A Comparison of the Reading Strategies Used by Good Readers in Print and Hypertext Environments: Implications and Recommendations for the Improvement of Reading Instructions

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Abstract
This paper reports in summary the findings of Bolaños (2009) where he compared the reading comprehension strategies being used by good second language (L2) readers when they read in print and hypertext environments. The paper then provides the implications of its findings and conclusions for further improvement of reading instruction.

Keywords: Reading strategy, Hypertext, Reading instruction

Instruction
The 21st century has been characterized by rapid technological breakthroughs that have impacted significantly on the lives of people, particularly students in the tertiary level. What was once in print form alone has now its electronic version readily available. As a matter of fact, countless learning materials are being introduced every now and then having only online electronic versions available to every learner. Given the recent scenario these days, educators are challenged to ask and answer questions such as: What does the current deluge of technological developments imply pedagogically? What should be done in order to benefit from the numerous forms of technologies that continue to come out day in and day out? And how do teachers make use of the different forms of technologies effectively and efficiently in their respective classrooms?

Reading is one area of literacy that is predisposed to the changing forms brought about by persistent and unstoppable developments in technology. The information and communication technology (ICT) phenomenon has brought the field of reading to a form way complicated than ever before especially to general readers. With it came the birth of hypertext or “a kind of informational environment in which textual materials and ideas are linked to one another in multiple ways” (Burbles & Callister 2000, p. 43).

Anderson (2003) claims that studies investigating the nature of comprehension and comprehension strategies in online environment are too limited. In fact, it is Coiro and Dobler (2007) who, so far, have done an elaborate study on the topic. It goes without saying then that the area is under investigated. Fontanini (2004) states that due to the dearth of studies in the area, the differences in the processing of linear text and hypertext seem not to be totally established yet.

The exploratory study of Coiro and Dobler (2007) investigated the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. Their 11 good readers of traditional print form were tasked to locate, evaluate, and synthesize content area information within informational websites and search engines. Data analysis of verbal protocols, interviews, and field observations following a grounded theory model (Glaser, 1992; Glaser & Strauss, 1967) demonstrated that first, “in
some ways, reading on the Internet looks the same as reading printed text” (p. 229) and second, “reading on the Internet is uniquely more complex” (p. 229).

Responding to the call for more studies that explore the reading strategies readers apply while engaged in online and print reading tasks, Bolaños (2009) aimed at identifying the specific comprehension strategies good L2 readers use when they process texts in linear and nonlinear contexts. His study is a deliberate attempt to problematize the usual way good readers are described - active, skilled, proficient, among others - which can be said to be vague.

Premised on the view that reading is a process of constructing meaning while interacting with texts (Ruddell, 2002), the comprehension processing in Bolaños (2009) was accounted for by some theories and models that served as framework of the study and these are 1) self-regulated learning by Azevedo (2005, as cited in Scheiter & Gerjets, 2007) which states that for better processing of any textual information, awareness and monitoring of the reading activity being performed are necessary; 2) cognitive flexibility theory by Spiro, Feltovich, Jacobson, and Coulson (1991, as cited in Bolaños, 2009, p. 70) which argues that for successful hypertext navigation, flexibility is important for it is centered on the cognitive aspect which is in command of restructuring knowledge processing in hypertext context; 3) new literacies by Leu, Kinzer, Coiro, and Cammack (2004) which succinctly asserts that as new technologies emerge, new ways of reading also emerge; and 4) cognitive load theory by Sweller, Chandler, Tierney, and Cooper (1990) which explains that to reduce the mental effort readers must exert in comprehending a text, readers must be presented with organized, readable material.

Bolaños (2009) employed a qualitative research perspective to draw out the specific comprehension strategies as evident in the readers’ verbal protocols. In this comparative inquiry, 16 participants who were equally good L2 readers were randomly assigned to read three editorials in just one of the two reading environments - either in print or in hypertext. Their usage of comprehension strategies was then compared. This design followed the argument that making the same readers read the same text in both environments and then examine them for the differences in their use of strategies later would yield contaminated data, for their exposure to the content in one environment would have corresponding effects when they process the same text in the other environment. Thus, making the same readers read the same texts in both environments was not done. As Anderson (1999) argues, activation of prior knowledge can influence reading comprehension strategies and comprehension as a whole. Just as there is a causal relationship that exists between comprehension strategy use and comprehension (Pressley, 2002), the same thing can be said between schema and comprehension strategy. To control the influence that schema might bring, the need to have two sets of equally good L2 readers randomly assigned to read only in a particular environment was necessary.

The participants were able to successfully hurdle the inclusion criteria set by the researcher in order to establish the idea of “good L2” readers. Among these criteria were grades in their previous language course, IQ level, age, scores in a standardized test, and scores in a cloze test.

Eight readers were randomly assigned to read in each environment. Since intensive data were gathered, it took each participant an hour and a half to complete all the required tasks. The data from 16 comparable female readers were obtained through verbal protocols. Three editorials of Philippine Daily Inquirer in print and online forms available during the data-gathering schedule were used as primary research materials. As the main objective of this study was to identify specific strategies being used by good L2 readers when they read expository texts in print and online forms, periodicals - particularly broadsheets - were used as main materials. According to Marshall and Bly (2005), “periodicals represent a type of material that invites many different kinds of reading - browsing, skimming, flipping, and glancing – and a variety of strategies” (Introduction section).
Triangulation was also observed in collecting the needed data as evident in the following methods: transcribed videotapes of think-aloud protocols, individual interviews, and focus group discussion.

Since the study focused on expository text - the kind of text where the writer’s primary goal is to give or share information - three editorials which appeared to be argumentative were used as reading texts for the study. These texts were good examples or representatives of academic reading texts as many critical academic reading books today contain editorial texts. Being an article in a newspaper, editorial gives the views of the editors or publishers. They can be argumentative depending on the subject or the pressing issues of the day. As such, it can be claimed that it still falls under the rubric of expository texts.

The data gathering proceeded in three phases - pre-gathering, gathering, and post-gathering. The pre-gathering phase considered think-aloud training as well as setting up the venue; the gathering phase included warming up through think-aloud practice, navigating, observing and field note taking, giving retrospective verbal report, interviewing, and doing focus group discussion; and post-gathering phase which took into account transcribing, validating the transcription, inferential coding and validation of strategies.

As operationally defined by Bolaños (2009), strategy (reading strategy) refers to any specific conscious verbal or nonverbal act that readers engage in to facilitate and/or enhance their meaning-making of the text or to address actual or even perceived comprehension difficulty. This is in agreement with Alexander, Graham, and Harris’ (1998, as cited in Varaprasad, 2006) definition that strategies are procedural, purposeful, effortful, willful, essential, and facilitative in nature. It also conforms with Duffy (1993, as cited in Almasi, 2003) who states that strategies are “plans for solving problems encountered in constructing meaning” (p. 214) as well as with Paris, Wasik, and Turner (1991, p. 692, as cited in Koda, 2005, p. 205) whose definition of strategies is “actions selected deliberately to achieve particular goals.” Thus, in essence, it can really be said - and that there is sense to believe - that strategy is a “planned and useful action in context” (Allan & Miller, 2005, p. 16).

Furthermore, strategies in the paper were deduced, inferred, identified, and defined based on the context in which they occurred in the readers’ verbal or think-aloud protocol. In short, these strategies were data-driven, adhering to the bottom-up approach of data treatment.

To draw the line between skill and strategy in the coding process, which in some instances created ambivalence for other researchers (Koda, 2005), the differentiation made by Koda between these two concepts was considered. That is, “skills are used subconsciously, strategies require deliberate activation” (p. 210). Thus, all throughout the coding, the intention of the reader for using a certain strategy was considered and became the primary compass in determining whether a certain behavior is a strategy or merely a skill.

Specifically, the main concern of Bolaños (2009) descriptive study is the investigation of the comprehension strategies good L2 readers employ when they read expository texts in print and hypertext environments. Of corollary interest to the aforesaid primary concern are the three-fold related purposes which are: 1) determining the readers’ level of comprehension in the two environments, 2) finding out if there is a difference in their comprehension, and 3) checking if there is a relationship or association that exists in some of the important constructs in the study such as reading environments, reading strategies, and comprehension.

Results of the study indicate that, in general, good L2 readers of expository texts employ a wide repertoire of strategies when they process texts. These strategies are almost the same in both environments. Owing to their relative nature, the 54 strategies elicited were clustered into six which are: 1) meaning-negotiating or transacting strategies which include asking/questioning, agreeing, using physical action or expression, justifying their agreement/disagreement, suggesting action or solution, raising clarificatory question, and disagreeing; 2) trouble-shooting or facilitating strategies which are rereading, pausing, unlocking
vocabulary, pronouncing the new plan of attack, giving specific on-line mental response, toning down, adjusting speed, asking where they are at in the text, waiting for a clue, changing/modifying/correcting oneself, recognizing an unfamiliar lexical item, marking the portion where they are in, commenting on the text, repeating, noticing a textual element, previewing/overviewing/surveying, and noticing a grammatical item or structure; 3) **meaning-enhancing or feedback-giving strategies** such as giving immediate reaction, drawing on background knowledge/recalling, expressing surprise, expressing/showing absence of knowledge, responding emotionally, providing additional relevant information, evaluating a point, responding to self-generated question, looking back, guessing/estimating/approximating, making personal stance, responding to rhetorical question, confirming a (correct) guess, offering synonymous term, self-questioning, and recasting/reformulating the question; 4) **meaning-reinforcing or meaning-remembering strategies** like acknowledging information/learning/realization, rehearsing a key word or an idea, and code-switching/code-mixing/processing in L1; 5) **meaning-generating or meaning-construction strategies** consisting of inferring, expressing assumption, apprehension, or reservation, elaborating, paraphrasing, taking risk, gesturing, synthesizing, expressing a hope or a wish, and forming a conclusion; and 6) **information-checking or information-monitoring strategies** that include establishing the linkage of information and keeping track of information.

The findings also reveal that, over all, the level of comprehension of the participants is the same regardless of environments, though there is indication that the print readers have a slight advantage over the hypertext group.

As regards the difference in comprehension, on the whole, the result indicates that the difference is not significant, suggesting that reading environments may not affect or influence comprehension, its level, and quality, significantly. However, it can be noted that, perhaps, the nature of comprehension measure such as questions that examine the text’s global structure/macrostructure can spell a significant difference in the two groups’ comprehension as shown in the second comprehension question of the study.

Lastly, results likewise reveal that there is a significant association/relationship between reading environment and reading strategies, implying that an environment may trigger usage of a particular strategy or vice versa. The same finding is true of reading strategy and level of comprehension, which means that the more frequently the strategies are used, the better the comprehension becomes; it can also be that the more effectively the strategies are used, the more effective the comprehension becomes. Simply put, reading strategies offer salutary effects on comprehension. On the other hand, results of reading environment and level of comprehension reveal no association/relationship between the two. As pointed out, this may mean that reading environment and level of comprehension are independent of each other—that, regardless of environment, comprehension level may remain the same.

In the light of the findings of this study, Bolaños (2009, pp. 201-203) offers the following conclusions: First, reading is truly an activity or experience unique to every individual. Though readers arrive at a common understanding of the text, the process by which they explore or make their way through text and respond to the information varies. The variations in the readers’ processing strategies attest to this. Second, reading is not solely a cognitive endeavor. It is also affective, as indicated by high cases of strategies which are emotionally-laden in nature. Third, strategies have primordial roles in the meaning-making process of good readers. In fact, most of the good readers in the study are aware of their strategy usage and how it helps them handle the text effectively. Fourth, strategies and schemata are two influential and converging variables in reaching a desired level of comprehension. The participants of this study believe that successful comprehension happens when there is convergence and fusion between prior knowledge and strategies. Fifth, there is no one best strategy to make sense of the text. Pearson et al. (1992) buttressed this view. As evident in the processing strategies of
good readers, strategies come in combination or in most cases, in group. Sixth, good readers employ an aggregate of strategies that they bring with them every time they read or interact with text. This supports the claim of Duke and Pearson (2002) that multiplicity in strategy usage is apparent in comprehension processing of good readers. This likewise vouches Jiménez, Garcia, and Pearson’s (1995) “multistrategic approach to reading” (p. 80) as practiced by good readers. Seventh, good readers are “good” because they are cognitively advanced, they are motivated and focused, they monitor their engagement with the text, they apply the appropriate strategies available in their resources, they are in control of the whole reading activity, they have a clear grasp of their roles as readers, and they know how to skillfully summon or invoke the appropriate strategies and the strategies to combine or coordinate. Simply stated, they demonstrate what Almasi (2003) calls declarative knowledge (what the strategy is and does), conditional knowledge (when and why to use the strategy), and procedural knowledge (how to use the strategy). Eighth, regardless of environment or situation, good readers can manage and probably transfer reading skills and strategies they use in the traditional context. Their good ability to make sense of the text regardless of reading environment is a proof of this. Ninth, reading environment cannot simply be taken for granted for it has a relationship with reading strategies. Tenth, good readers are dynamically using the linguistic resources they have to their advantage. The code-switching/code-mixing cases provide evidence on this. Lastly, even good readers are not spared from the difficulties in processing a certain text especially those in which limited prior knowledge is available to them. However, they always make it a point to address those challenges. Thus, schema is particularly crucial.

All in all, Bolaños (2009) concludes that good college readers of L2 expository texts take advantage of and benefit from their being multistrategic. Since they possess a heightened awareness of reading strategies, they are, in most cases, skillful and successful comprehenders.

Some Implications and Recommendations

Given the findings and the conclusions of Bolaños (2009, pp. 203-206), the following recommendations on curriculum development, pedagogical practice, and administrative support are offered:

Concerning curriculum development, it is crucial to note that being in the age where information and communication technologies (ICTs) play a key and pervasive role in the lives of the people, it is vital that technologies and their various forms occupy a certain curricular space. Their integration and use in the classroom must be seen with a clear sense of purpose and prudent judgment coupled with the best strategies by which they can be utilized and explored. Thus, curriculum engineers may be of utmost help if they can consider and heighten the ways by which effective utilization of these ICTs can be achieved across educational levels and across curriculum with emphasis on content-area subjects/courses. One way of achieving this is through the development, testing, and implementation of a well thought-out strategy-based curriculum.

An intensified, strategy-anchored reading component for each content-area subject across educational levels can be a part of the curriculum. This is in keeping with the view that learners’ success, particularly on content-area subjects, largely depends on their ability to read.

Development, validation, and adoption of more appropriate print- and online-based instructional materials can also be done to ensure that they conform to the nature and overall goals of reading for meaning.

As regards pedagogical practice - the teachers, being the key implementer of the curriculum, can help best if they have a clear and sound grasp of the nature of reading, its processes, principles, and underlying theories. It may make them more equipped in facing the humongous task of guiding and making students construct meaning from text. Being aware of how reading processes interact, as well as of the prerequisite skills for effective comprehension,
teachers can plan and devise effective means of optimizing the potentials of every learner in the classroom. Hence, there is a need for all teachers, especially those in the content areas, to receive serious and continuous in-service strategy training/workshop from highly competent literacy coaches or professionals. This practice, in turn, may facilitate transfer of skills among students - one problem schools have been contending with due to lack of uniformity in practice. Furthermore, it may orient teachers concerning the importance of gradual release of responsibility (Keene & Zimmerman, 1997).

The strategy training can focus on key aspects such as development and use of schema, awareness of levels of comprehension, ways of approaching and overcoming inconsiderate texts, enhancement of vocabulary and word attack skills, development of reading-writing connection, and other areas reflective of integration of top-down-bottom-up processes and of the most frequently used reading strategies good L2 readers used in this study such as: asking or questioning, rereading, acknowledging information/learning/realization, rehearsing a key word or an idea, agreeing, inferencing, giving immediate reaction, drawing on background knowledge or recalling, and using physical action or expression. At the end of this strategy training is a showcase of teaching demonstrations by the teachers. Just as the training is meant to be serious, teachers, in the same vein, must give it considerable thought, assiduousness, and disposition.

Since strategy instruction takes time, it is vital for teachers to explicitly model each strategy in class. Teacher think-aloud can better serve the purpose. In this way, learners may be able to understand better how each strategy relates with one another and realize for themselves the strategies’ value in order for them to function independently, strategically, and metacognitively. Strategies that are fix-up in nature can be highlighted. Moreover, it is essential at this juncture for teachers to underscore the point that, regardless of reading environments or forms, the interactive nature of reading should continuously be upheld, that strategies can simply be transferred, and that comprehension should remain the pivotal goal for reading. This will create more impact if it is to be started in the basic level.

It is also essential for teachers to encourage extensive reading/reading for pleasure in class. Since reading is best learned through actual reading, students will have more exposure to both knowledge of the word and knowledge of the world if outside-of-class reading will be promoted. The need to introduce reader response and other transactional views on reading may help teachers motivate students regarding the relevance and benefits of independent reading to them.

As regards school administrators, it is worthy to note that since they are instrumental to teacher development and overall success of reading instruction, it is crucial that they give their teachers the necessary support in order for the teachers to advance their learning and to implement in class (or in school in general) what they think must be prudently done to create a culture of reading. It is also crucial that school administrators forge good partnership with parents and the immediate community so they can extend support to school endeavors that may benefit the students later on.

Concluding Remarks

As the times continue to usher in changes and developments, educators should remain at the forefront embracing all the new that come. The effort and the path to adapt and adopt may not always be smooth but if they remain committed to the true nature of the calling, no challenges are so difficult to hinder them from becoming the ideal teachers that they can be in this century. As Lao Tzu puts it, “Life is a series of natural and spontaneous changes. Don’t resist them – that only creates sorrow. Let reality be reality. Let things flow naturally forward in whatever they like.”
References


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Eduardo A. Bolaños is Assistant Professor at the Department of English and Applied Linguistics - De La Salle University, Manila. He is a board member of two national organizations - Linguistic Society of the Philippines (LSP) and Reading Association of the Philippines (RAP). His research interests include metacomprehension, critical literacy, early literacy, hypertext, and historical linguistics.