

**The Effectiveness Of The Descriptive Statistics Module In Online Learning
In Computerized Accounting Study Program, Banjarmasin State Polytechnic**

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Abstract: Module is considered important in distance learning as a self-study guide for students. The importance of module in the learning process because modules can facilitate students in learning independently or face to face. Based on several explanations regarding the importance of modules in distance learning, the authors are interested in examine the effectiveness of using the descriptive Statistics Module in Online Learning in the Computerized Accounting Study Program, Banjarmasin State Polytechnic. The variables observed by the authors in this study were the learning outcomes of groups of students who were given a module and those who were not given a module in descriptive statistics courses. The two variables were carried out a Normality Test with the purpose of assessing the distribution of data in groups of data or variables, whether the data distribution was normally distributed. From the results of the data normality test, a test of the assumption of homogeneity of variance was then carried out to determine the variance of several populations was the same or not. Then a difference test was carried out to test the differences in the group of students who were given the module and the group of students who were not given the module in learning descriptive statistics courses. The data normality test was carried out using the SPSS Kolmogorov Smirnov Test application on the learning outcomes data for descriptive statistics courses for students who were given a module and those who were not given a module yielded a significance value of 0.101. The significance

value of 0.101 was greater than 0.05 so it can be concluded that the research data met the assumption of normality. The homogeneity of variance test was carried out by analyzing the significance value of Levene's Test for Equality of Variance where the significance result was 0.466 so it can be concluded that the data had a homogeneous variance. The final stage of this analysis is to test the difference between the learning outcomes data of student groups who were given modules and not given modules by using the Independent Sample t Test. The test results showed a significance value of 0.021 where the significance value was less than 0.05. Thus it can be concluded that the alternative hypothesis (H1) that states that "There is a significant difference between the learning outcomes of groups of students who are given a module and not given a module" can be accepted and verified statistically.

Keywords: Effectiveness, Modules, Online, Descriptive Statistics

1. Introduction

The role of education is very important to fulfill human resources in sufficient quantity and quality to support development (Sukestiyarno et al., 2021). Law number 20 of 2003 concerning the National Education System article 3 states that national education has the function of developing capabilities and forming dignified national character and civilization in the context of educating the nation life. National education is to develop the potential of students to be human beings who believe in and fear with God Almighty, have noble character, healthy, knowledgeable, capable, creative, independent, and become citizens of a democratic and responsible state (Hadiyanti et al., 2021). The law also explains that learning is a process of interaction between students and educators and learning resources in a learning environment (Astalini et al., 2019).

One of the impacts of Covid-19 distribution in Indonesia since 2020 in the education sector is the implementation of distance learning or online learning (Wong et al., 2020). The online learning emphasizes independent learning methods so that adjustments to learning media are needed to facilitate students in independent learning (Kustijono & Hakim, 2020).

The module is important in distance learning as a self-study guidel for students. The importance of modules in the learning process because modules can facilitate students in learning independently or face to face (Handayani et al., 2021). Based on some of the explanations above regarding the importance of modules in distance learning, the authors are interested in examining the

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2. Literature Review

a. Learning Effectiveness

The word "effective" is taken from the Latin word, namely "effectivus" that means creative, productive, or effective. The word "effective" according to (Halim et al., 2021) is a measure to state achieved desired goal or target. The word "effectiveness" according to the Big Indonesian Dictionary means something that has the generated effect, it is effective to bring results and it is the success of a business or action.

b. Learning media

Learning media is anything that is used to convey information to facilitate the achievement of learning objectives. One of the learning media that can be used to support distance learning is the media module. The learning process requires a unit of discussion that is arranged in a systematic, operational, and directed manner for student use along with guidelines for the use for lecturers and students. A unit of discussion that is easy to understand and trains students for independent learning can be realized in the form of a module.

c. Learning Module

(Kustijono et al., 2020) states that the module is a complete measurement tool that is independently arranged roles and tasks so that students can easily achieve their goals. Furthermore, Anwar, 2010 said that the contents of the learning module are packaged more comprehensively and interestingly. The method and its evaluation have benefits for achieving the desired competency.

1) Weakness of Learning Module

- Less effectively used for independent student learning without supervision.
- In terms of the organization, the learning activities is not good.
- Still need evaluation about the truth of study independently using modules or not.
- It takes a facilitator as a supervisor to monitor the learning process independently.

- It costs a lot to buy modules and also for the services of a facilitator.

2) **Strength of Learning Module**

- Students have self-awareness.
- Build a sense of responsibility for the learning activities
- Students are more explorative and depend on their level of understanding and ability.
- Can generate motivation for students.
- Understanding of the material to be efficient

d. **Learning Outcome**

Learning outcomes are changes in students both in the form of behaviour, knowledge (cognitive), skills (psychomotor), and attitudes (affective) that can be measured through the evaluation process carried out by the teacher based on predetermined goals and obtained learning outcomes in the form of numbers and values in the teaching and learning process (Setambah et al., 2016).

e. **Online learning**

Online learning according to (ref) is formal education carried out by schools where students and teachers are in different locations so it requires an interactive communication system to connect the two and the various resources. Meanwhile (ref) says that online learning is a learning mechanism that utilizes ICT using the internet.

1) **The Benefit of Online Learning**

- Can build very efficient communication and discussion between teachers and students.
- Students can interact and discuss with other students without the teacher.
- Can facilitate interaction between teachers, students and students parents
- As a means for tests and quizzes.
- Teachers can easily provide material to students in the form of pictures and videos.
- Students can easily search and download teaching materials.
- Teachers can make questions or quizzes anywhere and anytime without a time limit.

2) **The stipulation of Online learning**

Regulation of the Minister of Education and Culture of the Republic of Indonesia through the circular letter Number 4 of 2020 concerning limitations in the implementation of online learning such as :

- Students are not burdened to complete curriculum achievements to continue to the next grade.
- Learning is carried out to provide a meaningful learning experience for students without being burdened with the demands of completing all curriculum achievements for grade promotion and graduation.
- Learning from home can be focused on life skills education, including the Covid-19 pandemic.
- Tasks and activities are adjusted to the interests and conditions of students considering the conditions of students, and learning facilities at home.

The Evidence of learning from home is given qualitative and useful feedback from the teacher, without being required to give a quantitative score/value

3. **Research Methods**

a. **Research Methodology**

This study used a field experiment method that empirically investigates the impact of giving modules on competency mastery of descriptive statistics courses as shown by the change in student scores individually. The selection of experimental research methods was carried out to test the causal relationship between the independent variables and the dependent variable.

b. **Research Population**

The population in this study were all students of the Computerized Accounting Study Program, Department of Accounting, Banjarmasin State Polytechnic for the 2021/2022 academic year semester II with a total of 44 students.

c. **Research Variable**

The variables observed by the authors in this study were the learning outcomes of groups of students who were given the module and those who were not given the module.

d. Data Analysis

First, the Normality Test to assess the distribution of data in groups of data or variables, with the normality of the distribution. Referring to the results of the data normality test, the following statistical tests are:

- 1) To test the assumption of homogeneity of variance as carried out by analyzing the Significance value of Levene Test for Equality of Variance
- 2) To test the difference about the differences in the group of students who were given the module and the group of students who were not given the module by analyzing the significance value on the output of Equal Variance Assumed.

4. Results And Discussion

a. Normality Test

This test was conducted to find out the research data with normal distribution or meets the assumption of normality. Testing was carried out using the Kolmogorov Smirnov Test, with the following criteria:

- If significance > 0.05 then the data is normally distributed
- If the significance is < 0.05 then the data is not normally distributed

The results of the test results of student learning outcomes in the descriptive statistics course for students who were given a module and those who were not given a module produced a significance value of 0.101. The value was greater than 0.05 so it can be concluded that the research data fulfilled the assumption of normality.

b. Homogeneity Test

This test is to find out the variances of several populations. This test is usually performed as a prerequisite in independent sample t tests and ANOVA analysis; because the underlying assumption in ANOVA is that the variances of several populations are the same. The test is carried out by analyzing the significance value of Levene's Test for Equality of Variance with the following criteria:

- If the significance value is > 0.05 , it means that the variance of the data is homogeneous
- If the significance value is < 0.05 , it means that the variance of the data is not homogeneous.

The significance result was 0.466 so it can be concluded that the data had a homogeneous variance.

c. **Difference Test**

The test is to find out the difference between the learning outcomes data for groups of students who are given a module and not given a module. Because of this, the following hypotheses can be made:

- H_0 = There is no significant difference between the learning outcomes of groups of students who are given modules and not given modules.
- H_1 = There is a significant difference between the learning outcomes of groups of students who are given modules and not given modules.

The test is carried out by analyzing the significance value at the output of Equal Variance Assumed with the following criteria:

- If the significance < 0.05 means there is a significant difference
- If the significance > 0.05 means there is a significant difference

The test results showed a significance value of 0.021 with the significance value was less than 0.05. Thus it can be concluded that the alternative hypothesis (H_1) states that "There is a significant difference between the learning outcomes of groups of students who are given a module and not given a module" can be accepted and proven statistically correct. Differences in students creative thinking abilities before and after using the descriptive statistics course learning module with a statistical test, namely the Independent Sample t Test. The results of this test concluded that there were differences in students thinking abilities before and after using the learning module. These differences is caused by the learning modules used. Student activities can be more active, can be organized properly according to the syntax contained in the module and able to think fluently to issue many ideas, think flexibly in issuing the same or different ideas with their group mates, are able to think original, that is able to issue ideas rarely issued by others, and able to think in detail, namely developing, adding, and expanding the ideas obtained. (Ozarslan & Ozan, 2016) states that *Instructional Effectiveness* depending on five factors:

- Attitude;
- Ability to Understand Instruction;
- Perseverance;
- Opportunity;

- **Quality of Instruction.**

A learning can run effectively if there is an attitude and willingness in the child to learn, the readiness of the child and the teacher in learning activities, and the quality of the material presented. If the five indicators are not exist, the children teaching and learning activities will not run well. The increase in student thinking skills is due to the fact that in learning students are required to think in solving the problems presented, group and discuss to find new ideas based on Bruner learning theory (Satyawan et al., 2021). The implementation of Bruner learning theory in the learning process uses the descriptive statistics course learning module namely students that carry out discovery activities through investigations to solve the problems presented, can generate many ideas both the same and different from their group mates, so they can develop, add to, and enriching student creative thinking skills in solving the problems presented and being able to find the appropriate solutions. Learning with descriptive statistics course modules can make more meaningful learning with the knowledge gained to solve real life problems. Learning with modules can help students develop old knowledge by discussing and they can express their opinions so that they can complement one another.

5. Conclusion

The module contains formulated learning objectives so that the direction of learning with the module can be directed, and gives students the opportunity to progress according to their abilities. Statistically, it can be verified that there is a significant difference between the learning outcomes of groups of students.

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