

Increasing Critical Thinking Using Nominal Group Technique: A Classroom Action Research

Denius¹, Alies Poetri Lintangari²
{deniusnad19@student.ub.ac.id¹, alieslintang@ub.ac.id²}

Universitas Brawijaya, Indonesia^{1,2}

Abstract. This research aims at improving students' Critical Thinking Skills through the implementation of Nominal Group Technique (NGT) in English as a Foreign Language classroom. The Class Action Research (CAR) method was implemented in one class consisting of 25 students. The study was conducted fully online due to Covid 19th pandemic. The NGT implementation was carried out in 2 cycles over 4 meetings consisting of 2 synchronous meetings in cycle 1 and 2 asynchronous meetings in cycle 2. The Success criteria are established if there is a significant improvement in the students' Critical Thinking Skills. Pre- and Post tests are applied as a means of measurement. The 25 are students of English Language Education Program, Language Education Department,, Faculty of Cultural Studies, Brawijaya University who joined Critical Reading (Critical Reading) courses participated in this research.s. A Critical Thinking Test from Assessment Day was applied as a research instrument measuring 5 Critical Thinking Skills: The Skill of Evaluating Argument, Deductive Thinking, Inductive Thinking, Evaluating Conclusion, and Interpreting Information. Critical Thinking Test is carried out 3 times, namely pre-test conducted before the application of NGT, post-test 1 conducted after the application of cycle 1, and post-test 2 conducted after the application of cycle 2. The results showed that the application of NGT successfully improved students' Critical Thinking Skills demonstrated by Critical Thinking Test results that increased from an average pre-test result of M=20.68 to M=23.34 in post-test 1 and significantly increased to M=31.96 in post-test 2.

Keywords: Critical Thinking, Nominal Group Technique, Online Discussion

1 Introduction

Based on PISA 2018 data (Programme for International Student Assessment) conducted by the OECD (Organization for Economic Co-operation and Development) as an international prestigious institution consisting of 37 member countries, Indonesian students showed low and below average OECD scores, especially in reading ability. Indonesian students only achieve 30% of reading proficiency at level 2 (very low compared to the OECD average of 70%) with the ability to identify key ideas in a medium text, identify explicit information, and be able to reflect the purpose and form of the text. Since 10 years of Indonesia's participation in PISA, Indonesian students' performance in reading fell in 2018 after reaching peak levels in 2009 and only 29% of students had a growth mindset in 2018 [1]. Regrowing awareness and instilling the habit of Critical Thinking becomes a considerable responsibility in fields of education, especially at the college level. Although efforts to increase literacy to Critical Thinking have begun to be encouraged since 2016 through the National Literacy Movement (GLN). As a

proactive response in supporting GLN, The English Education Study Program, Department of Language Education, Faculty of Cultural Studies Brawijaya University conducted curriculum updates that support GLN through a Critical Thinking approach to improve students' Critical Thinking Skills, especially in English. Based on research, Critical Thinking Skills play an important role in literacy performance, especially reading skills. Reading is the most widely used language skill by students in an academic context so reading skills are needed by students to understand learning materials and information on a large scale both inside and outside the classroom [2]. Reading Skills (especially Critical Reading) play a major role in equipping students to understand the text and literacy instruction so that they learn how to read and evaluate a text from various points of view Teaching students to think critically when they read is called Critical Reading (CR). CR courses encourage students to evaluate, predict, and devise a discourse/idea through decision making, inference formulation, and inference based on relevant evidence [2].

CR is one of the courses that came from the results of Curriculum [3] in the English Education Study Program, Faculty of Cultural Studies, Brawijaya University. Replacing the Extensive Reading course, CR focuses more on increasing the scale of Critical Thinking of students in accordance with the Criteria of HOTS (Higher Order Thinking Skills) of Bloom Taxonomy. Through CR courses, students are expected to improve their literacy and Critical Thinking Skills, especially in responding and solving the problems (problem-solving) that they encounter in daily life. In fields of education, in the current technological and information era, having only information and knowledge is no longer enough, but those who can think critically will be able to solve problems (personal, social, etc) effectively [4]. CR courses are expected to provide Critical and Creative Thinking Skills for students to be able to plunge directly into society and be ready to face the challenges of increasingly dynamic changing times. Discourse presented as a topic of discussion in learning is not only in the form of written text but also visual and audio-visual (multimodal) that can be accessed using technology (internet, social media, etc). The themes raised to be discussed relate to actual issues that exist in the community, both locally and globally [5][6][7][8][9].

During the Covid-19 pandemic where learning was carried out online, CR courses encountered several challenges, including the discussion process which is a fundamental activity to increase Critical Thinking Skills [10][11][12][13]. Although the CR learning plan has been designed with the use of technology (Information and Communication Technology - ICT) such as accessing material through social media channels and the internet and uploading essays on blogs, the discussion process was originally designed to be done directly (face to face). When learning must be entirely done online, teachers and learners rely entirely on information technology [14]. The absence of direct interaction creates a 'distance' that often reduces the meaning of learning itself [15]. This is where teachers are challenged to be able to create a meaningful learning atmosphere in solving a problem or decision making, through learning technology facilities [16]. Learning must be designed to better 'captivate' learners, not only through technological features but through methods that increase engagement, collaboration, and connectivity, both between lecturers and students and also between students and students. The practice of decision-making in solving a problem is becoming one of the crucial aspects of learning in CR courses.

Based on the results of pre-test Critical Thinking Skills using Critical Thinking Test developed by Assessment Day, out of a total score of 34, the average Critical Thinking Skills of students in CR class is 20.68 or in the moderate category. While the ability to think critically is a much-needed ability in the process of Critical Reading. From various discussion methods, Nominal Group Technique (NGT) is a promising method to ensure the participation of all

students. The use of NGT in the context of education has been widely reported as an effective method to increase active learning and increase the participation and involvement of learners in discussions both in online and offline contexts. The purpose of NGT is to involve all discussion participants to support passive learners, improve problem-solving skills and also Critical Thinking Skills [17][18][19][20][21][22][23]. Therefore, this study applies NGT in Critical Reading classes to improve students' thinking skills in supporting their participation in Critical Reading courses.

2 Research Method

Class Action Research (CAR) is applied to this research to improve the Critical Thinking Skills of students in Critical Reading classes in The English Language Education Program, Department of Language Education, Faculty of Cultural Studies, Universitas Brawijaya. The Participants are students who enroll in Critical Reading courses as many as 25 students. The study was conducted online in full at the time of the pandemic. The NGT implementation involved 2 cycles for a total of 4 meetings. Cycle 1 consists of 2 meetings conducted in a synchronous meeting and cycle 2 consists of 2 meetings conducted in an asynchronous meeting. The research instrument used in this study is a Critical Thinking Test adopted from Assessment Day that measures 5 Critical Thinking Sub-abilities. The data was collected through a Critical Thinking Test conducted 3 times. The first is done as a pre-test applied before the application of NGT. The second test is applied after Cycle 1 implementation and the third test is applied after cycle 2 implementation.

3 Finding and Discussion

3.1 The Implementation of NGT

The implementation of NGT consists of 2 cycles with a total of 4 meetings. Cycle 1 contains 2 synchronous meetings and cycle 2 contains 2 asynchronous meetings. The synchronous learning will use Google Meet, while asynchronous learning will use Google Classroom. Before implementing NGT, the lecturer divided the students into groups and assigned 1 student of each group to be the facilitator of the discussion. Each group discusses the assigned topic using the 5 steps of NGT as seen in Figures 1 (The Procedures of NGT). The steps consist of Silent Ideas' Generation, Series Discussion of Ideas, Voting and Ranking, Concluding and Report Writing.



Fig. 1. The Procedures of NGT

3.1.1 Step 1: Silent Idea Generation

This step invites the student that has been assigned as facilitator to open and invite the other participants to digest and provide responses on the topic being discussed. In synchronous mode, the participants respond verbally or nonverbally through room chat on Google Meet. Meanwhile, for asynchronous mode, participants can only respond non-verbally by typing text in the comment field in Google Classroom. In this step, the participants are not allowed to provide reasons or arguments, they are only allowed to share their short response to the given topic.

3.1.2 Step 2: Series Discussion of Ideas

At this stage, the facilitator in charge invites all the participants to elaborate the ideas that have been provided in the first step. In this step, every participant should provide reasons, arguments, evidence, examples, and also valid references to support their response. Additionally, the participants are also allowed to for and against other participants' responses/opinions. Once the discussion finishes, the facilitator needs to list the final response based on the discussion process.

3.1.3 Step 3: Voting and Ranking

The facilitator in charge invites the participants to vote for the best ideas or opinions that have been listed in step 2. Then, all participants are asked to give a score of the ideas with scale 1-3 for the least until the most favorable ideas/response. In synchronous mode, participants score the ideas directly through room chat or chat box. While in the asynchronous mode, participants score the idea through the comment fields available on that platform.

3.1.4 Step 4: Concluding

After the participants score each idea, the facilitator calculates the total score of each idea and picks the idea with the highest score as the final ideas/response.

3.1.5 Step 5: Report Writing

This stage contains a report of the results of activities that have been carried out by the facilitator. They were asked to explain what steps had been done, what the responses or ideas of the participants, and the conclusions they came to. In this session, lecturers can give some questions related to the conclusions they get. Each group or facilitator will explain again what decision they got to all participants. Although lecturers give the same topics or sources to each group, the decision will definitely be different.

3.2 Students Critical Thinking after the NGT Implementation

The result of the implementation of NGT showed that there was a significant increase in the average value of Critical Thinking of students in the Critical Reading Class. In Table 2 (Critical Thinking Test Results), it can be known that the average increased by 3 points from before the application of NGT from $M=20.68$ in the pre-test results to $M=23.4$ in post-test results 1 after the application of NGT cycle 1 and improved to $M=31.96$ after cycle 2 implementation.

Table 2. Critical Thinking Test Results.

Respondents	Pre-Test	Post-Test 1	Post-Test 2
R1	23	22	33

Respondents	Pre-Test	Post-Test 1	Post-Test 2
R2	35	35	36
R3	30	31	36
R4	15	17	34
R5	15	12	36
R6	20	25	32
R7	28	36	36
R8	20	24	34
R9	25	27	30
R10	19	21	22
R11	14	16	22
R12	15	27	34
R13	20	14	19
R14	27	26	35
R15	19	25	32
R16	16	16	37
R17	19	27	34
R18	14	20	36
R19	24	23	29
R20	19	19	31
R21	16	20	35
R22	18	31	36
R23	28	26	32
R24	19	20	29
R25	19	21	29
Average	20,68	23,24	31,96

Asynchronous learning is the most common and flexible learning system implemented online at this time [24]. This method, widely used by educational institutions that carry out online education [25]. However, because it is not limited to time and place, students have the opportunity to be late to collect their assignments [25]. Asynchronous learning leads more to self-learning and student-center learning [26]. Asynchronous learning also provides students with opportunities for group discussion to enhance Critical Thinking Skills and deeper learning [26]. In addition, this system helps students who are shy, quiet, and afraid of teachers, are more courageous to express themselves because it is not a face-to-face meeting in person [25].

Synchronous learning, in contrast to asynchronous learning, leads to learning that is carried out directly via electronic mode either through video/voice/text so that students and teachers can interact directly. Synchronous learning provides an opportunity for students to interact directly (real-time) with teachers in understanding material, asking questions, asking and providing feedback, etc. The challenge in synchronous learning is the adjustment of internet time and conditions [25]. This can cause students to feel frustrated and fail due to technical problems. Then it is necessary to pay attention to the media or instruction requested to students. Synchronous learning is more towards the role of teacher, teacher-center learning).

Asynchronous and Synchronous learning have great benefits for language learning There is no significant difference between asynchronous learning when examining positive influences, cooperation, and perceptions of competition but significant differences exist in the mode/way of learning However, through asynchronous learning, students have a high individualistic perception They are more willing to express their opinions. For students who

have online learning activities and other jobs, asynchronous learning is a suitable system because it helps students be more relaxed and avoid anxiety because it is not tied to time. In addition, asynchronous learning helps students to formulate work correctly, as they have time to revise their work. The roles and opinions of group friends or teachers also help them work with the right formula. So that the correct answer helps the understanding of the concept.

The Nominal Group Technique is a learning approach that engages students in groups to improve discussion skills in determining a topic. The technique was developed by Delbecq, Van de Ven. In terms, 'Nominal Group', means a collection of two or more individuals who joined in one group. However, this technique fully involves each individual as an input to create active interactions within a group. The Focus Group is different from The Nominal Group Technique. The Focus Group is a discussion technique that only asks for one's views on a topic without any group selection and approval as to which opinion is best. NGT is a discussion technique that asks for one's opinion on a topic and requires approval to reach a group consensus in choosing the best opinion.

Through NGT, all students will be asked to express their opinions to help students who have shyness to speak and also trigger Critical Thinking Skills in analyzing things. In addition, students enjoy the NGT process because they can formulate ideas with the help of others and learn to be open to hearing and respect the opinions of others, and they are also more courageous to speak and be honest when discussing with colleagues without having to involve the teacher in the discussion.

In this technique, two limitations must be considered. First, students are only required to express their opinions and are not allowed to respond or compare other people's comments. Second, in the transfer of discussion sessions from 'Focus Group Discussion' to 'Nominal', it will give rise to the bias of individual suggestions, making it difficult to find a cohesive opinion. Therefore, an evaluation session is needed to discuss the objectives, methods, data collection, analysis, and improvement of actions.

Based on the result of the Critical Thinking test in Table 2, the average post-test value 1, and post-test 2 of 25 respondents found that the average value of post-test 2 produced was 31.96 while the average value of post-test 1 produced was 23.24. So it can be concluded that the post-test value of 2 of the respondents as a whole is higher than the post-test value of 1. This has been in accordance with the literature delivered by Darabu et al., 2013, that students showed better performance in asynchronous discussions that can be seen from post-test 2 scores that have a higher average score. This can be because the instruction given asynchronously is considered clearer and provides an opportunity for students to prepare discussion materials when they have to deliver impromptu. While post-test 1 produced an average value of 23.24 which is the result of the post-test synchronous learning. It can be concluded that the average value produced is lower than the asynchronous learning. This can be because with synchronous learning, students are not given the opportunity to prepare in advance the material to be delivered impromptu. Thus, it can be concluded that asynchronous learning is considered better than synchronous learning in improving student performance in the Nominal Group Technique (NGT) learning method. Nominal Group Technique (NGT) learning methods also have several benefits including improving Critical Thinking and Problem-Solving Skills. This can be seen from the results of the Critical Thinking Test that the average pretest value produced is 20.68 which is lower than the post-test value for both synchronous and asynchronous learning. So it can be concluded that through the Nominal Group Technique (NGT) learning method, students' understanding ability is increasing.

4 Conclusion

In the application of NGT are 3 actors who will benefit. First, for students, it provides an opportunity to express themselves and dare to criticize ideas [25], improve the ability to think critically in responding to other people's arguments, and improve the problem solving skill in finding the best solutions on a particular problem. Second, for lecturers, this makes the classroom atmosphere feel more exciting and active because it involves more students (student-centered), lecturer can get to know the character of students (advantages and disadvantages) so that lecturers can provide treatment that suits the needs of students (for example, treatment for passive students), and this makes it easier for lecturers to provide score according to the ability and activeness of students, both individually and in groups. For external (reader & researcher), this helps readers (other students & lecturers, and society) to get new insights that can be used as additional considerations in solving a problem, and it could be additional or supporting data for the next researchers.

From the learning techniques carried out, namely synchronous and asynchronous learning, Critical Thinking Test produces different results. In post-test 2 conducted after cycle 2 using asynchronous learning, each participant experienced an average increase compared to post-test 1 conducted after cycle 1 with synchronous learning. This shows that asynchronous learning using NGT is considered beneficial in improving students' Critical Thinking Skills. Because asynchronous learning gives students space to think and act more freely without fear of being challenged by others, be it friends or teachers. Meanwhile, synchronous learning, teachers and students have the opportunity to interact directly including seeing activities carried out by students so that students are not so free when expressing [20].

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