

The Effect of Integrated Learning (*Webbed and Connected*) and Cognitive Style on Critical Thinking Skills in Social Knowledge LearningAsri Harfiyani¹, Ajat Sudrajat², Mohammad Syarif Sumantri³

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Abstract: The achievement of learning outcomes through the right learning process is an urgency that must be immediately implemented, therefore this study aims to determine the effect of integrated learning (webbed and connected) and cognitive styles on critical thinking skills in learning Social Sciences. This research was conducted in class IV of the elementary school Cipete Utara 11 Pagi, South Jakarta. The research design used an experimental method with treatment by level 2 x 2 factorial design. The data analysis technique used in this study is a two-way analysis of variance (ANOVA). The results of the study obtained, namely students who learn using the webbed type integrated learning model gain lower thinking skills than students who learn by using an integrated connected type learning model in a group of students who have a field-dependent learning style.

Keywords: webbed, connected, cognitive style, thinking skills

INTRODUCTION

Critical thinking is reflective and productive thinking, and involves evaluating evidence (Sanrock, J. W. 2007). Critical thinking is all mental activity that helps formulate or solve problems, make decisions, or fulfill desires (Rachmadtullah, R. 2015; Novikasari, I. 2009) by analyzing and interpreting data in scientific inquiry activities (Nurhayati, E. 2011) and added to evaluate the truth a statement that is giving a decision to accept, deny, or doubt the truth of the statement in question (Sanderayanti, D. 2015). So it can be concluded that critical thinking means that mental processes are effective, reflective, productive and reliable, used in pursuing relevant knowledge and correct evaluation in solving a problem based on analysis and interpretation so as to produce a decision (rejection / acceptance).

This way of thinking can be developed through learning Social Sciences. Social Sciences is a branch of science that studies human behavior both individually and in a group of Sciences (Frankfort-Nachmias, C *et al.*, 2007) and is also a field of study that studies, examines, analyzes symptoms and social problems by reviewing various aspects of life or one fusion (Sardijyo. 2013). Social Sciences is one of the subjects that is very important for students to learn in order to develop their potential and be sensitive to social problems. In addition, students are also able to have a positive mental attitude towards improving all irregularities, as well as being skilled in overcoming

every day-to-day problem that afflicts itself as well as what happens to the community (Duron, R *et al.*, 2006). Critical thinking can improve cognitive development, an effective learning environment, results-based assessment, and provide teachers with a useful framework. This framework can be used to move students towards more active learning environments that are, ultimately, more enjoyable and effective for teachers and students (Hermawan, A. H. 2014).

As a professional and competent teacher, it must be able to design all efforts to overcome this. One learning model that can be applied to Social Sciences subjects to improve students' critical thinking skills is the Integrated Learning Model. Integrated learning is an approach oriented to learning practices that is appropriate to the developmental needs of students (Nicol, D. J *et al.*, 2006). So as to enable students to actively seek, explore, and discover scientific concepts and principles in a transparent, meaningful, and authentic manner (Trianto, M. P. 2010). This approach departs from the theory of learning which rejects the process of training / memorization (drill) as the basis for forming the knowledge and intellectual structure of students. Integrated learning webbed model is integrated learning that uses thematic approaches (Trianto, M. P. 2010). This thematic learning model departs from a theme chosen and developed by the teacher with students. While the connected model is on the interrelationships in all fields, the interrelationships between topics, concepts, skills, linking tasks on this

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day with the next even ideas learned in one semester with ideas learned in the next semester in one field of study (Fogarty, R. 1991).

In addition to the learning model used in learning Social Sciences, cognitive style is also considered influential in the process of improving critical thinking skills (Moon, J. A. 2013). Cognitive style is a consistent way done by a student in capturing stimulus or information, how to remember, think and solve problems. Understanding of learning styles can help plan and implement students in learning so that they get a direct learning experience. Understanding of learning styles can also be used to ensure that students get the right way of handling and in accordance with the needs and desires of students so that it can improve retention, acceptance and learning in general (Torre, J. M. 2013). Learning style is a way in which a student understands the meaning of learning from the concrete, where the main learning source is the environment and towards learning that is abstract (Wakefield, A. P. 1993). Style of learning and critical thinking are two things that are interconnected, if the learning style of a student is done in a maximal way, it is expected that students' critical thinking skills will also be maximized.

Style of learning and critical thinking are two things that are interconnected, if the learning style of a student is done in a maximal way, it is expected that

students' critical thinking skills will also be maximized. Therefore, researchers are encouraged to conduct research with the title "The Effect of Integrated Learning Models (webbed and connected) and Cognitive Style on Critical Thinking Skills on Social Sciences Learning". This study aims to determine the effect of integrated learning (webbed and connected) and cognitive styles on critical thinking skills in learning social science.

METHOD

This research is an experimental method with 2 x 2 factorial design. The target population in this study were all fourth grade students who were in the area of North Cipete Subdistrict, amounting to 9 Public Elementary Schools. The affordable population in this study were all fourth grade students of Elementary Schools Cipete Utara 11 Pagi, South Jakarta. Cipiete Utara Elementary Schools 11 In the morning there are two classes in parallel, each consisting of 24 to be used as the experimental class and the control class randomly.

RESULTS

The hypothesis is using a two-way analysis of variance (ANAVA) design treatment by 2x2 level. Two-way Anava (*twoway anova*). A summary of the results of the two-way variance analysis calculation is presented in the following table.

Table-1: Summary of Two Path Variance (ANAVA) Analysis Results

Source of Variance	Db	JK	RJK	F _{count}		F _{table}	
						0.05	0.01
Learning Model (A)	1	918.75	918.75	192,653	*	4.06	7.25
Learning Style (B)	1	1.33	1.33	0.280	*	4.06	7.25
Interaction	1	385.33	385.33	80,801	**	4.06	7.25
In	44	209.83	4.77				
Total Reduced	47	1515,25					

The critical thinking score of students using the webbed learning model is higher than the learning outcomes of students who use the connected learning model. The average critical thinking score of students using the webbed (A1) learning model is 53.50 while the average critical thinking score using the connected (A2) learning model is 44.75. The results of the calculation of two-way ANOVA obtained Fcount = 192,653 for the learning model while Ftable = 4.06 at the real level $\alpha = 0.05$. Because the Average Value of critical thinking scores of students using the webbed learning model is greater than the average score of critical thinking using connected learning models.

The effect of interaction between integrated learning models and cognitive styles on students' critical thinking abilities. Large the effect of the interaction of the integrated learning model and cognitive style on students' critical thinking skills is 62% ($W^2 = 0.62$). The ANAVA calculation results that Fcount = 80.801 for the interaction factor that is greater than Ftable = 4.06 at the real level $\alpha = 0.05$ therefore nilia $W^2 = 0.62$. This means that there is an interaction effect between the use of integrated learning models and cognitive styles of students towards students' critical thinking scores. The graphical form of the interaction between learning methods and cognitive styles towards critical thinking scores is presented in the following figure:

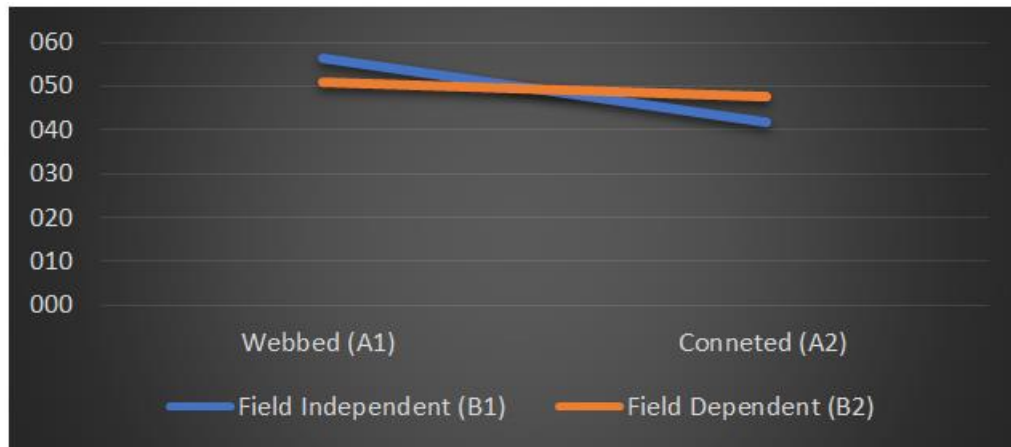


Fig-1: Graph of interaction of integrated learning models and cognitive styles towards students' critical thinking skills

Students who have Field-Independent cognitive style, higher critical thinking ability when using a spider web learning model (webbed). The average score of critical thinking scores of students using the webbed learning model with field-independent cognitive style (A1, B1) was 56.17, while the average score of critical thinking scores using learning models connected with field-independent

cognitive styles (A2 , B1) is 41.75 and the Tuckey Test shows that $Q\text{-count} > Q\text{table}$ is 4.20 at the significance level of 0.05, thus it can be concluded that H_0 is rejected and H_1 is accepted which means that for Students who have cognitive style Field-Independent, critical thinking skills are higher when using a webbed learning model. A summary of the Tuckey Test results is presented in the following table:

Table-2: Summary Tuckey test scores of students using critical thinking learning model Cobwebs (*webbed*) and connectivity (*conneted*) with field-independent cognitive style

Group compared	Q _{count}	Q _{table}
		$\alpha = 0.05$
A ₁ B ₁ and A ₂ B ₁	22.87	4.20

Students who have a Field-dependent cognitive style, lower critical thinking skills use a conneted learning model. The average score of critical thinking scores of students using the webbed learning model with field-dependent cognitive style (A1.B2) is 50.83 while the average score of critical thinking scores using the learning model is connected with field-dependent cognitive style (A2. B2) is 47.75 and the

Tuckey Test shows that $Q\text{-count} > Q\text{-table}$ which is 4.20 at the significance level $\alpha = 0.05$, thus it can be concluded that H_0 is rejected and H_1 is accepted which means that for Students who have a Field-dependent cognitive style, lower critical thinking skills using a conneted learning model. A summary of the Tuckey Test results is presented in the following table:

Table-3: Summary of the Tuckey Test Score critical thinking of students using the *webbed* and *conneted* learning models with cognitive styles *field-dependent*

Group compared	Q _{count}	Q _{table}
		$\alpha = 0.05$
A ₁ B ₂ and A ₂ B ₂	4.89	4.20

Table-4: Tuckey Test Result Summary

Group compared	Q _{count}	Q _{table}	Conclusion
		$\alpha = 0.05$	
Q1: A ₁ B ₁ and A ₂ B ₁	22.87	4.20	Reject H ₀
Q2: A ₁ B ₂ and A ₂ B ₂	4.89	4.20	Reject H ₀

DISCUSSION

Integrated connected type learning is one of the learning models that emphasizes certain subject subjects, so students only focus on certain subject

subjects which ultimately make students feel bored, because when the student is disliked by a subject subject, then the teacher it will be very difficult to achieve the results you want to measure. With the

advantages of each, overall it is assumed that the webbed type integrated learning model and connected type integrated learning model have a significant impact on students' thinking ability. Based on the description above, it can be said that the critical thinking abilities of students who learn using the integrated learning model webbed type are higher than students who learn with the connected type integrated learning model (Fogarty, R. J *et al.*, 2009).

Cognitive style is a variety of psychological aspects of students that have an impact on the mastery of abilities or competencies in learning, including the ability to think critically. By using a webbed type integrated learning model the main thing that must be done is that the teacher helps students to design the learning theme for the day so that learning becomes more interesting. After that the teacher is the same as the students connecting the theme with some related lesson content so that the students learn that they can learn various lesson content in one day. Furthermore, students deepen the material on the theme by expanding their knowledge from several content of lessons contained in the theme by finding the facts that are around them so that they can directly apply them to everyday life. With this model students who use the webbed type learning model with field-independent cognitive style will have high critical thinking skills (Stronge, J. H. 2018).

Students who have a field-dependent cognitive style tend to want to start learning if there are influences or orders from other people (teachers or parents) (Sabri, A. 2005). And these students are likely to obtain an authoritarian education from their parents or other possibilities is during learning students never get success or satisfaction in learning. Students who have field-dependent cognitive styles need to be stimulated or motivated by all means to improve their critical thinking skills. In the integrated learning model the webbed type provides an approach in which students act as subjects of learning so that learning is centered on students and in the process can provide direct experience to students. Students who have field-dependent cognitive styles tend to accept existing structures, tend to lack the ability to analyze so students will find it difficult to express opinions with their own perceptions. Therefore there needs to be active learning activities and involve each student in each learning process (Sumantri, M. S *et al.*, 2018).

It is different if the student has a field-dependent cognitive style and he is taught with an integrated learning model connected type. The fact is that this type connected integrated learning model is good for focusing on one scientific discipline by linking between topics, between concepts. In practice, students who have a field-dependent cognitive style will focus

more on one discipline because one of the characteristics of children possessed by students in field-dependent cognitive style is to accept existing structures and work with external motivation so that students will not get difficulties in things to analyze and argue that require a high ability to think critically (Kozhevnikov, M *et al.*, 2014).

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