

# The Effectiveness of Question-Generation Strategy on Improving the Undergraduate Students' Reading Ability

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**Abstract**— This study was aimed at examining the effectiveness of Question-Generation (QG) Strategy in improving the reading ability of the undergraduate students and at finding out the students' perceptions of the use of QG strategy in reading. To these ends, this study adopted a mixed method which employs the combination of quantitative and qualitative approaches. Forty-five students at the fourth semester at the English department of Mataram University were involved in this study. To collect the data needed, the pre- and post-test were given to the students and the questionnaire was distributed. The data gotten from the tests were analyzed quantitatively with the help of SPSS and those data gotten from the questionnaire were analyzed qualitatively by following three general steps: reducing, displaying, and drawing conclusion. The findings from the *t-test* (-19.097) indicated that there was a significant difference between the mean scores of the students in the pretest (67.69) and posttest (77.27), and thus, the use of QG strategy was effective in improving the students' reading ability. Further, the questionnaire results indicate that most of the students stated that QG strategy could improve their reading comprehension and it encouraged them to read critically and creatively.

**Keywords**— *question-generation, reading comprehension, critical thinking, creativity*

## I. INTRODUCTION

Literacy should be the primary concern of the teachers in any education levels, particularly in higher education such as university, in which the students with the good quality of literacy will experience better learning than those students with the poor level of literacy

Literacy can be defined as the ability to read and write. In a broad picture, literacy might be referred to the ability of comprehending or accessing information through reading and expressing it through writing.

Literacy, in the context of language teaching, according to Kern, involves seven principles: interpretation, collaboration, convention, cultural knowledge, problem solving, reflection, and language use [1].

To attain the high quality of literacy through a reading course in higher level of education such as university, the students do not only need the exposure the reading activities which train them to comprehend the text and to answer the comprehension questions but they also need the exposure to reading activities which train them to do the analysis,

evaluation and creation as the high cognitive aspects which require critical thinking or commonly known as higher order thinking skills (HOTS).

In any reading courses, students are generally exposed to and required to answer some comprehension questions after having read a text and those questions are written in the text or those produced by the teacher to assess the students' comprehension. In a sense, the students in this context are "passive" as they are being asked some questions rather than asking questions. White and Gunstone [2] stated that asking questions during the teaching and learning activities is not commonly done by the students. Thus, there is a small number of students who have the ability and courage to create and to ask questions. To these ends, an after reading strategy called Question-Generation strategy can be an alternative to equip the students with the ability to generate questions and to improve their reading comprehension as well.

Question Generation (hence called QG) might be referred to self-questioning strategy in reading in which a reader asks him/herself questions about the text he/she is reading. In self-questioning strategy, commonly, the readers put the questions in their minds and try to find the answers of those questions through reading. QG in this case, however, means that the students are required to generate some questions about what they have read and thus, this kind of reading strategy is an after reading strategy.

This study was aimed at examining the effectiveness of QG strategy in improving the students' reading ability and also at discovering the students' perceptions of the use of QG strategy in reading. Further, for the purpose of statistical analysis, the null hypothesis was formulated and it stated that there was no significant difference between the pre-test and post test scores gotten by the students.

Reading can be defined as meaning reconstruction from a text in which ideas of a reader and messages of a text are combined [3]. In other word, reading is an interactive process between a reader and a text, in which the reader employs his/her knowledge and reading competence to get the meaning from the text being read [4].

Reading is not only knowing the meaning of individual word because the fact says that some of the readers might fail to understand a text eventhough he/she knows the meaning of the words [5]. Thus, the main goal of reading is comprehension and without having comprehension from what he/she has read, a reader has not really read [6]–[9], and in order to comprehend a reading text, a reader needs to have a reading strategy which can facilitate him/her.

A strategy, as what Brown stated, is a specific way to solve problems or tasks, to acheive the goal, to control or to manage certain information [10]. While reading strategy, according to Lems [11], is a deliberate action done by a reader to facilitate him/her in comprehending the text. Further, a strategy in a teaching and learning of reading refers to what a teacher prepares and do to help his/her students to manage and comprehend what they are reading [9].

*Question-Generation (QG)* also called as *question-production* or *self-questioning* refers to activities of making questions and QG in reading can be defined as activities in which students are trained and encouraged to generate questions from what they are reading – before, during and after reading activities.

Humphries and Ness [12], QG is a promising strategy in reading in which readers ask themselves about what they are reading and in this way, higher order thinking skills or critical thinking skills are stimulated and developed.

*Question-generation* or *question-production* during the teaching and learning process is not commonly found as an activity done by students. The students are given some questions rather than they give or ask questions and, consequently, very few students who can ask or generate good or high quality questions [2]. Considering these facts, it is necessary to provide learning activities which encourage or train students not only on how to answer the questions but also on how to ask questions, either in written or spoken forms.

There have been some studies about QG which are associated with the students’ reading ability, creativity and critical thinking. Having reviewed some studies, Chin [13] stated that the questioning activities have the potential and important role to manage the learning style and to develop the knowledge of the students.

Humphries and Ness [12] found that some studies reported the benefit and the effectiveness of question generation. National Reading Panel [14] found the effectiveness of teaching QG students, in which the students have freedom to pose questions and to give answers, and question-generation helps students to remember, review, identify and integrate main ideas to draw a conclusion. It was also found that the students who asked or generated questions while reading, performed better or their reading scores developed.

With reference to the previous related study and the benefits of QG strategy in reading, this study was aimed at implementing and examining the effectiveness of QG strategy in improving the reading ability of the undergraduate students and also to discover their perceptions of QG strategy as an after reading strategy.

**II. METHOD**

This study employed a mixed method with the sequential explanatory design as it is characterized by the collection and analysis of quantitative data in a first phase of research followed by the collection and analysis of qualitative data in a second phase [15].

This study adopted one group pretest-posttest design which involved 45 students from two classes at the English department of Mataram University. The treatments in applying QG strategy in reading were given to the students after the pre-test and before the post-test. There were four meetings for the purpose of training students in applying QG strategy in reading in which the questions they generated refer to 3 reasoning levels, adapted and modified from Bloom taxonomy, they are: literal (knowledge), inferential (comprehension & application) and evaluative (anlysis, evaluation & synthesis). After the posttest, the students were required to fill in the questionnaire asking their perceptions of QG strategy.

With reference to the purpose of this study and the data needed, there were two types of data analyzed in this study – quantitative and qualitative data. The quantitative data gotten from pretest and posttest were used to know the effectiveness of QG strategy and for this purpose, t-test was applied with the help of SPSS (Statistical Packedge for Social Science).

Further, the qualitative data gotten from the questionnaire asking the students’ perceptions of the QG strategy were analyzed by following three general steps in analyzing qualitative data, i.e. reducing, displaying, and drawing conclusion.

**III. RESULTS AND DISCUSSION**

QG strategy is an after reading strategy in which students pose or generate questions about a text they have read. In its implementation, the teaching of QG strategy follows the concept of gradual release of responsibility involving modelling, guided practice, independent practice. Thus, there were four meeting for the purpose of treatments, in which the first meeting is for modelling and guided practice, the second, third and fourth meetings are for independent practices – in group, in pair and individually respectively.

The results of the tests show that the mean score of the students in the pretest was 67.69 with standard deviation 5.329 and that in the posttest was 77.27 with standard deviation 4.850 (see table 1).

TABLE 1. PAIRED SAMPLES STATISTICS

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRETEST	67,69	45	5,329	,794
	POSTTEST	77,27	45	4,850	,723

TABLE 2. PAIRED SAMPLES TEST

Pair	Pretest - Posttest	Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
		-9,578	3,368	,502	10,590	-8,566	19,079	,000	

Based on *t-test* result -19.079 (Table 2) with the probability value 0.000 which is lower than 0.05. This means that there was a significant difference between the the reading ability of the students before and after the teaching of QG strategy, with 9.578 for the difference in mean scores and thus, it can be stated that the QG strategy was effective in improving the students' reading ability.

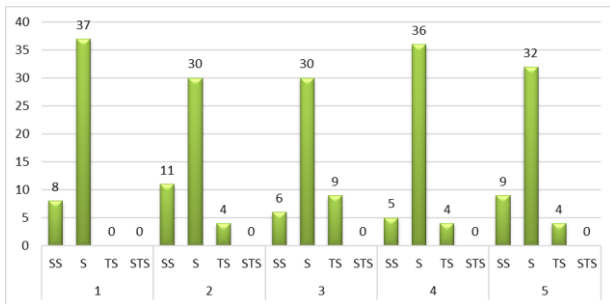


Fig. 1. Students' Perceptions of the Question-Generation Strategy

Further, based on the results gotten from the questionnaire asking the students' perceptions or opinions of the QG strategy (as depicted in figure 1), it can be stated that:

1. In the first category dealing with the effect of QG strategy on the students' reading comprehension, it was found that 8 students (17.78%) stated "strongly agree", 37 students (82.22%) stated "agree" and no students stated "disagree" or "strongly disagree".
2. In the second category dealing with the effect of QG strategy on the students' critical thinking skills, it was found that 11 students (24.11%) stated "strongly agree" that QG strategy encouraged them to think critically, 30 students (66.67%) stated "agree", 4 students (8.89%) stated "disagree" and no students stated "strongly disagree".
3. In the third category dealing with the effect of QG on the students' creativity reflected by the questions they generated, it was found that 6 students (13.33%) stated "strongly agree" that QG strategy encouraged them to be more creative, 30 students (66.67%) stated "agree", 9 students (20%) stated "disagree" and no students stated "strongly disagree".
4. The fourth category is about the benefits or usefulness of QG strategy on students' reading. It was found that 5 students (11.11%) stated "strongly agree" if they could use QG strategy and took benefits from it for their reading ability, 36 students (80%) stated "agree", 4 students stated "disagree" and no students stated "strongly disagree".
5. The last category is about the students' interest and preference for learning QG strategy within the Academic Reading course. It was found that 9 students (20%) stated "strongly agree" if they had interest in QG strategy and liked to use it in reading, 32 students (71.11%) stated "agree", 4 students (8.89%) stated "disagree" and no students stated "strongly disagree".

With reference to the findings above, it is necessary that the teachers provide activities which encourage the students to pose or generate their own questions when reading. This is to make the students to be "active" in reading as they ask questions rather than being asked.

The activities of asking questions in the process of teaching and learning are acknowledged as uncommon for the students, particularly in reading. It is commonly found that in reading activities, students are given or confronted with several comprehension questions after reading a text and in this context, the students are passive as they are given or asked some questions rather than they produce or ask the questions. White and Gunstone [2] stated that posing or generating questions in teaching and learning process is not a usual or common activity done by students. Thus, training or encouraging students to pose or generate their own questions in reading, such as QG strategy suggests, is really needed. This is not only to improve the students' reading comprehension on what they are reading but also to encourage them to think critically and creatively as they generate or formulate the various types of questions about what they are reading. In a sense that the students will not be able to generate appropriate questions about a text they have read if they do not understand it.

The ability to structure or generate questions is an important skill which students need to have and for this purpose, teachers should give examples of the questions and train students in how to structure or generate questions [13]. Humphries and Ness [12] stated that QG is an activity which encourages critical reasoning in order to generate the questions and to give response to those questions.

Further, the findings from the questionnaire showed that most of the students agreed that QG could increase their reading comprehension about a text they had read, it could encourage them to think critically and creatively in order to be able to formulate or generate the questions. In order to formulate questions with inferential and evaluative types, the students are required to read more deeply and critically, they need to associate what they are reading with their background knowledge and also to think beyond or think what implicitly stated in the text.

#### IV. CONCLUSION

With reference to what has been stated in the findings and the purposes of this study, it can be concluded that the results of the tests show that the use of QG strategy was effective to improve the students' reading ability and this can be seen from the difference in the mean scores gotten by the students between the mean score in the pretest and that in the posttest and the difference was significant as indicated by *t-test* result. The questionnaire results indicate that most of the students stated that the QG strategy could improve their reading comprehension and it encouraged them to read critically and creatively in order to be able to generate appropriate questions about the text they are reading.

Posing or generating questions is not only useful to improve the students' reading ability but it also train students to think critically and creatively. At the same time, it is acknowledged that generating questions during the process of teaching and learning is not commonly done by the students. Thus, it is suggested that the teachers provide the students with the activities, such as those in QG strategy, which train them to generate questions.

Since the present study was limited and based on one-group pretest and posttest design, it is necessary that next researchers can apply another design of experimental

research to examine the effect of QG strategy on the students' reading ability. In addition, the next researchers can also examine the effect of QR strategy not only on reading ability but also on critical reading.

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