Gradual Psychological Unfolding (GPU) Discussion Format and Reading Comprehension and Student Engagement

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Discussions have remained a norm in classrooms because of their perceived effectiveness and convenience in developing reading comprehension and improving student engagement. However, there is a gap between theory and practice which this inquiry aimed to address.

The quasi-experiment lasted for twenty (20) one-hour sessions. It sought to identify the effects of Gradual Psychological Unfolding (GPU) discussion format on reading comprehension and student engagement using the t-test. Participants were 42 Grade Six students from a rural public school. Data were obtained using a validated comprehension test and an engagement survey and through observation and video-recording.

Findings indicate that GPU significantly affects reading comprehension and student engagement. Implications highlight the need to develop in students discussion-ready behaviors for success of classroom discussions. Recommendations to broaden the scope of research on GPU and its effects on specific ability groups, lengthen intervention duration, and test the effects using the mother tongue, were made.

Introduction

Reading is an important skill one must learn and develop to function effectively in society. Much of the weight of the responsibility to develop in students reading comprehension and its sub-skills lies on school instruction. Unfortunately, current research shows that while students are able to read, most cannot understand what they read. Several strategies aimed at improving reading comprehension skills, including discussion formats, have been made to tap not only the lower-level, but also, and more especially, the higher-level skills. In this manner, both the need to develop in students higher-cognitive skills and to enhance engagement are addressed, as the latter is found to be significantly linked to the level of reading comprehension (Kelly, 2007).

A growing number of researches delve into the relationship between teacher questioning and student reading comprehension. The practice of questioning through discussions remains a norm in many classrooms because of the convenience and perceived effectiveness of using questioning techniques in teaching (Borich, 2004, Nystrand, 2006). However, researchers who have studied classroom interaction found that teachers tend to use, for the most part, literal questions that concern retrieving of trivial factual information rather than getting a broad understanding of a material (Barr & Dreeben, 1991; Cazden, 1986; Durkin, 1979; Goldenberg, 1992 in Applegate, Quinn & Applegate, 2006; Guzak, 1967). They have long before noted that most questions teachers ask in the name of comprehension are at a very low intellectual level and do little to stimulate thought or teach reading comprehension (Durkin, 1978, 1979, 1984; Gambrell, 1980, 1983 in May, 1986; Nystrand, 2006; Schaefer, 1976).

Despite knowledge of the need to develop higher level thinking skills and several strategies developed through the years, results of current research still indicate that teachers have been asking the wrong questions to promote learning (Nystrand, 2006; Schaefer, 1986). Questions of higher-level cognitive complexity are the least emphasized in the classroom (Pones & Hubbard, 1999; Rinser, Skeel, & Nicholson, 1992 in Borich, 2004). Previous research data reveal 70 to 80 percent of questions require simple factual recall and 20-30 percent are for higher level thought processes, and three out of five questions are for recalling data and only one tapping higher level thought processes (Atwood & Wilen, 1991; Brown & Wragg, 1993; Corey, 1940; Haynes, 1935 in Borich, 2004). This is no different from present data which generally show the trend in classrooms that teachers still use more lower-level than higher-level questions (Applegate, Quinn, & Applegate, 2006; Kelly, 2007; Schussler, 2009; Nystrand, 2006; Wilen, 1991 in Borich, 2004). Consequently, comprehension is taught as an exercise in memorization of details. Researchers report that typical classroom tasks emphasize copying, remembering, and reciting, with few tasks that engage students in thinking about what they have read (Applegate & Applegate, 2010).

As an effect, learners are less engaged in the learning process as these kinds of questions do little to encourage enthusiasm and appreciation for the rewards of reading (Applegate & Applegate, 2010; Borich, 2004; Kelly, 2007). Low engagement among students have been attributed to several external factors, but notably, the kind of questions teachers ask and the manner by which classroom discourse proceeds also contribute to the distribution of engagement among students (Kelly, 2007; Khan & Inamullah, 2011; Schussler, 2009; Shen & Yodkhumlue, 2012).

To address both problems in reading comprehension and student engagement, several discussion formats have been promoted. Each claims to be effective in developing higher-level thinking skills and increasing student engagement. The more common is Bloom's Taxonomic Strategy based on Bloom's Taxonomy of Educational Objectives. In this discussion format, the questions are arranged either inductively or deductively. When questions proceed from knowledge to evaluative levels, students are engaged in inductive reasoning while when questions follow the reverse, proceeding from evaluation to synthesis down to knowledge, thinking is deductive. This strategy's advantage is in the ease of employment (Hunkins,

1989). Another format is the Dimensional Ordinary (DO), coined by Prof. Basilisa Manhit, former Chairperson of the Reading Education Area of the College of Education, UP Diliman. The features of the DO as a format for sequencing questions are similar to Bloom's Taxonomic Strategy in which the questions are highly sequential, following the order of skills, specifically in Gray, et al's Dimensions of Reading Comprehension. Questions are arranged according to dimensions and build up from the literal comprehension, interpretation, evaluation, and integration levels, and finally, to creative reading. This format aids students in understanding the selection by providing more structure and progression. Like the Taxonomic Strategy, it provides ease in execution (Ocampo, 1997).

A variation of the abovementioned formats is the Gradual Psychological Unfolding (GPU) discussion format, also labeled by Prof. Basilisa Manhit. Questions in this strategy fall under the different comprehension levels of Gray, et al. taxonomy (Hermosa, 2002) but are sequenced following the question-answer-question pattern regardless of the dimension. As such, GPU follows a natural conversation pattern where the previous answer triggers the next question, hence perceived to be more engaging. Figure 1 shows the sequence of questions in the GPU format.

GPU is one format used and taught by the reading Education Area of the College of Education, UP Diliman, as it develops reading comprehension at the same time engages students to participate in the learning process. However, there is a research gap in the lack of empirical local research on this long-practiced discussion technique to prove the claims and assumptions.

This research aims to find out if there are significant differences in the effects of the Gradual Psychological Unfolding (GPU) discussion format on reading comprehension and level of engagement among students. Specifically, the research was conducted to answer the following research questions:

1. Is there a significant difference on the reading comprehension of students before and after they are exposed to GPU?
2. Is there a significant difference on the level of engagement of students before and after they are exposed to GPU?

Knowing the effects of the selected discussion formats on reading comprehension and engagement is considered significant as it could provide insights and data that contribute to the body of knowledge on effective ways to develop reading comprehension and engagement.

1. The study on discussion techniques is a useful addition to educators' repertoire of effective strategies as discussions are part of all subject areas. Results of this study with regard to student engagement provide teachers a tool to create learning situations that facilitate participation among students.
2. Results of the study provide data for the Reading Education Area, College of Education, UP Diliman and other researchers on the effectiveness of discussion formats, specifically GPU, for which there is an absence of empirical data recorded. Research data can also open avenues for more research on the GPU discussion format.
3. Finally, the study hopefully helps students and teachers, both learners in their own right, to understand that reading and meaning-making are as natural as daily conversations; and that such realization eventually leads to developing genuine love for reading.

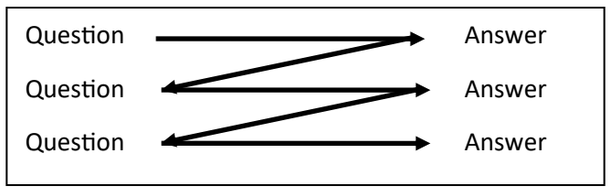

***Figure 1**. Gradual Psychological Unfolding (GPU) Sequence (Manhit, 1980; Ocampo, 1997)*

Method

The inquiry on the effects of the GPU discussion format on reading comprehension and student engagement was pursued through a quasi-experiment that followed a pre-test – posttest design, which made use of both quantitative and qualitative data.

Research Locale and Participants

Participants of the study were forty-two (42) grade six students of an intact class from a public elementary school in Bulacan, Philippines. The grade six students were deemed to be in Chall's (1983 in Hermosa, 2002) Stage 3 or Reading for Learning of the New Stages of Reading Development. In this stage, students from ages 9-13 years old use reading to learn new ideas, gain new knowledge, experience new feelings, and learn new attitudes. It is in this stage where reacting to the text is acquired mostly through discussions and answering questions. For this reason, the level was chosen as the subjects of the study on the effects of discussion formats.

Quantitative data were gathered using a standardized reading comprehension test and an engagement survey.

Manhit Diagnostic Reading Test (DRT)

The Manhit Diagnostic Reading Test (DRT), Grades 4 -12, Form C was used. It is a standardized reading test of norms covering Grade 4 through Grade 12 or 2nd year college. The test has three sections: Comprehension, Vocabulary, and General Reading. Form C was correlated with the original Forms A and B, which were standardized in the 1960s with national norms. Correlation coefficients range from 0.60 to 0.90. The level of significance is < 0.001 to < 0.01 (Gonzaga, 2004; Manhit, 1978).

The Comprehension Section of DRT Form C has 25 items with multiple options per item. Skills covered by the items range from literal understanding to integration. Form C was used for the pre-test and the posttest to determine the change in comprehension scores after intervention. Items in the comprehension test were distributed to the different dimensions of reading skills.

Engagement versus Disaffection with Learning (EvsD): Student Report

To measure student engagement, the Engagement versus Disaffection with Learning (EvsD) student and teacher reports were used. The report forms were originally developed by Dr. James P. Connell and his colleagues at the University of Rochester as a part of the Rochester Assessment Package to assess components of a theory of motivation that includes construct of engagement versus disaffection (Connell, 1990; Connell and Wellborn, 1991 in Skinner, et al, 2009).

The Student Report contains 20 items in four subscales: behavioral engagement that taps effort, attention, and participation in learning activities; behavioral disaffection that taps lack of effort and withdrawal from learning activities; emotional engagement that taps emotions indicating involvement in learning activities and; emotional disaffection that taps emotions indicating withdrawal from learning activities. The Teacher Report contains items grouped in the same subscales as the student report.

EvsD had been tested for reliability and internal consistency on a sample of students in grades 3-6 of 0.61-0.85 for the four subscales. Tests yielded cross-year correlations for subscales of engagement of 0.53-0.68 for student self reports and 0.65-0.82 for teacher reports (Skinner, et al, 2009). Evidence for construct validity of the instrument was also reported as the subscales showed correlated as hypothesized. The instrument had also been used in published research that explored the nature of engagement, its changes over time, and various student profiles of engagement (Skinner, et al, 2009).

For the purpose of the current research, the EvsD Student and Teacher Report Forms were modified. Modifications made were purely structural and not conceptual: first, the word "class" was made more specific to "English class"; and second, the items in

the student report form were translated to Filipino by an expert and validated by another, and the translations were written below each statement in English. These modifications were necessary to 1) direct teacher-observers and students to evaluate English class alone and 2) scaffold possible difficulties of some students in understanding the statements in English.

The report forms were summative scales, thus scored based on the points assigned per response: Very true (totoong totoo), four (4) points; Sort of true (totoo), three (3) points; Not very true (hindi parating totoo), two (2) points; and Not at all true (hindi totoo), one (1) point. Reverse scoring was done with items stated in the negative. The highest possible score of 80 indicated high student engagement in class.

Focus Group Discussion (FGD)

Focus group discussions were conducted to clarify and validate student-responses in the EvsD. Questions in the FGD were based on the items in the engagement instrument. FGDs were conducted in groups of five to six students before and after the period of intervention. The researcher facilitated the FGDs. FGD questions included the following:

1. What do you feel about English class?
2. Do you like to attend English class?
3. Do you participate in discussions in English class?
4. What can you say about the way the teacher asks questions?

The students were allowed to express answers in both English and Filipino to reduce the language barrier bias in gathering opinions from students. The responses were tallied and common responses were reported as support for certain findings.

Lesson Plans

The intervention instrument was a researcher-made twenty-lesson literature-based package on the theme Knowing Oneself is Key in Building and Keeping Relationships. The lesson plans employed the Directed Reading Lesson (DRL), a part of Literature and Skills: An Integrated Instructional Framework (LINKS) (Hermosa, 1997 in Ocampo, 1997) which included the following parts:

1. Pre-reading activities
   a. Unlocking of vocabulary
   b. Motivation
   c. Motive Question
2. Reading activity

   The reading activities varied from read aloud, read-along, to silent reading.
3. Post-reading activity
   a. Discussion using DO and GPU
   b. Enrichment

Data Gathering and Analysis Procedures

Lessons were implemented using English as medium of instruction. The use of Filipino by the teacher and the students was also allowed since the study was concerned with discussion formats and not language proficiency, per se.

The intervention period covered six (6) weeks including pre- and posttest sessions. After necessary communications and pre-intervention activities (ie pilot-testing and revising of instruments), the researcher taught the class for one hour everyday for twenty (20) days.

Results of the reading comprehension test and the engagement survey were subjected to the t-test for paired and independent samples, while results of the self-reports were triangulated with the responses in the FGD.

Results

Results of the t-test for paired samples are presented and discussed below. At 95% confidence, the critical region of the t-value is 2.002 from the table of degrees of freedom (41).

GPU and Reading Comprehension

Table 1 presents the results of the t-test for paired samples for the group exposed to GPU. Based on the data, there was a highly significant difference

***Table 1**. Reading Comprehension Means of GPU Group*

GPU Group	N	Mean	Std. Deviation	t-value	Sig.
Pre-test	42	9.119	2.432	-2.416	0.020*
Posttest	42	10.167	2.878		

*significant at p=<0.05 TOTAL SCORE: 25

***Table 2**. Level of Student Engagement of GPU Group*

GPU Group	N	Mean	Std. Deviation	t-value	Sig.
Pre-test	42	66.238	5.608	-2.315	0.026*
Posttest	42	69.429	6.121		

*significant at p=<0.05 HIGHEST POSSIBLE SCORE: 80

between the pre- (M=9.119, SD=2.432) and posttest (M=10.167, SD=2.878), t(41)=-2.416, p=0.020, scores in reading comprehension of the group exposed to GPU. This signifies that discussion using GPU was effective in causing a change in reading comprehension.

GPU and Student Engagement

Initially, the group exposed to GPU showed a comparable level of moderate engagement (M=66.238) with the group exposed to DO. The 3.191 difference between the mean pre- and posttest scores, however, caused the significance of the effect of GPU as presented in Table 2.

For the group exposed to GPU, the t-value -2.315 is significant at 0.026. This suggests that there is a significant difference between the means of the level of engagement of students before (M=66.238, SD=5.608) and after (M=69.429, SD=6.121), t(41)=-2.315, p=0.026, intervention.

Discussion

The significance can be attributed to the use of GPU for several reasons. First, since the discussion format followed the flow of natural conversation, engagement is improved. Engagement is said to increase when discussions mirror authentic conversation about relevant themes versus classroom talk (Schussler, 2009). GPU which follows a sequence that bases the questions on the preceding answers appropriates natural conversations. Second, the results also confirm the recommendation of an earlier research that to increase the level of engagement in discussions, lower- and higher-level questions could be combined (Kelly, 2007). In this manner, students from different levels could participate in questioning activities (Sun, 2012) at any point in the discussion for questions from different levels of comprehension are not asked in a pattern that is based on the dimensions. Third, the discussion format may have answered the students' need to practice higher-level thinking by employing an approach that targets all the dimensional skills. The use of higher-level thinking skills through purposeful use of questions provoke thought and analysis (Kelly, 2007), which challenges students and leads them to become more engaged.

The results of the student engagement questionnaire are further supported by the student responses in the engagement instrument. Particularly, items about discussion, recitation and participation show increased rating. Table 3 presents the scores of the GPU group in specific items:

The increase in the mean score for items #10 and

Table 3*. Behavioral Engagement Means of GPU Group*

Statements	Pre-test	Posttest
#10. I recite in English class.	3.119	3.262
#17. I participate in discussions in English class.	3.214	3.429

#17 shows improvement in the perception of students on discussions and participating in them.

This is further supported by the results of the pre- and post-intervention FGD responses to the question: **Do you participate in discussions in English class? (Nakikisali ka ba sa talakayan sa English class?)**

Responses in the FGD (Table 4) show changes in the perspective of students toward discussion. The fear of being evaluated may have been reduced because of the opportunities for success that the discussion format provided. Such positive perceptions in the post-intervention results, when sustained, will significantly change the attitude of students toward discussion.

Conclusions and Implications

Based on the findings, the following conclusions are made:

1. GPU is effective in developing reading comprehension. It significantly affected the reading comprehension of students since it made use of questions from different dimensions or levels of comprehension which tapped the improvement and/ or development of different comprehension skills.
2. GPU is effective in increasing the level of engagement of students. This is supported by claims that when discussion mirrors authentic conversation, combines low-level and high-level questions, and targets high-level cognitive processes (Kelly, 2007; Schussler, 2009; Sun, 2012), engagement is increased.

The implications of the conclusions are the following:

1. Discussion improves reading comprehension. Moreover, the kind of questions used in discussions affects the level of comprehension developed in a student. Thus, teachers should expose students to discussions that target all levels of comprehension. However, since discussions are not enough to address other comprehension and language difficulties, teachers should consciously strike a balance between the use of discussions and skills development activities, geared toward improving specific difficulties.

Table 4*. FGD Responses of GPU Group Indicating Participation in Discussions*

Pre-Intervention	Post-Intervention
Hindi (No)…	*Oo* (Yes)…
kasi kinakabahan ako. (because I feel nervous.)	*kasi maraming stories ang binabasa namin*. (because we read a lot of stories.)
kapag hindi ko naiintindihan. (when I do not understand (the lesson).)	*gusto naming matuto*. (because we want to learn.)
Minsan (Sometimes)…	*masaya kapag nakasagot ako sa tanong*. (I feel happy when I am able to answer the question.)
kasi kinakabahan ako sa pagsagot sa blackboard. (because I get nervous when asked to answer on the blackboard.)	*parang masayang sumagot sa mga tanong*. (It seems fun to answer questions.)
para tumaas ang grade. (to increase my grade.)	

2. Teachers could include GPU in their repertoire of teaching, specifically discussion, strategies as it was found to have significant effects on reading comprehension and student engagement in class.
3. Classroom discussions, while working to improve comprehension, should aim to engage students from all ability levels. The improvement in both comprehension and engagement because of exposure to discussions could be basis to say that such trend will continue if students participate more in purposeful discussions. Eventually, because of this, the relationship between reading comprehension and engagement will be more evident.

Recommendations

In light of the findings and conclusions presented, the succeeding recommendations are made:

For Educators

1. Discussions are an essential part of classroom instruction. It serves the purpose of scaffolding students' learning. For this reason, the use of purposeful, challenging, and relevant discussions is recommended.
2. There is a need to train educators to use GPU in the classroom to maximize its possible effects on students.
3. The need to encourage students to take part in discussion is as important as developing students' knowledge and skills through questions. Results suggest that exposure to discussion alone can improve comprehension among students; and that a particular discussion format can significantly affect one's behavior and reading comprehension. Thus, it is suggested that educators try discussion strategies that mirror real conversations as they increase engagement and eventually cause significant improvement in reading comprehension.
4. For discussions to be successful in their purposes, teachers need to prepare students to participate in them. If necessary, instruction on turn-taking and other discussion-related behaviors should be done.

For the Reading Education Area and Researchers

1. The empirical data provided by this study on the effects of GPU on reading comprehension and engagement can be a basis for further research and/ or improvement of instruction. Thus, it is recommended that research on the effects of discussion formats on different ability levels and with consideration on the students' language proficiency level to validate the claim that a certain level of language mastery is necessary for the success of a particular format (GPU) (Ocampo, 1997) be conducted.
2. Look into the effects of the discussion formats on comprehension and student engagement when the mother tongue is used as the medium of instruction.
3. Continue the research observing improvements in the following aspects:
   a. Lengthen duration of intervention to gather data that might prove the relationship between reading comprehension and engagement.
   b. Increase reliability of research data by using notes and responses from Teacher Report Forms and other observational means like daily research logs to support student responses in the self-report forms.
   c. Conduct observations that are more directed to specific changes in behavior such as turn-taking, listening, and attitude towards discussions; the quality of answers to questions and language use (appropriate vocabulary, correct use of

grammar structures, and the like); and the atmosphere of discussion in class.

d. Establish and use criteria for observation to ensure internal validity of observations done for the study.

e. Increase sample population to establish external validity and generalizability of results.

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