

DO HOTS CORRELATE WITH READING COMPREHENSION?

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Abstract

The intent of the research is whether there is correlation between HOTS and RC. The researches' design is correlation design that this study was projected to give the respon of these questions, "Is there a correlation between HOTS and RC?" The participants who took part in this study are 140 students. The instruments of the research were tests which were needed to gather the data. These participants had to do two tests. The first test was the analysis, synthesis, and evaluation. The second test was literal comprehension and inference comprehension. The HOTS skills Assesment was ten questions to analysis, seven questions to synthesis and eight questions to evaluation. And reading comprehension test was 12 items of multiple choices for literal comprehension and 12 items of multiple choices for inference comprehension. Total numbers of correct answer from these instruments were calculated. To get the purpose of the study, those numbers of correct answer were being correlated using Bivariate Pearson in SPSS 20.

The result of the research showed the positive relationship between HOTS skills and RC. The coefficient correlation is r-value .552. It means that the significant relationship between these two variables was a fair and answers the hypothesis that the H_0 is rejected because the significance level is lower than 0.05 (p value $0 < 0.05$) and H_1 is accepted because the significance level is more than 0.05 (p value $0 > 0.05$).

This suggestions to other research are to increase the study in exploring sharper and deeper concerning with teaching and assessing methodology in senior high school since critical thinking has been given in high school curricula. Moreover, the study also suggests to further research to not only verify the theory that has been known but also to conduct introspective study and to develop study in investigating and exploring factors of how the students can be critical thinkers and how teacher guides students to be critical thinkers, also improve book which include critical thinker.

Keywords: HOTS, Critical Thinking and RC

INTRODUCTION

HOTS is critical thinking within educating and learning. Critical thinking abilities are basic of study in educational development. A learner's thought can have an impact on the capacity of learning, speed and value of learning. HOT is the most elevated level within the pecking order of cognitive forms. It makes a difference students lead the challenges of as well much data with a constrained preparing time (Phillips, 2004). HOT could be a most critical portion of creative that can offer assistance learners create more imaginative thoughts, ideal perspectives and creative bits of knowledge. It is able to moreover recognized that HOT emphasizes on creating learners' capacities to assist them to examine successfully, make (synthesize) something new and evaluate the problem easily.

The demand for complex thinking does not continuously refer to the difficulty of getting the solution an issue or completing a task. Cognitive complexity, in fact, refers to the type and level of thinking that a problem or task requires, separated from the effort it takes to complete the task. The level of difficulty can change based on a students' learning style, prior knowledge, and personal comfort level with the problem or task because it is related to effort (Bieri & Blacker, 1956). They clarify that higher-order thinking abilities gives a implies of clarifying the capacity to work out vague content by producing elective translations, considering them in light of involvement and world information, suspending choice until assist data is accessible, and tolerating elective clarifications. They conclude that higher-order thinking abilities are the method which the reader uses to comprehend.

Based on Tomei (2005), HOT incorporates the transformation of data and concepts. The said transformation happens when students can combine truths and concepts, synthesize, simplify, and clarify theory, and they can arrive at some conclusion or some interpretation. Students are able to get the solution the issues by controlling the data and concepts through the previously mentioned forms.

McNeil's audit (2011) projected that development from LOT to HOT is called scaffolding that is clarified in Bloom's Taxonomy and Webb's Depth of knowledge. They explained how students ought to move from LOT to HOT slowly. The said taxonomy was proposed by Benjamin Bloom, an educational psychologist at the College of Chicago, in 1956. Bloom (1984), he characterized three diverse significant psychological sphere within the learning prepare as cognitive, affective and psychomotor. The cognitive region is based on the understanding and information of thoughts. The affective region is managing with the attitudes, emotions and feelings which are about of the learning handle. The final region which is called psychomotor is approximately physical abilities.

Pang at.al (2003, p.6) state that the fixation of reading is about how the learner understands about the information in the text. It can be a compound action that

includes both perception and believed. Grabe and Stoller (2001, p. 3) state that reading is the capacity to draw meaning from the printed page and interpret this data fittingly. It implies that students must be able to associate with the reading materials and take on the meaning on each word in arrange to induce the data from that they have examined. Getting the data is one of the reasons why individuals studied. Linse (2005, p. 71) clarifies that there are two point of reasons why individuals read. The primary is for joy and the next is for data. Hence, reading for delight can be deciphered to reading without a burden or risk as reading task in school. It is as it were for delight of each person or side interest. Whereas reading data alludes to the people's require. Based on the definition over, it can be concluded that reading may be a expertise that presents the writer's thought related to the management reading content substance itself. It can be seen that reading is not as it were looking at word within the shape of realistic images but moreover getting meaning from word to word or line to line to get it what reader read.

Anderson (2006), offered that the thought of RC has transformed from what has been known as a reactive prepare to what is presently known as an intelligently prepare. RC skill isolates the "passive" incompetent reader from the "active" readers. It appears that dynamic readers can extend more data from the content and conclude the more profound layers of the planning message. Sanders (2001) uncovered that in RC abilities the inactive untalented reader is isolated from the dynamic reader. On the other hand, not as it were do gifted readers read, but they moreover connected with the content.

For case, talented readers can anticipate, induce and analyze what happens in a story or a bit of reading utilizing clues presented within the content to create questions almost the most thought or plot of the content. Usually exceptionally close to the higher arrange considering capacity. It appears that readers commonplace with higher arrange considering may comprehend the examined writings superior. Reading comprehension is the foremost predominant expertise in outside dialect settings particularly when considering scholarly settings. As surveyed, in spite of the fact that numerous thinks about have demonstrated the adequacy of HOT, nearly no ponder, to the most excellent of our sprinkling information, has examined the correlation between HOT and RC capacity of students. In arrange to fill this gap and profiting from the discoveries within the writing survey, the show consider pointed at exploring the correlation of HOT skills and RC the discoveries of which is able be supportive and advantageous for both EFL learners and educates.

METHOD

The researchers' design is correlation design. The researcher chose Pearson Product Moment Correlation Coefficient to measure the correlation between two or more factors. This study was mainly designed to get the answer whether or not there was a significant correlation between students' HOT skills and RC.

The population of the research is 140 students. The subject were student at senior high school who are required that are able to make unused information that involves thinking and examination beside preparing and assessing data. So, senior high school level was chosen since HOT skills are closely with senior high school students' thinking style. The researcher used two instruments to achieve the purpose of the study. She prepared HOT skills' test that is covering certain abilities of analysis, synthesis, and evaluation. And she also arranged RC test covering skills literal comprehension and inference comprehension.

Data were taken in three week, strated from 15th of April until 6th of May, 15th April until 18th April used to conduct the try out. Try out was conducted to look for the validity of questions item which the result used to conduct data collection. There are some stages in collecting data; first, the researcher conducted the try out to look for the validity and reabilty the questions item of reading test. Second, the result of try out was used to arrange the level of reading test. The researcher eliminated invalid questions item and chose only the valid questions item. Third, the researcher distributed the test; HOT test and RC test to 140 students.

The following procedures were adopted in order to meet the objective of this study. First phase was testing HOT skills of students. There were 25 questions which were divided into three parts of the test. There were 10 questions for Analysis, 7 questions for synthesis and 8 questions for evaluation. Sixty minutes were allocated for this tests. Then, the researcher collected a total number correct answer from this test.

Second phase was testing students' reading comprehension. The test was literal comprehension and inferencial comprehension in the form of TOEFL reading test . Sixty minutes were allocated for this tests. The researcher analyzed the result of TOEFL reading test. Third phase was correlating between students' higher-order thinking skills and their result in doing reading comprehension test. Bivariate Pearson is utilized in this stage which was computed by SPSS 20.

In this study the researcher presented two analysis, these were; descriptive analysis and hyphotesis analysis. Descriptive statistics including Pearson product-moment correlation coefficient and hypothesis testing were used to answer research hypothesis proposed in this study.

RESULTS

Descriptive statistics are used to describe or summarize data in ways that are meaningful and useful. The summary of the data collected is using a combination of tabulated description (i.e tables), graphical description (i.e graphs and charts), and statistical commentary (i.e discussion the result). It includes mean, median, standart deviation and variance. The descriptive statistic is presented in this part.

Table 4.1 Descriptive Statistic of HOT Skills (Analysis, Synthesis, Evaluation)

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Analysis	140	60	100	87,14	12,482
Synthesis	140	71	100	78,56	8,894
Evaluation	140	47	89	69,18	11,359
Valid N (listwise)	140				

According to table 4.1, it can be known that the number of participants is 140. From 140 participants, the lowest score is 60 and the highest score is 100 in doing analysis test. The mean score of learners got in doing analysis test is $M= 87,15$ ($SD=12,482$). The lowest score is 71 and the highest score is 100 in doing synthesis test. The mean score of learners got in doing synthesis test is $M= 78,56$ ($SD=88,94$). The lowest score is 47 and the highest score is 89 in doing evaluation test. The mean score of learners got in doing evaluation test is $M= 69,18$ ($SD=11,359$).

Table 4.2 Descriptive Statistic of Reading Comprehension (Literal Comprehension and Inference Comprehension)

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Literal_Comprehension	140	58	100	84,61	10,389
Inference_Comprehension	140	69	100	82,24	9,139
Valid N (listwise)	140				

According to Table 4.2, it can be known that the number of participants is 140. From 140 participants, the lowest score is 58 and the highest score is 100 in doing literal comprehension test. The mean score of learners got in doing literal comprehension test is $M = 84,61$ ($SD = 10,389$). The lowest score is 69 and the highest score is 100 in doing inference comprehension test. The mean score of learners got in doing inference comprehension test is $M = 82,24$ ($SD = 9,139$).

The correlation of the study explored whether there is any significant relationship between HOTS and RC. The data collected from HOTS test and RC test were analyzed using descriptive and inferential statistics.

Table 4.3 The Correlation between HOTS and RC

		Correlations	
		HOTS	Reading Comprehension
HOTS	Pearson Correlation	1	,552**
	Sig. (2-tailed)		,000
	N	140	140
Reading Comprehension	Pearson Correlation	,552**	1
	Sig. (2-tailed)	,000	
	N	140	140

** . Correlation is significant at the 0.01 level (2-tailed).

The table 4.3 presents the statistical result of correlation between students' HOTS skills and RC. In the table, r is 0.552. For this reason, we can conclude that there is a moderate relationship between HOTS skills and RC variables.

DISCUSSION

The present finding confirm the previous studies (e.g. Villavicencio, 2011)). In his ten-year study, Cotton (1999) asserted that higher-order thinking skills or critical thinking considerably facilitates academic achievements. Similarly, Villavicencio (2011) studied higher-order thinking skills in relation achievements, reported that higher-order thinking skills significant positively correlates with their proficiency.

Regarding of the study, the finding of the study highlight that higher level of reasoning, contemplating, and judging results in a better considering of reading passages. Learner with higher critical thinking skill evaluate the hidden message and confirm and disconfirm what is important in getting the point.

Existing theory which supported that higher-order thinking skills or critical thinking significantly correlated to critical reading came from Thistlewait (1990) claimed that critical thinking skills frequency listed in textbook for teaching critical thinking are similar to critical reading. The fundamental of being critical readers is being critical thinker. Following the same idea, Commeyras (1990) pointed out that critical thinking is closely to reading comprehension that involving logical reasoning, determining and examining evidence and relating to background knowledge. This thinking style belong to the critical thinking skills.

Considering the statistical result of correlation between higher-order thinking skills and reading comprehension as has been stated in hypothesis testing (table 4.3) the finding of the study revealed that there was significant relationship between students' higher-order thinking skills or critical thinking and their proficiency in reading comprehension which the size is .552. The result of this study verified and agreed with the result of some previous study which conducted by Sheikhy Behdani (2009) further supported a high significant correlation between students' Higher-Order Thinking Skills ability and their reading comprehension. In line with previous findings and based on the present study, it can be concluded that learners' students' higher-order thinking skills ability has a positive relationship with their ability to handle reading passage. It denotes that students can think critically, formulate inferences, and make decision in order to to better understand specific reading passages.

Based on the data description in table 4.3 chapter IV, it can be claimed that students' higher-order thinking skills and their reading comprehension proficiency correlates significantly. The correlation's size of these two variables indicated the moderate relationship. The result of this study verified and in line with several previous study, as Dianti (2017:54) claimed that higher-order thinking skills or critical thinking of 114 undergraduate students correlated to their ability in critical reading. She revealed on her study that there was a significant and positive correlation between students' critical thinking and critical reading.

The result of data descriptive of table 4.3 can be as an interpretation that there was a moderate significant relationship between these two variables and answers the hypothesis that the H_0 is rejected and H_1 is accepted. This finding of this study suggested that the higher students' critical thinking which was reflected by the high score from the correct answer can logically have better proficiency in reading comprehension

Another important finding in this study r is 0.552. This number is very close to 1. For this reason, we can conclude that there is a moderate relationship between higher-order thinking skills and reading comprehension variables.

As it strongly believed by Fahim and Sa'epoour (2011: 872) that teaching higher-order thinking skills or critical thinking is vital for the improvement of language proficiency. The prominent pedagogical implications in this study corresponds with that students' critical thinking significantly correlated to learners' reading comprehension proficiency. The more critical thinkers learners the better reading proficiency they have. Although, the correlation size of higher-order thinking skills or critical thinking higher than reading comprehension.

Hence the finding of extent association of higher-order thinking skills or critical thinking and reading comprehension it is pointed out that critical thinking can predict a quarter to critical reading comprehension. higher-order thinking skills or critical thinking that only contribute a quarter to predict critical reading may be due to the learners are still not accustomed to facing critical reading which was just recently started to become a trend on foreign language teaching and the emergence of higher-order thinking skills in the latest Indonesian curriculum revision.

CONCLUSION

HOTS as a cognitive construct demonstrates how student infer, reason, deduce, and analyze task and the context at hand. Critical learners show more competence in the use of ideas, assumptions, inferences, and intellectual processes. They specify the ability to evaluate related questions and subjects clearly and accurately, bring together and formulate information precisely, differentiate the relevant from irrelevant, identify questionable assumptions, as well as reveal sensitive to important implications and conclusions. This stresses the unquestionable role of critical thinking in language development.

Based on the finding of the study, it is very critical that teachers and curriculum developers help to develop critical thinking abilities of learners. A strong correlation between students' HOTS and RC signifies the effective role of reasoning and inferring.

The findings of the study support the improvement of the students' thinking skill, which will result in the promotion of reading skill. Teachers should instruct learners to read critically during reading. They should be thought to focus on information from context, and tasks to get the points. This study also indicated that higher critical learners are more successful in their reading.

Nowadays, teaching critical thinking and being critical thinkers are strongly emphasized in any subjects of life. Critical thinking becomes one of the key academic skills in learning process. Having in mind that Indonesian education just revised the latest curriculum and emphasized teachers to incorporate 4C; communication, collaboration, critical thinking and creative. Indonesian government also emphasized to incorporate higher-order thinking skills and literacy aspect to equalize the

demand of 4C. Therefore, critical thinking is not only for tertiary students. Now, it emphasizes and encourages to secondary students, elementary, junior and senior high school. Regarding these, the researcher suggests to further research to investigate, to expand to find something new of incorporating critical thinking in senior high school.

Moreover, the study also suggests to further research to not only verify the theory that has been known but also to conduct introspective study and to develop study in investigating and exploring factors of how the learners can be critical thinkers and how teacher guides students to be critical thinkers, also develop book which incorporate critical thinker.

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