspects of online learning, face-to-face activities, and real-world practice. Blended learning allows students to learn flexibly, have multiple access points to acquire knowledge, and combine various types of learning and delivery methods. Through blended learning, the teaching-learning process can be carried out in a flexible, time and cost-saving, interactive, effective, and efficient way.

After all, it is a new pioneer, especially in schools. With limited Internet support, it is still possible to apply blended learning in curriculum presentations using credits. The choice of using blended learning in the SKS-based curriculum is because it has many advantages compared to other teaching systems in classroom instruction. This innovation in the curriculum presentation system, which uses a mixture of internet reliability and conventional systems, requires a new reconciliation between the separation of materials or curricula that must be presented face-to-face and the curriculum or Basic Competencies that must be delivered to students virtually involving the strictest possible use of the internet to present package curriculum materials to students. Blended learning is a combination of a face-to-face basic competency presentation system in class with an online presentation system with a certain percentage ratio. Blended learning is a fusion between classroom learning that uses face-to-face with online presentations in providing learning experiences for students [1]. Blended learning in a broad sense includes all the applications of learning methods, which makes the scope of textbooks wider beyond the incorporation of face-to-face and online presentation activities. As emphasized by Horn M.B, blended learning is a learning presentation model to deliver a curriculum that allows students to learn without being limited by time controlled by the teacher or using the Internet guided by the limits of the place and speed of students. From this definition, the notion of blended learning is described in Figure 1.

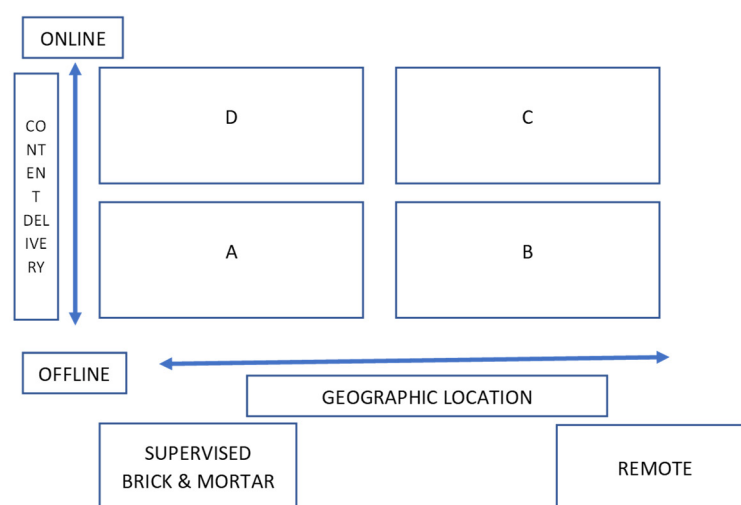


Figure 1. Blended learning chart.

Figure 1 was adopted from Blended Learning Evidence-Based Practices [2]. In the scheme, it is illustrated that a limitation of blended learning is that students learn through

combining the presentation of material online and offline with learning that is supervised and controlled directly by their teacher, either through direct contact in the classroom or remotely controlled contact. There is an affirmation that is also given by several experts that blended learning must have an affirmation of what percentage of the subject matter must be held online. Some show it must be 30% and some show up to 80%, but it is important that not 100% is online as this would mean one of the mixing elements is missing and this could no longer be called blended learning. Consideration for the percentage limit is very important for some experts in order for the system to be called blended learning. The use of blended learning in the presentation of learning materials emerged due to a belief that the way in which curriculum materials are presented can be adapted to combining the curriculum material presentation system to students can meet the learning needs of students, especially high school students. Students who learn entirely online do not show complete satisfaction because they feel they have lost personal contact time with their teachers.

1.2. The Effect of a Blended Learning Model on Students' Learning Process and Outcome

Consequently, when a presentation model is used that combines online and face-to-face teaching, the obstacles associated with the lack of direct contact between teachers and students can be overcome. With face-to-face contact, the demands of personal contact within the framework of education can be met, while the online presentation system can provide a sense of comfort for students in learning because of the nature of online flexibility. As a result, maximum learning outcomes can be achieved, and students can complete the program completely [3].

The use of blended learning in the presentation system can increase the level of interaction that occurs in the classroom compared to using the conventional presentation system because the variations in the use of technology for presenting curriculum materials will encourage the emergence of various types of communication variants among students. In longitudinal research, it has been proven that the use of technology in combining models of curriculum material presentation can significantly improve student learning outcomes. In 23 long-term studies conducted by the US Department of Education, it was found that blended learning improved learning outcomes more than the face-to-face model itself [4]. Thus, it can be concluded that the blended learning presentation system is used for four reasons, namely, (a) adapting to the needs of students, (b) increasing the level of communication more productively, (c) saving on the average cost of providing education per student, and (d) improving learning outcomes.

In its development, the use of blended learning functioned not only as a system for presenting curriculum material but also functioned to fulfill school excellence. This type is known as blended learning substitution. Blended learning substitution was found in the research arena after involving the possibility of school excellence being packaged in the form of a curriculum and used as a material that must be presented in an additional curriculum structure to ensure the achievement of school excellence as well as to characterize schools that are differentiated compared to other schools.

When combined with the semester credit system, the blended learning model is very relevant. The semester credit system provides opportunities for students to take on a learning load according to their abilities and interests. Some research results show that the magnitude of a student's learning load does not reduce their achievement if it is in accordance with their abilities. Even, the higher the learning load taken is, the higher the achievement achieved is [5]. In addition, the use of a Fully Flexible Credit System has a strong effect on students' academic performance [6]. Students' perceptions of the semester credit system also affect their learning outcomes [7]. However, there were some obstacles such as students' lack of motivation, enthusiasm, and responsibility [8]. Therefore, the implementation of the semester credit system needs to be supported by an effective learning strategy. The blended learning model is one model that is thought to be very effective in supporting the implementation of the semester credit system. As through the

blended learning model, students can learn online and offline; therefore, they have broad opportunities to develop themselves according to their abilities, interests, and talents.

The meta-analysis of blended learning compared to traditional learning shows different results. The difference is thought to be due to the use of different methods. The use of different methods causes different learning effectiveness [9]. A blended learning model can improve student motivation and learning achievement [10,11]. From another perspective regarding online learning, several research results also show different results. Online learning still cannot be implemented effectively, and teachers have still not implemented online learning optimally [12]. Likewise, lecturers have also not implemented online learning effectively [13,14] and students have also not used ICT-based communication techniques optimally [15]. Even online communication, such as the use of Google Meet or Zoom, has not been implemented optimally [16]. Therefore, it is necessary to develop a blended learning model in learning. The blended learning model can be combined with existing learning systems. Starting from this foundation, this research was carried out. The purpose of this study is to develop a model for implementing a blended-learning-based semester credit system to improve learning services. Through the use of the blended learning model alongside the semester credit system, schools will be able to provide optimal services to students in learning according to their talents, interests, and abilities.

2. Materials and Methods

2.1. Research Design

This study used a research and development design, namely, research conducted to develop a product. The following steps refer to the opinion of Borg and Gall: (1) research and information collecting, namely, conducting preliminary research including conducting literature studies, (2) planning, including determining the goals to be achieved, (3) developing the preliminary form of the product, namely, developing the initial form of the product or model to be produced, (4) preliminary field testing, namely, conducting initial field trials on a limited scale, (5) main product revision, namely, making improvements to the initial product produced based on the results of the initial trial, (6) main field testing, the main test involving all targets, (7) operational product revision, namely making improvements or improvements to the results of a wider trial, (8) operational field testing, namely, the validation test step of the operational model that was produced, (9) final product revision, namely, making final improvements to the developed model in order to produce a final product and (10) dissemination and implementation, namely, disseminating the developed product or model.

2.2. Research Samples

The population in this preliminary study was the public and private high school institutions in Malang City, totaling 56 schools. Sampling using proportional random sampling, with a large sample of 5527 students from Class X (SMA and SMK), a total of 4436 students from Class XI (SMA and SMK), a total of 466 students from Class XII (SMA and SMK), and a total of 37 students from Class XIII (SMK program 4th year), with an overall total of 10,466 students as respondents. To test the model, 144 students were taken as samples, with a total of 15 subjects, namely Religion and Character, Civic, Indonesian Language, Basic Mathematics, Indonesian History, English, Cultural Arts, Health and Physical Education, Entrepreneurship, Javanese Language, Mathematics, Biology, Physics, and Chemistry. The number of samples for the trial was randomly selected by Class XII students, consisting of 85 or 59.0% male students, and 59 or 41.0% female students. This was based on the consideration that they have experienced implementing blended learning before and have implemented a blended learning model in such a way that the improvement can be known. The characteristics of the samples also reflect the characteristics of the population; therefore, they are representative.

2.3. Research Instrument

The instrument used in this study was a questionnaire. The research instrument was developed from variables that were transformed into questions. The questionnaire used in this study used a Likert scale with five alternative answers. In addition, it was also equipped with an open response item. The measured variables were translated into indicators that were then used as a starting point for formulating instrument items. The researcher developed the research variables, sub-variables, and indicators and then formulated them into instrument items. Scores were given according to the alternative answers provided, for examples, very happy = 3, quite happy = 2, unhappy = 1, or very effective = 3, quite effective = 2, less effective = 1. To obtain good content validity, the researcher also asked for consideration from three experts. The results of the experts' validation show consistent answers to each item of the instruments. Thus, good content validity was obtained. Cronbach's alpha reliability analysis results obtained $r_{ii} = 0.809$. The value is above 0.7, thus it can be concluded that the instrument was reliable.

2.4. Data Analysis

The data analysis techniques used in this research were descriptive analysis and dependent *t*-test. Description analysis was used to describe the data. Several data analysis techniques used include percentage, frequency distribution, mean, and standard deviation. The descriptive analysis was carried out to analyze questions about the implementation of online learning with a semester credit system. Data analysis for several items was analyzed in a simple and separate descriptive manner, while the other items were analyzed according to sub-variables. The analysis of the collected documents was concluded directly by the researcher.

The dependent *t*-test was used as a data analysis technique to test the hypothesis, namely, testing the difference in scores' mean before being given a blended learning treatment (pretest) and after being given a blended learning treatment (post-test). The results of the analysis of the mean and standard deviation are also used to strengthen the explanation of the results of hypothesis testing. The data analysis program uses the SPSS for Windows program.

3. Results

3.1. Preliminary Study Results

The first step in developing the blended learning-based semester credit system implementation model is conducting preliminary research. The purpose of conducting this preliminary research is to dig up information about the implementation of learning that is being carried out today. Several aspects explored in this preliminary study include the student's choice of learning, the adequacy of facilities, the burden of learning and teaching, as well as parental support for the learning system. The results of these studies will be taken into consideration in the development of the model. In general, the results of the preliminary research are presented in Figure 2.

Based on the results of the preliminary study, it can be underlined that as many as 10.1% of students stated that they were happy to study at home, 51.6% were quite happy to study at home and 38.3% were not happy to study at home. From the results of this study, it was also found that the adequacy of facilities to support online learning at home was sufficient (34.1%), quite sufficient (49.9%), and insufficient (16%). Regarding tasks given by the teacher, we found that all teachers (59.2%), not all teachers (40.2%), none of the teachers (0.6%) gave assignments. We also asked whether the tasks given by teachers are difficult or not: All difficult (17.2%), Not all difficult (70.4%), Not difficult (3.4%). The following results relate to parental support online instruction: highly support (33%), moderately support (58.1%), do not support (8.8%).

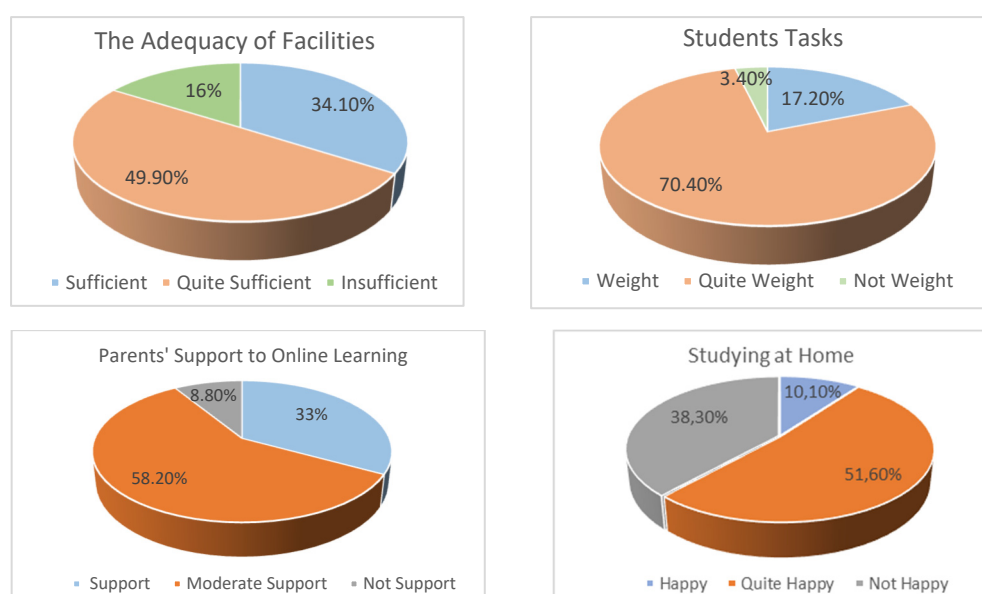


Figure 2. Preliminary research results.

The results of the preliminary study, related to the learning model, also found that 77% of students' parents wanted the implementation of face-to-face learning, and 23% wanted online learning. When given the choice of blended learning, 100% of the parents agreed with blended learning. As much as 99.1% of the parents would also allow all students to take part in blended learning. Based on the results of the preliminary study, a blended learning model with a semester credit system was developed.

The learning process with blended learning serves to provide services according to the abilities, talents, and interests of students. With this blended learning system, it is expected that students who have more abilities can complete the learning process earlier, students who carry out learning at a usual speed can obtain more content at the end of the semester to add to their provision of skills as superior to SMA Negeri in Malang according to their talents and interests, and students who experience learning problems and cannot complete the learning process within 3 years can be facilitated.

3.2. Model of Blended Learning-Based Semester Credit System Implementation

Based on the results of the initial research, a model of blended learning based on semester credit system implementation was developed. Three main stages are conducted, namely, planning, organizing, and the teaching-learning process. The planning step describes the class selection, the organizing step describes the school's strategy in providing services for students, and the learning activities refer to the process of implementing blended learning. The steps carried out in the process of implementing the blended learning model are as follows.

3.2.1. Planning Stage

Figure 3 shows the first step in implementing a blended learning-based semester credit system model, namely, a class or group selection step. The first is the planning stage. Through this step, students can take learning programs according to their interests and abilities. This includes the student's admission, program selection, class grouping, regular teaching and learning, service of learning, and reporting on the learning process. The implementation process is supported by computer software; therefore, it can be implemented practically, carefully, and effectively. After the process of selecting and determining students, it is necessary to prepare a program according to the student's grouping. For that, it is necessary to take the next step, namely, the organizing stage.

CLASS/GROUP SELECTION FLOWCHART

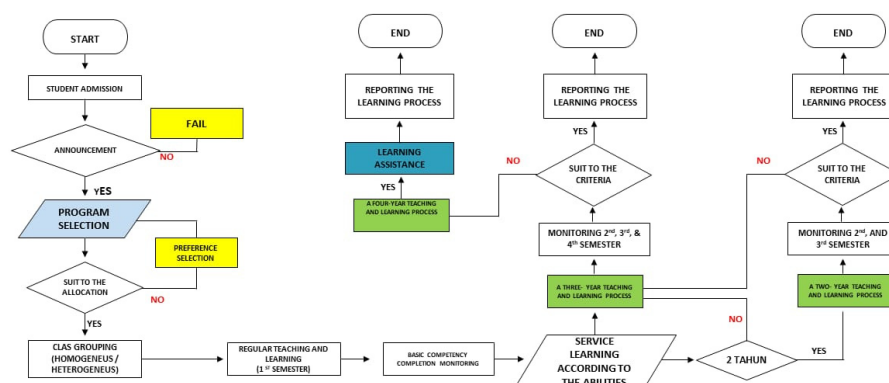


Figure 3. Class network flowchart.

3.2.2. Organizing Stage

Figure 4 is an organizing step in implementing a blended-learning-based semester credit system model. This step prepares the programs, including its management, following the results of the planning stage, namely, in class or group selection steps. This includes preparing for guidance documents, basic competence analysis, and mapping, basic competence for blended learning, management system development, teaching-learning process, reporting on the development success, and producing a final report. The implementation process is also supported by computer software; therefore, it can be implemented practically, carefully, and effectively. Based on the results of planning and organizing, the third stage can then be carried out, namely, the implementation of the learning process.

FLOWCHART OF THE SCHOOL STRATEGY

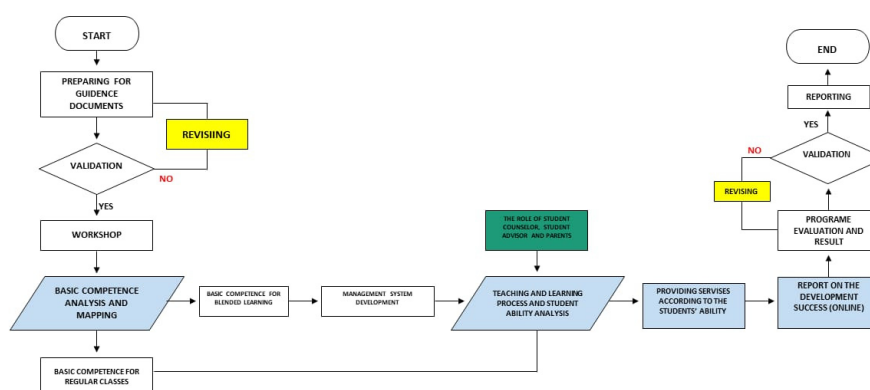


Figure 4. School strategy for service flowchart.

3.2.3. Stages of the Learning Process Flowchart

Figure 5 shows the third step in implementing a blended-learning-based semester credit system model, namely, the learning process step. This step is the main step in implementing the model, namely, implementing the blended learning process. This includes basic competence mapping, preparing the teaching and learning documents, the teaching and learning process, assessment, and appraisal improvement program, collaborative coaching, and reporting on the learning process. The implementation process is also supported by computer software; therefore, it can be implemented practically, carefully, and

effectively. These three steps are implemented in a blended-learning-based semester credit system model.

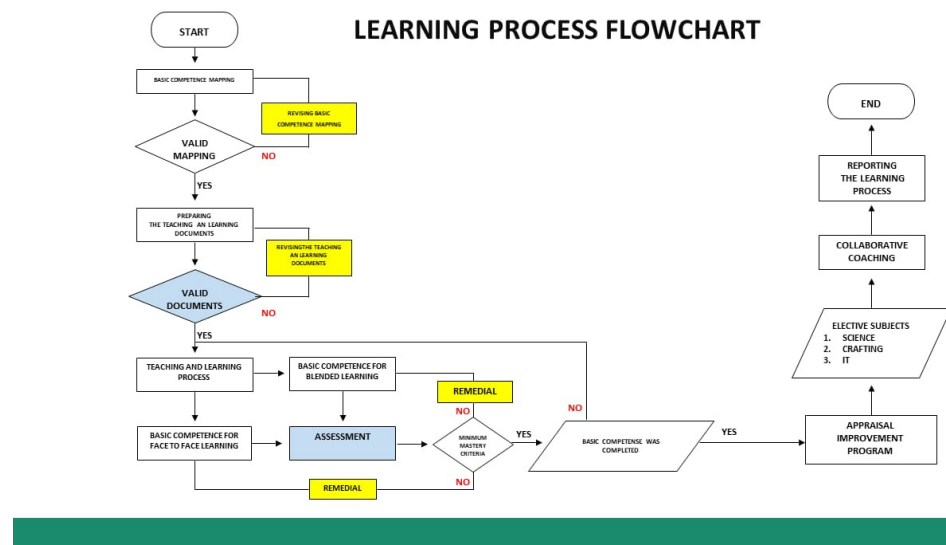


Figure 5. Learning process flowchart.

One important step in implementing blended learning with a semester credit system is conducting curriculum analysis. The structure of the high school curriculum consists of general subjects of group A, general subjects of group B, and subjects of academic specialization in group C. The subjects of academic specialization in group C are grouped into subjects of specialization in Mathematics and Natural Sciences, subjects of specialization in Social Sciences and Language and Culture specialization subjects. Specialization in Mathematics and Natural Sciences consists of Mathematics, Biology, Physics, and Chemistry subjects; Social Sciences specialization consists of Geography, History, Sociology, and Economics; while specialization in Language and Culture consists of Indonesian Language and Literature, English Language and Literature, other Foreign Languages and Literature (Chinese, Japanese, German) and Anthropology. The curriculum structure allows students to make choices based on specialization, cross-interests, or deepening interests.

Students select their specialization when registering in high school or Islamic high school based on the value of their Junior High School Student Learning Outcome Report or its equivalent, the value of their junior high school national exam or its equivalent, recommendations for guidance and counseling teachers in junior high school or the equivalent and the results of the placement test when registering for high school, or an aptitude and interest test carried out by a psychologist. The selection of specialization groups is carried out after students register for high school or after students are accepted into high school following the interests, talents, and academic abilities of the students.

Several stages are carried out in implementing blended learning, namely, the following: (1) the basic competency mapping stage, (2) the learning activity stage, and (3) the reporting and evaluation stage. The mapping phase of basic competencies in the blended learning process begins with the mapping of basic competencies (KD) for semesters one to six during a School Subject Teacher Discussion (MGMP) for each subject. MGMP inputs the KD-KD and determines the KD needed for learning to be conducted using a blended learning model through a system that has been built by the school. Furthermore, preparing the learning process includes materials, modules, and blended learning exams with a system that has been provided by the school. In the mapping of the KD-KD in blended learning, there will be signal signs. Then, the stage of learning activities can proceed.

At the learning activities stage, blended learning activities are carried out online without face-to-face contact, with the requirements according to the characteristics of each subject. Students can take the next KD using blended learning if the previous KD

has been completed. The value entry for KD, which is carried out face-to-face, and KD blended learning uses a system built by the school through a portal. The value template is provided with one Excel form model that is adapted to an Excel template that is used for e-reports from the directorate to reduce the activity of entering the same value for different systems. Homeroom teachers, counselors, teachers, students, and their parents can monitor the progress of students through the portal so that students can independently estimate whether they can complete 2 years, 3 years, or 4 years of study. Students who complete all the KDs will obtain school superior skills as a substitute for KD-KD, which are blended according to the characteristics of the subject with a choice of scientific research, crafts, and Information Technology (IT). The school's flagship content is implemented according to the choice of talents and interests of the students.

At the reporting and evaluation stage, the school provides a portal to monitor the progress and achievement of the students' abilities for each KD for all the subjects, which can be accessed by the school management, teachers, homeroom teachers, BK, parents/guardians and the students themselves classically. In processing grades, the system will be given five color categories, namely, (1) gray means the number of students who does not exist/scores has not been uploaded, (2) green means the number of students who completed the KD is the same as the number of students, (3) blue means more students completed the KD, (4) yellow means that fewer students completed the KD, and (5) red means that none of the students completed the KD.

The school provides a portal to monitor the progress and achievement of students' abilities for each KD for all subjects, which can be accessed by the school management, teachers, homeroom teachers, BK, parents, and the students themselves per subject, to see whether their progress toward achieving the KD of a subject for all classes is evenly distributed or not. If it is not evenly distributed, the students who have completed a KD can follow the next KD learning in another class that carries out the KD learning; therefore, these students can be facilitated in their learning without waiting for all the students in the class. Through the parent portal, teachers and students can openly monitor the progress in the process of scoring results for each KD.

The blended learning model has been tested in schools. The result of model testing is described in Figure 6.

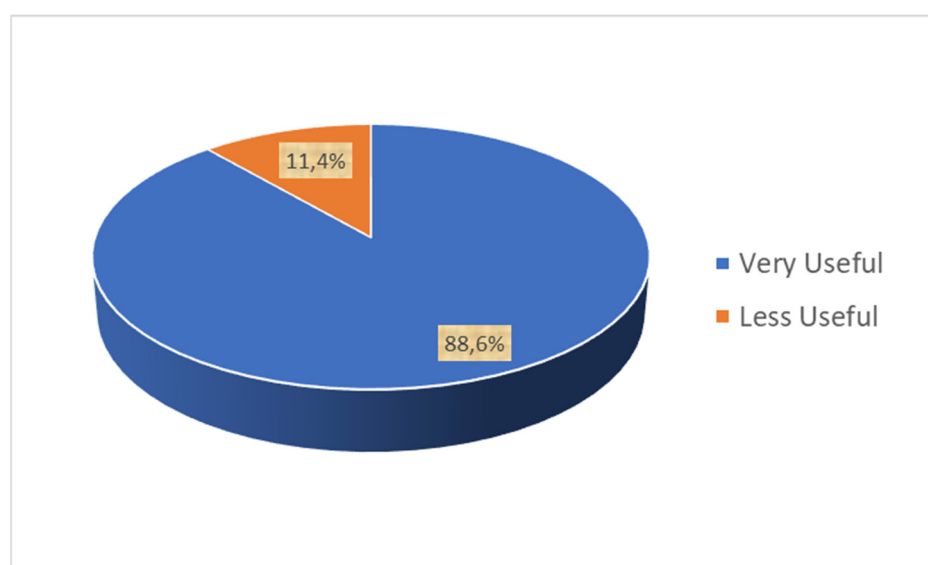


Figure 6. Rating of blended learning based semester credit system implementation model.

Figure 5 shows that the respondents know the benefits of learning using the blended learning model; less useful, 11.4%, and very useful, 88.6%. Thus, the results of the study show that blended learning is very useful in the learning process. Further results, based

on the product test of the blended-learning-based SKS model, suggested that several research instruments must be revised. Schools must review all the KTSP documents, school academic regulations, and lesson plans. We conducted discussions on the implementation of the blended learning model at high schools in Malang that was attended by the Principal, Curriculum Development Team, and Subject Coordinator.

The results of the analysis of scores achieved by students before using blended learning and after using blended learning also showed significant differences. The results of the dependent *t*-test are briefly presented in Table 1.

Table 1. The results of the analysis of the differences between students' pretest and posttest before and after using the blended learning model.

No	Subject	Pretest		Post-Test		t	p	Conclusion
		Mean	SD	Mean	SD			
1	Religion and Character	89.12	4.28	92.37	1.81	−8.653	<0.05	Significant
2	Civics	85.44	2.30	88.81	4.04	−8.386	<0.05	Significant
3	Indonesian Language	87.15	1.13	89.33	2.11	−16.056	<0.05	Significant
4	Basic Mathematics	80.03	4.92	86.18	1.92	−19.555	<0.05	Significant
5	Indonesian History	83.06	3.13	84.88	1.86	−14.431	<0.05	Significant
6	English Language	86.39	3.43	87.49	1.84	−5.923	<0.05	Significant
7	Culture Art	85.07	2.39	85.53	1.38	−4.608	<0.05	Significant
8	Health and Physical Education	85.77	1.43	88.44	1.87	−4.657	<0.05	Significant
9	Entrepreneurship	85.78	1.17	87.58	2.34	−9.073	<0.05	Significant
10	Javanese Language	86.12	2.52	87.19	2.27	−7.692	<0.05	Significant
11	Mathematics	80.54	4.13	83.06	2.91	−15.397	<0.05	Significant
12	Biology	82.99	1.20	83.90	3.04	−3.705	<0.05	Significant
13	Physics	82.92	1.19	89.20	2.57	−29.270	<0.05	Significant
14	Chemical	80.45	3.74	82.62	2.26	−15.429	<0.05	Significant
15	Cross Interest	82.08	5.89	84.22	3.55	−8.170	<0.05	Significant
16	Total	84.18	1.45	86.58	1.31	−7.327	<0.05	Significant

Based on Table 1, it can be seen that there is a significant difference in the average value of student learning outcomes before being taught by the blended learning model and after being taught by the blended learning model. There was an increase in student scores in all subjects, and overall. The coefficient of the error probability value is below 0.05; therefore, the null hypothesis was rejected and the alternative hypothesis was accepted. The score mean of the students' outcomes was significantly higher after being taught using the blended learning model compared to before being taught using the blended learning model. In addition, the standard deviation values are also relatively small, which is below a quarter of the mean values. This means that the data are homogeneous. Overall, the standard deviation of the post-test is lower than the standard deviation of the pre-test, which means that after the treatment process, students' scores are becoming more homogeneous. The implementation of the blended learning model enhances the learning outcomes of all students. Thus, the results of this descriptive analysis strengthen the results of hypothesis testing that the blended-learning-based semester credit system implementation model can improve the learning service and students' learning outcomes.

4. Discussion

Based on these research findings, it can be concluded that the blended learning developed is quite effective in supporting the quality of the learning process with the semester credit system. This finding corroborates previous research. The results of research in schools indicate that the online learning model has not been fully implemented in schools [12]. Some students want offline learning, some students want face-to-face learning. Likewise, the results of a survey of teachers also show that some teachers want online learning, and some want offline learning.

The results of research at universities also show that lecturers still have not implemented online learning [13]. Likewise, students have also not fully used online communication techniques in learning [14]. Some want an online learning model, and some want

an offline learning model. The results have also not shown a significant effect on student learning outcomes. Thus, the results of this study corroborate the results of previous studies.

When viewed from the perspective of school management, principals have not used the online learning model fully. In establishing a relationship with parents, students even prefer to have face-to-face relationships [15]. Likewise, school administration staff also fully use online communication techniques in carrying out administrative tasks [17]. This study, from the perspective of school management, also strengthens several previous studies.

When associated with student characteristics, the blended learning model and student characteristics have a significant effect on the level of satisfaction and learning outcomes achieved [18]. The higher the use of blended learning is with the level of self-regulated learning and a high positive attitude, the higher the satisfaction and learning outcomes of students are. Through blended learning, learning is also not only conducted in the classroom but also outside the classroom. Learning in universities is also mostly conducted outside the classroom through online learning [19]. Blended learning and blended-learning-based learning projects are quite influential for increasing the critical thinking skills of prospective biology teachers compared to conventional learning [20]. Blended learning is also effective for improving students' abilities in learning English grammar [21]. Through blended learning, students are also satisfied because they do not only participate in face-to-face learning but also use technology with computer-based assignments outside the classroom. Thus, learning becomes interesting and challenging. Students understand the material better, enjoy self-directed learning, and perform tasks independently [22]. Thus, in general, it can be concluded that the findings of this study strengthen the results of previous studies.

When viewed in more detail, the use of online communication techniques is also not optimal. The use of synchronous communication media, such as Google Meet or Zoom, has not been maximized in the online learning process [16]. Likewise, in searching for library sources, there are also not many uses of library source search engines [23]. Some institutions that use a Learning Management System (MLS) are also using them optimally [24]. In addition, there are also many problems faced by students, such as the problem of poor Internet connections, unstable signals, Internet quotas, incapacity, access, and others [16,23,24]. Therefore, face-to-face meetings are still needed. For this reason, the application of blended learning is very suitable.

Blended learning has several advantages. Through blended learning, the instructional process can be implemented more efficiently. Blended learning is also more accessible. Students are also more engaged and have fun [25]. Some research results show that student learning outcomes and motivation are better taught with blended learning models compared to traditional learning models [26]. Through blended learning, students will be able to participate in online and offline instruction. With face-to-face learning, students can increase their motivation and interest in learning, gain a better understanding, higher classroom interactions and through online learning, students can learn quickly, gain flexibility in the time and place to study [27]. Thus, students will be able to gain more learning experiences in a shorter period of time. By using information technology, blended learning is an approach that brings the best out of classroom and online learning [28]. The students' attitudes toward online learning, study management, online interaction, and learning flexibility influence the success of blended learning. Therefore, classroom management, both online and offline, is very important to improve the students' learning motivation and achievement [29]. Thus, in general, it can be concluded that the findings of this study support the results of previous studies. Blended learning can improve the quality of learning [30].

Several principles must be applied in order for blended learning to be implemented optimally. First, keep student contact hours as close to normal as possible, with a blend of on-site face-to-face and digital learning, ensuring it is maximized. Second, the instruction should be delivered using the flipped learning model of blended learning to optimize the

use of on-site face-to-face time for the highest value activity. Third, the group should be subdivided, and fewer on-site face-to-face sessions provided for each, alongside digital activities. Fourth, a fully online experience is necessary for a student; it should be as equitable as possible with the experience of those undertaking on-site learning activities. Fifth, program teams should encourage, sustain, and monitor student engagement. Sixth, early introduction and continued scaffolding of digital capabilities within each program are crucial to allow students to learn effectively and to provide a good experience. Two major principles are consolidation and extension. The consolidation principle emphasizes designing different types of activities for students to think so that their knowledge can be consolidated, and the extension principle emphasizes the extension of the space of learning and facilitating the diverse needs of students. Moreover, providing autonomy, interaction, feedback and the awareness of student diversity are the general principles [31]. By integrating it into the semester credit system, the use of a blended learning model becomes more effective. To prove the research findings more significantly, it is necessary to disseminate the findings on a wider scale to obtain a more comprehensive evaluation result.

5. Conclusions

Based on the research findings, it can be concluded that the blended learning model in this study is very effectively used with the semester credit system for the teaching-learning process at school. Special strategies and cooperation from all elements of the school in providing learning services according to the talents, interests, and learning abilities of students need to be improved. Blended learning is one of the models in providing student services. The development of an IT-based management system is very helpful in monitoring the progress of students, the openness of services to students, and increasing the awareness of teachers and parents in overseeing the success of learning.

Several steps are taken in the implementation of the semester credit system with a blended learning model, namely, the planning, organizing, learning process, assessment, and reporting stages. The implementation process is supported by the software including class screening, the implementation of learning activities, evaluation, and reporting. The results of the model trial show that the developed blended learning model is very useful to support the learning process. Therefore, it is hoped that this blended learning model will be applied. It is hoped that the implementation of the blended learning model can be an example of a school model for implementing SKS in schools.

Based on the findings of this study, it is expected that education implementers in schools can apply the blended learning model. However, the findings of this study are not final. The results of this study need to be followed up using a wider scale and a comprehensive research approach.

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