



An Investigation of an Approach to Teaching Critical Reading to Native Arabic-Speaking
Students

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Abstract

The purpose of this study is to determine whether the approach to critical reading utilized by the researcher in classroom practice has a positive affective influence in the development of higher order reading skills displayed by students in class. The Higher Order Reading Skills (HORS) approach involves explicit discussion of the nature of critical reading and range of skills involved. Taxonomies such as individual skills are used to familiarize students with these skills and in order that reading is placed in the context of application of derived knowledge for a clear, identifiable purpose. That is, students identify a need to read. The methodology involved two groups: a test group that was exposed to the HORS approach, and a control group that was not. Reading

effectiveness was then compared based on performance results taken from two reading texts. Data analyzed indicates that this approach seems to be a significant positive affective factor in their reading, resulting in a higher level of successful measured comprehension performance by the test group over the control group. The confidence of building upon already established skills provides scaffolding upon which further development of critical reading skills can take place. The sample population is foreign language users at the freshman (year 1) level enrolled in a university engineering school in the United Arab Emirates (UAE). This study examines their progress in the second-level of a communications course where the research was conducted. This English-medium course aims to produce well-rounded, autonomous life-long learners, along with specific language outcomes, who are able to use higher-order thinking and communication skills required by engineering professionals. Reading in general and the development of what are commonly called Higher Order Reading Skills (HORS) continues to be a concern in the context of secondary and tertiary education (Alverman, 1987). Arabic-speaking students reading in a foreign language face a yet more complex set of difficulties (Shaw, 2006). The study is significant as this population need to be effective critical readers as they are involved in lengthy and complex primary research projects. Further, the institutional reading load is generally high. In this context, effective approaches to teaching critical reading are of obvious importance to the learners' academic success.

Keywords: reading, approach, HORS reading strategies, critical thinking skills, EFL, engineering, Arabic

Background

The Petroleum Institute (P.I.) in Abu Dhabi, United Arab Emirates (UAE), is an English-medium university for engineering, applied science and research for students at the undergraduate level, with Emirati males and females each based on their own campus.

The fact that English is the medium of instruction as well as the operating language of the

oil and gas industry in this region implies a range of issues for them. For example, demands on their language skills and proficiency are not limited strictly to academic criteria, but require them to function as sophisticated foreign language users in a business environment.

The students in this study are involved in a two-level Communications programme. In the second level of the two-level programme in which the study is carried out, students develop communication skills through a semester-long, two-stage team primary research project culminating in an extensive written report and a forty-five minute multimedia presentation.

The first stage of the project is a written recommendation report. In the early stages, the students conduct a literature review on the related content to broaden their understanding of the topic area and frame their research. The reading skills involved in this process exceed a level of basic comprehension and require the reader to have reasonable confidence in, and mastery of, a range of critical reading skills. The kind of texts used in this study would be compatible with an IELTS (International English Language Testing System) Level Seven (IELTS, 2011).

This students population by and large, do not come from a culture of reading either in the home or at the high school level and while this is an increasing problem in many places (AIR, 2006) it takes on particular significance in the GCC (Gulf Countries Cooperation Council) region where emphasis has traditionally been placed on a culture of oral communication (Shannon, 2003).

Literature Review

Many assumptions are made about students entering tertiary education, one being that they are ready to participate in an academic environment and academic discourse. Agreement as to what constitutes this discourse is sometimes not easily found. Certain practices however, do help to frame what academic discourse does mean. Flower (1989) suggests two ideas that have a direct bearing on the current study: (1) integrating information from sources with one's own knowledge and (2) interpreting one's reading for a purpose. In order to do this, readers must be able to read critically which at least involves knowing what a text says, what a text does, what a text means and what it can be applied to/utilized for. In turn, this involves (among other things) being able to distinguish between fact and opinion, recognize assumptions, inferences and implications resulting in enhanced clarity and comprehension and an ability in a research context to evaluate the usefulness of the text for an explicit reader purpose. Undoubtedly, many students enter college without such skills. (Baldi and Finney, 2006) This situation is particularly relevant in the UAE where the author has observed that students entering tertiary institutes from secondary education remain ineffectively prepared

Further, while many studies have focused specifically on native English speaker students, reading in a foreign language presents a yet more complex set of difficulties (Bensoussan, 1990; Taguchi and Gorsuch, 2002). Boz, (2005) describes the difficulties faced by students when they enter their chosen disciplines after leaving the sheltered environment of their English for Academic Purposes classes and points out that strategies which were effective in that background may not be so in a more rigorous academic environment. While it is not the purpose of the current study to focus on the myriad issues of English as a Foreign Language (EFL) reading strategies, the added difficulties must at least inform the overall context of the study. This question is partly addressed in the discussion section of the paper.

One further factor in the lack of development of critical reading skills may be related to the issue that these skills are not widely taught and in some environments simply not effectively taught (Yao 2006; Orndorff, 1987). There is, however, an increasing body of

research describing approaches to developing these skills. Wilson et al, (2004) describe an approach used in a Bachelor in Education programme at the University of Canberra, commenting on favourable student responses to various elements of support. As that research demonstrates, the area of critical reading and issues of student performance generate concern and investigative interest for academic interest and English Language Teaching (ELT) study. What is not so widely researched is the effectiveness of different teaching approaches, apart from studies such as Nasr and Pritchard (2004) which looked at a set of different skills from those in the current study.

The focus of this work is to determine whether the HORS approach to critical reading developed and utilized by the researcher in classroom practice is a positive affective factor in the development of higher order reading skills displayed by students in the class, by looking at their ability to identify and comment on particular functional/conceptual elements of text; specifically fact and opinion and implication (Luke, 2000). As stated, the students involved in this study need to be effective critical readers as they are involved in lengthy and complex primary research projects. They therefore have clear instrumental objectives (Linderholm and van der Broek, 2002). As readers they need to make judgments about the relevance and usefulness of source material for their research and therefore require reasonable development of the types of skills mentioned above. Specifically, differentiating between fact and opinion, stating the implications of text-derived information are frequently required and high priority skills in this context and were therefore chosen as the 'performance' focus for this study.

Many influences impact on a reader's ability to extract meaning from a text, and a teacher's approach to the development of reading and to the use of the 8 stages of the HORS approach could be an obviously significant affective factor. This study utilizes a top-down and bottom-up processing of the kind identified as being of particular value to Arabic speakers (O'Sullivan, 2004; Marsden, 2002). This process is present throughout, and explicit in, stages 1, 4 and 6. Pritchard and Nasr (2004) emphasize the particular

importance of vocabulary in the context of nominal compounds for Arab students. In the HORS approach the noun and its representation at phrase and clause level is given particular focus as a driver of text meaning (Berwick, 2001) which also results in relevant vocabulary development (see F student comments, p. 20).

The HORS approach begins with accessing prior knowledge of reading, and a discussion of learners' reading experience (which for most of the P.I. students had been rather negative and largely based on memorization). In this process learners establish the myriad reasons why reading is important. This is particularly significant in the GCC context where some research (Shaw, 2006) indicates major issues with pre-tertiary education, language and reading and a particular concern about the limited amount of time spent reading generally in the Arab context (New Page Foundation, 2007; Abdelwahid, 2009). Given the circumstances, it was hoped that a HORS approach would stimulate an interest in reading. This proved to be the case (see student comments, p. 20-21)

The current study is an evaluation of the HORS approach and student perceptions as to whether, and in what ways, they felt it had impacted on the development of their reading skills (HORS). The focus of the study is therefore on the cognitive domain while agreeing with Yamashita, (2002) that the affective domain continues to receive less attention despite a growing body of research as to its importance. Affective factors would therefore be a suitable area for further study.

Teaching matrices and taxonomies

The teaching approach investigated in the study employs a series of matrices and taxonomies which capture some of the central concept-defining lexis which students need to be able to understand and apply in order to develop critical reading skills. One such example of concept-defining lexis is the difference between looking within a text and beyond it. In this way, in-text meaning is focused on, as well as higher order skills such

as evaluation and application of the content. The matrix and taxonomy are used in teaching reading strategies since these concepts familiar to students from their studies in science and engineering. Wherever possible, constructivist engagement in learning strategies is used to allow the learner to employ and build on existing schema and thus begin from a basis of some familiarity (Piaget and Garcia, 1991).

Frameworks such as process and system which are known to students from other areas of their studies, permit cognitive cross-referencing and bridge building, and reinforce the integrated nature of learning and transfer of skills. The eight stages outlined below are preparatory, front- loaded (and referred to throughout the course), and demonstrate a process in which students are encouraged to internalize and activate during other reading. As such, the stages may cover a number of learning periods as student assimilation of the knowledge influences the pace.

Class sessions are fifty minutes per day and the course is seventeen weeks long. Explicit reference is made to the HORS approach during further reading periods and learners are provided with a glossary that can be used in classroom discussion to focus on critical reading and thinking. The concepts captured by the lexis in the glossary are also encountered in generalized academic contexts and specific areas of science content. The purpose is to have students recognize that the set of reading skills they are developing is a useful and applicable in a range of contexts/subjects.

The HORS Approach.

The HORS approach mainly attempts to sensitize students to elements of critical reading related to reading purpose and make these explicit. It is therefore worked in tandem with reading students need to do for their research. The tests are given to see if the approach positively influences student performance.

Over the first six weeks of the course, the tutor works through the following stages with the learners. At this time they are gathering background material for their research report and at this point the reading load is at its highest and most intense. After three weeks, the first reading test is administered and the second is given after six weeks.

Stage 1

Discussion begins with exposing what students understand reading to be and its uses and applications. Areas of difficulty in understanding and factors which impede comprehension are identified by both the learners and the tutor. Prior reading experience is described and discussed, as is the importance of reading. Group work and feedback are the focus of this session

Stage 2

At this stage, brainstorming on what different kinds of readers do, and how reading purpose can influence the approach to any given text, is the intended focus. This stage begins to address the question: “What is a critical reader?” The tutor focuses learners on reflection of previous reading needs and issues encountered while reading.

Stage 3

1. The necessary skills for critical reading are addressed here through group discussion and report feedback to peers. A personal reading skills and strategies skills audit with exemplification is generated to answer the question: “Am I a critical reader?” Current reading needs are specified in the context of the research report literature review that students conduct for their research reports.

Stage 4

These skills are then compared with the critical skills taxonomy. The tutor leads a vocabulary focus on unknown terms and concepts. Students are encouraged to see these as universal concepts which might appear in any academic context/subject through discussions on the meaning and usefulness of reading skills. For example, P.I. students often encounter problems selecting information relevant to their purpose and distinguishing between, essential and incidental evidence. (Appendix 1: Complete Skills Matrix).

Stage 5

At this stage, the application of taxonomy to knowledge matrix is demonstrated to encourage an understanding of ‘within text’ and ‘beyond text’ thinking. Students relate this convergence of taxonomy to matrices to their literature search. Learners look at what it is within a text that may encourage them to use it for a purpose beyond the text.

Stage 6

At Stage 6, students apply their understanding of Stage 5 to a reading text focusing on differences between ‘fact’ and ‘opinion’. Students self-select the difficulty of text according to the Stage 3 audit. This freedom of choice allows students to select a text within their range of abilities as texts have different levels of ‘scaffolding’. Students work through the text and report back to the group and tutor. This stage has a guided focus in which students are encouraged to explicitly apply their growing knowledge to the texts they are reading as research background (See Stage 5). Questions are also asked by the tutor to determine if the level of difficulty chosen reflects the respective student’s level of reading competence. Students in the course identify this choice as this is an ongoing problem when students select materials for research, particularly from databases.

Stage 7

In Stage Seven, there is a connection of the above concepts to current needs and context within the student research project, such as the literature review and discussion section of the report. This focus provides a purpose to the development of the skills they are using.

Stage 8

A substantial review of the previous stages is begun in Stage Eight. Further discussion focuses on and the ways in which students apply the skills approach, and deals with problems they encountered, modifications they made and their reflection the process. This review takes place in groups with facilitators and note-takers in each group. A report is given back to the class by the note-taker and leads students into discussion on the review.

The concepts captured by the lexis in the glossary are also encountered in generalized academic contexts and with specific application in a scientific context. Figure 1, Appendix 1, illustrates the matrix of these skills. Figure 1, below shows the knowledge matrix.

These matrices provide the basis for exemplification and in-class discussion.

Figure 1 Knowledge Matrix

Within text		Beyond text
Focus		Action
Recognize		Connect, evaluate, be influenced by, apply
Read		Select prioritize
Understand		Specify use /purpose
		Contextualize use/purpose
Words		
Structure		Describe
Concepts		Exemplify
Meaning		Link
		Develop
Purpose		Conclude

Opinion		Evaluation, implication, assumption
Fact		Completeness

This knowledge matrix approach is worked with over a period of weeks, but always as a part of a range of reading activities directly related to the students' research, in order to give it purpose and

context (Van der Broek et al, 2001). The focus of the knowledge matrix (knowledge is not being used here as a synonym for content, but rather relates to concepts and language) is to stimulate discussion that understanding within a text leads to application beyond, it thereby reinforcing the idea of reading purpose. This focus can then be explicitly related to the content and purpose of the research report the students will later produce. For example, the concepts of selection and evaluation are linked (albeit not exclusively) to selection of sources (literature review); the notion of implication can be located within the context of the discussion section; description related to results and so on, since students also need to be able to read their own texts critically. The application of the learned skills to a clear academic purpose and task which the students need to complete, adds value to using the strategies in this approach as a pedagogical tool. These themes are returned to periodically during the preparation period and worked with explicitly by the tutor.

Participant/Student Profile

The sample is made up of thirty-seven Emirati males from government and private high schools currently in the freshman year at the PI. All achieved a 500+ score in the international TOEFL exam and successfully completed the first part of the two-part communication programme. The average age is 19. The two classes, test class and control class, have a similar GPA profile and the grade range from the previous semester fell within a similar curve.

The students are in two different classes on the same programme following the same syllabus.

Table1- grade breakdown.

Group	Grade A	B	C	D	F
Test	7	9	2	0	0
Control	8	8	3	0	0

While homogeneity between classes is unusual, these two groups display very similar academic and language proficiency.

Methodology and procedure

The researcher's class was the test group and the control group was taught by another tutor. The test group was exposed to the approach described; the control group was not. As this is a causal comparative study and the groups are not less than fifteen, the sample size can be considered reasonable (Cohen et al, 2000). Further, involving more classes would have required training colleagues in delivery of the approach being used in the study. A longitudinal study would be able to do this.

A pre-test survey was given to the test group. This survey elicits evaluation of prior reading teaching and students score previous reading teaching effectiveness on a 5-point Likert scale. Respondents were further asked to define and state the purpose of critical reading. They were then asked to rate their understanding of key elements of critical

reading such as distinguishing between fact and opinion, recognizing what may be implied by the text, identifying points of view and recognizing assumptions. This was done in order to compare their self evaluation with respect to these elements, in a post-test survey.

The test group uses the HORS approach over a period of three weeks. Explicit reference is made to the purpose, concept and skills of critical reading. In the third week, the first test text is issued to both groups again in a normal 50-minute class session. Results from the classes were then compared. Further reading took place using the approach for the following three weeks and then the second test text was issued. Results were analyzed and collated.

A post-test survey was given to the test group. It was the same as the pre-test apart from asking respondents to evaluate the teaching of reading in the class (using the same Likert scale) and requesting qualitative data on if/how they feel their reading may have improved. Pre and post survey data were then compared. Ad hoc individual sessions were conducted with 10 of the test group (i.e., 10 out of the 18 participants) in which they related their experiences of reading after going through the eight stages. Specifically, the researcher wanted to determine if the students noticed any differences in their levels of confidence and understanding, and then determine if there was a correlation with the survey results. As a gate-keeping (control) procedure, a selection of responses from both classes was sent to the original five text reviewers and they were asked to comment on whether these were reasonable implications.

Materials for testing

Two test readings were given to assess if development of reading skills had taken place. These test readings were selected according to the following criteria.

- Length: text length (420 and 435 words respectively)

- Interest: Test texts were selected according to area of interest (Linderholm et al, 2002). One of the texts focused on literacy and reading both of which are relevant topics for these learners in this course. The second text focused on nuclear power, an energy source currently of great interest here.
- Level of difficulty: Level of difficulty can relate both to subject matter and vocabulary (Day and Bamford, 2002). Paul Nation has speculated (2001) that for academic texts a reader needs to understand about 98% of the running vocabulary for full comprehension. For purposes of clarity, while in class, students were permitted to ask questions about vocabulary as they would in any class. However, no such questions were asked during the test period, as the text selection had a high known vocabulary level.

Text preparation

Five teachers from a language/communications background were given two expository texts to read and identify text opportunities related to concept recognition. These two texts were to be used to focus test questions. Ten examples of distinguishing between fact and opinion were agreed upon, and five text opportunities lending themselves to implication. The researcher then reviewed these and selected the areas of commonality to provide the test focus. That is, these selected examples would be the text content students would be expected to identify and to understand.

Texts were introduced according to the researchers' view of those examples which best met their learning needs and approached the identified cognitive levels. The fact and opinion text was given first as for this reason (i.e., the concept of implication extends beyond recognition into explanation and interpretation). It is important to note that for the concept of implication, it is difficult to be totally prescriptive since a range of implications may be possible derived from text content/evidence. For each implication, some notion of what is realistic had to be agreed upon, based on text evidence. Five

opportunities for implication to be derived were agreed by the text reviewers and which provided the focus for testing.

For example, in one of the texts, reference is made to oil being a limited-supply, non-renewable energy source.

Results

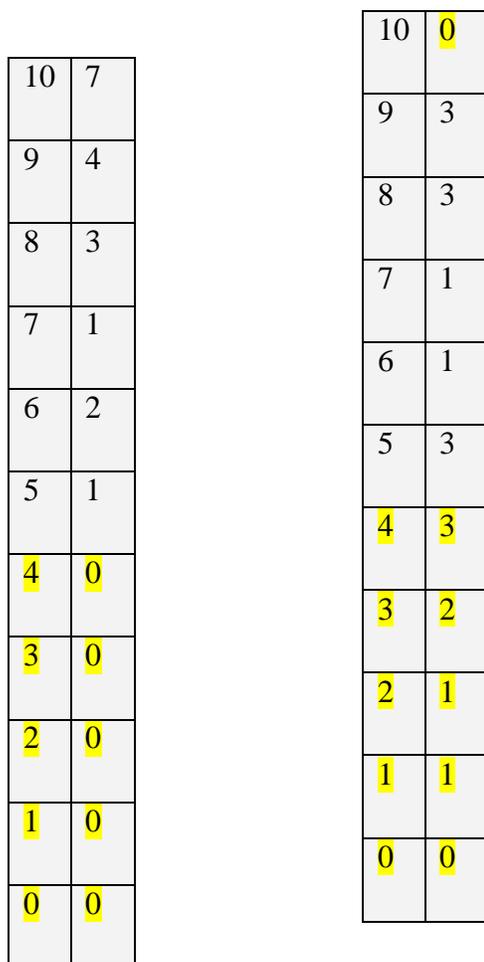
Triangulation combined information from quantitative and qualitative data gathering. Cross-group results were compared initially with a simple frequency count of successful answers. For the implications text, qualitative analysis of answers was applied with a focus on how realistic the implications were based on text evidence. Subjectivity here was minimized by giving a random selection of answers to a group of language and communications teachers and comparing their comments on the qualitative nature of the student responses. Responses from the surveys and interviews were then built into the overall analysis.

Reading tests

The results from the fact and opinion text displayed in Figure 1 are of immediate interest. The results for the test group show that seven of the respondents had 100% correct whereas none of the control group did. Results for nine correct answers were four and three respectively. Significant differences can be observed for scores of five and under where seven of the control group scored four or less while none of the test group fell into this bracket. The mean of six-ten correct answers in the test and control group was 3.6 and 1.6 respectively.

Fig 2 Test group:

Control group:



Successful task-performance in the test group can immediately observed to be better, particularly when one looks at the groupings in the 4 and under range and the 10 bracket.

Figure 3 shows the numerical range of the number of text opportunities for implication as seen by the respondents. No respondents indicated that there were less than four opportunities.

None of the test group identified more than seven text opportunities, while seven of the control group did.

Fig 3 Text Implications Range

Test group	Control group
9 0	9 1
8 0	8 6
7 3	7 2
6 5	6 7
5 8	5 2
4 2	4 1
3 0	3 0
2 0	2 0
1 0	1 0

This included areas of text where no implication was suggested given the completeness of information in the text. The range of error here is therefore substantially less for the test group.

Next, the numbers in each group who selected all or some of the same five pre-selected opportunities within their range as selected by the teaching team were examined. The results are displayed in Fig 3.

Fig 4 Agreement with teacher-selected text opportunities

Test group

5	3
4	3
3	4
2	6
1	2
0	0

Control group

5	0
4	0
3	3
2	7
1	7
0	2

The same five text opportunities for implication were identified by three of the test group while none of the control group was able to do so. The same result is evident for four same-opportunity choices. The lower-end results are also interesting with seven of the control group having only one correct choice and two with zero, while the test group had two with one correct choice and no respondents with zero. The mean of three to five-correct answers in the test and control group was 3.3 and 1.0 respectively.

However, in going beyond the simple numerical count, issues of accuracy need to be considered. Of the two respondents in the control group who identified five text opportunities (Figure 2) one identified two of the pre-selected opportunities and one identified none. Accuracy is also a factor in the quality of the implications derived from the text and this also needs to be compared. There were clear qualitative differences in many of the responses and this will be further addressed in the discussion section.

Survey results

Comparison of pre and post-surveys conclusively show a more developed ability in the test group to define critical reading and state purposes for which it is used (these were the

only two questions). Descriptions were on the whole more detailed and thoughtful showing less superficiality than in the pre-survey. A thorough reading of the responses shows a clear (and sometimes impressive) qualitative improvement in terms of thinking and understanding.

Below is an anecdotal example of a typical learner response. The full data set of responses is represented in Appendix 1.

Student 1.

Pre –survey: The ability to read quickly and fully, understanding the content and analyzing it.

To read articles for research and study.

Post survey: The ability to read beyond the text to compare your own opinion with the writer’s opinion. To identify critical areas and important information in the text that you will use. To not just agree with what the writer says.

To produce more effective writing in the context of research and study.

All respondents indicated that their reading had improved. While this response is also high in the post-course survey given each semester; here it was unequivocal and unanimous. Students were asked to evaluate the effectiveness of the approach to reading on a scale of 1 to 5, with 1 being not effective and 5 being very effective. The results are displayed in figure five below.

Fig 5

5	4	3	2	1
8	7	3	0	0

Interview results

The focus here was on the idea of improvement, both from the perspective of the learner and the tutor. One question was asked as to whether the students felt their reading had improved or not, and if so, in what ways. Overall perception of improvement was specifically stated. Below are a typical set of responses.

Student A I improved at recognizing overgeneralizations and differentiating between facts and opinions. I also came to recognize implications in the texts which I didn't know about before.

Student B Well my reading before was just reading the words of the text and trying to know the surface meaning, but now I know there is much more than meets the eye in the text, where a text is a way of communicating what the writer uses to deliver information that may not always be right and may be exaggerated and maybe not credible.

Student C I can identify things like facts and opinions, implications, relevance and overgeneralization.

Student D This semester more than ever I got to read a lot of interesting and fairly complex texts. This developed my reading in a way that I can read with more focus and understand what the writer is trying to convey and I can identify the writer's opinion about the topic.

Student E I thought the training to read critically was very effective and it's an important skill not only for the course, but also for life.

Student F I can read better now...in a way I can understand what the writer is really trying to say. I can differentiate between facts and opinions better than before and my vocabulary has increased from determining what new words mean to me...

Discussion

In summary, the results on text one are notable for the high-end and low-end grouping of effective responses. As indicated in the results section, the test group had a much higher level of success with the task. The fact that only three students in the control group fell into the 9/10 range on this text, while 11 of the test group did, is significant. This positive result is further reinforced through the individual interviews in which the test-group students indicated they did not have difficulty with the task. In discussion with the colleague teaching the control group, it was clear that completion time on average was also faster than in the control group. No data is available to the researcher on exact completion times, but the teacher stated that a number of the group had difficulty completing the task within the allocated time. This was not the case in the test group where all students finished comfortably within the fifty minutes given.

Analysis of results from test two shows that the number of choices at the 5 and 4 level and at the 1 to 0 level again indicate a significant difference in successful performance. Further, there are differences evident in the content and quality of implications. For example, in the control group there was a noticeable tendency to paraphrase, summarize and repeat information given in the text which seemed to indicate a lack of surety on behalf of the students as to the nature of implication. Such tendencies were not nearly so noticeable in the test group. These kinds of qualitative differences were evident throughout the responses, with the nature of the implications expressed by the test group

being rather more focused and going beyond the paraphrasing nature of a high number of responses from the control group.

There was an element of randomness in the approach to the task taken in the control group. Four respondents did not number the text as directed, five had no numerical order and two repeated more than the same number twice. Some respondents identified 8 and only wrote about three. One respondent who identified 8 wrote about 7. Two respondents identified 7 but only wrote about 2. One identified 7 and wrote about five. The respondent who identified 4 only wrote about two. One respondent wrote about six but with no reference to text location. This problem did not occur in the test group.

Given that the two groups had such a similar profile in the same programme, with the same syllabus, it is reasonable to assume that a major contributory factor to the success of the test group was that they had been exposed to an approach explicitly focusing on teaching critical reading. This was the only notable element of difference in classroom practice in the context of reading.

The post-test surveys indicated an observably enhanced understanding of critical reading evidenced by generally more sophisticated, comprehensive and detailed definitions, as well as a wider range of responses as to what these skills can be used for. A higher level of confidence and contentment is also indicated. It is reasonable to conclude that the approach used was an affective factor in the development of this understanding.

The student discussion indicated a similar development in thinking and understanding in which students can clearly describe what they are able to do as readers and make reference to past performance as readers to demonstrate qualitative difference. Use of time adverbials such as 'now', 'before', 'this semester' are common in the responses. More importantly, the approach is described as 'helpful', 'very effective' and 'especially effective' and specific reference and exemplification is given to qualify these statements.

Conclusion

The choices educators make to reach learning objectives are based on choosing the most appropriate means taken from experience and knowledge. This autonomy of practice is one of the great freedoms of teaching and the notion of prescription is often (and perhaps rightly) seen as anathema. However, there is clearly value in looking at the effectiveness of different approaches used by others to inform our own behaviours and benefit learners.

One significant aspect of this approach of developing HORS through eight stages, given the oral traditions of the local culture, is the importance of speaking in the context of reading tasks and post-task discussions, and the ways in which reading is integrated with other language and communication skills. Moreover, since many of the students have a largely negative view of reading, they benefit from clear instrumental reasons for reading. In other words, reading leads to something real. The students come to understand that they cannot complete later professional tasks effectively if they cannot read effectively, and make a connection that reading is an antecedent. Since they are required to manage a research project, they are also able to see and value the task-dependent nature of reading in this context. Thus, the HORS approach places reading clearly in a dependency relationship with other skills and tasks. The students have a high level of interest in their research topics since they choose them and there is a strong personal engagement. They also understand that the need to read is important and will be a strong affective factor in their success.

Implication for further study

This short study has sought to give some basic analysis and data that go beyond the subjective in order to show that a particular approach to teaching the skills identified, has *measurable* value for the learner and can be *demonstrated* to be effective. Such studies

clearly have a role to play in stimulating discussion of pedagogy and methodology in a variety of contexts. The researcher intends to repeat the study longitudinally and with a larger number of reading tests administered. The second study would include more control and test groups and involve other colleagues working with the approach in the new test groups. Results across more sections could then be compared and a higher degree of reliability generated from the data.

This would enable other researchers to use the procedure followed here to look at other HORS (higher order reading skills) not specifically focused on as part of this study.

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About the author

David F Dalton is a senior lecturer in Communications at the Petroleum Institute in Abu Dhabi. He has eighteen years experience of teaching language and communications at universities in the UK, Spain, Mexico and the UAE. He also has extensive experience of curriculum design and educational management. His current work has two strands. One is teaching a range of practical, synthesized communications, project management and research skills to undergraduate students. The other is team-teaching on an engineering problem solving programme. All students will later work in the oil and gas industry as engineers, managers and administrators.

Appendix 1

Skills matrix

Determining advantages and disadvantages
Determining the accuracy of presented information

Determining relevance
Determining overgeneralization
Identifying exaggeration
Identifying points of view
Identifying missing information
Identifying implication
Distinguishing between fact and opinion
Recognizing assumptions
Detecting inconsistencies in an argument
Judging essential and incidental evidence
Judging the credibility of a source

Appendix 2

Student 2

Pre –survey: Critical reading is a way to read and understand.

Prepare for test and quizzes.

Post-survey: Critical reading is a skill that is applied to get answers to specific questions when you read.

Understand all the concepts the writer uses.

Developing research and getting points of view.

Student 3

Pre survey: Don't know.

No information on purpose

Post survey: A way of reading to analyze the facts, writer's point of view and hidden meaning of the topic.

Reading for research and report writing. To take information from sources effectively.

Student 4

Pre survey: It is to read something and understand it carefully.

It is used for understanding texts and to say what is it talking about.

Post survey: Critical reading is to understand every bit of the text and its meaning and also to understand the text from different perspectives.

I use it to understand any text I am going to use for a purpose.

Student 5

Pre survey: Critical reading is reading that gives a clear image about the ideas of the text....

To identify the quality of a text.

Post survey: The ability to analyze the words and concepts of a text in order to identify things like advantage and disadvantage, facts and opinions, reliable information and the quality of the text in general.

To communicate with the text in order to judge reliability, key ideas etc.

Student 6

Pre survey: To read an article and understand it.

To study, to understand the texts

Post-survey: Understanding what, how and why the text says what it say, to understand the purpose

To review sources, for study purpose.