

Blended Learning for Vocational Teacher Candidates

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Abstract. This study aims to see the effectiveness of using Google Classroom-aided blended learning for vocational teacher candidates. The effectiveness of blended learning in terms of the socialization of knowledge transfer and the internalization of knowledge transfer for vocational teacher candidates is good, in order to be able to adapt it for learning in vocational high schools. In detail the research was carried out to find: (1) the effective use of methods and strategies in the Google classroom assisted blended learning model for prospective teachers, (2) the effective use of the tools, media, and learning resources used in the Google classroom assisted blended model for prospective teachers, (3) the effectiveness of learning management on the use of google classroom assisted blended for prospective teachers, and (4) the effectiveness of learning outcomes using blended learning for prospective teachers. The research method uses a development and evaluation approach. The development approach is used to develop methods, strategies in the blended model that are used, while the evaluation approach is carried out to evaluate the results of development used. The results showed that: (1) the use of models and strategies in the Google classroom assisted blended learning model is very effective (3,88) for prospective teacher students, (2) The use of tools, media, and learning resources used in the Google classroom assisted blended model very effective (3.86) for prospective teacher students, (3) Management of learning in the use of google classroom-assisted blended has been very effective (3.88) for prospective teacher students, and (4) learning outcomes in the use of Google-assisted blended assisted classroom learning outcomes Students are better than before using Google classroom assisted blended.

Keywords: Blended learning, vocational, teacher candidates, google classroom.

1 Introduction

Higher education continues to be challenged to continue to carry out their various roles to face the challenges and changes that occur in this era, especially in the aspects of education and teaching, development, and dissemination, as a breadbasket of the treasury of knowledge for the community. In this regard, there are at least three important things and need to be done by universities.. First, universities must start implementing hybrid teaching systems. Here, universities must be able to respond to the development of the role of technology. In this case, the application of online learning or lecture technology should now be considered, which is now known as Massive Open Online Courses (MOOCs). [1]. But this way of learning and lecturing is still in doubt and is considered not to be widely applicable in subjects that require skills training that is dependent on laboratory equipment because they must use high technology or require adequate communication technology equipment [2].

The quality of students in the future is largely determined by the role of teachers in schools today. In view of the need to understand how the world changes transform for a better human

life. Besides that, it is also necessary to understand the transformation that also takes place in the world of education we know the terms Education 1.0, Education 2.0, Education 3.0, and finally Education 4.0 as an answer to social development due to the times. Views on how humans learn also need to be adapted. The terms pedagogy, mesagogy, andragogy, and heutagogy form the basis that should be understood by the teacher. Each view of learning is needed in an effort to treat students in digesting knowledge / competencies that are adapted to the available environment.

The phenomenon that occurs in the field of education is the challenge that not only focuses on what is taught, but also the way of teaching where the education itself is based on the need to meet the needs that exist in the future [3]. It is common consumption that education is now seen as a lifelong process not just as a stepping stone towards the professional world. Education 4.0 is considered an opportunity for schools that are ready to grow their students' readiness to enter a new round of the world of education that is changing so fast. Teachers are required not only to be able to change the way their students think facing all the obstacles they experience, but also have a heroic role that is not easily replaced; how important the role of the teacher for the future of their students. The role of the teacher is more complex than in previous eras. The complexity is shown, for example, how a teacher must respond to the changing needs of students, technological developments that are rapidly reaching and filling the world, or demands for excellence from society, and changes in social construction in society and globalization [4].

In addition to preparing responsive steps to answer challenges, universities should also instill five basic values to equip students to excel in facing change, namely resilience, adaptability, integrity, competency, and continuous improvement. Resilience, resilience, is needed in the midst of uncertainty, competitive climate, and various economic shocks, cultural clash, and the existence of disruptive innovation. A prospective teacher must have the ability to survive, survive, not easily give up and get frustrated in dealing with various circumstances, because the process of forming prospective teachers must be done superiorly [5]. A superior learning process for prospective teachers requires adaptability that encourages or adapt to changes that occur both at domestic and international levels. Integrity, students must uphold personal and professional integrity, such as honesty, tolerance, mutual cooperation, mutual assistance, adhere to scientific principles, and professionalism. The policy gives strict sanctions for every violation of rules and law enforcement will firmly make students with personal integrity. Then, competency, where students must have the competence and qualifications in the field they are involved in and be able to understand the development of other fields so that they are not narrow-minded. Policy provides flexibility / requires students to take courses in other fields is an effort to improve field competence and knowledge across fields. Meanwhile, continuous improvement prepares students to become true learners so that they continue to make improvements in their occupied fields.

The implementation of learning process for prospective teachers is carried out in order to apply learning practices that are relevant to the learning situation in the School. This condition is carried out to make it easier to adapt in the form of internationalization to prospective teachers. Basically learning in schools is oriented to the demands of the curriculum that applies in schools, where learning is carried out with the Scientific Approach approach using various learning models such as discovery learning, Problem Based learning, Project Based Learning, and others that are relevant to the scientific approach. Educating learning is learning that inspires students. Educative learning can be created through the use of appropriate learning methods and following the tastes of the times. The Scientific Approach Method is one example that meets these criteria. Furthermore, based on the tastes of the times, it turns out that learning oriented to blended learning, is also very liked by students so that the learning activities are applied in learning using

a scientific approach, with learning methods oriented towards blended learning. Blended learning activities that are online are determined by using Google classroom facilities.

2 Research Method

This research uses a mixture of qualitative and quantitative approaches. The research began with Research and Development (R & D) research to develop blended learning models and tools that are relevant to the learning needs of vocational teacher candidates. The research model was adapted from Thiagarajan, Semmel, and Semmel in [6] by using Four-D Models. This model consists of 4 stages of development, namely: define, design, develop, and assess or adapt to a 4-P model, namely (1) Define which includes the front end analysis, student analysis, task analysis, concept analysis, and formulation learning objectives. (2) Design which includes the stage of compiling the benchmark reference test, the stage of media selection, format selection. (3) Development includes device validation by experts followed by revisions, simulations, limited trials with real students. (4) Disseminate stage is the stage of using devices that have been developed on a broader scale. In this final stage, a quasi-experimental method is used to determine the effectiveness of the use of the discovered model.

The application of the results of the development model is done by asking for responses from prospective teacher students about the implementation of lectures with blended, because this method is expected to be adopted by the con teacher students after they teach at the Vocational School. Data collection techniques in this study used instruments in the form of questionnaires, interview guides and documentation in development activities, and used test instruments in the model effectiveness test activities. The data analysis technique used in this study was a different test and continued with a simple qualitative descriptive analysis technique.

3 Research Result and Discussion

Development Results

The results of the needs analysis found a description of the planning steps and types of lecture activities that are possible to be carried out online and face to face in accordance with the curriculum used. The blended lecture activity model is planned by integrating the application of six lecture assignments, and describing various lecture activities as in Figure 1. The developed model is equipped with standards or provisions relating to the use of the model in each subject. The models consist of provisions relating to the quality standards of learning planning, implementation of lectures, and monitoring and evaluation.

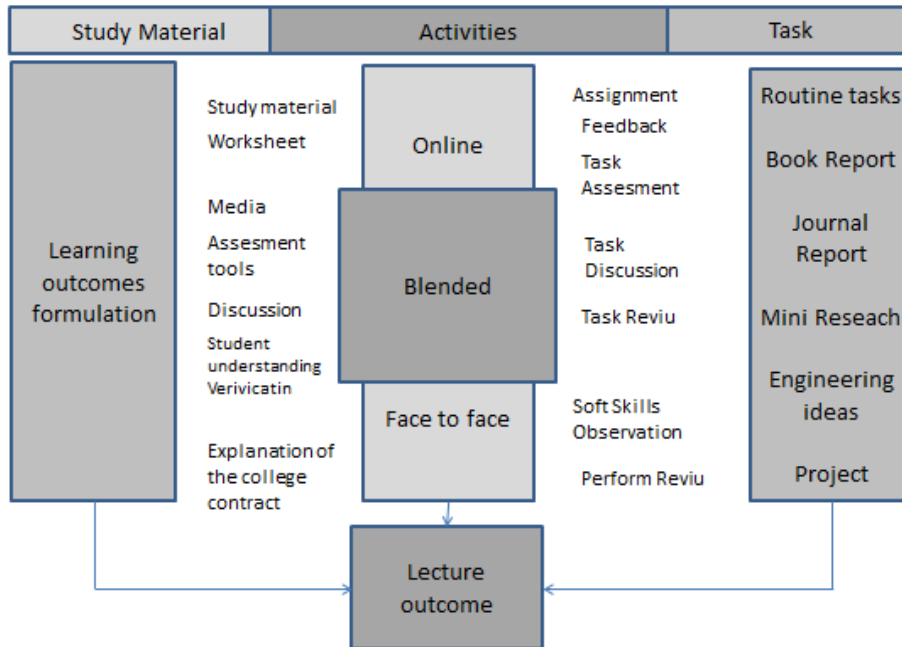


Fig 1. Blended learning activities for prospective SMK teachers

Provisions relating to the quality standards of learning planning, consisting of: (1) Lecturers plan for blended learning arranged based on scientific learning principles compiled in the Lecture Events Unit, (2) The lecturer prepares teaching materials and is socialized to students through the lecturer blog, (3) Lecturers are able to choose the most suitable learning method to achieve the desired learning outcome (product), (4) Learning resources are provided in accordance with the learning objectives, and (5) Learning facilities and infrastructure are able to support learning. This condition will create a learning process that can be done by students and lecturers not limited by time and place [7] and [8].

Furthermore, the provisions governing the Learning Implementation Standards include: (1) Lecturers must be disciplined in implementing learning, both online and in class, (2) Students must be actively involved, both online and face-to-face activities, so as to create interactions that support learning, (3) Lecturers must be pedagogical, personal, social, and professional exemplary in the face-to-face learning process, (4) Lecturers must act as facilitators that encourage the creation of student learning independence, (5) learning methods applied must be able to develop learners as much as possible, (6) Learning facilities and infrastructure must be utilized optimally, (7) Learning methods must direct students to learn independently and in groups, (8) Lecturers are able to develop and use a variety of teaching media, (9) Learning resources can be accessed by interested parties, and (10) Administration of learning support activities is carried out transparently and accountably.

While the standards set in the Monitoring and Evaluation activities include: (1) Assessment of learning outcomes is carried out transparently, (2) Evaluation of learning must be able to measure the achievement of competence, conscience, and compasion, (3) Lecturers utilize feedback from students to improve the learning process , (4) Lecturers and students

reflect on the learning process for continuous improvement, and (5) The learning process is evaluated every face-to-face activity, (6) Each lecturer must develop and provide subject assignments consisting of routine, critical assignments book reports, review journals, mini research, idea engineering, and projects in order to evaluate learning outcomes and to improve students' learning abilities and experiences, (7) Each assignment is corrected, discussed and / or returned to students as feedback on the process and results of learning through selected media channels, and (8) Minimum number of assignments given should be adjusted to the credit load and planned in the learning plan.

The use of blended learning models for vocational teacher candidates, in addition to being expected to be adapted when they become teachers, also increases students' ability to apply learning practices and improves student learning outcomes of prospective teachers. Therefore, one indication of the effectiveness of using the model is that there is a good response from prospective teacher students, as well as an increase in student learning outcomes. To see an increase in student learning outcomes towards the use of models in subjects that are the subject of research, it is necessary to study learning data on the application of the model and student learning outcomes data in the same course and the same teaching lecturer before using the model.

To see the impact of the transfer of knowledge about the application of the blended model to vocational teacher candidates, an evaluation was conducted related to the socialization activities and internalization of the knowledge that was impacted on the prospective teachers. Evaluation of socialization activities and internalization of the implementation of blended learning carried out on three aspects which include: (1) aspects of using approaches, strategies, methods, and learning techniques; (2) the use of tools, media and learning resources; (3) Class management and how to motivate students. Next to see the effectiveness of the implementation of blended learning for vocational teacher candidates, an evaluation of learning outcomes is conducted. Evaluation of aspects 1 to 3 is carried out using a questionnaire, while evaluation of learning outcomes is done through an assessment of the assignments of prospective teacher students and the results of midterm exams.

Result of Socialization and Internalization of knowledge transfer

The results of an analysis of questionnaires that have been filled out by students related to the socialization aspects of the use of approaches, strategies, methods, and learning techniques; aspects of using tools, media and learning resources; and aspects of classroom management and how to motivate students obtained an average score of 3.87 from a scale of 1 to 4. This shows that overall student responses to the three aspects included in the category are very good. When viewed in each category, it appears that aspects of the use of approaches, strategies, methods, and learning techniques obtain an average response of 3.88; aspects of the use of tools, media, and learning resources obtained an average response of 3.86; and aspects of classroom management and how to motivate students obtained an average response of 3.88. It also shows that each aspect evaluated shows the response from students in the very good category (Figure 2).

Results of an analysis of questionnaires that have been filled out by prospective teacher students related to aspects of internalizing the ability to use approaches, strategies, methods, and learning techniques; aspects of using tools, media and learning resources; and aspects of classroom management and how to motivate students obtained an average of 3.80 from a scale of 1 to 4. This shows that overall the ability of prospective teachers to internationalize the three aspects is included in the category of very good. When viewed in each category, it can be seen

that the ability to use approaches, strategies, methods, and learning techniques obtain an average response of 3.82; the ability to use tools, media, and learning resources obtained an average of 3.80; and the ability to manage classrooms and how to motivate students obtained an average response of 3.78. This also shows that each of the aspects evaluated showed a very good category (Figure 3).

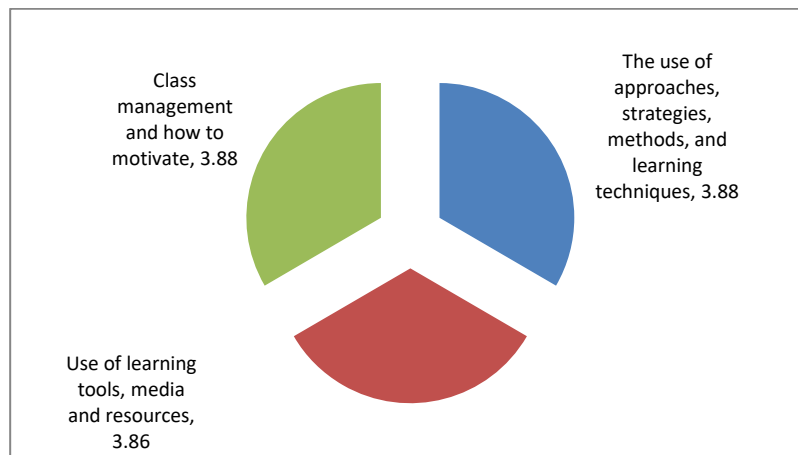


Fig 2. Average Response of Socialization Results of Lecture Implementation

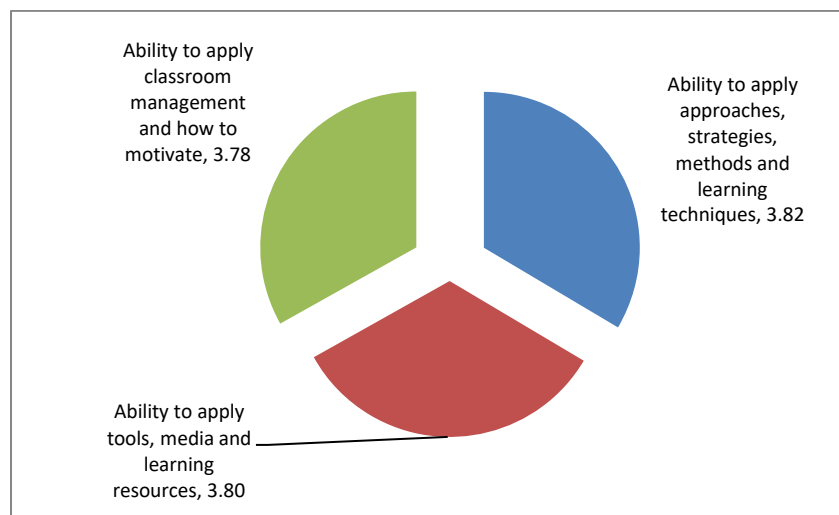


Fig 3. Average Response Result of Students' Ability to Internalize Lecture Implementation

The results of the evaluation of the items on the aspects of the use of approaches, methods, strategies and learning techniques, obtained student responses from all items on average 3.88

with a very good category. These results indicate that the use of approaches, methods, strategies and learning techniques in lecturing activities has been very good, but if traced there is one of the questions that obtained the lowest response which is an average of 3.72. The lowest response obtained is a response that is related to the suitability of the method used with the expectations of students, this can occur due to the number of course participants who take lectures, so there are some students who have different learning characteristics, and feel that the method used is not optimal in helping with lecturing activities, and of course this should be able to be a study to be followed up on in the next learning process.

The results of the evaluation of the ability of prospective teachers to internalize aspects of the use of approaches, methods, strategies and learning techniques used showed an average ability of 3.82 in the excellent category. This proves that prospective teacher students are able to internalize the practice of using approaches, methods, strategies and learning techniques applied in blended learning. The evaluation results also show that there is a strong correlation between the socialization activities provided and the ability to internalize the knowledge practiced (Figure 4).

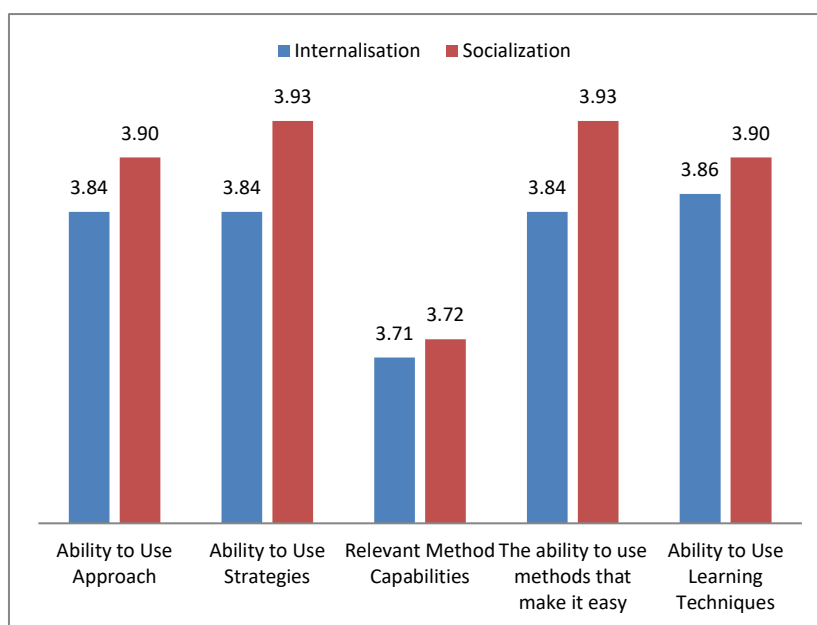


Fig 4. Data Outcomes of Socialization and Internalization Capability of Using Approaches, Strategies, Methods and Learning Techniques

The results of the evaluation of the items on the aspect of the socialization of the use of media tools and learning resources, obtained student responses from all items an average of 3.86 with a very good category. These results indicate that the use of media tools and learning resources in lecturing activities has been very good, but if traced there is one of the questions that obtained the lowest response that is an average of 3, 78. The lowest response obtained is the response related to the use of media tools make it easier to understand lecture scenarios for students, this is possible because students feel the existence of a media tool in the form of a google classroom has not been fully helpful in understanding scenarios of whole learning

activities. This condition is indeed realized, because not all activities have been regulated in google classroom, so there are still a number of activities that are adapted to the conditions that occur, especially with the number of participants who are unpredictable in accordance with the previous plan. This condition causes some students to feel that the media tools used have not been maximized in assisting them in lecturing activities, and of course this should be able to be a study for follow-up to the next learning process.

The results of the evaluation of the ability of prospective teachers to internalize aspects of the use of media tools and learning resources used showed an average of 3.80 in the excellent category. This proves that prospective teacher students are able to internalize the practice of using media and learning resources applied in blended learning. The evaluation results also show that there is a strong correlation between the socialization activities provided and the ability to internalize the knowledge practiced (Figure 5).

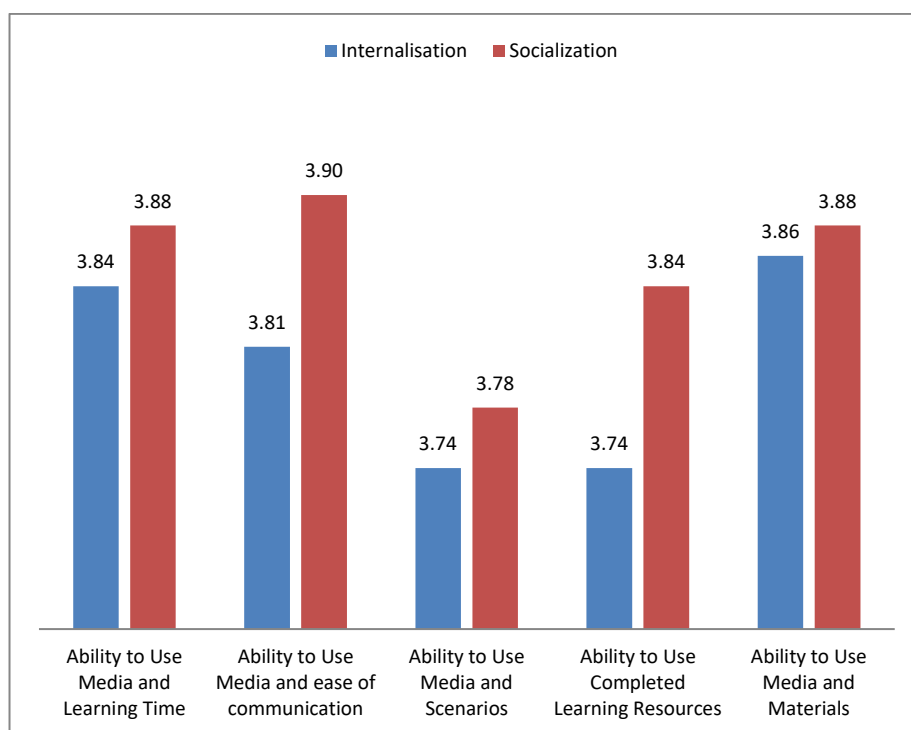


Fig 5. Results of Socialization and Internalization of the Ability to Use Media Tools and Learning Resources

The results of the evaluation of the items on the aspects of class management socialization and how to motivate students obtained student responses that the aspects of aspects related to management obtained an average of 3.83 with a very good category, and items related to aspects of motivating students obtained an average response 3.94 with a very good category. These results indicate that classroom management and how to motivate students in lecturing activities are already very good, but if traced there is one of the questions that gets the lowest response that is an average of 3, 71. The lowest response obtained is a response related to the compatibility between management and study material, this can occur due to the large number

of course participants who take lectures, so that there are some students who have not yet benefited maximally from classroom management conducted by lecturers, and of course this should be able to become a study to be followed up on the next learning process.

The results of the evaluation of the ability of prospective teachers to internalize aspects of classroom management and how to motivate students used showed an average ability of 3.78 in the excellent category. This proves that prospective teacher students have been able to internalize the practice of using classroom management and how to motivate students to apply it in blended learning. The evaluation results also show that there is a strong correlation between the socialization activities provided and the ability to internalize the knowledge practiced (Figure 6).

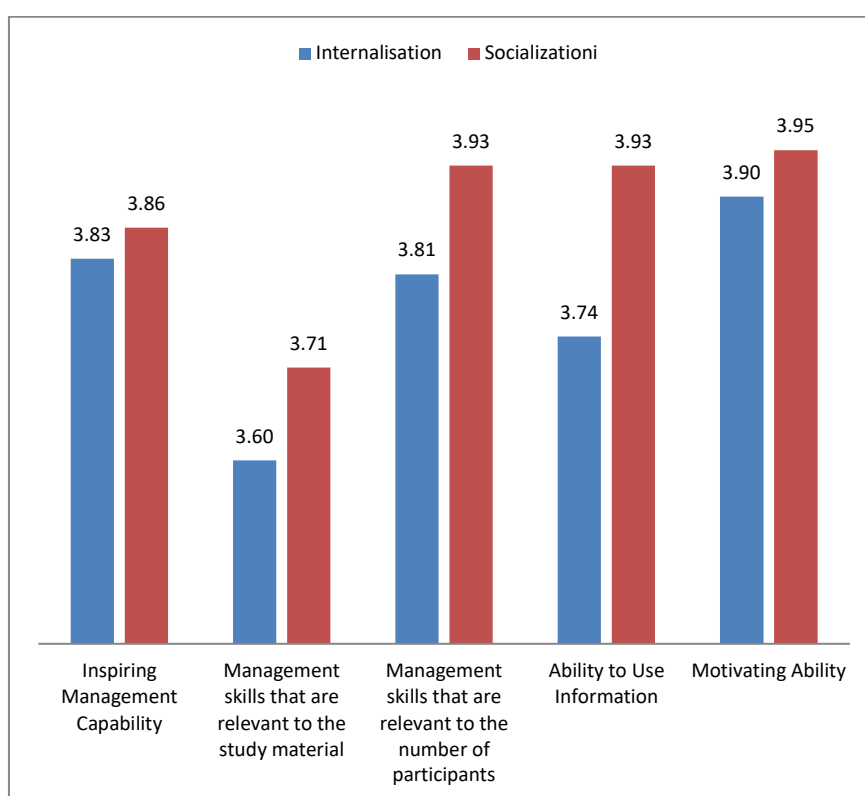


Fig 6. Results of the Socialization and Internalization of Students' Management and Motivation Ability.

Evaluation of learning outcomes obtained by students shows that there are 87.93% of students who get an A (90-100), 10.36% of students who get a B (80-89), and 1.72% of students who get a C (70 - 79). This shows that the level of success of students in following this lecture is very good. When compared with previous lecture activities which show that students get in entrepreneurship education courses is still low. Comparison of the percentage of value acquisition between students taught with the current model (blended model) with the previous student's grade value is shown in Figure 7.

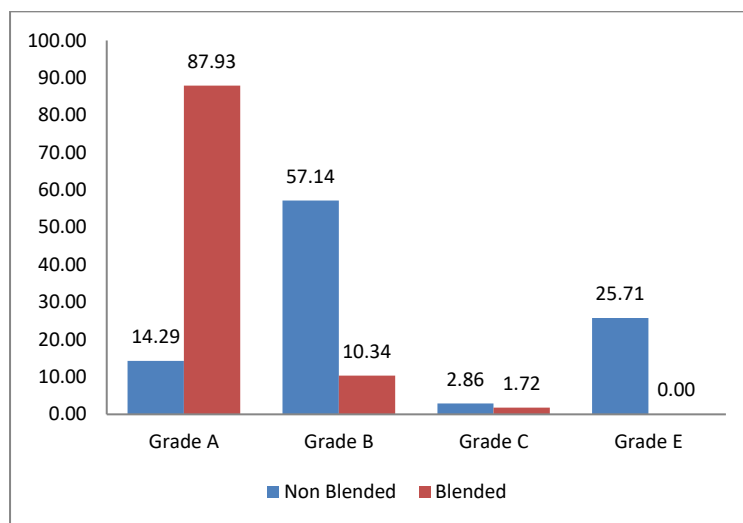


Fig 7. Comparison of Student Grades before and after Blended Learning Activities

Discussion

The evaluation results from three aspects show that the socialization activities of the use of blended learning given to prospective teachers are strongly correlated with their ability to internalize the knowledge provided, this is in accordance with the view [9] that everything that is received both seen, heard, and read will greatly affect the process of growth of knowledge, personality, and intellectual someone. Furthermore [10] internalization requires a long process, and if this internalization process is successful then a person is able to attach his knowledge in his daily life, with his own awareness of individuals already able to comply with existing values and norms without coercion. From the results of socialization, experiences gained such as the desire to maintain life, mingle, imitate, know, worship, beauty, are all learned and will go through a process of internalization which will eventually become a part of the individual's personality.

Based on these conditions, the blended learning process undertaken for prospective teachers is certainly very helpful in internalizing various aspects of learning practices that can be used when they become teachers in vocational high schools. Blended learning patterns which aim to be internalized quickly by prospective teacher students are effective learning practices, because according [11] that the internalization process is more commonly realized through the involvement of role models. Student teacher candidates will make the lecturer as someone who can be respected and used as a role model, so that he can accept a set of norms that are displayed by example. This process is commonly named as identification, both in psychology and sociology. These attitudes and behaviors are realized through conscious learning or assimilation. Based on this opinion, it can be explained that the internalization process is more easily realized through the role of lecturers as role models (role models), one will be easier to internalize something through role models so that one can quickly accept the set of norms that are displayed. In the field of psychology it is known that the process of internalization is the process of receiving a series of knowledge and norms from other people or groups that affect him.

Student learning outcomes indicate that the use of blended learning is effective for students in obtaining better learning outcomes. These results are consistent with the statement [12] which

suggests that the Blended Learning model has a significant influence on student learning outcomes. The same opinion is also mentioned by [13] which states that students have high concept understanding learning outcomes in the use of the Blended Learning model.

4 Conclusion

Based on the results obtained concludes: (1) the process of socialization activities using blended learning for prospective vocational teachers is very effective; (2) the process of internalizing the use of blended learning for prospective teachers takes place effectively, this can be seen from the ability of prospective teachers to integrate the entire set of learning processes mixed in oneself that are ready to be used in learning in vocational schools; (3) The learning outcomes of prospective teachers are better on the use of blended learning mix compared to using blended learning, this proves that the results of developing a blended learning model are effective in its use.

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