

THE EFFECT OF DISCOVERY LEARNING METHOD ON STUDENTS' SELF-MOTIVATION THROUGH ONLINE LEARNING DURING THE COVID-19 PANDEMIC

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Abstract

Introduction: The learning process at the university level, especially in nursing, has changed since the number of cases of COVID-19 has continued to increase. Various problems after one year of the pandemic include students complained of boredom and lack of focus on learning compared to conventional learning in the classroom. The aim of this study was to analyze the effect of discovery learning method on students' self-motivation through online learning in the COVID-19 pandemic. **Method:** This study used a quasi-experimental with pre-post control group design and conducted in two areas, PSIK Sam Ratulangi University as an Intervention group and PSIK Stikes Jendral Achmad Yani Cimahi as control group. We recruited a total sample of 82 respondents in total. This study lasted for four weeks with six stages described as two t meetings a week. To measure students' self-motivation, the Motivated Strategies for Learning Questionnaire (MSLQ) instrument totaling 32 items was used. Data were analyzed using Wilcoxon test and Mann Whitney test.

Results: The results of this study indicate that there is a significant effect of discovery learning methods with self-motivation in online learning in community nursing course [$p=0.00$; $Z = -2.28$] and emergency nursing course [$p=0.00$; $Z = -3.43$].

Conclusions: The results of the study are promising as the course can have a direct effect on the nursing education system, especially in improving the quality of learning methods. This method may be used as a way to improve student skill in the nursing courses especially community nursing and emergency nursing.

Keywords: Discovery Learning, Self-Motivation, Nursing, COVID-19

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INTRODUCTION

The prevalence of coronavirus disease 19 (COVID-19) cases significantly shows an increase, not only seen in Indonesia but throughout the world. Globally, the number of cases to date is 10 million with a death rate of 512 thousand per 1 million population. Furthermore, it is explained that, in the Asian region, Indonesia ranks third with a total of 57 thousand cases with an increase of 1000 cases every day, after India and Bangladesh, and has a community transmission classification (WHO, 2020). This certainly needs to be a concern through all government and community parties to be able to break the chain of transmission so that it does not cause a significant impact.

The one-year evaluation of the COVID-19 pandemic in Indonesia has had a significant impact. These impacts are in terms of economy, health, and education which have undergone significant changes (Madurai Elavarasan et al., 2020). In particular, the impact on the education sector is the change in the learning system process, which was initially carried out face-to-face and is currently being implemented face-to-face/online. This is certainly very impactful for learners or students; the results of previous studies conducted in Bangladesh with the target respondents being students revealed that the perception of online classes currently still has a lack of class scope, such as learning media, methods used and the ability to understand the material provided. (Al-Amin et al., 2021). This study is also in line with the results of research conducted on medical and nursing students in India showing 49.8% dissatisfaction with the online learning process because it only uses one method, namely slide presentations. (Menon et al., 2021). This, of course, has an impact on technical and health problems as well as the readiness of students to conduct online lectures. A previous preliminary study conducted by researchers revealed that 57.5% of students had an inability to focus and felt tired of learning during online learning. When viewed from the point of view of the lecturer, 79.6% of lecturers mostly use the lecture method. The problems mentioned above have certainly become the main obstacles to online learning,

so we as educators need to find solutions related to this.

To overcome the problem of online learning, it is necessary to develop online learning methods. Previous studies revealed that the better and more varied the learning methods provided by educators to learners, the better the ability, interest and motivation to learn for students, one of which is the use of discovery learning methods (Tas et al., 2019). The discovery learning method is part of the component of educational practice which includes teaching methods that promote active learning, orientation in the process, self-direction, self-discovery and reflective (Anwar, 2020). So students, especially in nursing, certainly need to have these skills while studying during the COVID-19 pandemic with an emphasis on Student Centered Learning (SCL). The importance of increasing student competence in the field of nursing by adjusting the online learning process means that researchers are interested in applying the discovery learning method during the learning process of community nursing and emergency nursing courses. The aim of this study is to analyze The Effect of Discovery Learning Method on Student's Self-Motivation through Online Learning in the COVID-19 Pandemic

METHOD

Research Design

This study used a quasi-experimental design with pre and post measurements in the control and intervention groups. The implementation of this study was measured before the intervention was carried out in both groups. Next, the researcher applied the "Discovery Learning" intervention and then evaluated it through return measurements at the post-intervention. The population in this study were all students who contracted community and emergency nursing courses. The sample used in this study was through a total sampling technique. Total sampling was carried out on the intervention group who contracted the course so that the sample was used as a whole. But, for the control group, the population was 130 people, so the sample used as a control was adjusted according to

the intervention group as many as 42. To even out the sample of the control group, the researcher selected the sample using a simple random sampling technique, choosing based on a number that was determined randomly by drawing numbers until it reached 42 control samples. Therefore, the sample used in this study was 42 people in the intervention group and 42 people in the control group.

Instrument

The variable in this study is self-motivation (Intrinsic Goal Orientation, Extrinsic Goal Orientation, Task Value Beliefs, Control of Learning Beliefs, Self-Efficacy of Learning and Performance, Test Anxiety). The

Motivated Strategies for Learning Questionnaire (MSLQ) questionnaire was used as instrument, consisting of 32 questions developed by Saab et al. (2009) and Putri and Oktaria (2017);). Each statement was measured using a 7-point Likert scale consisting of the lowest "1" Strongly Disagree and the highest "7" Strongly Appropriate. This instrument has been tested for validity and reliability with a Cronbach's value 0.62 – 0.92. The intervention process using the Discovery Learning method will last for four weeks. This intervention has six stages of intervention in sequence which will be carried out 2x a week at each stage and adjusted to the hours or time of lectures. The implementation procedure is illustrated in Diagram 1.

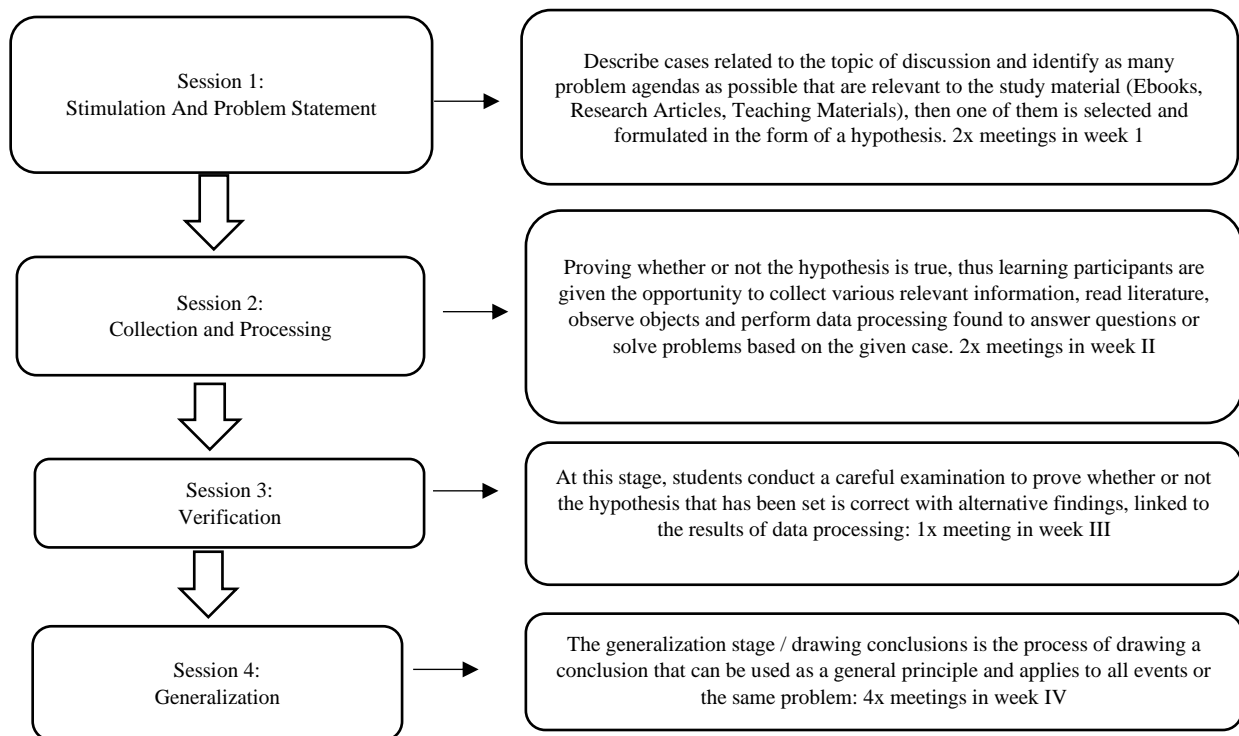


Diagram 1. Intervention implementation flowchart "Discovery Learning"

Data used in this study were analyzed using analysis computer statistical SPSS 23. The Wilcoxon test was used to see the different levels of self-motivation pre-test and post-test in each group. Furthermore, to see the difference in the level of self-motivation in the intervention and control groups, the Mann-Whitney test was used.

Ethical Clearance

This research has been conducted an ethical feasibility test at the Ethics Commission of the Sint Carolus College of Health Sciences with the result that it passed Ethics Eligibility No.056/KEPPKSTIKSC/VI/2021.

RESULTS

Table 1 describes the characteristics of the respondents. The results found that gender was more dominant than male, the intervention group was 33 respondents (78.6%) and the control group was 39 respondents (92.9%). Student residences in the intervention group were more dominant

with parents, 34 respondents (81%), in the control group the dominant students lived in boarding houses for 21 respondents (50%). It is further described related to the use of online learning tools dominantly in the intervention group and the control group using two tools, namely mobile phones and laptops or computers 23 respondents (54.8%) and 31 respondents (73.8%), respectively.

Table 1. Demographic Data of Student Respondents in the Control and Intervention Group, July 2021 (n=84)

Variable	Treatment Group (n=42)		Control Group (n=42)	
	n	%	n	%
Gender				
Male	9	21.4	3	7.1
Female	33	78.6	39	92.9
Status of residence				
Parents	34	81.0	20	47.6
Boarding house	4	9.5	21	50.0
Uncle / Aunt	4	9.5	1	2.4
Online Learning Device				
Handphone	13	31	3	7.1
Laptop/Computer	5	11.9	7	16.7
Handphone, Laptop/Computer	23	54.8	31	73.8
Others	1	2.4	1	2.4

The effect of the discovery learning method on student self-motivation in community nursing courses is depicted in Table 2. The results show that there is a difference in the mean between the intervention and control groups in the pre-test and post-test with a p value of 0.00 which means that there is a significant effect of the implementation of discovery learning methods

on students' learning motivation. Furthermore, it is described based on the components of learning motivation, namely the ability of Intrinsic Goal Orientation (p = 0.00), Task Value Belief (p = 0.00), Self-Efficacy of Learning and Performance (p = 0.01). This means that the discovery learning method has a significant influence on the three components.

Table 2. The Effect of the Discovery Learning Method on Students' Self-Motivation in Community Nursing Courses, July 2021 (n=84)

Variable	Group	Pre-Test (Mean ± SD)	Min-Max	Post-Test (Mean ± SD)	Min-Max	Nilai Z	p value
Intrinsic Goal Orientation	Treatment	(21.71 ± 2.73)	17-27	(22.31 ± 2.56)	18-27	-3.05	0.02**
	Control	(19.93 ± 3.46)	10-26	(20.38 ± 3.48)	12-27		
Extrinsic Goal Orientation	Treatment	(32.19 ± 5.50)	20-41	(32.71 ± 4.75)	23-42	-1.26	0.20*
	Control	(33.07 ± 5.05)	21-41	(32.43 ± 4.54)	24-42		
Task Value	Treatment	(24.12 ± 2.32)	18-28	(24.98 ± 1.91)	20-28	-5.17	0.01**

Beliefs	t Control	(21.43 ± 3.02)	15-26	(22.50 ± 2.41)	16-28		
Control of Learning Beliefs	Treatment t Control	(27.79 ± 3.30) (27.95 ± 3.38)	19-33 20-34	(28.29 ± 2.95) (27.69 ± 2.92)	22-35 20-33	-1.53	0.12*
Self-Efficacy of Learning and Performance	Treatment t Control	(45.60 ± 4.99) (43.55 ± 6.81)	33-55 17-54	(46.02 ± 5.96) (44.24 ± 5.63)	34-56 32-55	-2.34	0.01**
Test Anxiety	Treatment t Control	(26.00 ± 3.94) (25.90 ± 4.96)	17-35 15-35	(25.38 ± 4.21) (26.19 ± 4.06)	17-33 14-33	-0.16	0.87*
Self-Motivation	Treatment Control	(177.40 ± 16.38) (171.83 ± 16.87)	142-203 133-198	(179.69 ± 16.17) (173.43 ± 16.64)	144-210 138-211	-2.82	0.01**

p*: >0,05 ; p**: <0,05

Table 3 shows the effect of the discovery learning method on student self-motivation in emergency nursing courses. The results show that there is a difference in the mean between the intervention and control groups in the pre-test and post-test with a p value of 0.001 which means that there is a significant effect of the implementation of the discovery learning method on students' learning motivation in emergency nursing

courses. Furthermore, it is described based on the components of learning motivation, namely the ability of Intrinsic Goal Orientation (p = 0.00), Task Value Belief (p = 0.00), Control of Learning Beliefs (p = 0.00), Self-Efficacy of Learning and Performance (p = 0.00), and Test Anxiety (p = 0.01). This means that the discovery learning method has a significant influence on the five components.

Table 3. The Effect of the Discovery Learning Method on Students' Self-Motivation in Emergency Nursing Courses, July 2021 (n=84)

Variable	Group	Pre-Test (Mean ± SD)	Min- Max	Post- Test (Mean ± SD)	Min- Max	Nilai Z	p**
Intrinsic Goal Orientation	Treatment t Control	(21.71 ± 2.73) (19.93 ± 3.46)	17-27 10-26	(21.55 ± 2.25) (19.31 ± 4.29)	16-26 6-27	-3.76	0,01**
Extrinsic Goal Orientation	Treatment t Control	(32.19 ± 5.50) (33.07 ± 5.05)	20-41 21-41	(30.79 ± 4.89) (32.86 ± 5.82)	22-39 11-40	-0.19	0,84*
Task Value Beliefs	Treatment t Control	(24.12 ± 2.32) (21.43 ± 3.02)	18-28 15-26	(23.60 ± 1.44) (21.29 ± 3.31)	20-27 14-28	-4.88	0,01**
Control of Learning Beliefs	Treatment t Control	(27.79 ± 3.30) (27.95 ± 3.38)	19-33 20-34	(27.52 ± 2.64) (26.76 ± 3.56)	20-32 16-33	-2.59	0,01**
Self-Efficacy of Learning and Performance	Treatment t Control	(45.60 ± 4.99) (43.55 ± 6.81)	33-55 17-54	(43.36 ± 4.79) (42.05 ± 6.80)	32-52 30-56	-2.73	0,01**

Test Anxiety	Treatment	(26.00 ± 3.94)	17-35	(26.26 ± 4.38)	16-32	-2.44	0,01**
	Control	(25.90 ± 4.96)	15-35	(25.55 ± 4.61)	14-32		
Self-Motivation	Treatment	(177.40 ± 16.38)	142-203	(173.07 ± 15.54)	142-206	-3.43	0,01**
	Control	(171.83 ± 16.87)	133-198	(167.81 ± 19.46)	125-207		

p*: >0,05 ; p**<: <0,05

DISCUSSION

The development of varied learning methods in this era of the COVID-19 pandemic is very important. The results of previous studies provide reinforcement of the importance of developing online learning methods; studies conducted in China on medical students encountered many problems related to high levels of boredom, longer screen time so that it can cause health problems (Hao Liu & Hsien Lin, 2021). Furthermore, another study also explained the same thing, that the COVID-19 pandemic requires educational institutions to develop learning methods that can stimulate learner motivation to be active during the learning process (Azlan et al., 2020).

The results of research conducted on students at the nursing science study program University of Sam Ratulangi gave significant results. There is an effect of learning methods in the form of Discovery Learning on student self-motivation in the online learning process for community nursing courses with p value of 0.005 and emergency nursing courses of 0.001. These results are in line with several previous studies, namely further studies that have been conducted to describe the learning motivation of learners is strongly influenced by specific learning models in discovery learning and the involvement of peers in groups (Ye et al., 2021). Other studies also reveal something similar to learning that is done by discovery will increase students' abilities in the process of solving evidence-based problems and be able to increase the learner's self-motivation toward the learning process (Rahmawati et al., 2020; Sucipta et al., 2018).

The process of increasing learner motivation requires several factors that need to be achieved. The results of this study

provide an explanation relating to the factors or components of self-motivation that must be fulfilled and which have a significant influence. Among them are related to students' inner abilities and mastery of the material given to students, interest in a topic, increasing self-confidence to think critically in solving problems, and expectations from learning outcomes. This is in line with the explanation in the literature study which explains the abilities that must be achieved by students or learners to stimulate self-motivation. The more factors that are achieved, the better the student's self-motivation to learn (Saab et al., 2009; Tas et al., 2019). In addition, based on this study, the status of residence with parents and the use of adequate learning tools greatly affects self-motivation in the online learning process.

Motivation to learn in the world of nursing education has specifications and distinguishes it from education in general. Nursing students tend to face higher and specific difficulties in the learning process and in a more serious educational environment. This is because the learning process is associated with service to humans as service objects so that if you experience errors in the learning process, it will have a negative impact. (Ganotice et al., 2020; Putri & Oktaria, 2017). This is in line with previous studies showing various problems experienced by nursing students during the online learning process, namely difficulty focusing, less involvement in the learning system, and higher stress levels. In addition to these problems, there are also technical problems such as internet connectivity and limited data packages (Azlan et al., 2020; Chaturvedi et al., 2021; Singh et al., 2021). Therefore, the results of this study can be used as evaluation material for managers of educational institutions so that,

when doing online learning, they can prevent negative things from happening.

CONCLUSION

This research concludes that there is a significant influence between the Discovery Learning method and students' self-motivation in online learning. The results of this study can certainly have a direct effect on the nursing education system, especially in increasing the variety of learning methods. The researcher recommends for further studies by applying other learning methods such as problem-based learning or project-based learning that is associated with student learning motivation which is carried out online not only during the COVID-19 pandemic.

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CONFLICT OF INTEREST

The Author(s) declare(s) that there is no conflict of interest.

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