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Facilitating active reading through a self-questioning strategy: student and tutor experiences and reflections of the strategy use

Abstract

Questioning plays an important role in the teaching and learning process and is a cognitive strategy that is considered essential in fostering higher levels of thinking and reading comprehension. This article discusses a student self-questioning and answering reading strategy by drawing on data from a study in which students participated in generating their own questions and answers in an academic development module. Data was collected by means of student and tutor feedback on the strategy use. The findings indicate positive student and tutor experiences with student self-reports indicating that while this technique was new to many of them and was perceived as challenging, it forced them to read the text many times in order to engage at a deeper level ultimately leading to an increased understanding of the text. The author raises concerns that despite the benefits of this strategy students are more likely to view it as a 'once off' intervention and therefore it is suggested that for greater effectiveness this strategy should be embedded in disciplinary teaching either explicitly or implicitly with sustained coaching and practice. Some practical ways in which disciplinary lecturers can help their students develop self-questioning and answering strategies are suggested.

Keywords: active reading, student generated questions and answers, self-questioning, reading comprehension, reading strategy use, higher education.

***Journal for Language Teaching*, Volume 51, Number 2, pp. 85 – 103. 2017.**
ISSN 0259-9570. http://dx.doi.org/10.4314/jlt.v51i2.4

1. Introduction

The reading of disciplinary texts is one of the most important academic tasks encountered by students in higher education and reading these texts with comprehension is integral for academic success. For effective learning to occur students need to be active readers. Active reading occurs when students are proactively involved in what they are reading and includes strategies such as highlighting, annotating, comparing and evaluating texts and generating and answering questions, etc. (Adler & Van Doren, 1972; Harvey & Goudvis, 2007; Baker, Afflerbach & Reinking, 2011). Local and international research indicate that first year students struggle to read and enter university with limited reading experiences and strategies (Bharuthram, 2012; John 2013; Spaull, 2013; Livingston, Klopper, Cox & Uys, 2015). One solution demonstrated in numerous research studies to improve reading comprehension (Hattie, Briggs & Purdie, 1996; Rosenshine, Meister & Chapman, 1996; Stricklin, 2011; Bugg & McDaniel, 2012), is the explicit teaching of reading strategies. For this reason, over the years numerous techniques have been developed to stimulate learners towards more active and effective text processing (Bugg & McDaniel, 2012). This article discusses one such technique which is a self-questioning reading strategy commonly referred to as student-generated questions and answers that was implemented in an Academic Development module called English for Educational Development (EED) at a South African university. One objective of this research is to show through student and tutor experiences and reflections the value, if any, that the self-questioning and answer reading strategy may have for students in particular, the benefits, and the challenges experienced by students and tutors during the implementation of this strategy.

It is also known that many university academics express disappointment in their students' reluctance to read and in their students' inadequate comprehension of assigned readings (Doolittle, Hicks, Triplett, Nichols & Young, 2006). Yet, generally in the higher education context, there is a heavy reliance on academic development programmes to develop the academic literacy practices of students with academics seeing their role purely as being content experts devoid from any teaching of the 'tools' that students may require to acquire the content knowledge (Bharuthram & Clarence, 2015). It is hoped that the discussion arising from the findings of this research would not only serve to raise lecturers' awareness of the self-questioning technique but will also serve to motivate them to integrate this strategy into their daily teaching while also becoming more conscious of the questions they pose to students. Therefore, some practical ways in which disciplinary lecturers can promote the development of self-questioning in their classrooms are suggested. Finally, it is hoped that this research would contribute to the growing national and international body of literature on student-generated questions and answers and would also serve as a catalyst for further research.

In light of the above the key questions addressed in this research are: *What are the benefits and challenges of the student-generated question and answer technique?* and *What are the implications for teaching and learning?*

2. Literature review and conceptual framework

Reading at university level requires sophisticated reading that involves critique, analysis and synthesis of information across multiple texts and sources – skills that many students lack (Horning, 2007; Jolliffe & Harl, 2008; Bharuthram, 2012). Numerous reading strategies have been developed to help students improve their reading comprehension. These strategies include for example, monitoring and metacognitive strategies, graphic and semantic organisers, generating questions and summarising information.

Much research into questioning strategies has been conducted (Ribbens, 2008). To name a few, in the early 1940s Robinson (1946) constructed the SQ3R (Survey, Question, Read, Recite, Record) reading strategy which was later modified to SQ4R to include 'Review' (Applegate, Quinn & Applegate, 1994). Since then many similar strategies using different acronyms and mnemonics were developed, for example, the Question-Answer Relationship strategy (QAR) by Raphael and Pearson (1985) and later the Questioning the Author (QtA) by Beck, McKeown, Hamilton and Kucan (1997). The commonality in studies on questioning strategies is the acknowledgement that the reader's awareness has to be raised for them to consciously engage in the act of reading for reading comprehension to improve (Ribbens, 2008). Of note is that while there is an abundance of empirical research studies on student self-questioning (Yu, 2009; Weinstein, McDermott & Roediger, 2010; Bugg & McDaniel, 2012; Garcia F.C., Garcia A., Berben, Pichardo & Fernando, 2014), the literature on actual student experiences and their reflections on the strategy is scant and almost non-existent especially in the South African context.

The technique whereby students pose and answer their own questions while reading is referred to as self-questioning, and is a cognitive strategy that can be used before, during and/or after reading. Much of the research into student questioning has shown positive benefits (Underwood, 1997; Chin, 2002; Yu, 2009; Garcia *et al*., 2014). For example, Underwood (1997) states that when students ask themselves questions during the reading process, they tend to at the same time search for answers as they read, thus engaging in active comprehension. Furthermore, when the text is revisited after reading, through the questions and answers that they have posed students are able to reflect on their own understanding of the text. In addition, they are able to assess their own comprehension. These points are also encapsulated in a discussion provided by Chin (2002:60) who points out that the very task of asking students to generate their own questions encourages active reading, helps them focus their attention on key ideas, provides students with "a way to test themselves", and helps them monitor how well they are comprehending their study material. These points invariably lead to improved reading comprehension and retention of the content read (King, 1994). While many research studies point out that the self-questioning strategy "encourages readers to elaborate and consider the contents of the text more fully than they otherwise would, leading to better learning of the text material" (Bugg & McDaniel, 2012:922), not all experimental studies provided uniform support for this claim. One such study was conducted by Weinstein *et al*. (2010) in which twenty-nine university students participated in a research project consisting of three experiments whereby all participants read the same passage, answered questions and wrote a test in

order to familiarise themselves with the materials. They were then given three passages and had to complete one of the three tasks (reread the passage, answer questions set by the investigator or generate and answer their own questions) on each passage. The findings reveal that both of the question and answer techniques yielded better results than merely re-reading the text. However, the researchers did not find any improvements to answering questions when students generated their own questions. From a literature review, Rosenshine *et al*. (1996) attribute this lack of uniformity of the experimental studies to the wide range of methods that researchers have used to teach the self-generation of questions.

In their review of literature on self-questioning, Wong (1985) and Rosenshine *et al*. (1996) found that methods using procedural prompts to generate questions were more effective in improving comprehension and the retention of the text read. This is further supported by a recent study conducted by Garcia *et al*. (2014:389) who found that students who were trained in question generation using prompts showed the highest gains on metacognitive knowledge and strategic self-regulation compared to students who were not given prompts and those who received no training. The most commonly used procedural prompts are generic question stems and signal words (Rosenshine *et al*., 1996). Generic question stems include stems such as 'How does… effect…?, What do you think causes…?, How does … tie in with what we learned?, Explain why' (King, 1992:113). In the case of signal words students are provided words for starting questions. These are often referred to as *wh*-questions because they include words such as why, what, where, when, who and how. According to Dentisak (2013:35) the *wh*-question forms are "high level questions which are part of 'students' intelligence". Dentisak (2013) further argues that the *wh*-questions are interchangeably used with interpretive questions, which prompt the reader to read between the lines in order to obtain a richer understanding of what was read. In other words, the reader employs critical thinking skills or higher order skills to construct the *wh*-questions. A study conducted by King (1992) on the role of question stems provides support for Dentisak's (2013) views. King (1992:119) reports that students who were given question stems performed better than those who did not receive them; therefore concluding that question stems are necessary in the student-generated question strategy because "they appropriately guide the students to ask the kinds of questions that elicit explanatory responses (i.e. critical thinking questions). Thus, the question stems control the quality of the specific questions students generate, which in turn shape their answers to those questions".

To facilitate question generation students should be taught the different types of questions that could be asked. Day and Park (2005) discuss three levels of questioning in reading comprehension. The most commonly used are lower level cognitive questions in the form of literal questions in which most often the words common to the question and the answer are found in the same sentence. These questions usually focus on the retrieval of factual information (Wilen, 1991). The more challenging questions are inferential and applied questions which involve higher level processing because they require deep critical thinking. Inferential questions are questions in which the reader has to read between the lines and read at least two sentences or more to arrive at an

answer. For applied questions the reader has to rely on his/her background knowledge and experience and involves synthesis and evaluation of information. It is essential that students receive training in the form of scaffolds on all three levels of questioning.

The merits of the different approaches to teaching reading strategies have been debated by many researchers. For example, one suggestion is through explicit instruction (Delpit, 1988; Snow, 2002; Klopper, 2013) which Snow (2002) affirms has shown to be invaluable in the development of good readers as it involves using teaching strategies that good readers eventually learn to control. A commonly used explicit instruction method is referred to as the explicit explanation approach. The explicit explanation approach involves 3 steps that consist of an explanation of the strategy including a discussion of what the strategy is (declarative knowledge), how to use it (procedural knowledge), and when and why to use it (conditional knowledge). The second step is teacher modelling which involves the teacher explaining how the strategy is used while reading. The third step is guided practice and transfer which requires students to work independently on tasks in order to apply what was learnt.

This method has been subjected to criticism especially by proponents of the whole language approach (Neuman, 1985; Edelsky, Altwerger & Flores, 1991) and the cognitive apprenticeship approach (Palinscar & Brown, 1984; Brown, Collins & Duiguid, 1989) where emphasis is placed on group work, "drawing on Vygotsky's (1978) notion that cognitive processes are first developed through social interactions" (Bharuthram, 2007:202). In taking cognisance of the criticism against the explicit explanation approach, researchers suggest the melding of different approaches or what Duke and Pearson (2002) refer to as a balanced approach. Similar methods of explicit reading strategy instruction were used by Kaplan-Dolgoy (1998), Casteel, Isom & Jordan (2000), and Livingston *et al*. (2015) and have yielded positive results.

3. The implementation of the student-generated question and answer reading strategy

The English for Educational Development (EED-CHS) module is a one-semester academic development (AD) module consisting of 2 one hour lectures per week and 1 one hour tutorial per week that is offered to first year students from different departments in the Faculty of Community and Health Sciences (CHS) at a university in South Africa. The purpose of the EED-CHS module is to facilitate the acquisition of disciplinary literacy practices in a scaffolded manner. Reading forms a key component in the EED-CHS module and the teaching of reading strategies is embedded throughout the course. Authentic reading texts which are obtained from the disciplinary lecturers are used to teach reading strategies and students require these texts in order to complete assessment tasks. In addition, assessment tasks are designed in consultation with the disciplinary lecturers and at times the same task is used by both the disciplinary lecturer and the AD lecturer thereby making the task more meaningful to students.

The reading strategies taught in the EED module include both metacognitive (self-monitoring and self-regulation strategies) and cognitive strategies (identifying the main idea, annotation including question-generation and summarizing information). In previous years the teaching of the question-generation strategy consisted of providing students with a list of generic questions that they could ask before, during, and after reading. The feedback received from tutors on this strategy use has not always been positive. Tutors often reported that students were only using questions from the list provided and when required were unable to construct their own questions. Therefore, in revisiting the curriculum in preparation for the academic year 2015, it was decided that for greater effectiveness the self-questioning strategy should be extended to include students constructing their own questions as well as providing answers to their questions after they had read a text.

As such, the student-generated question and answer strategy was included in the curriculum and the lesson plans were revised to include the teaching of the different levels of question types. Drawing on the research by Dentisak (2013) and King (1992) on student-generated questions and answers (refer to literature review section) it was decided that *wh*-questions would be used as prompts to facilitate question generation. While the explicit explanation approach forms the basis of most of the teaching in the EED course, in taking cognisance of the criticism against the explicit explanation approach, a combinational instruction approach which included aspects from the whole language and cognitive apprenticeship approaches was used. The melding of different approaches is found to be suitable for the EED course as it allowed for different goals to be achieved at different times in the classroom, more specifically catering for the diversity in student population. Furthermore, as discussed above, in order to make the lessons more authentic and meaningful to students disciplinary texts related to an assignment that students had to complete for the EED lecturer and the mainstream lecturer was used. The combinational approach invariably includes the following components:

- Lecturer/tutor informs students of the strategy to be taught.
- Students explain to their seated partner their understanding of the target strategy. This could also take the form of a written task.
- Drawing on feedback received from students the lecturer/tutor provides a detailed explanation of the target strategy (what it is and how, when and why to use it).
- Lecturer/tutor then models the use of the reading strategy using the think aloud method which involves a commentary or explanation on how the strategy is being used. Authentic texts are used.
- Next, students practice using the strategy in a scaffolded manner with continued guidance from the lecturer/tutor. The scaffolds could involve using few easy sentences and or a paragraph from a text as well as working in pairs and/or in groups.

- For further application and transfer of the strategy students are then given a larger text to complete on their own.
- Finally, the strategy use is integrated in a variety of context.

The student-generated question and answer strategy was the last of the planned reading strategies to be taught to students. Hence, in a sense they could apply the other strategies they had learnt in EED (e.g. identifying the main idea, annotation, paraphrasing/summarising information) to help facilitate their question generation. Furthermore, in preparation for the lessons on student-generated questions and answers an entire lecture period was devoted to teaching the different question types in the manner discussed above. Thereafter, in the tutorials, students were divided into smaller groups and each group was assigned a section of a reading text. Of note is that separate texts for the Natural Medicine and Dietetic students were used that were required to address their discipline specific essay questions. Working individually, students were requested to first read through the text and then construct a set of what, why, how, and when questions on their section of the text. Students were also requested to answer their questions. In order to avoid yes-no type answers they were informed that their questions had to carry between 5 to 10 marks. In the next tutorial, students shared their questions with their group members and discussed their answers at length. Where possible, they had to come up with one set of *wh*-questions or select the most important questions, which they presented to the class in the next lesson. After each presentation, all groups were encouraged to ask questions and a discussion ensued. The aim of these presentations and discussions was to ensure that all students had a good understanding of the text so that they were in a position to use the information from the text in their assignments. It also served as a way for tutors to provide feedback to students since it was difficult for them to read through all of the students' questions.

4. Research Methodology

The overall aim of this research was to ascertain student and tutor experiences and reflections on the value of the student-generated question and answer strategy that was introduced into the EED-CHS curriculum.

4.1. Research Design

A mixed method research design involving the integration of both qualitative and quantitative data was used to achieve the research aim (see Cresswell, 2014). In this research the qualitative analysis complements the quantitative analysis by elaborating, enhancing and clarifying the quantitative counts (Greene, Caracelli, & Graham, 1989).

4.2. Participants

4.2.1 Student participants

A total of 63 first year university students from the Departments of Natural Medicine and Dietetics participated in this research. Their ages ranged from 18 to 24 years. In both groups there was a mixture of English First Language and English Additional Language speakers.

4.2.1 Tutor participants

Seven post-graduate students who were employed as tutors participated in this project. All 7 tutors had previously worked in the EED course and were therefore familiar with the question and answer reading strategy.

4.3. Instrument/Tools

Data were collected by means of a student questionnaire, tutor observations and written tutor feedback.

4.3.1 Student questionnaire

The questionnaire was designed to elicit responses to specific questions related to the student- generated question and answer reading strategy and which was in line with the aims of the research. In addition to the biographical details the questionnaire consisted of both open and closed questions. Some examples of the open-ended questions are: *Did you enjoy the task? Explain your answer; Did you find the task easy or difficult? Explain; Have you ever been asked to construct your own questions before? Explain;* and, *What were some of the challenges you experienced in completing this task?* Students completed these questions in their tutorials at the end of the sessions on reading strategies.

4.3.2 Tutor observations

Since the tutors were responsible for facilitating the lessons on question generation they were asked to systematically observe students' performance during each task and make notes during the lessons and expand these at the end of each session. This method is suggested by researchers, see for example, Cohen, Manion and Lawerence (2011:468) who state that "[T]he intention here is to introduce some systematization into observations in order to increase their reliability". Tutors reported on their observations at the weekly course meeting. Their observations were initially recorded

by coordinator, summarised and presented to tutors for confirmation at the final tutor meeting.

4.3.3 Written tutor feedback

As part of the ongoing evaluation of the course the tutors provided written feedback at the end of lessons on the question and answer reading strategy. They were encouraged to think back on each task on question-generation and to write a holistic reflective piece on their experiences when taking students through the different tasks and their perceptions of students' experiences. These were emailed to the coordinator of the EED course. The written feedback also served as a way to triangulate data received during tutor observations.

4.4. Data analysis

4.4.1 Student questionnaire

The responses to the closed questions were counted and recorded. The open-ended questions were analysed as follows: the response to each question was read and the key words and phrases were highlighted. In the second reading these key words and phrases were recorded searching for similarities and/or differences in students' responses in relation to the particular question while also taking cognisance of the research aims. Similar methods of data analysis have been used by other researchers (see for example, Taraban, Rynaerson & Kerr, 2000; Arzipe, 1994; Crossman 2007).

4.4.2 Tutor observations

The co-ordinator's summary of tutor observations was compared to the written tutor feedback. Since there was much overlap in both the data (i.e the tutor observation data and written feedback) these were integrated and analysed as one.

4.4.3 Written tutor feedback

The tutor responses were analysed in a similar manner as done for the open-ended questions (refer to 4.4.1 above).

4.5 Ethical considerations

Students were informed that their written feedback would be used for research purposes. They were given a choice to participate and had to sign a consent form allowing for their

feedback to be used. They were assured that their names would not be revealed in any publications arising from the research. The research process was in keeping with the University's code of ethics. In essence, all steps were taken to ensure that the research is credible, dependable and confirmable (Shenton, 2004).

5. Findings and Discussion

Overall, there were students (18/63) who reported that they did not enjoy the task and most of their reasons related to the 'difficulty of the text' and the 'challenging nature of the task'. As an illustration some student responses included *'Constructing the questions took a lot of thinking and answering them appropriately was tough'; 'I wasn't sure how to formulate clear and reasonable questions'; 'The text was complex and I found it quite challenging to understand';* and *'I had to read the extract several times to gain understanding and I could not understand some words in the extract'*. The tutor data confirmed that while the majority of the students found the task of constructing their own questions and providing answers to those questions manageable and enjoyable there were some students who did not appear to enjoy the task as they struggled through the various lessons and reported that the text was extremely difficult and they were experiencing difficulty thinking of questions and ways to formulate them**.** The tutors identified some of these students as having limited English Language proficiency (on the basis of their interactions with them in the tutorials and their performance on a language test that was given earlier in the semester). They noted that these students experienced difficulty at the level of restating the text and were therefore in no position to interrogate critically the underlying issues in the text. Some students reported that the question stems given by the lecturer was very restrictive, for example one student wrote *'I found it difficult to use all the questioning words. I found myself using 'what' most of the time and I had to reconstruct the questions a few times'*. To a certain extent some of these responses were justifiable as tutors reported that the one particular section of the Dietetic text that some students worked with was short and did not lend itself to too many questions. This does not nullify the use of question stems as research suggests that question stems are necessary because they serve as a guide for students to ask critical thinking questions and "control the quality of the specific questions students generate, which in turn shape their answers to those questions" (King, 1992:119). Rather it places emphasis on the importance of using sections/texts that are appropriate and conducive to the task. In contrast to the above student responses, the majority of them appreciated the fact that the self-questioning task made them read the text more closely as illustrated in the following quotes: *'I enjoyed the task because it made me critically think about what questions to ask and how it could be answered'*; *'…by formulating the questions it forced me to understand and be able to answer them too*'; and '*Doing this task gave me a different perspective of the text (not just a 'reader' perspective). It allowed me to question what I was reading'.* These views were supported by the tutor feedback as tutors reported that the student-generated question and answer strategy was useful as it helped some students to think critically, *'not only about how to answer a question but how to conceptualize one that is relatively sophisticated'*. However, tutors were of the view

that the 'better' readers derived more benefits from this task. It would seem that these students were able to work at the higher-order level from the start whereas students less familiar with critical engagement with academic texts required more practice.

Some of the above student responses could also indicate that generally students read rather passively, usually searching for particular information they require without necessarily grasping the essence of the text. Reading the text many times in order to gain an understanding of the text is generally not the norm among students and the task of constructing questions forced them to read actively. Rosenshine *et al*. (1996:182) argue that question-generation itself does not lead to comprehension. "Rather, in the process of generating questions, students need to search the text and combine information, and these processes help students comprehend what they read". Interestingly, 9 of the 18 students who reported that they did not enjoy the task indicated that they would not mind doing the task again '*in order to gain experience on how to formulate questions from the text*'. Perhaps these students, despite finding the task challenging, realised the importance of such a task.

A large number of students (41/63) found the task to be very difficult. The two main reasons given were, firstly, that in order to construct questions they had to have a very good understanding of the text which meant reading the text many times. Secondly, the very task of thinking of a question to ask and then phrasing the question in an understandable manner was found to be challenging. This was not surprising as 49 students reported that this was their first experience at setting questions. Of note is that 11 of the 13 students who indicated that they did similar tasks in school attended expensive private schools which are more elite and better resourced than public schools. Some students, albeit a small number (16/63), reported that it was a challenge to provide adequate answers to the questions they had set. For example, one student wrote that although his questions were based on the article, he had to find some of the answers on the internet while another said that *'The answers to the questions lay within the text but it also required me to elaborate and think beyond the text'*. These responses could suggest that students had to draw from their background knowledge and experiences which may or may not have been adequate. Prior knowledge plays an important role in learning and King (1992:119) says that "the type of prior knowledge a student possesses strongly affect what that student learns". It could also suggest that these students had moved beyond literal questions and were able to pose inferential and applied questions which are higher order level questions that required them to conduct research in order to provide adequate answers. These findings are consistent with that presented by King (1992:124) who concluded that the self-questioning strategy "induces students to ask thought-provoking questions and generate elaborate explanations; and these verbal behaviours, in turn, lead to improved comprehension". The majority of the students particularly favoured the group work and the presentations that followed after they had set and answered their own questions as it helped them share ideas and enhance their understanding of the text. For example, some responses included: '*What I enjoyed most was getting feedback from my group members and from looking at how they constructed and answered their questions'*; '*Learning how one would ask a same question you have asked, but with a different approach was fun'*; and '*The presentations helped us engage*

fully into understanding the text'. Tutors confirmed that students enjoyed the discussion and presentation part of the task more since *'it clarified certain issues they might have had and more importantly ensured that everyone in the group understood the particular section they had to deal with'.* These responses concur with the findings of King (1992) who reports that during discussion of their questions and answers students were able to explain, clarify and justify their thinking. This kind of engagement often results in students learning from each other whereby some students are then able to modify their own mental representations.

6. Implications for teaching and learning

While the above findings are positive, pointing to the value of the student-generated question and answer reading strategy, the end of semester tutor feedback indicated that many students were not able to apply their understanding of the text to their written assignment. It appears that students tend to compartmentalise their learning, resulting in limited transfer of knowledge. It could also be that because these are first year students and therefore novice readers and writers, they require additional and sustained practise on how to integrate what they have learnt from a text into their writing in order to become skilled. To address the above point the self-questioning strategy should be reinforced across the curricula by all academics so that it becomes a core practice among students. In addition, academics can assist students to become stronger readers in their disciplines by setting reading tasks for which students are held accountable and in this way receive continued reading practice.

Research studies on the self-questioning strategy points to the importance of training and guided sustained practice for transfer to occur. While training and practice form part of the EED course it is clearly not sufficient for adequate transfer of the strategy to occur because of the short duration of the course. Hence, extending the course to a year-long course would be beneficial. Nonetheless, the foundation is set in EED and this foundation must be built on across the curriculum. In this way students will not view Academic Development interventions as 'once off' interventions. Research suggests that students who are taught a self-questioning technique that slowly deepens and broadens the kind of questions asked are better able to produce and answer high level questions (Glaubman, Glaubman & Ofir, 1997).

The finding that some students struggled to understand the text at a literal level raises 2 concerns. The first concern relates to reading at school level and more specifically whether the self-questioning strategy forms part of the repertoire of reading strategies that should be taught and/or why is it not taught; and the instructional methods used to teach the strategy. The second concern relates to university entrance requirements, more specifically, accepting students who are unable to meet the academic demands of university education. In particular, when such students are not able to succeed within a supportive and nurturing environment as provided in the academic development programme. Both these concerns have serious teaching and learning implications for

academics and students, and are therefore worthy of further investigation and discussion within their respective communities.

7. Suggestions for developing the strategy of student-generated questions and answers

7.1. The type of questions lecturers ask students.

Lecturers could begin by paying conscious attention to the type of questions they ask students, using lower-order questions as a starting point and then moving to higher level questioning. During this process, they can explain to students the different levels of questions asked and the different levels of thinking required at each level in order to acquire content knowledge and expertise. Question production and more specifically the asking of probing questions is not a usual practice of students (Chin, 2002) but can be taught through teacher/lecturer modelling and coaching. Therefore, by lecturers revisiting the type of questions they ask students and consciously focusing on these questions, they can make the process of question generation explicit for students. This in itself would serve not only to enhance student content knowledge and curiosity but could also serve as a model for the types of questions students should ask.

7.2. Creating opportunities in our teaching for students to ask questions.

Once academics begin asking the right questions and have modelled this process to students, spaces then need to be created for students to ask questions. These spaces could involve providing opportunities for students to ask questions in class either during or after a lecture, or as homework. As an illustration, at any point during the course of a lecture, the lecturer could ask students to work in pairs/groups (depending on the class size) and construct either a low, middle, or higher order question on what was discussed. These could be presented to the class followed by a discussion of the answers. This exercise would provide students with the practice they require to develop their questioning skills.

As a homework exercise students could be asked to write three questions, one for each of the different levels of question types (lower order, middle order and higher order) based on the lecture. The lecturer then begins the next lecture by asking a few students to present the questions they constructed. All students in the class then attempt to answer these questions. Such an exercise would serve not only to recap the previous lecture but will also give the lecturer an indication of the extent of students' understanding. It could also serve as a source of revision for students as they will be forced to read through their lecture notes in order to construct their questions. Furthermore, the processing effort that is required to generate questions should result in greater retention of information (Gillespie, 1990/1991). The above two exercises need not take more than 5-10 minutes

and can be implemented in large classes. As an additional source of motivation some of the questions set by students could be used as test and examination questions.

Finally, in order to ensure that students are able to apply what they have learnt and also maintain/retain this skill, students could be given a text to read in preparation for the next lecture. They can be given generic question stems which could be presented and discussed in class starting with the lower-order questions. Alternatively, they could be asked to come up with *wh*-questions (as done in the current study). In both cases, the questions that students generate could form the basis of the lecture. In this process the lecturer plays a facilitating role, filling in the gaps wherever necessary while scaffolding the process, leading students from lower order questioning to higher-order questioning. Through these question and answer sessions the lecturer shifts responsibility for learning to the students enabling them to become actively involved in the lessons. Furthermore, the benefits of student question generation could extend to examination situations where students would be in a better position to identify the type of question being asked and provide answers that are relevant to the particular question type.

8. Conclusion

One of the major challenges facing higher education in South Africa presently is getting students to actively engage in the reading process and in so doing become critical readers and learners who are able to take responsibility for their own learning. This article presents a student-generated question and answer reading strategy that could assist students in improving reading comprehension by encouraging students to move from being passive absorbers of information to active readers and learners.

Drawing on data from student self-reports and tutor observations and feedback, it was found that the student-generated question and answer strategy was beneficial in that it forced students to read the text many times in order to construct and answer their questions - a process which students claim helped them to improve their understanding of the text. It also encouraged engagement of the text at a deeper level. Students were also able to engage in fruitful discussions around the content (based on their question and answers) and these discussions extended to related issues beyond what was provided in the text thereby broadening their knowledge base. However, for adequate transfer of knowledge to occur it is essential that sustained coaching and practice be embedded throughout the curricula as the gains of this strategy extends beyond just reading comprehension. By encouraging students to generate their own questions, students become “inducted into a habitual state of constructing personal knowledge” (Yu, 2009:1129). This article also highlights that since effective questioning is important for the overall development of the student, lecturers begin to examine the type of questions they ask and spend more time framing questions that would encourage deeper thinking (Black, Lee, Marshall, Wiliam & Harrison, 2004).

It is acknowledged that there are certain limitations to this study in that no statistical evidence is provided – possibly in the form of a pre and post comprehension test - to support the finding that the question and answer reading strategy did assist in improving students understanding of the text; and that there is a heavy reliance on student and tutor feedback. Despite these limitations, student self-reports form an important part of a qualitative data gathering process and every measure was taken to ensure the credibility and dependability of this research. Furthermore, the intention of this research was to obtain through student and tutor experiences and reflections the value, if any that the student-generated question and answer reading strategy may have and to raise awareness of the importance of the strategy. Nevertheless, this research could be extended to include a detailed analysis of the actual questions set by students, in terms of the different levels of questions, and their answers to these questions.

9. References

Adler, M.J. & C. Van Doren. 1972. *How to read a book*. Simon and Schusler, New York.

Applegate, M.D., Quinn, K.B. & Applegate, A.J. 1994. Using metacognitive strategies to enhance achievement for at-risk liberal arts college students. *Journal of Reading*, 38(1): 32-40.

Arzipe, E. 1994. Reading response: the reading processes of adolescent reluctant readers. PhD thesis. University of Cambridge. (Unpublished).

Baker, L., Afflerbach, P., & Reinking, D. 2011. *Developing engaged readers in school and home communities*. Routledge, New York and London.

Beck, I.L., McKeown, M.G., Hamilton, R.L., & Kucan, L. (1997). *Questioning the author: an approach for enhancing student engagement with the text*. Newark, DE: International Reading Association, Inc.

Bharuthram, S. 2007. Developing reading strategies in higher education through the use of integrated reading/writing activities: a study at a University of Technology. PhD thesis. University of Kwa-Zulu Natal. (Unpublished).

Bharuthram, S. 2012. Making a case for the teaching of reading strategies across the curriculum in higher education. *South African Journal of Education,* 32: 205-214.

Bharuthram, S. & Clarence, S. 2015. Teaching reading as a disciplinary knowledge practice in higher education. *South African Journal of Higher Education*, 20(2): 42-55.

Black, P., Lee, C., Marshall, B., Wiliam, D. & Harrison, C. 2004. Working inside the black box: Assessment for learning in the classroom. *Phi Delta Kappa*, 86(1): 9-21.

Brown, J.S., Collins, A. & Duiguid, P. 1989. Situated cognition and the culture of learning. *Education Researcher*, 18(1): 32-42.

Bugg, J.M. & McDaniel, M.A. 2012. Selective benefits of question self-generation and answering for remembering expository text. *Journal of Educational Psychology*, 104(4): 922-931.

Casteel, C.P., Isom, B.A. & Jordan, K.F. 2000. Creating confident and competent readers. *Intervention in School and Clinic*, 36(2): 67-74.

Chin, C. 2002. Student generated questions: encouraging inquisitive minds in learning science. *Teaching and Learning*, 23(1): 59-67.

Cohen, L., Manion, L. & Morrison, K. 2011. *Research Methods in Education*. 7th ed. Routledge, New York.

Cresswell, J.W. 2014. *Mixed methods. Qualitative, quantitative and mixed methods approaches*, 4th ed. Sage Publications, Thousand Oaks, California.

Crossman, J. 2007. The role of relationships and emotions in student perceptions of learning and assessment. *Higher Education Research and Development*, 26 (3): 313-327.

Day, R.R. & Park, J. 2005. Developing reading comprehension questions. *Reading in a Foreign Language*, 17(1): 60-73.

Delpit, L. 1988. The silenced dialogue: power and pedagogy in educating other people's children. *Harvard Educational Review*, 54(3): 280-298.

Dentisak, D. 2013. The effect of question generating strategy instruction of EFL freshmen's reading comprehension and use of English tenses. *Journal of Liberal Arts*, 5(2): 32-45.

Doolittle, P.E., Hicks, D., Triplett, C.F., Nichols, W.D. & Young, C.A. 2006. Reciprocal teaching for reading comprehension in higher education: a strategy for fostering the deeper understanding of texts. *International Journal of Teaching and Learning in Higher Education*, 17(2): 106-118.

Duke, N.K., & Pearson, P.D. 2002. Effective practices for developing reading comprehension. In: Farstrup, A.E. & Samuels, S.J. Eds. What research has to say about reading instruction. 3rd ed. Newark, DE: International Reading Association, Inc. Chapter 5, pp. 205-242.

Edelsky, C., Altwerger, B. & Flores, B.M. 1991. *Whole language, what's new?* Portsmouth, NH: Heinemann.

Garcia, F.C., Garcia, A., Berben, A.B.G., Pichardo, M.C. & Fernando, J. 2014. The effects of question-generation training on metacognitive knowledge, self-regulation and learning approaches in Science. *Psicothema*, 26(3): 385-390.

Greene, J.C., Caracelli, V.J., & Graham, W.F. 1989. Toward a conceptual framework for mixed-method evaluation design. *Educational Evaluation and Policy Analysis*, 11(3): 255-274.

Gillespie, C. Dec/Jan 1990/1991. Questions about student-generated questions. *International Reading Association,* 34(4): 250-257.

Glaubman, R., Glaubman, H. & Ofir, L. 1997. Effects of self-directed learning, story comprehension, and self-questioning in kindergarten. *The Journal of Educational Research*, 90(6): 361-374.

Harvey, S. & Goudvis, A. 2007. *Strategies that work: teaching comprehension for understanding and engagement.* 2nd ed. Stenhouse Publishers Portland, Maine.

Hattie, J., Briggs, J. & Purdie, N. 1996. Effects of learning skills interventions on student learning: a meta-analysis. *Review of Educational Research*, 66(2): 99-136.

Horning, A. 2007. Reading across the curriculum as the key to student success. *Across the Disciplines*, 4. Available: http://wac.colostate.edu/atd/articles/horning2007.cfm. [Accessed: 20/06/2016].

John, V. 2013. Drop-out rate points to lack of support. *Mail and Guardian*, 17 May 2013.

Jolliffe, D. & Harl, A. 2008. Studying the 'reading transition' from high school to college" What are our students reading and why? *College English*, 70(6): 599-617.

Kaplan-Dolgoy, G. 1998. The effects of teaching second language students a combination of metacognitive and cognitive strategies for reading and listening comprehension. PhD thesis. University of South Africa. (Unpublished).

King, A. 1992. Facilitating elaborative learning through guided student-generated questioning. *Educational Psychologist*, 27(1): 111-126.

King, A. 1994. Guiding knowledge construction in the classroom: effects of teaching children how to question and how to explain. *American Educational Research Journal*, 31(2): 358-368.

Klopper, B. 2013. Metacognitive awareness as a requirement for effective comprehension strategy instruction. *Litnet Akademies,* 10(2): 197-230.

Livingston, C., Klopper, B., Cox, S. & Uys, C. 2015. The impact of an academic reading

programme in the Bachelor of Education (intermediate and senior phase) degree. *Reading and Writing* 6(1), Art.#66, 11 pages. http/dx.doi.org/10.4 102/rw/v6i1.66.

Neuman, J. 1985. *Whole Language*. Portsmouth, NH: Heinemann.

Palinscar, A.S. & Brown, A.L. 1984. Reciprocal teaching of comprehension fostering and comprehension-monitoring activities. *Cognition and Instruction*, 2(2): 117-175.

Raphael, T.E. & Pearson, P.D. 1985. Increasing students' awareness of sources of information for answering questions. *American Educational Research Journal*, 22(2): 217-235.

Ribbens, R. 2008. Hypnotised by Gutenberg? A report on the reading habits of some learners in academia. *Journal for Language Teaching*, 42(2): 105-122.

Robinson, F.P. 1946. *Effective study.* New York: Harper and Row.

Rosenshine, B., Meister, C. & Chapman, S. 1996. Teaching students to generate questions: a review of the intervention studies. *Review of Educational Research*, 66(2): 181-221.

Shenton, A.K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for information,* 22(2): 62-75.

Snow, C. 2002. *Reading for understanding*. RAND Education, Santa Monica.

Spaull, N. 2013. South Africa's Education Crisis: the quality of education in South Africa 1994-2011. *Centre for Development and Enterprise Report*.

Stricklin, K. 2011. Hands-on reciprocal teaching: a comprehension technique. *The Reading Teacher* 64(8): 620-625. http://dx.doi.org?10.1598/RT.64.8.8.

Taraban, R., Rynaerson, K. & Kerr, M. 2000. College students' academic performance and self-reports of comprehension strategy use. *Reading Psychology*, 21(4): 283-308.

Underwood, T. 1997. On knowing what you know: Metacognition and the act of reading. *The Clearing House*, 71(2): 77-80.

Vygotsky, L. 1978. *Mind and society: the development of higher psychological processes*. Cambridge: Harvard University Press.

Weinstein, Y., McDermott, K.B. & Roediger 111, H.L. 2010. A comparison of study strategies for passages: re-reading, answering questions, and generating questions. *Journal of Experimental Psychology: Applied*, 16(3): 308-316.

Wilen, W. 1991. *Questioning skills for teachers: what research says to the teacher.* 3rd ed. Washington, DC: National Education Association.

Wong, B.Y.L. 1985. Self-questioning instructional research: a review. *Review of Educational Research*, 55(2): 227-268.

Yu, F.Y. 2009. Scaffolding student-generated questions: Design and development of a customizable online learning system. *Computers in human behaviour*, 25(5): 1129-1138.

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