Questions Students Ask as Indices of their Comprehension

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Abstract This study investigated student-generated questions as indices of comprehension levels; employed the descriptive design to describe comprehension levels of 46 Grade 8 participants via their generated questions; employed question-generation sheets for both narrative and expository texts to gather data; utilized three phases to carry out the study; and used mean and percentages to report the data. Results revealed that: (1) the five comprehension levels ranked the same for both texts; (2) questions on character traits surfaced in narrative but not in expository; (3) reorganization level obtained the lowest percentage for both texts; (4) few questions were exhibited under reorganization and appreciation levels; (5) schemata and metacognitive were employed; and (6) L1 aided them on question generation. The study concluded that comprehension is triggered when participants are given leeway to generate questions before, during, and after reading the selections. It recommended that: (1) student questions may be utilized; (2) a seminar on Barrett taxonomy may be introduced; and (3) future researchers may conduct a similar study.

Keywords: Barrett taxonomy of comprehension levels, metacognition, schema theory, student-generated questions

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Introduction

Comprehension-related problems have been besetting the educational institutions all over the country. The 2009, 2010, and 2011 National Achievement Test (NAT) results revealed that second year students of Caloocan struggled much on reading comprehension as shown by the three mean percentage scores in English subject in general. In particular, the mean percentage scores of the researcher's school for the school years 2008-2009, 2009-2010, and 2010-2011 were 43.11, 36.57, and 36.60, respectively (Department of Educational Testing and Research Center, 2009; 2010; 2011). Columna (2013) found that students were still struggling to comprehend texts in L2 with majority of them falling under the instructional level and a significant number under the frustration level. Similarly, the students in the secondary level had difficulty in reading materials in the content areas especially in Mathematics and Science (Dela Cruz, 2004).

Unfortunately, in culling studies conducted in the Philippines, the researcher encountered only a few related to the present study, and these studies dealt with subject areas other than English. Hence, this investigation is filler to the recognized research gap by expounding on whether there are differences in the student-generated questions between the narrative and expository texts.

Though the current practice of checking comprehension and answering teachers' questions seeks to enhance the development of comprehension skills, still, a number of students' responses show that a problem on comprehension is far from being resolved. The researcher posited that student-generated questions may be indices of students' comprehension levels, for they aid and fuel comprehension. Rooks (2009), Taboada (2003), Chin (2002), Pangilinan (2001), Keys (1998), and Gallanosa-Garcia (1994) found that student-generated questions have an

impact on reading comprehension. Therefore, this study on student-generated questions for both narrative and expository becomes imperative because few teachers let their students ask questions that would eventually clarify confusions and would possibly guide them in their reading and understanding texts. In addition, results of the participants' comprehension levels would be useful to administrators, teachers, students, and to future researchers as well who are finding solutions to comprehension-related problems.

Student-generated Questions

Studies on questions were conducted to find out the effects of the questioning method and students' questioning skills on their performance. Santos (2004) found that the *questioning group* shifted from low level to higher level questions. This means that the questioning method improved the students' questioning skill, and it had a significant effect on student performance. Similarly, Buendicho (2009) found that student-initiated questioning had a significant positive effect on the students' questioning skills and reasoning. According to Matibag-Angeles (2008), self-questioning spawned significant gains in the comprehension of Level 7 students.

Levels of Questions

Questions can be classified into different levels. In this study, the Barrett taxonomy of comprehension levels was utilized to classify or categorize the elicited student-generated questions. According to Barrett (1972), it is designed originally to assist teachers in developing comprehension questions and/or test questions for reading and to determine students' understanding levels of the assigned texts. Barrett taxonomy is divided into five main categories: (1) literal; (2) reorganization; (3) inference;

(4) evaluation; and (5) appreciation. According to Cotton (2000), lower cognitive questions are also referred to as fact, closed, direct, recall, and knowledge questions. The second kind of questions is the higher-level-questions, also called as interpretative, evaluative, inquiry, inferential, and synthesis questions, which ask the students to mentally manipulate bits of information previously learned to create or support an answer with logically reasoned evidence.

The types of questions asked during the period of observation were grossly of the lower order type: knowledge, comprehension, and application while the higher order types such as analysis, synthesis, and evaluation were a negligible entity (Abonal, 1993).

Reading Theories

The schema theory is grounded on the learner's background knowledge. According to May (1990), while the reader's background knowledge is the reader's previously acquired knowledge, the schemata are mini-theories about things, people, language, places, and other phenomena in our background of experiences.

Taboada (2003) investigated the relationship of student-generated questions and prior knowledge to reading comprehension by examining the characteristics of student-generated questions in relation to text. She found that comprehension of expository texts in the domain of ecological science was related to students' prior knowledge.

Metacognition. According to Alder (2001), metacognition is defined as "thinking about thinking." In the research community, the use of metacognition as a positive learning strategy has been well-established (Anderson & Krathwohl, 2001; Marzano, 2001; Pressley, 2002). Lehr and Osborn (2005) elucidate that metacognition refers to readers' awareness of their cognition; that is, they're thinking

about their thinking if before they read they use their textual knowledge to think about and set purposes and expectation for their reading.

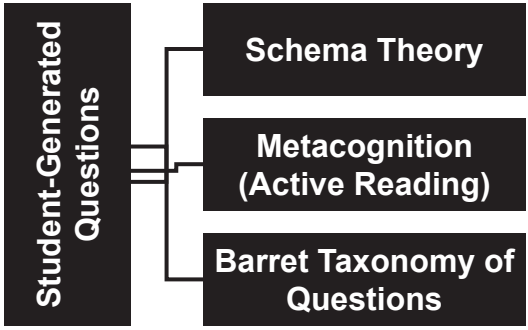

Figure 1. Schematic Diagram of the Conceptual Framework

Figure 1 indicates that the student-generated questions are indices of students' comprehension levels. The framework shows that the students' background knowledge is a foundation which they could use in reading and understanding selections. The schemata of the learners pertain to their direct or indirect learning experiences. Direct learning occurs primarily in school where the teachers and the students come together and do the teaching-learning processes while indirect learning has something to do with the students' vicarious experiences. Both types of learning constitute the learners' holistic background knowledge since the two modes of learning combine and become one.

Active and meaningful reading means students generate questions *before, during,* and *after reading* (Yiğiter, K. et al., 2005). In this process students employ the metacognitive strategy to check whether their formulated questions are correct or not vis-a-vis their background knowledge and the information present. Likewise, active reading is expounded by the students' use of metacognition in their quest to comprehend the selection. This is reflected in the student-generated questions where rethinking,

reconsidering, and revising of their previous queries are evident. The present study considered this as a monitoring-thinking strategy employed by the participants who wanted to verify or change their lines of thought because they realized that what they had generated were insufficient in relation to textual contents, scenarios, or situations. Subjecting student-generated questions to the Barrett taxonomy enabled the researcher to classify whether the queries were of the Literal, Reorganization, Inference, Evaluation, or Appreciation levels.

Interconnections among Barrett taxonomy, schema theory, and metacognition may be displayed in the student-generated questions. Students' questions create a lot of interplays, i.e., from schema to metacognition and vice-versa. The participants may utilize their background knowledge in framing questions. Their schemata could be derived from formal learning in school, personal experiences, and in vicarious learning.

Purposes of the Research

This study puts student questions under investigation. Specifically, this study addressed the following research questions:

(1) What are the levels of students' comprehension based on the questions they generate on expository and narrative texts?

(2) What are the differences or similarities in the questions generated by the students between the narrative and expository texts ?

Methodology

The descriptive type of research was used in this study because (1) it is a simple design that accounts for human activity, and (2) it deals with an existing condition (Cayaban-Casela & Cuevas, 2010). The design was deemed suitable because the data pertained to questions as outputs of a human activity.

Participants

Forty-six Grade 8 students were chosen as participants of the study for the following reasons: (1) It would be convenient to have them as subjects as they were the researcher's students in English; and (2) They could construct or generate questions.

Data Collection

The study was carried out in three phases as shown below.

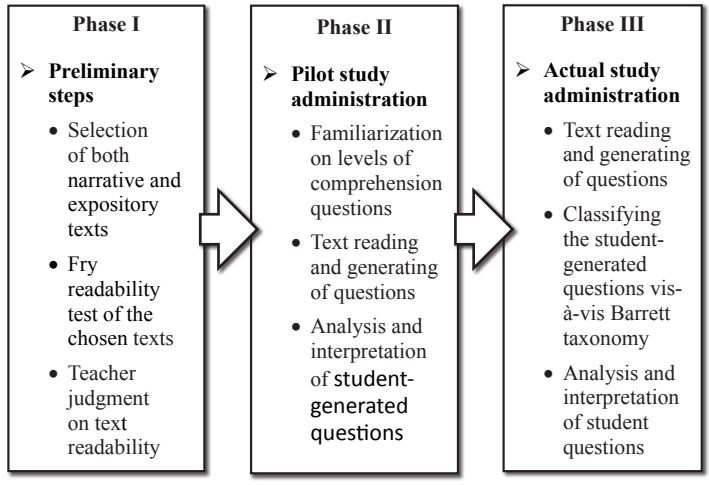

Figure 2. Phases of the Study.

Phase I

This phase included narrative and expository texts which afterward were subjected to Fry readability test to establish their grade level. The texts were further judged by teachers who helped determine their suitability to the target readers.

Selection of texts. The two narrative and expository selections consisting of "A Hug from a Teenage Boy" and "What Is Global Warming?" respectively, were selected by the researcher himself. The former was taken from a book while the latter was drawn from the internet. These selections served as stimuli for question generation.

Afterward, the researcher administered the Fry readability test.

Fry readability. The Fry readability formula was utilized in determining the grade level of the texts employed. This was done to ensure that the selections were suitable to the reading level of the students.

Teachers' judgment. Twenty-nine (29) teacher-judges evaluated the selections used in this study. They were asked to give their own opinion by responding to a set of questions. The teachers were allowed to take home the survey form so that they would have ample time to read the selections.

Below is an account of the preliminary steps establishing readability.

Table 1. Results of the Fry Readability Tests.

Three Sets	Narrative		Expository	
	Number of syllables	**Number of sentences**	**Number of syllables**	**Number of sentences**
First 100 words	144	8.2	153	6.63
Second 100 words	127	6.45	143	6.36
Third 100 words	128	8.33	157	6.47
Total/ Average	399/3=133	22.98/3=7.66	453/3=151	19.46/3=6.49

Table 1 shows that the average number of syllables and the average number of sentences for the three sets of 100 words is **133** (for narrative) and **151** (for expository), **7.66** (for narrative) and **6.49** (for expository), respectively. According to the Fry Readability Formula, these figures are at the grade level of the student-participants.

Table 2. Teachers' judgment on the narrative text.

Survey Questions	Responses	
	Yes	**No**
1. Is the narrative text readable by the Grade 8 students?	29	0
	100%	0%
2. Is it interesting to the Grade 8 students?	25	4
	86.21%	13.79%
3. Is the selection too hard for Grade 8 students to handle?	12	17
	41.38%	58.62%
4. Can the text be used to gauge the students' comprehension?	27	2
	93.10%	6.90%
5. Is the text of desirable length (neither too long nor too short)?	29	0
	100%	0%

Table 3. Teachers' judgment on the expository text.

Survey Questions	Responses	
	Yes	No
1. Is the expository text readable by the Grade 8 students?	21	8
	72.41%	27.59%
2. Is it interesting to Grade 8 students?	17	12
	58.62%	41.38%
3. Is the selection too hard for Grade 8 students to handle?	11	18
	37.93%	62.07%
4. Can the text be used to gauge the students' comprehension?	20	9
	68.97%	31.03%
5. Is the text of desirable length (neither too long nor too short)?	19	10
	65.52%	34.48%

It can be gleaned from Tables 2 and 3 that teachers' judgment or opinion supported the results of the Fry readability test. Majority of the teachers believed that both texts are: (1) readable by Grade 8 students; (2) the narrative and expository selections were interesting; (3) not too hard for students; (4) could be used to gauge the students' comprehension; and (5) of the desired length.

Phase II

The purpose of the pilot test was to try out the procedure employed in the study proper. The procedures undertaken in this phase are described as follows:

Pilot study administration. Pilot testing, with 120 participants, was undertaken to ensure that the subsequent actual administration would run smoothly.

The first step of the pilot study was *students' familiarization on the levels of comprehension questions.* This was pursued to gauge the capacity of students generating questions. It was assumed that the observed student difficulty in generating questions would suggest duplicating this step in the actual conduct of the study (Phase III).

Phase III

This phase involved *actual study administration* guided by lessons and insights gained from the pilot testing.

Actual study administration. This time, forty-six (46) students comprising one section served as the participants. The steps employed in the pilot study were replicated.

The first step was a brief orientation on the Barrett taxonomy intended to prepare the students in generating their own questions.

The second step concentrated on *text reading and generating of questions* utilizing the same procedures undertaken during the pilot study. However, other features were modified and improved such as running this activity as a regular recitation period to avoid disruption of classes; employing a teacher-guided generation of student questions; and administering the question generation in two sessions (i.e., one day was allotted for the narrative text and another day for the expository text); and doing the analysis and interpretation as bases for determining the levels of comprehension questions.

Question generation was divided into three parts: *before, during,* and *after reading.* The participants were reminded to read and follow the instructions written on the *question-generation sheet.*

The last step under Phase III was the *analysis and interpretation of student-generated question.* In carrying out this step, the Barrett taxonomy was utilized to determine the level of questions made. Frequencies, percentages, and actual questions served as bases for the descriptive interpretation of the data gathered to answer the two research questions in this study.

Results and Discussion

Tables 4 and 5 capture the frequencies and percentages obtained from the students' levels of comprehension on the narrative and expository texts, respectively.

Comprehension levels of student-generated questions on expository and narrative texts

Table 4. Levels of students' comprehension on the narrative text.

The Barrett Taxonomy of Comprehension levels	Student-Generated Questions											
	Before Reading	%	R	During Reading	%	R	After Reading	%	R	Overall		
										Total	%	R
Literal	35	16.06	3	88	36.97	2	45	32.14	2	168	28.19	2
Reorganization	0	0	5	0	0	5	0	0	5	0	0	5
Inference	138	63.30	1	114	47.90	1	73	52.14	1	325	54.53	1
Evaluation	36	16.51	2	30	12.61	3	16	11.43	3	82	13.76	3
Appreciation	9	4.13	4	6	2.52	4	6	4.29	4	21	3.52	4
Total	218			238			140			596	100	

Before Reading

Questions generated on the narrative text before reading were predominantly *inferential.* The only clue available to students for question generation was the title of the selection. Given this limited information, it was expected that students' predictions about the text are informed by their background knowledge and prior experiences (Leu & Kinzer, 1999; Hansen, 1981). In other words, guided by their schemata they needed to infer. Inferences/predictions made were along supporting details, outcomes, character traits,

and cause and effect relationships. Barrett (1972) elucidates that inferential comprehension is demonstrated by students when they use ideas and information stated in the selection, their intuition, and their personal experience as a basis for conjectures and hypotheses.

The following sample questions are **inferential** and sub-categorized accordingly. It may be noticed that many of them are syntactically erroneous; yet, they express intentions clearly. Hence, the researcher culled them faithfully. Q*uestions on* **inferring supporting details** *surfaced: Paano nagbago ang ugali ng mga lalaki (How do attitude of men change?)?; and For whom the hug from a teenage boy?*

The next subcategory is questions pertinent to **inferring predicting outcomes** such as "*What will happen to the story and Ano kaya ang mangyayare sa wakas (What will eventually happen?)?*

During Reading

Questions raised in this stage of reading are text-dependent, i.e., they relate to text content. A majority of the students' questions during reading were also of the **inferential** type. In contrast, however, to the questions generated during the before reading stage, this type of questions was followed sequentially by the *literal*, *evaluation*, *appreciation*, and *reorganization* levels. Hansen (1981) describes this as a state that readers improve their abilities to construct meaning when they are taught how to make inferences which readers' guesses or predictions about the texts.

Inferential student-questions such as "*Mahal ba ng ina ang teenage boy?* and *Bakit nila kailangang magdiwang para sa kanilang mga ina (Why do they need to celebrate for their mothers?)?* were subcategorized as **inferring supporting details** because apparently students are intended

to conjecture about additional facts the author could have included in the selection which would have made it more informative, interesting, or appealing.

On **inferring of cause and effect relationship,** students' questions like "*Bakit kinakailangan ng isang bata ang suporta ng ina (Why does a child need mother's support?)?* and *Why his friend's mother is not around the program?* were formulated to hypothesize about the motivations of characters and their interactions with time and place. These queries were likewise intended to speculate on what caused the author to include certain ideas, words, characterizations, and action in his or her writing.

Student-formulated questions under **inferring character traits** such as "*Ano ba ang ugali ni Jimmy (How does Jimmy behave?)?* and *Bakit hinayaan ng guro na ibigay ni Jimmy ang regalong ginawa para sa kanyang ina (Why did the teachers allow Jimmy to give the gift he made to his mother?)?* were intended to hypothesize about the nature of characters on the basis of explicitly stated clues presented in the selection.

After Reading

Student-generated questions after reading a narrative text were similar to those questions during reading. The **inferential** level ranked first. This was followed by the *literal, evaluation, appreciation* and *reorganization* levels as sequenced. On **inferring of supporting details,** sample questions were "*Ano kaya ang pinaka feelings niya habang nararanasan niya ang mga pangyayaring ito?* and *Bakit parang ganoon na lang ang importansiya niya sa pangyayaring ito (How did he feel while experiencing all these event? and Why does he give much importance to the events?)?*

Student-questions on **inferring of cause and effect relationship** *comprised "Why Mrs. Marra say thank you to Jimmy and her Mother?* and *Bakit bumalik si Jimmy sa board (Why did Jimmy return to the board?)?"* These questions aimed at showing reasons and consequences of actions as well as behaviors. Likewise, question under *inferring on character traits* surfaced. Questions under **appreciation** ranked second to the last and were sub-classified as *emotional response to content, identification with character or incidents,* and *reactions to author's language.* Sample questions on this level were: *(1) "Ano ang naging reaksiyon mo sa pagmamagandang loob ng persona (What were your reaction in regard the courtesy or good deed shown by the person?)? (2) "How do you treat your mom?"* and (3) *"Paano naugnay ang pamagat sa kwento (How do you connect these things to the title of the story?)?"* The first query is meant to verbalize certain feelings as a reaction to persona's good intentions. The second one intends to elicit a response that demonstrates sensitivity to, sympathy for, and empathy with a character. The third question expects to respond to the author's craftsmanship in terms of the semantic dimension of the selection. Such appreciation is dependent upon the denotation and connotations of words. Likewise, emotions are inherent in appreciation.

Reorganization obtained the lowest percentage of questions. Maybe, this level was not sufficiently understood by students during the brief orientation on question-generation.

The next section will deal with the presentation of the results pertinent to the expository text.

Table 5. Levels of student-generated questions on the expository text.

The Barrett Taxonomy of Comprehension Levels	Student-Generated Questions											
	Before Reading	%	R	During Reading	%	R	After Reading	%	R	Overall		
										Total	%	R
Literal	10	4.08	4	113	42.32	1	50	27.78	2	173	25	2
Reorganization	0	0	5	3	1.12	5	0	0	5	3	.43	5
Inference	160	65.31	1	81	30.34	2	59	32.78	1	300	43.35	1
Evaluation	61	24.90	2	59	22.10	3	46	25.56	3	166	23.99	3
Appreciation	14	5.71	3	11	4.12	4	25	13.89	4	50	7.23	4
Total	245			267			180			692	100	

Before Reading

The most prevalent student-generated questions during the before reading were likewise **inferential**, followed sequentially by *evaluation, appreciation, literal,* and *reorganization*. On **inferring of cause and effect relationship,** *questions* such as *"Bakit nagkaroon ng global warming (Why did global warming occur?)?* and *Ano ang magiging sanhi at bunga nito satin (What are the causes and effects of global warming?)?"* were queries that clearly conjecture on the causes and effects of global warming.

Questions on **inferring of main ideas** like "*What is the meaning of global warming?"* dealt on the theme or main topic of the expository text. This would mean that the students wanted to know the gist of the text.

Under **evaluation**, questions on **judgment of adequacy and validity** include "*May solusyon ba sa global warming (Is there or are there solutions to global warming?)?* and *Makakaepekto ba ito sa tao, halaman, hayop (Will global warming affect people, plants, and/or animals?)*? They appear to be seeking information from the selection with an eye toward agreement and disagreement and completeness and incompleteness with what they know.

Questions on **judgment of fact or opinion** were formulated to analyze and evaluate the text on the basis of the knowledge they have on the subject as well as to analyze and evaluate the intent of the author. "*Sa palagay mo, tayo ba ang naggawa ng Global Warming (Do you think that we humans caused global warming?)?"* demonstrated this subcategory.

On **judgment of worth, desirability, and acceptability,** one example is the question, "*Kapupulutan ba ito ng aral (Can we deduce any learning from this?)?* It exemplifies judgments based on the students' moral code or their value system, i.e., whether the text is worthy, desirable, and acceptable.

On the **appreciation** level, questions were sub-classified as *identification with characters or incidents*. According to Barrett (1972), *appreciation* involves all the previously cited cognitive dimensions of reading, for it deals with the psychological and aesthetic impact of the selection on the readers. Therefore, generated questions under this level call for the readers to be emotionally and aesthetically sensitive to the work and to have a reaction to the worth of its psychological and artistic elements.

On the **literal** level, questions were subcategorized as *recalling of details.* Apparently, the 10 questions were all the same, i.e., asking what the title of the selection is.

During Reading

The most frequent questions of the participants during reading were **literal**. Sample questions falling under **recalling of details** are "*Sino-sino ang may kagagawan ng Global Warming?* and *Ano ang katawagan sa nagagawa ng araw at ng ating Daigdig?"* Answers to questions raised are directly stated in the selection. **On recalling of cause and effect relationship,** questions that surfaced are "*What is the other effect of global warming?* Apparently, questions were formulated to recall the causes and effects of global warming.

The **inferential** level of inquiries, which called for reading between the lines, was the second most prevalent student-questions. This level is viewed as more demanding in terms of processing than the literal level. The subcategories under this level include (1) *inferring of supporting details,* (2) *inferring of cause-effect relationship,* (3) *predicting outcomes,* (4) *inferring of main ideas,* and (5) *inferring of sequence.*

Next to the *inferential* level was the **evaluation** type of questions. Questions generated on **judgment of adequacy and validity** were assumed to assess whether the pieces of information presented were complete or not. This was demonstrated by sample queries like "Do *so many diseases or bacteria in a place possibly much increase global warming?* and *Is the carbon dioxide the main culprit of global warming?"* Questions of the participants were deemed to prompt actions or possible solutions on global warming. The feeling of being part of a solution were evident in their queries.

Questions under **judgment of appropriateness** *and* **Judgment of reality or fantasy** were only few. These were "*Is there a treatment for global warming?* and *Anu-ano*

ba ang mga dapat gawin upang maiwasan ang masyadong tagtuyot na mararanasan (What are we suppose to do to prevent us from experiencing drought?)?"

After Reading

The most frequent student-generated questions after reading were categorized as **inferential**. This was followed by the *literal, evaluation, appreciation,* and *reorganization* levels. Questions on **inferring supporting details** are reflected in the following queries: "*Kailangan ba talaga itong ingatan (Do we really need to secure these?)?* and *Hanggang kailan natitiis ang Global Warming (How long can we endure global warming?)?* It is understood that answers to these questions are not directly found in the selection; rather, they need to be deduced.

On **inferring of main ideas,** the following questions demonstrated that the participants wanted to identify the main theme, gist, or moral lesson of the selection: "*Ano ang natutunan mo matapos mabasa ang kwento?* and *Bakit kailangan pag-aralan ang global warming?*

Questions on **inferring sequence** showed that the participants desired to know the possible order of events right after certain actions stated in text. Queries like "*Paano nagkaroon ng global warming ang isang lugar (How does global warming occur in a particular place?)?* and *Kailan nangyayari ang climate change (When does climate change happen or occur?)?"* illustrated this question type..

Only one question was generated under **inferring of comparisons;** *to cite,* "*Ano ang pagkakapareho ng climate change at global warming (How do we compare climate change and global warming?)?"* It could be interpreted as students wanting to abstract the similarity between the two ideas.

Literal questions of the students were subcategorized as *recalling of details, recognition of details,* and *recalling of cause and effect relationship.* Sample student-generated questions are *"Anong klaseng panahon ang mararanasan ng Earth (What kind of weather will Earth experience?)?"* and *"What is the serious effect of global warming?"* These questions may be regarded as afterthoughts of what students remembered about the selection read.

In addition, **evaluation** questions were sub-classified as (1) *judgment of adequacy and validity;* (2) *judgment of worth, desirability, and acceptability;* (3) *judgment of fact or opinion;* (4) *judgment of appropriateness;* and (5) *judgment of reality or fantasy.* The following questions correspond to the above-named categories: (1) *Ito ba ay kabilang sa dahilan na pagkakaroon ng global warming (Is this strange event because of the presence of global warming?)?* and (2) *Mahalaga bang maagang masulusyunan ang global warming (Is it important to immediately resolve or solve the global warming problem?)?*

On the **appreciation** level, only the subcategory on **identification with characters or incidents** surfaced. *"Paano maging handa sa global warming (How do we prepare ourselves for global warming?)?"* and *"Ano ang dapat gawin para hindi magkaroon ng climate change (What do people need to do to prevent global warming from occuring?)?"* were sample questions drawn from the participants.

The results of the study revealed that the most prevalent levels of students' comprehension based on the questions they generated on narrative and expository texts were *inference* and *literal* comprehension. These levels obtained the first and second highest percentages, respectively. This could be interpreted that the participants

of the study would perform better at these levels of comprehension than at the other levels when asked to read narrative and expository selections. Apparently, the performance of the student-participants on the *literal* and *inferential* levels supports the study conducted by Santos (2004) wherein student-formulated questions revealed that the participants under the *questioning group* shifted from a low level to a higher level type of questions. In addition, the subjects' performance on *inferential* comprehension was supported by their predictions before and during reading which included questions that promote understanding (Anderson & Pearson, 1984).

However, with regards to the result under the *literal* level, the result of the present study was slightly different from a previous study on student-generated questions conducted by Aban (2006).

A possible reason why the participants of the study performed well on the *inference* level was because they belonged to the top section and may have already developed their comprehension skills at it. Likewise, this could be due to the type of selection. However, in terms of the *literal* level, one strong influence may be the teaching-learning situation. This idea was supported by a study on questions asked by science teachers wherein De la Cruz (1990) found that teachers' questions were predominantly of the memory type, i.e., the answers to the questions were found in the text. Another study revealed that teachers' questions were classified as literal comprehension questions (Gocer, 2014).

The comprehension performance of the Grade 8 students on *reorganization, evaluation,* and *appreciation* levels obtained the lowest percentages, respectively. This seemed to be expected since these are higher-level skills and need more rigorous processing on the part of the reader. These comprehension levels need to be addressed during classroom

instruction and also in a reading remediation program that may be set up as an offshoot of this study.

Among the five comprehension levels in the Barrett taxonomy, the *reorganization* level obtained the lowest percentage for both narrative and expository texts. Probably, the participants understood less the questions under this level presented during the orientation and question-generation training. This further implies that the students' schemata on its subcategories such as *classifying, outlining, summarizing,* and *synthesizing* may be weak, insufficient, or less focused on; therefore, they needed to be developed further among the students. Moreover, the result of the present study slightly negated the findings of Gocer (2014) that questions were adequate under the *inferential*, *reorganization,* and *evaluation* levels. Findings of this study support the inferential level only of Grocer's claim.

As noted, the most prevalent levels of students' comprehension based on the questions they generated on the expository text were the *inferential* and *literal* levels. This suggests that the participants have already gained adequate proficiency in literal and inferential comprehension.

A number of significant observations surfaced that are worth mentioning. These observations were revealing of the participants' background knowledge and their degree of reading comprehension gauged from the questions generated. Palma (2006) pointed out and confirmed the importance of teaching students to activate and reinforce their background knowledge on the content of the narrative text to be read so as to enhance their comprehension.

First, the *literal* and *inference* level questions were the most generated types in both narrative and expository texts. Of special mention were questions on *recalling of details* under the *literal* level and on *inferring supporting*

details under the *inference* level. This occurrence may be attributed to the fact that the students were well-exposed to *recalling* and *inferring of supporting details* common in teacher-generated and text/author-generated questions. The results of the present study confirmed the findings of Aban (2006) and De la Cruz (1990). They indicated that students' schemata on these subcategories were adequate, that is why they were able to generate questions along these types. Santrock (2009) found that readers reconstruct information which fit into information that already exists in their minds.

In the same manner, the common question patterns prevalent in the three reading stages, i.e., *before reading, during reading,* and *after reading,* comprised *inferring supporting details* and *recalling details*. Moreover, for both narrative and expository selections, expectedly, the '*during reading'* stage obtained the highest number of questions followed by *questions* generated *before* and *after reading.* This could be attributed to the idea that the participants generate more questions when they are exposed to more pieces of information. Moreover, the most prevalent level of questions asked before, during, and after reading for both texts were at the *inference* level. On the other hand, literal questions were frequently asked on the expository text in the '*during reading'* phase.

Third, most questions formed by student participants made use of *wh*-question words. It could be posited that students were exposed to these kinds of author-generated questions as well as teacher-generated questions. This may likewise explain why questions under *reorganization* were very few.

Fourth, some questions were intended to monitor the thinking process. This pertained to metacognition. S ample student questions illustrating this were as follows: (1) *What do you think could be the other title of the story*? (2) *Why?* (3)

Ano ang nararamdaman ng isang isang bata kapag wala ang kanyang ina (What does a child feel when the child's mother is not present?)? (4) *Nababawasan ba ang tiwala sa sarili ng isang bata kung walang suporta ang ina (Does a child feel inferior and not confident without the mother's support?)?* Questions 2 and 4 sought to monitor the students' thoughts expressed in questions 1 and 3, respectively. Metacognitive strategies were employed by the participants in generating these types of questions. These were revealed through the questions that served to monitor their previous inquiries or thoughts. They asked for confirmation whether what they had generated referred to what was actually or really existing or happening. Sometimes, it was used to obtain further explanation. This observation found support from Alder (2001) who elucidated that metacognition is 'thinking about thinking' wherein students who are good readers would make use of it by monitoring their understanding, adjusting their reading speed to fit the difficulty of the text, and fixing any comprehension problems. This is simply checking their understanding of what they read via asking questions.

Fifth, schema or background knowledge was employed by the participants in generating questions especially before reading the text. This may be due to the fact that titles provide limited information only for the participants to process. Therefore, they had to go back to their stored knowledge in order to generate predictive inquiries which are also classified as referential questions. However, this does not mean that schema was not used during and after reading. Students are presumed to utilize their stored knowledge consciously or unconsciously when generating questions before, during, and after reading. The participants' use of schema is rooted on the idea that what already exists in our minds is used in reconstructing information (Santrock, 2009), and thus, what actually occurs is an interactive process (Yigiter et. al., 2005).

Lastly, the brief orientation given to students on the Barrett Taxonomy may have aided them in asking varied types of questions which would not have occurred if such exposure were not provided. Some of the questions they were able to raise appeared to be less evident in queries of teachers and authors themselves.

It could be interpreted that the student-generated questions were reflective of their learning and comprehension which may be traced back to their past experiences. This idea is grounded on the contention of Yigiter et al. (2005) who claim that prior knowledge is essential for comprehension; hence, teachers should help learners build schemata and make connections between ideas.

Differences and Similarities on Student-Generated Questions

Questions before reading were analyzed and treated differently from those generated during and after reading because pieces of information expressed between them demonstrate more differences than similarities. For instance, a question like *"Saan nangyari ang kwento (Where did the story happen?)?"* was categorized as *inferring supporting* detail if it was generated before reading. Therefore, it was classified as an *inferential* type of question or specifically *inferring of supporting detail*. However, it was categorized as *recalling of detail*, if it was generated during or after reading. This was true for both narrative and expository selections.

Other subcategories pertinent to before reading were *predicting outcomes, inferring of main ideas, inferring character traits,* and *inferring cause-effect relationship.* These results revealed similarities to the findings during reading where questions on *inferring cause-effect relationship, inferring character traits, inferring of main ideas, predicting outcomes, and inferring sequence* were demonstrated by the participants. Apparently, what ranked second *before*, *during,*

and *after* reading was *predicting outcomes, inferring cause-effect relationship, and inferring main ideas,* respectively.

On the *evaluation* level*,* student questions *before*, *during,* and *after* reading exhibited strong similarities. Questions on *judgment of fact or opinion* supported this claim because it ranked first in the three reading stages.

On *appreciation* level, generated questions *before*, *during,* and *after* reading summed up to twenty-one only. This implies that this level needs to be strengthened among students. Student-generated questions during the three reading stages demonstrated both similarities and differences. While the most frequent generated questions *before* and *after reading* were similarly categorized as *inferential*, queries *during reading* were classified as *literal*.

On the *literal* level, student questions *before reading* were limited only *to recalling of details* which was not true of *during* and *after reading* because there were other subcategories that surfaced aside from it. These were *recognizing of details, recalling of sequence, and recalling of cause-effect relationship.*

On the *reorganization* level, there were no student-generated questions *before* and *after reading*. Only three questions were generated *during reading* and were subcategorized as *summarizing*.

As to the *inferential* level, most of the questions drawn *before reading* were classified as *inferring cause-effect relationship*. This finding was contradicted by the questions generated *during* and *after reading* because *inferring of supporting details* type of queries were the most prevalent in both stages.

On the *evaluation* level, the most frequent student-generated questions *before, during,* and *after reading* were

subcategorized as *judgment of adequacy and validity*. In addition, student participants were able to generate questions on *judgment of fact or opinion; judgment of worth, desirability and acceptability; judgment of reality or fantasy; and judgment of appropriateness.*

On the *appreciation* level, the questions of the participants showed similarity because most of the queries asked *before, during,* and *after reading* were classified as *identification with character or incidents.*

Results revealed that there were no differences in the questions generated by the students between the narrative and expository texts in terms of their rank. Findings indicated that for narrative and expository selections, *inference, literal, evaluation, appreciation* and, *reorganization* levels of comprehension ranked first, second, third, fourth, and fifth, respectively.

However, there are differences among the questions generated between narrative and expository texts. In a narrative, students were able to formulate queries under recognizing, recalling, and inferring of character traits. On the other hand, these subcategories did not surface in an expository text. This is because a narrative tends to follow a predictable structure of setting-character-goal/problem-events-resolution Golding and Long (1991).

Conclusion and Recommendations

Based on the research findings obtained, it is safe to conclude that: (1) students' comprehension of texts read can be gauged via student-generated questions; (2) textual understanding is fuelled by schemata and metacognitive strategies employed consciously or unconsciously by participants; (3) the use of L1 is helpful in determining students' level of comprehension which otherwise would not have surfaced due to student's

inadequacy in expressing their questions in another language (in this case, English) which they cannot handle with facility; and (4) the amount of exposure and practice students have to a taxonomy of comprehension levels can either restrict or enhance their ability to ask questions.

In this regard, it is recommended that teachers utilize student-generated questions to advance comprehension of reading texts; make use of all the levels of comprehension questions to check understanding of texts read as a means of enhancing student competence in asking questions. More exposure to any taxonomy of questions may be employed; exert a conscious effort to help students gain proficiency in expressing themselves in English especially in asking questions; and probe student comprehension by having students employ their L1 judiciously.

To fortify further the effects of student-generated questions, the researcher recommends that the school offers a seminar to teachers in all subject areas on the levels of comprehension and on the importance of student-generated questions and implement a reading intervention program to remedy students' comprehension inadequacies based on an assessment of questions they can generate. In addition, future researchers may conduct a similar study using other text types with another level of participants in another locale as variables; must not use the results of the study for generalization purposes because the respondents represented only one section out of the eleven sections of Grade 8 students; and a similar study may likewise be conducted with focus on listening comprehension.

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