

Critical Thinking in Exposition Writing: Numbered Head Together or more effective Cooperative Script?

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Abstract: Exposition writing learning is one of the materials in language learning that aims to expose information to readers. The purpose of this study is to determine which methods are effective in learning to write exposition through the concept of critical thinking. This study uses a quantitative research approach with methods of *experimental design*. A total of 68 students who were involved in this study were divided into two different treatment groups. Each group numbered 34 students. The first experimental group (A) applied the method *Numbered Head Together*, while the second experimental group applied the method *Cooperative Script*. In this study, the data were collected through a test of exposition writing skills in the two groups that had been given treatment in the learning process, namely the NHT group and CS. The results showed that learning activities by applying the cooperative learning *Numbered Head Together* was more effective than *cooperative scripts*. Students who learn with the NHT produced appropriate exposition writing and the structure exposition, such as, the selected topic, the presentation of the argument following the data and facts in the field, the disclosure of conclusions by emphasizing the core part of the topic being written, and using spelling and punctuation where there are only a few errors.

Keywords: critical thinking, writing skills, exposition writing

1. Introduction

Writing is the activity of producing a graphic symbol. According to certain conventions, the symbol in question is arranged in such a way to form whole sentences. Pasand & Haghi (2013) stated the writing is a skill that involves developing an idea and understanding a mental representation of knowledge. Writing activities require a controlled learning process. Broad et al., (2009) stated that writing is a process that occurs dynamically in expressing ideas, so it requires a logical concept in formulating writing well. Writing is a complex task that requires sufficient mastery of language for logical ideas to make the text easy to understand (Syarfuni, 2013) The concept in question is a stage that must be passed through knowledge and practice.

Writing skills are a lesson learned by students in Indonesian language courses. One of the writing materials discussed is writing the exposition. The importance of writing exposition as a provision of student knowledge to master scientific writing skills and writing aims to convey information to broaden readers' horizons. Ruday, (2016) suggests that the exposition describes organizing, investigating, presenting, and evaluating. It works to solve problems both individually and in groups as specific and logical ideas so that readers easily accept them. Another opinion, Hyland (2015) stated that exposition writing is an activity to present information in a structured manner to make readers easily understand the meaning conveyed by the author.

Writing an exposition paragraph is an activity of writing through proper writing procedures (Hyland, 2015). The content of exposition is described in a structured manner based on the facts seen by the author so that the reader can easily understand. Lillis (2002) argues that the main features in forming an exposition include three aspects: statements, a series of proofs in the form of *a sequence of arguments*, and conclusions. The exposition of the paragraph is formed by elements that support one another; without these elements, the exposition paragraph is incomplete. Murphy & Stay (2012) put forward the same concept that the exposition paragraph has three structures in the form of a thesis, argument, and repetition. These concepts were supported by Ravichandran et al., (2017); they revealed that writing paragraphs became a challenge for students because the students have to mastery grammar, vocabulary, organization, and supporting ideas. Therefore, Ravichandran advised students to improve their ability to write paragraphs through group discussion activities. Besides, it is hoped that students' English proficiency in writing articles must go through a feedback process to produce better work. Furthermore Mahmood Reza Atai, Esmat Babaii (2018) stated clearly that time constraints and student attitudes affect the effectiveness of written feedback in the learning process so that it has a major influence on the amount and quality of written feedback.

The results of observations and preliminary tests on students' ability to write show some of the problems faced by students in writing exposition. *First*, students are less active in writing activities, so it is very difficult to compose a structured paragraph. *Second*, students do not understand well the structure of the exposition, which results in students' exposition writing being difficult to distinguish from other types of paragraphs. *Third*, teaching activities did not apply suitable methods to student characteristics that emphasize the writing practice process effectively.

Referring to the problems that have been described, the researcher applies a cooperative learning model to solve the problems of exposition writing in students. Cooperative learning is focused on group work activities to adapt to the conditions of the learning environment (Johnson & Johnson, 2018) and as a solution in overcoming various problems in education (Slavin, 2009). Many educators have used cooperative learning in the classroom to produce learning that can help students think critically and increase student responses in providing faster feedback (Mustami & Safitri, 2018)

There are two methods applied in this study: the *numbered head together* (NHT) and *cooperative Script methods* with treatment in different classes. Irby states that NHT learning is a learning technique that provides justice in groups because all students are active together in preparing answers and questions to understand the material being studied. Lince (2016) expressed that the learning system *Numbered Head Together (NHT)* is one part of cooperative learning that emphasizes students' activeness to interact in groups. Cooperative learning only occurs when a group of students work collaboratively with each other for a goal (Vellayan et al., 2021). This is in line with W. C. Hunter et al., (2015) and W. Hunter & Haydon (2013), who stated that NHT learning could increase students' participation, academic results, and positive behavior in learning. Students are trained to comprehend each given task comprehensively (Leasa & Corebima, 2017). Therefore, this learning system involves individuals and as members of a group to work together, starting from gathering information, solving problems, and formulating conclusions in learning.

The following learning method is the application of *cooperative scripts* in learning to write exposition. *The cooperative script* is a learning method used to improve student memory. The student's memory is meant to provide a stimulus to students during learning without any burden on students (Slavin, 2009). Another opinion was put forward by (Birgili, 2015) that *cooperative script* learning is a learning system in pairs that are involved in turn as speakers and listeners.

The application of the method *Numbered Head Together* and *cooperative Script* combined students' ability to think critically in writing expositions. Cottrell (2017) argues that critical thinking is a way for someone to analyze methods of thinking by thinking logically. Another opinion expressed by Johnson that critical thinking is more concerned with two types of arguments. *First*, the reasons to support a conclusion. *Second*, a debate or dispute. However, the principal thing is to be aware of the shape of the word's meaning and clarify what it means when using it.

Critical thinking lies in the realm of knowledge and cognitive processes. Anderson et al., (2013) referred to the four categories of knowledge that is factual, conceptual, procedural, and metacognitive. Each of these knowledge has a cognitive process that includes several stages: such as remembering, understanding, applying, analyzing, evaluating, and creating as the results of research by Qoura & Zahran (2018) that a person's thinking ability can be developed through a writing skill test using a model *trait writing*. Writing skills can be started from writing topics to activities to produce complete writing by utilizing critical thinking skills.

Based on the description of the problem of this study regarding the conditions of learning to write, it appears that this research is essential to do. The way to overcome these problems is by applying the NHT and CS learning methods in writing exposition paragraphs. Besides, several previous research results have been described as a reference in this study. From several previous studies, there are similarities and differences with the research conducted by the author. The similarity with previous research is research on paragraphs and critical thinking. The difference from previous research is applying the methods NHT and *Cooperative Script* in learning exposition writing through the concept of critical thinking in two different groups. Therefore, this study aims to determine which methods are effective in learning to write exposition through the concept of critical thinking.

2. Review of Related Studies

Prayoga et al., (2018) conducted a study on improving expository text writing skills through video-assisted CIRC for elementary school students. The results showed that the teachers and students had carried out the learning activities well. The writing value of exposition text increased from cycle I of 66.7 to 76.2 in cycle II. It increased again to 81.6 in cycle III. The aspects of the exposition text assessed were a thesis, argumentation, explanation, and writing. conducted a study entitled Increasing the ability to write exposition writing using the MIND MAP technique for Class X Students of SMA Negeri 14 Padang. The results showed that the average score of writing exposition essays increased to 76.67 with suitable qualifications. When viewed from the ability to write students' exposition essays, there was an increase of 9.67% using the mind map technique, so there was a significant increase. Ravichandran et al., (2018) regarding Strategies to Address English Language Writing Challenges Faced by International Graduate Students in the US. The results showed that writing paragraphs are a challenge students face because they relate to grammar, vocabulary, organization, ideas that support writing, critical thinking, and plagiarism. Seyyed Mehdi Keshavarz et al. I, (2014) entitled the effect of cooperative learning techniques of promoting writing skill of Iranian EFL learners. The results showed that before cooperative learning was implemented in the class, students received low scores. However, the implementation of the experimental group (STAD and GI) after learning to write was better than the control group (CI). Cooperative learning in writing has had a positive impact on learning to write. Qoura and Zahran (2018) with the title The Effect of the 6 + 1 Trait Writing Model on Esp University Students Critical Thinking and Writing Achievement. The results showed that a person's critical thinking skills could be developed through writing skills tests using the 6 + 1 model.

Hidayati, (2017) entitled The Effect of Inside-Outside Circle and Numbered Heads Together Methods on High and Low-Interest Students Reading Comprehension A Case At 8th Grade In NU Islamic High School West Ungaran in the Academic Year of 2014/2015. The results show that the NHT technique affects teaching reading comprehension with a significant level of $0.005 < 0.042$. NHT is at a score of 78.250, while the IOC is 80.156. SY Nursyamsi et al., (2016) entitled the effect of numbered heads together (NHT) learning strategies on student learning outcomes of Sma Negeri 1 Muara Badak. The results showed results of the analysis that the learning strategy influenced the student's cognitive learning outcomes. It can be seen from the corrected mean comparison that the NHT learning strategy has a more significant effect, which is 21.56%, compared to the effect caused by conventional learning. Prayekti et al., (2019) studied the Effect of NHT model assisted with audio-visual media on the learning outcomes of identifying story elements of students grade V. based on the results of data analysis in this study; it can be concluded that the learning model NHT and Audio Visual influence student learning objectives showing that the value of the F test of $0.000 < \alpha$ probability of 0.05. Furthermore, the effect of the NHT type Learning Model on students is 38.9%, where 61.1% is the outside influence of other variables. The audio-visual effect of using the NHT type in student learning outcomes is 58.4%. The remaining 41.6% is the influence of external influences on other variables.

3. Hypotheses of the Study

Based on the theoretical study and the framework described above regarding the relationship between variables in the theoretical framework, the hypothesis can be formulated:

- 1) There are differences in exposition paragraph writing skills based on the NHT cooperative learning model and the CS type.
- 2) There are differences in exposition writing paragraph skills based on critical thinking skills with students who have creative thinking skills.
- 3) There is an interaction effect of the cooperative learning model based on exposition writing paragraph skills.
- 4) There are differences in exposition paragraph writing skills in the critical thinking ability group based on the NHT cooperative learning model and the CS type.
- 5) There are differences in writing exposition paragraphs in groups of students who can think creatively between students who learn using the NHT cooperative learning model and the CS type

4. Population and Sample

The population in this study were all students of the Indonesian language and literature education program, Cokroaminoto Palopo University. The research was conducted in the second semester of the academic year 2016/2017 for four weeks using NHT and CS. This study involved 68 students from the population of students. The sample chosen in this study was the multistage random sampling technique.

5. Statistical Techniques

The data obtained were analyzed, and tested with the parametric statistical f-test, t-test, and univariate test.

6. Data Analysis and Interpretation

The table 1 is about the writing skills exposition paragraph data in groups learning with the NHT model

Table 1. Frequency distribution of writing skill scores with that model

No.	Score	Absolute Frequency	Relative Frequency (%)
1	78 - 81	-	-
2	82 - 85	-	-
3	86 - 89	17	100
4	90 - 93	-	-
Total		17	100

Interpretation Table 1.

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he data of Experimental groups have critical thinking skills with the maximum scores of 89, a minimum score of 87.47, standard deviation score of 1.007, variance score of 1.015, the minimum to the maximum score of 4, the class interval score of 4, and the number of classes scores of 4. NHT type cooperative learning model in students who have critical thinking skills.

Writing Skills Exposition Paragraph Data in Groups Learning with the CS Model

Table 2. Frequency Distribution of Writing Skills in Exposition Paragraphs

No.	Score	Absolute Frequency	Relative Frequency (%)
1	78 - 81	-	-
2	82 - 85	11	64.70
3	86 - 89	6	35.29
4	90 - 93	-	-
Total		17	100

Interpretation Table 2.

The data of the control group in writing exposition have critical thinking skills with the maximum score of 87, a minimum score of 82, an average score of 84.88, a standard deviation of 1.536, a variance of 2.360, the minimum to the maximum range scores of 5, and the class interval scores of 4. The number of classes is also 4. The frequency distribution table for the Indonesian exposition paragraph writing skills for groups of students learning with a CS cooperative learning model for students with critical thinking skills.

6.1 Normality Test Results Normality

Test for Student Groups NHT

Table 3. Results of Normality Test NHT Model

Group	P-Value	Sig	Information
Asymp. Sig. (2-tailed)			
A ₁ B ₁	0.446	0.05	Normal

Interpretation table 3.

The criteria of the normality test are the sample value of students' writing skills in the expository paragraph, which is given the treatment of *Numbered Head Together (NHT)*. The normality test results show that the population is normally distributed; it can be seen in Asymp. Sig. (2-tailed) of 0.446 or it can be written as a probability value (**p-value**) = 0.446 > 0.05.

6.2 Normality Test for Groups of Students Cooperative Script Model

Table 4. Normality Test Results in Cooperative Script Model

Group	P-Value	Sig	Information
Asymp. Sig. (2-tailed)			
A ₂ B ₁	0.657	0.05	Normal

Hypothesis Testing Results

The statistical hypothesis tested:

$H_0: A_1B_1 \leq A_2B_1$

$H_1: A_1B_1 > A_2B_1$

Interpretation Table 4.

The criterion in the normality test was the sample's score of expository paragraph writing skills treated by *Cooperative Script (CS)*. The normality test results show that the population is normally distributed, which can be seen in the line Asymp. Sig. (2-tailed) of 0.657 or it can be written as a probability value (**p-value**) = 0.657 > 0.05

Table 5. Results Two-Path Analysis of variants

Hypothesis	F-count	F-table	Sig
$H_0: A_1B_1 \leq A_2B_1$	6,764	1,996	0,000
$H_1: A_1B_1 > A_2B_1$			

Interpretation Table 5.

Based on the results of the hypothesis test shows that $t_{\text{value}} = 6,764$ $p\text{-value} = 0.000 / 2 = 0.000 < 0.05$ or H_0 is rejected. Thus, there are differences in writing exposition paragraphs of groups of students who learn with the cooperative learning model *NHT* with the *CS* who have critical thinking skills. The average value of the exposition paragraph writing skills of the *Numbered Head Together (NHT)* group is 87.47. The average value of the exposition paragraph writing skills of the group of students learning with the *Cooperative Script (CS)* is 84.88. Thus, it can be concluded that the results of the exposition writing skills of *NHT* are better than the group of students who study using *CS*. The test results can be received and tested significantly of $t = 6,764$ bigger than $t_{\text{table}} = 1.996$, significant at the $\alpha = 0.05$ level. It means that H_0 is rejected and H_1 received.

7. Discussion

There are significant differences between students taught using *Numbered Head Together (NHT)* with critical thinking than *Cooperative Script (CS)* in writing exposition paragraphs. The analysis results showed that writing paragraphs of exposition for an experimental group with the *NHT*, the students can think critically, is better than the group of students who learn with the *CS*. The results were in line with the opinion of Stevenson and Gordon in (Kempfer & Prado, 2014), Setiawan et al., (2021), which stated that *NHT* could improve critical thinking. Those things happen because students can share experiences, take various considerations to make decisions, and analyze the consequences of decisions. Widyastuti (2018) also found that the students have high-order thinking skills that are needed to develop the creativity of students in exploring broader knowledge and developing their ideas independently. This opinion is in line with the research results conducted by (Undang Rosidin et al., 2019) that the learning model *Argument-Driven Inquiry* can improve students' critical thinking skills. This model can accommodate all male and female students with various types of personality.

Students who can think critically using *NHT* models in sample number 006 get a score of 89. The student's answer sheet was shown to contain more apparent content, such as writing that tends to have rational and logical thinking. This result can be seen from the students' ability to compose a structured exposition paragraph by conveying statements, arguments according to the topic and supported by accurate facts. Also, it is pretty straightforward in terms of writing techniques, such as the placement of a punctuation mark at the end of a sentence or the use of capital letters at the beginning of a sentence or a paragraph. Although there are still some mistakes, the contents can be properly understood.

The results of writing paragraph exposition on students who have critical thinking skills in students who learn using the *NHT* and *CS* model have a different paragraph structure composition. The result showed that students' ability to think critically using the *NHT* model has precise structure, writing statements, presentation of arguments, disclosure of conclusions, and no error in spelling and punctuation.

The results of writing paragraph exposition on students who have critical thinking skills in students who learn using the *NHT* and *CS* model have a different paragraph structure composition. In the writing results of students with the ability to think critically using the *NHT* model, it has a more clear structure, such as writing statements with the selected topic, presentation of arguments in line with data and facts in the field, disclosure of conclusions by emphasizing the core parts of the topic written, and the use of spelling and punctuation where there are few errors.

The students' writing who have critical thinking skills with the CS model is different. It appeared when some writing structures were inaccurate. The arguments expressed were not based on facts and limited conclusions by repeating the previous sentence without discussing the topic. Based on the result found, it can be concluded that students who have critical thinking skills using the NHT were better than those studied with the CS model. It is influenced by a learning system that involves individuals and several members in a group working together by gathering information and solving problems with the team. This finding is in line with the opinion expressed by (Nursyamsi & Corebima, 2016) that students in the NHT group are trained to comprehend each given task comprehensively.

8. Conclusion

This study concludes that the skill of writing paragraphs exposition can be improved through the application of the cooperative learning numbered head together and cooperative script model. However, from applying these two methods, the most effective method is numbered head together in studying exposition writing through the concept of critical thinking. It was supported from the data analysis that indicates students who learn with numbered head together model has the highest score of 89. The lowest scores are 80, while the cooperative learning cooperative script model only got the highest 87 and the lowest is 78. In addition, the hypothesis test results show that $t_{count} = 6,764$ $p\text{-value} = 0.000 < 0.05$ or H_0 is rejected. Thus, there are differences in writing exposition paragraphs skill for the groups of students who learn through numbered head together with the cooperative script who have critical thinking skills.

References

1. Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J., & Wittrock, M. C. (2013). *A Taxonomy for Learning, Teaching, and Assessing: Pearson New International Edition: A Revision of Bloom's Taxonomy of Educational Objectives, Abridged Edition*. Harlow: Pearson Education.
2. Birgili, B. (2015). Creative and critical thinking skills in problem-based learning environments. *Journal of Gifted Education and Creativity*, 2(2), 71–80.
3. Broad, B., Adler-Kassner, L., Alford, B., Detweiler, J., Estrem, H., Harrington, S., McBride, M., Stalions, E., & Weeden, S. (2009). *Organic writing assessment: Dynamic criteria mapping in action*. University Press of Colorado.
4. Cottrell, S. (2017). *Critical thinking skills: Effective analysis, argument and reflection*. Macmillan International Higher Education.
5. Hidayati, I. U. (2017). The effect of inside outside circle and numbered heads together methods on high and low interest students reading comprehension a case at 8th grade in NU islamic high school of Ungaran Barat in the academic year of 2014 / 2015. *English Language and Literature International Conference (ELLiC) Contain*, 1, 118–123.
6. Hunter, W. C., Maheady, L., Jasper, A. D., Williamson, R. L., Murley, R. C., & Stratton, E. (2015). Numbered heads together as a tier 1 instructional strategy in multitiered systems of support. *Education and Treatment of Children*, 345–362.
7. Hunter, W., & Haydon, T. (2013). Examining the effectiveness of numbered heads together for students with emotional and behavioral disorders. *Beyond Behavior*, 22(3), 40–45.
8. Hyland, K. (2015). *Teaching and researching writing*. Routledge.
9. Johnson, D. W., & Johnson, R. T. (2018). *Cooperative learning: The foundation for active learning. Active Learning—Beyond the Future*.
10. Kempfer, S. S., & Prado, M. L. (2014). Reflecting about assessment by reflective-critical and creative thinking in nursing education in Brazil. *J Nurs Care*, 3(6).
11. Leasa, M., & Corebima, A. D. (2017). The effect of numbered heads together (NHT) cooperative learning model on the cognitive achievement of students with different academic ability. *Journal of Physics: Conference Series*, 795(1), 12071.
12. Lillis, T. M. (2002). *Student writing: Access, regulation, desire*. Routledge.
13. Lince, R. (2016). Creative thinking ability to increase student mathematical of junior high school by applying models numbered heads together. *Journal of Education and Practice*, 7(6), 206–212.
14. Mahmood Reza Atai, Esmat Babaii, B. L. G. (2018). Language Teaching Research A Narrative Study of In- service EAP Teachers' Cognition on Language Teacher Role Identities a Kharazmi b University. *Iranian Journal of Language Teaching Research*, 6(June), 97–115.
15. Murphy, C., & Stay, B. (2012). *The writing center director's resource book*. Routledge.
16. Mustami, M. K., & Safitri, D. (2018). The Effects of Numbered Heads Together-Assurance Relevance Interest Assessment Satisfaction on Students' Motivation. *International Journal of Instruction*, 11(3), 123–134.
17. Nursyamsi, S. Y., & Corebima, A. D. (2016). The effect of numbered heads together (nht) learning

- strategy on the retention of senior high school students in Muara Badak, East Kalimantan, Indonesia. *European Journal of Education Studies*.
18. Pasand, P. G., & Haghi, E. B. (2013). Process-product approach to writing: The effect of model essays on EFL learners' writing accuracy. *International Journal of Applied Linguistics and English Literature*, 2(1), 75–79.
 19. Prayekti, H., Utomo, U., & Haryadi, H. (2019). The Effect of Numbered Heads Together (NHT) Model Assisted with Audio Visual Media On The Learning Outcomes of Identifying Story Elements of Students Grade V. *Journal of Primary Education*.
 20. Prayoga, E. A., Suwignyo, H., & Mudiono, A. (2018). Peningkatan Keterampilan Menulis Teks Eksposisi melalui CIRC (Cooperative Integrated Reading and Composition) Berbantuan Video pada Siswa SD. *Jurnal Pendidikan*.
 21. Qoura, A. A., & Zahran, F. A. (2018). The Effect of the 6+1 Trait Writing Model on ESP University Students Critical Thinking and Writing Achievement. *English Language Teaching*, 11(9), 68. <https://doi.org/10.5539/elt.v11n9p68>
 22. Ravichandran, S., Kretovics, M., Kirby, K., & Ghosh, A. (2017). Strategies to address English language writing challenges faced by international graduate students in the US. *Journal of International Students*, 7(3), 764–785. <https://doi.org/10.5281/zenodo.570033>
 23. Runday, S. (2016). *The Narrative Writing Toolkit: Using Mentor Texts in Grades 3-8*. Routledge.
 24. Setiawan, R. R., Suwondo, S., & Syafii, W. (2021). Implementation of Project Based Learning Student Worksheets to Improve Students' Science Process Skills on Environmental Pollution in High Schools. *Journal of Educational Sciences*, 5(1), 130–140.
 25. Slavin, R. E. (2009). (2009). *Slavin, R.E. (2009). Educational psychology: theory and practice. 9th ed.* New Jersey: Pearson Education, Inc.
 26. Syarfuni. (2013). Error Analysis of the Written English Essay At the Third Semester. *Visipena, Vol. 4 No.* <https://doi.org/https://doi.org/10.46244/visipena.v4i1.117>
 27. Undang Rosidin, U. R., Nina Kadaritna, N. K., & Hasnunidah, N. (2019). CAN ARGUMENT-DRIVEN INQUIRY MODELS HAVE IMPACT ON CRITICAL THINKING SKILLS FOR STUDENTS WITH DIFFERENT PERSONALITY TYPES? *Cakrawala Pendidikan*, 38(3), 511–526.
 28. Vellayan, G., Singh, C. K. S., Tek, O. E., & Yunus, M. (2021). A Review of Studies on Cooperative Learning Strategy to Improve ESL Students' Speaking Skills. *Turkish Journal of Computer and Mathematics Education*, 12(3), 63–68.
 29. Widyastuti, S. (2018). *Fostering critical thinking skills through argumentative writing*. Yogyakarta State University.