Learning Model (IS Based GP) in the Developing of the Empirically Testing in the Research Field of Teachers Student

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Abstract: This study aims to examine the significance of integrated learning model of shared-based gallery project (IS based GP) in developing empirically testing capabilities in the field of research of teachers student. The study design used experimental quasi. The sample is determined by assignment random sampling, 339 teachers student. Data were collected by objective, subjective and portfolio test of research proposal, and analyzed by t-test. The results show that the learning model (IS based GP) is superior in developing the empirically testing capabilities in the field of research rather than the learning that has been done on teachers student.

Keywords: integrated learning, IS based GP model, empirically testing capabilities, teachers student

I. INTRODUCTION

Ability of the empirically testing in the field of research (thesis proposal preparation) of teachers student is still relatively low (Ulfatin & Mukhadis, 2016; FGD UM, 2013). This phenomenon is indicated by the low quality of thesis proposals submitted to the study program. The low quality, both from aspects of the flow of thinking, academic writing, and research methods. The weakness of the flow of thinking and academic writing indicates weakness in mastery of the logic of inquiry and weaknesses in research methods indicates weakness in mastery of the empirically testing (Ulfatin & Mukhadis, 2016).

In addition, according to Soewardi (2000), that the mastery of the logic of inquiry and the empirically testing is a prerequisite of meaningfulness in understanding and writing thesis proposal of teachers student. Mastery of the logic of inquiry in the writing of the thesis proposal is represented in identifying the problem, determining the theoretical framework, and formulating the hypothesis as a hierarchical procedure.

While the empirical testing mastery in writing thesis proposal is represented in conducting operationalization of research variables, instrument development, data collection and analysis, hypothesis testing and interpretation of research results. The empirically testing of the students' empirically testing skills in the writing of thesis proposal for teachers student also requires the satisfaction of the logic of inquiry meaningfully.

Cheetham and Chivers (in Le Deist and Winterton, 2005); Posner & Keele (in Westera, 2001); Wang (2007); Sudaryono (2017) mentions that the relationship between these two aspects is more of a procedural hierarchy between knowledge that acts as know-that and know-how, especially in writing thesis proposal for teachers student.

Referring to the importance of thesis proposals in improving the study result quality of teachers student, empirical data and some of the above opinions, urgent find alternative learning that is able to develop the ability of the emprically testing for teachers student. The relevant learning alternative for solving this problem is learning (IS based GP). The learning of this model theoretically and empirically has the potential to facilitate the development of the logic of inquiry and the empirically testing capabilities. The potential of this learning model is theoretically supported by the theory developed by Jonassen (1982); that has been synergized both approaches Content Treatment Interactions (CTI) and Apptitude Treatment Interaction (ATI) systematically.

In addition, the support of theories developed by Pasiak (2006); Jensen (2007); and Bradberry & Greaves (2007), on the theory of development of Neuroscience, especially Cognitive Neuroscience. Kovalik's theory (1994) about integrated thematic interaction (ITI). Empirically the potential of IS-based GP learning model as an alternative is also supported by the results of Cooper, Orrel, & Bowden (2010); Emslie (2012); Johnson and Johnson (2002); Arends (2004); which can be concluded that work integrated learning is superior to the separated learning model in improving academic mastery, skill, and student learning attractiveness.

In addition, Mukhadis and Ulfatin (2014b), the results of the study show that integrated learning model (IS based GP) at preservice education of teacher student institution is more effective in improving the quality of outcomes and attractiveness of study of research methodology of teachers student. In the select of learning model (IS based GP) as an alternative problem solving on empirically testing capabilities of teachers student is based on three tips of essence in the development of innovative learning.

These three tips include tips on content management mode, learning mode tips and instructional syntax mode tips. Tips for the mode of arrangement of essential contents, especially overlapping contents both between concepts, principles and interprocedures are packaged with shared models based on CTI theory (Jonassen, 1982; Fogarty, 1993). The learning mode tips are packed in a GP developed based on ATI theory (Jonassen, 1982). Integrated learning model (IS based GP) is a synergy of paradigm thinking CTI and ATI approach. The learning style syntax tip of this model is designed more nuanced centered oriented students, and places the class as a learning center (Koehler, et al., 2011; Silberman, 1996; Abduhzen, 2013; Ulfatin & Mukhadis, 2016).

II. METHODS

Integrated learning model (IS based GP) by following modification of the development step of Borg and Gall (1992); Gall, Gall, & Borg (2003); Richey & Klein (2007); and equipped with Mukhadis & Ulfatin (2013). An experimental quasi design with Pretest-Posttest Control Group to test the advantages of alternative learning models in developing the empirically testing capability of teachers student in thesis proposal writing.

Sampling technique with random assignment from private and public preservice education of teacher student institution with total of 339 students from Mathematics, Machinery, Education Administration, Accounting, and Indonesian language. Data were collected by test technique (objective and subjective), and portfolio of thesis proposal, were analyzed by parametric statistic technique with t-test formula.

III. RESULTS AND DISCUSSION

A. Ability of the Empirically Testing of Initial Student Learning

Initial ability of students in the empirically testing in the field of research preparation of thesis proposal before treatment is tested whether there is a difference between the experimental group and the control group. The purpose of this test is not to be contaminated with the result of the dependent variable (the empirically testing) observed. Control of the initial student's emprically testing capability was done by t-test (Siegel, 1956). The results of different test capabilities of the initial emprically testing of prospective teachers in preparing the thesis proposal between the experimental group and the control group on the overall sample are presented in Table 1.

The result of the test of significance difference of the empirically testing capability of the teachers student between the experimental and control groups is not significant difference. Therefore, the data analysis in the test of the significance of the difference of empirically testing ability of the teachers student in the preparation of thesis research proposal in the form of combination of objective test result, subjective test, and portfolio of initial ability score of empirically testing of teachers student can be ignored.

B. Ability of the Empirically Testing Student's at the End of Learning

Before performing the significance test of the differences between the experimental and control groups, a requirement analysis test on the normality of the data was performed. The results of the normality requirements test are presented in Table 2. The results of the normality test of data, both from objective, subjective, and proposal writing and combined (objective, subjective, proposal) test show normal data results.

The significance test of differences in empirically testing ability of teachers student in the preparation of thesis proposal between experimental and control group based on mean score of combined test result (objective, subjective and proposal) is done by t-test. Summary of t-test results the combined test scores are presented in Table 3. Table 3 shows the magnitude of t-count = 4.120, with significance = 0,000 < 0.05. Based on criteria set by $P < 0.05$, it can be interpreted that there is a significant difference between combined test scores (objective, subjective, and proposal) between the experimental and control groups. Therefore, in the developing of empirically testing of teachers student in the field of research (preparation of thesis proposal) is better with the students who are subjected to treatment with integrated learning model (IS based GP).

Table 1
Summary of Test Results T Score Initial Ability of Empirically Testing of Teachers Student

Class		n	df	t_{count}	Sig.	Interpretation
Sample	Experiment	173	337	0.517	0.423*	No difference
	Control	166				

*) Significance > 0.05

Table 2
Normality Test Results Summary of the one-sample Kolmogorov-Smirnov

No	Results	Class	Sig (p)	Significance	Interpretation
1	Objective Test	Experiment	0.185	> 0,05	Normal
		Control	0.126	> 0.05	Normal
2	Subjective Test	Experiment	0.1 02	< 0.05	Normal
		Control	0.06 6	< 0.05	Normal
3	Proposal Test	Experiment	0 07 2	< 0.05	Normal
		Control	0, 061	< 0.05	Normal
4	Combined (O + S + P)	Experiment	0.0 86	> 0.05	Normal
		Control	0.0623	> 0.05	Normal

Table 3
Summary of Test Results-t Combined Score (Objective, Subjective and Portfolio)

Class		n	df	t_{count}	Sig.	Interpretation
Sample	Experiment	173	337	4.120	0.000 *	There is a difference
	Control	1 66				

*) Significance < 0.05

Interpretation of test results this significance difference test can be explained from two paradigms of thought. First, the paradigm of learning model thinking (IS based GP), whose figure is developed by following the content management theory adapted to the characteristic of the content and combined with the overlapping variety of essential contents of the CTI approach) and by considering the variations in individual characteristics of the ATI approach developed by Jonassen (1982); (Bloom in Keefe, 1987; and Sugden, 1989). The form of learning model that synergizes between the tips in arranging the content, and the tips to pay attention to the differences of individual characteristics has the potential to have more (1) active, holistic, authentic synergistic effect in constructing the learning result (Fogarty, 1993; Kumar, et al., 2008); (2) maximal in the utilization of learning resources; (3) enhance the possibility of meaningful learning of students (Joni, 1996; Silberman, 1996).

In addition, the synergistic effect of CTI and ATI theory according to Kasali (2012) can potentially change the paradigm of thinking that has been (1) putting the class as a teaching center into a classroom as a learning center. This is also reinforced by the results of studies of several experts including Cooper, Orrel, and Bowden (2010); Van-Rooijen (2012); Mukhadis & Ulfatin, (2015); Mukhadis & Ulfatin (2016), and (2) enhances the logic of inquiry, and empirically testing, primarily in solving problems through research activities of teachers student. The empowerment of both aspects by teachers student as a representation of the ability of rational-theoretic thinking is mamatical and empirical thinking logic based on the precision of observation, and exact measurement (Rector of UM Regulation No. 17/2014; Hanafin, 2014; Soewardi, 2000; Kompas, 2017).

IV. CONCLUSIONS AND SUGGESTIONS

Based on the interpretation of results and discussion of research results can be concluded that the learning model (IS based GP) better as an alternative in developing the ability of the empirically testing in the field of research (preparation of thesis proposal) than the learning model that is done for prospective students. For that, it is suggested to the lecturers, especially the lecturers of the Research Methodology to try and develop further learning (IS based GP) as a continuous effort in improving the quality of service and teaching-learning outcomes.

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