Aspects of English Medium Textbook Use in Hong Kong

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This paper will consider the use of English medium textbooks in bilingual situations and will briefly present the results of a survey of 24 schools in Hong Kong. Language and textual constraints may both inhibit the efficient reading of content subject textbooks in school. It will be argued that textbooks are "inconsiderate" in not making rhetorical (top-down) structures clear and that this is a neglected cause of student difficulty. Practical examples for making books more "considerate" will be offered.

英文教科書在香港之使用情況

本論文探討在雙語環境中英文教科書的使用及簡述在二十四間香港中學進行意見調查的結果。結果顯示，語言及原文的約束可能妨礙學生有效地閱讀學科教科書。本文的論點是教科書沒有顯明「由上而下」的修辭結構，實爲學生閱讀困難的被忽視的原因。本文將提出教科書應如何顧及讀者的實際方法。

Introduction

For many students throughout the world reading in school is done in a second language. The acquisition of knowledge in school depends greatly on textbooks, most classes relying on textbooks as a primary source of information. (Applybee, Langer & Mullis 1987). Textbooks in school are important because they are the main models of written language for students.

Second language content reading dominates many African and Asian countries at secondary/high school level, yet relatively little recent study has been done on the nature of student problems in textbook reading or ways in which the textbooks themselves can be made more "considerate". The reasons for difficulties may vary - it may be that the language is too "difficult", it may be that the reader has a limited understanding of the topic, or the reader may have little experience in reading particular kinds of text.

Textbook use in Hong Kong schools

A number of studies in Hong Kong have demonstrated pupil problems with English medium textbooks. Williams & Dallas (1984) examined the problems posed by the vocabulary levels of English medium textbooks in Social Studies, estimating from cloze scores that the books were too difficult for 91% of those tested. A study by Tao (1994) looked at science in schools, concluding that many students had not achieved a threshold level of competence in the use of non-technical words in science reading materials. Cheung (1984), and Cheung & Lee (1986), looked at school pupils using English medium textbooks in a range of subjects. In their 1986 study Cheung & Lee noted that in a cloze test for forms 1-3 students all "fell far below minimum requirements for independent reading......." (p14). Neither the 1984 or 1986 studies however, offer any conclusions on the nature of the difficulties encountered by pupils and make little comment on how the situation might be improved.

These studies were with reading materials used in situations in which students are required to read content subjects in a second language. It is perhaps interesting to note, however, that the conclusions have some similarities with those offered by an extensive study of textbook use in ten L1 secondary schools in England (Harrison 1979). The author of this study concluded that there is:

> *firm evidence that many students, perhaps even most students, learn less than they might otherwise do from school texts, and this is because texts are presenting difficulties not just in terms of conceptual content, but because of **the way in which they are written*** (p101).

Later in this article I intend to offer suggestions to improve textbook writing, not just by vocabulary control, but by offering a more "considerate" organization and structure in textbook design.

A survey of teachers' views on textbook use in Hong Kong

As part of an investigation of the language of textbooks in Hong Kong, the present author undertook a study of teacher opinions of textbook difficulty. Among other things, the

survey (detailed below) attempted to collect teacher opinion on :

a) student difficulty in reading textbooks
b) the perceived purposes of the textbook for the pupil attempting to gain subject knowledge

Questionnaires were sent to 28 geographically disparate secondary schools in an attempt to cover a range of socio-economic areas of Hong Kong. School pupils in Hong Kong enter secondary education after assessments which band them from 1 (the "top" band) to 5 (the "bottom" band). The banding system is considered confidential, so selection of schools according to band was not possible in this survey. Some schools were hesitant about providing a precise band description of their school and sometimes offered an approximation. The results therefore reflect school responses and provide band indications grouped as band 1, band 1-3, band 3, band 3-5 and band 5. All teachers who taught Integrated Science, Social Studies, History, Geography, and EPA (Economics & Public Administration) to forms 1-3 were asked to respond. (The questionnaire is given in the appendix)

<u>Results</u>
229 teachers from 24 schools responded.

<u>Student difficulty in reading textbooks</u> (Chart 1) 75% of teachers felt that "language problems " affected students understanding of the subject. Band 1 schools put this figure at 52%. When band 1 schools are removed from the totals, 83% felt that language problems seriously interfered with content understanding. An inconsistent result is indicated with band 5 schools "strongly disagreeing" with the notion that there is student difficulty with understanding the texbook - this may perhaps indicate misunderstanding of the question.

Student difficulty in understanding the language of the textbook seriously affects their understanding of the subject
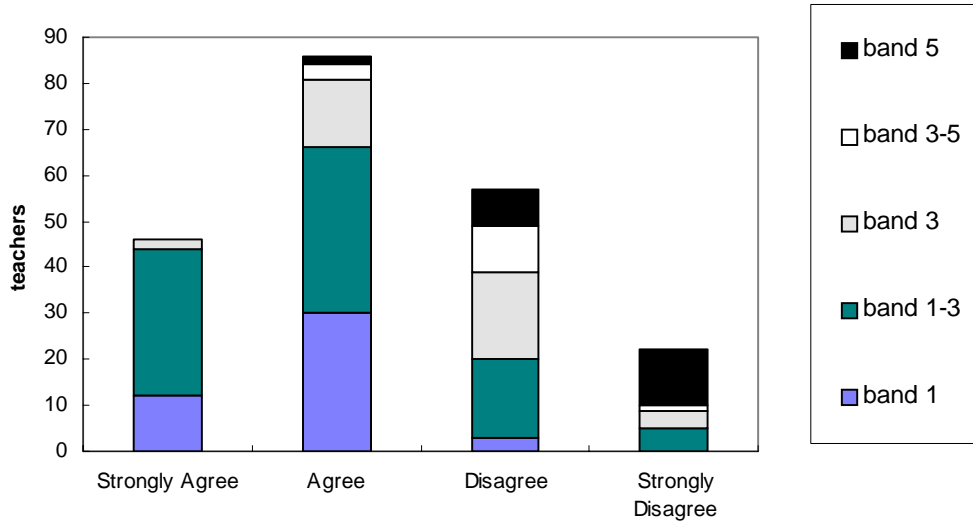

Chart 1

<u>Percentage of textbook understood by pupils</u>. (chart 2) As expected this was strongly related to the band of the school. Even in band 1 schools 33 of the 52 responding teachers felt that their pupils understood less than 70% of the textbook. In commenting about the reasons for students' lack of comprehension, 68% felt English language problems to be responsible.

Percentage of text book language the students understand.
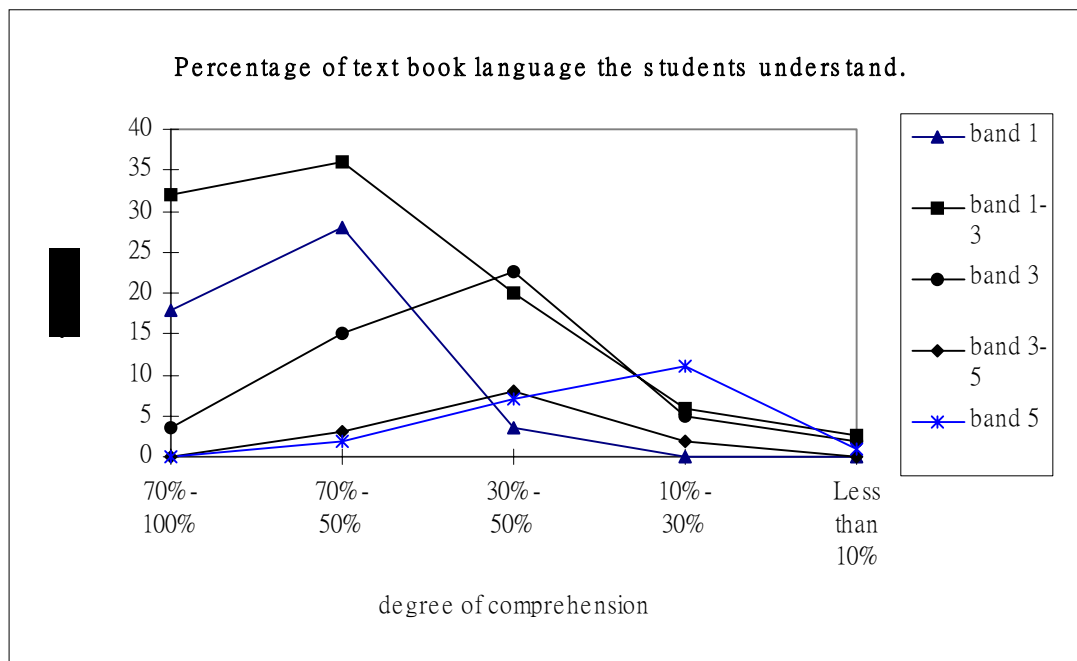
degree of comprehension

Chart 2

How the textbook is used There will clearly be differences between how teachers report textbook use and the reality of the situation. Teachers may be trying to create a favourable impression, or they may be responding in the way they think the investigator wants them to respond. However, 70% claimed not to use the textbook for homework reading, very different results from that reported by Lunzer and Gardner (1979), who found this to be one of the main purposes of textbooks in school. However, 62% of the teachers in the survey claimed that books were used for independent reading which may suggest some contradiction. 87% of teachers did state that the purpose of textbooks was to broaden student knowledge and agreed that textbooks were used in class with teacher support. Taken in conjunction with the earlier results on perceived comprehension problems, it seems reasonable to conclude that teachers believe that students ought to be able to use textbooks independently, but are unable to do so. 85% of teachers believed that additional materials should be provided to support the textbook, with 25% believing that most teachers do not provide it. 67% of teachers provided lists of words and translations for their students.

Teachers should provide written lists of English words, with translations, to help students.
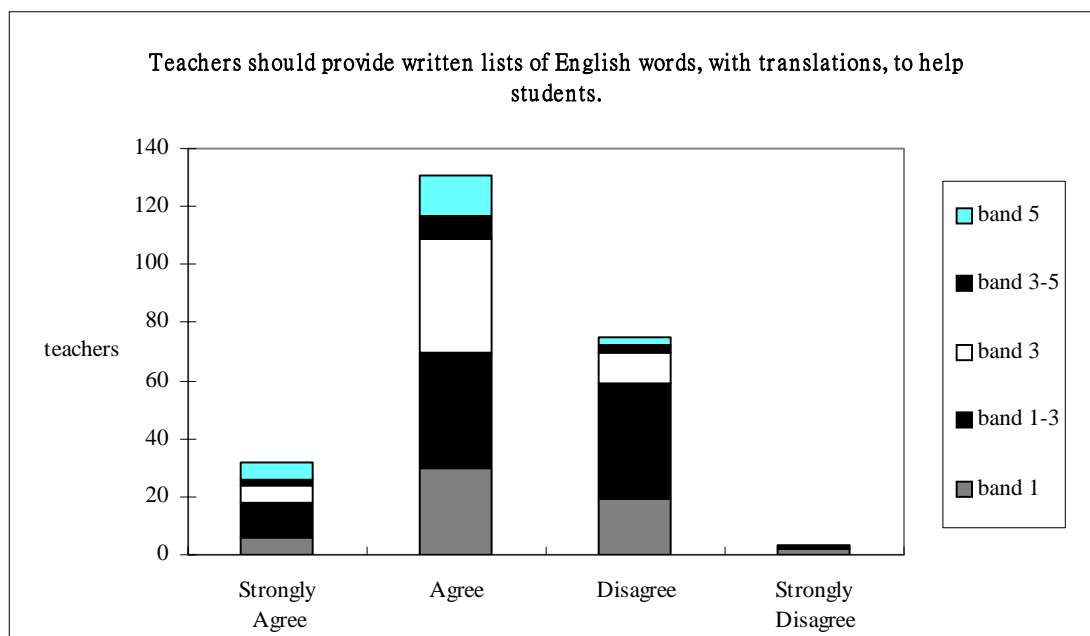
Chart 3

Invitation to comment

Teachers in the survey were also invited to comment in writing about the sources of student difficulty with textbooks - in response to an "open" question. Their replies indicated "difficult" vocabulary as a major source of problems. A number of comments also suggested the problem was with the style and organization of the books - an area I have indicated at the beginning of this article has been neglected in considering textbook difficulty. It is this area which will be developed in the latter part of this article - justification for emphasizing this is given in the following pages - particularly in point 3 below.

I will first briefly examine, in general terms, what might be considered the major sources of difficulty in reading L2 texts.

Sources of difficulty in reading L2 text

1. There may be problems caused by students' lack of familiarity with the academic/cultural conventions of the text, e.g. Asian culture may see knowledge as something to be conserved and reproduced whereas western knowledge encourages a more questioning, individual approach. (Mohan & Au Yeung Lo,1986) As the Hong Kong education system is based on a western model this may be an inherent problem.

2. Vocabulary and syntactic difficulties play an important part in comprehension. Clearly word knowledge will have an effect on all other aspects of comprehension. Johnson & Ngor (1996) report that weaker students in Hong Kong lack grammatical competence and as a result over-rely on lexical processing. They rely more on "surface processing" and as a result recall less details and are only able to offer shallow summaries of the material studied. Such surface processing is realized in attempts at rote learning as a survival

rather than a reading strategy. "Survival strategies enable teachers and students to maintain the appearance of credible teaching and learning.......they aim (to allow students to) complete tasks regardless of meaning" (p132).

3. There may be differences in the cultural conventions for presenting material. (its rhetorical or "top level structure'). Kaplan (1966, 1987) has argued that there may be cultural differences in the way that material is organized which may cause additional difficulties for L2 learners. Academic discourse, even at high school level, may have distinctive features offering abstract ideas, and the more complex syntax and a specialized vocabulary that goes with it. Expository text may be harder to understand because of its more complex rhetorical/top level structure. Vocabulary and syntactic weaknesses may also inhibit understanding of these rhetorical forms. Recall and comprehension might be strongly affected by rhetorical structure because such structure effectively maps out the logical relations of the ideas presented in a text. Awareness of this structure allows students to develop an expectation of how subsequent information will be organized and presented. This then serves as a framework on which the reader develops meaning (Meyer & Rice 1984). There is strong evidence that L2 learners have particular difficulty with cohesive ties often used to signal rhetorical structure and with the skills necessary to use such structures in comprehension. (Chapman, 1983, Cohen 1979, Pierce, 1975, Chung, 1997).

Armbruster (1984, 1986) listed the basic rhetorical forms as: listing, comparison/contrast, problem/solution, cause/effect, temporal sequence. Many researchers have found these to be fundamental to improved comprehension and recall among both first and second language speakers, (Meyer, Brandt & Bluth, 1980, Foo, 1989, Goh, 1990, Urquhart, 1984, McGee, 1982 , Taylor & Samuels, 1983, Carrell, 1984, Thorndyke, 1977), and research has shown that readers who have this knowledge have an advantage when it comes to comprehending main ideas, recall more specific information (Meyer et al., 1980, Meyer & Rice, 1984) and are more able to distinguish important from unimportant information (Dole et. al., 1991). It has also been shown to help recall of unfamiliar topics (Taylor & Beach, 1984, Alvermann & Qian, 1994).

How to make textbooks more "considerate" to their readers

Teachers in the survey outlined earlier provided information on the general language problems faced by their students in reading textbooks. In the specific comments in the later section of the questionnaire 21 teachers (of the 29 who responded to the invitation to offer written comments of their own) referred to problems related to the _way_ text was organized. I would contend that the teachers are referring to the structure described in point 3 above. I would suggest therefore, that both the general language problems and the specific text organizational problems referred to by teachers could both be affected by weaknesses in rhetorical structure and that by making such structures more explicit, the textbooks would be making themselves more "considerate" and therefore comprehensible to readers. Clearly, correctly selected vocabulary is vital in reading comprehension and recall, but the way a text is structured also plays a vital part and I would contend that this has been given too little emphasis in the preparation of textbooks by authors and

publishers. The importance of making such rhetorical forms clear has been demonstrated in the research briefly mentioned in point 3 above.

I would now like to offer examples of how suitable improvements might be made. Such improvements offer clearer signalling devices, titles, subtitles, introductions, topic sentences and make logical relationships more explicit. Some of the examples are taken directly from textbooks used in Hong Kong, others are adaptions considered typical of the kind of material found in school textbooks.

Example 1 : from a Hong Kong science textbook (Chan et.al. 1993, p65)

There are four chambers in the heart. The two chambers at the top are the collecting chambers: the left and right auricles. The two chambers at the bottom are the pumping chambers: the left and right ventricles.

Blood vessels carrying blood away from the heart are called arteries. Arteries branch into a network of fine tubes called capillaries. Their walls are so thin that exchange of materials takes place. Food and oxygen diffuse from the blood, through the wall of the capillaries into the body cells. Capillaries join together to form veins. Veins carry blood back to the heart. To prevent blood flowing backwards, veins have valves.

Alternative version

The Heart
*1. The two chambers which **collect blood** are the left and right **auricles***
*2. The two chambers which **pump blood** around the body are the left and right **ventricles**.*

Blood Circulation
*1. **Arteries** carry blood **from** the heart. These arteries branch **into** a network of narrow tubes called **capillaries**.*
*2. Next food and oxygen is **diffused** from the blood in the capillaries **into** the cells of the body. This diffusion, or movement, is possible because capillaries have very thin walls.*
*3. Capillaries join together to form veins. **Veins** carry blood **back** to the heart. To prevent blood flowing the wrong way veins have **valves**.*

The alternative version given here contains, more or less, the same content information, but has clearer signaling devices. Logical relations are made clearer by the use of **bold**, numbering and a more logical organization of meaning. (sequence and cause - effect relationships are made clearer) The text could, of course, be made even more "friendly" by additional elaboration: *Blood is forced into the arteries each time a ventricle contracts (becomes smaller) , you can feel the movement in your wrist when the arteries stretch and fill with blood. The stretching of the artery makes a pulse, Your pulse has the same rhythm as your heartbeat. The walls of arteries are thick and strong. Why? First, thicker walls are needed because arteries stretch with each pulse of blood. Thinner walls would break. Second, arteries assist in pumping blood........*

Example 2

> *The life cycle of a butterfly*
> *Butterflies lay eggs. The egg is the first stage in the life cycle. Caterpillars hatch from eggs. Not many of the caterpillars grow up to be adults. A caterpillar is the next stage of the butterfly - it is called a larvae. Caterpillars grow and eat a lot and when they get too big for their skin it splits. A new skin grows. The caterpillar grows on a leaf. This marks the beginning of the next stage of its life cycle. It changes into a pupa in a cocoon. Later the cocoon will open and a butterfly will come out.*

Alternative version

> *The four stages in the life cycle of a butterfly*
>
> *1. In the first stage the butterfly lays **eggs.***
> *2. In the second stage the eggs hatch into small wormlike animals called **larvae**. The larvae grow and when they become big their skins split and fall off.*
> *3. In the third stage, the larvae become **pupae** . The pupae build a small case or compartment around them called a cocoon.*
> *4. In the fourth stage the pupae grow into adults, the cocoon splits open and an adult **butterfly** comes out.*

Once again the alternative version has made the structure of the information clearer and more explicit by a variety of signaling devices.

Example 3:

A chapter/book *Introduction* should give a clear overview of the content and structure that is to follow. If appropriate it should show the significance of the information to be offered, any cause-effect relationships or other logical structures.

Below is an example taken from a Hong Kong history textbook aimed at form 3 students. (Kan, 1996, p92)

> *Two major conflicts took place in the 20th century. The first one was the first World War (1914-18). It lasted for four years. The second one was the Second World War (1939-45). It lasted for 6 years.*
> (This introduction is followed in the textbook by details of the causes, results and events of World War 1, a description of political events after 1918, including the rise of totalarianism, communism and democracy, followed by the causes, results and events of World War 2. None of this is mentioned in the introduction, nor is any clue given as to how the material will be organized.)

Alternative version:

> *The first and second world wars **caused** great political and social changes*

*throughout the world as well as being responsible for the deaths of millions of people. This chapter will look first at why these wars occurred and **how** the world changed **as a result**.. It will also look at some of the political ideas that developed, ideas such as democracy, totalitarianism and communism.*

The reader in the alternative version is provided with signals indicating the structure of the chapter that is to follow.

Example 4

Clarity of references may also make a difference. Does "they " refer to the people from the south or their ancestors in the example below?

The people from the south of the country learned from their ancestors. They were fishermen and warriors. They made tools and many fine buildings. They also traveled to distant lands. They wrote about their experiences.

Example 5

The use of analogy may also make the text more coherent by providing the reader with a suitable schema into which new information may be fitted.

Do you know how bread is made? Flour, water and yeast are mixed into dough. Then the dough is baked in an oven and the heat used to change the dough into bread.

The leaf of a plant use s a similar process. Just as the flour and yeast are used to make bread, so the water and carbon dioxide are used to make the leaf of a plant.. Sunlight provides the heat ....

Conclusion

I am suggesting in this article that offering texts that are themselves more "considerate" will aid comprehension and recall. There is evidence that such "considerate" text will also increase vocabulary learning from context. (Gordon , et.al. 1992) . The survey suggested that there is a serious problem with comprehension as estimated by content subject teachers in Hong Kong and that the commonly stated cause - lack of vocabulary knowledge- is not the only source of the problem. Textbooks may be "inconsiderate" in their organization and that this is an area which warrants more attention.

1. Full details of the results of the survey are available from the author. The survey forms part of an on-going investigation into student comprehension of school textbooks in Hong Kong.

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For completion by teachers of Forms 1-3 : Science, Social Studies, History, Geography and E.P.A in secondary schools

This questionnaire is part of a preliminary inquiry into the use of textbooks and other reading material (written in English) used by students in Hong Kong secondary schools.

I would be very grateful if you could answer the following questions. You do not need to put your name on this questionnaire

Your school:
        (a) Name of school...
        (b) Religious affiliation of school (if any) ....
        (c) Grant maintained ( ) Government ( ) , Subsidized ( ) (please tick)
        (d) English medium ( ) Anglo-Chinese ( ) Chinese medium ( ) (please tick)
        (e) Which band (s) of pupils does your school admit...

1. Number of years experience as a teacher...
2. What language or languages do you use to teach your students?...............................
3. Qualifications:

        degree.................. Teaching qualification (if any)....................other...........................

4. Subjects taught
                Main subject(s)   Subsidiary subjects

Please select one textbook (written in English) that you use frequently with students in forms 1, 2 or 3. Fill in the details of the book and answer the questions that follow.

Title of book using book	Author	Publisher	school year (forms 1-3)

....
....

(Please FILL IN / SHADE the circle of your choice using a pencil or black/blue pen) O

(a) Most pupils have no difficulty understanding   strongly agree   agree   disagree
strongly disagree
 the language used in this textbook.   O   O   O   O

(b) Student difficulty in understanding the language   strongly agree   agree   disagree
strongly disagree
 of the textbook seriously affects their   O   O   O   O
 understanding of the subject

(c) Most students can understand the textbook   strongly agree   agree   disagree

strongly disagree
 if they are given help by the teacher   O   O   O   O

(d) Teachers should provide written lists of English   strongly agree   agree   disagree
strongly disagree
 words, with translations, to help students   O   O   O   O

(e) Teachers should provide worksheets and/or   strongly agree   agree   disagree
strongly disagree
 handouts to support the material found in the   O   O   O   O
 textbooks

(f) I usually use the textbook for homework reading   strongly agree   agree   disagree
strongly disagree
 rather than for work in class   O   O   O   O

(g) The purpose of a textbook is to provide support   strongly agree   agree   disagree
strongly disagree
 for classwork   O   O   O   O

(h) The purpose of a textbook is to broaden   strongly agree   agree   disagree
strongly disagree
 students' knowledge of the subject   O   O   O   O

(i) The purpose of a textbook is to allow private strongly agree   agree   disagree
strongly disagree
 study of new topics   O   O   O   O

(j) The purpose of a textbook is to allow students strongly agree   agree   disagree
strongly disagree
 to read independently   O   O   O   O

(k) How much of the language of the book do your 70 -100% 50-70% 30-50% 10 -30% less
than 10%
 student's understand?   O   O   O O   O

(l) If you think the book is too difficult for your O subject matter/concepts used by your subject
 students is this because of the: O the use of the English language used in the
book?

                               O both of these

(m) If you think the book is too difficult for your   F.1 F.2 F.3 F.4 F.5 F.6 University
 students, at what age would you think they   O O O O O O O
 would be ready for this book

(n) Most teachers provide handouts to support   strongly agree   agree   disagree

strongly disagree
 the information found in the textbook   O   O   O   O

(o) Do you think the textbook should be written strongly agree   agree   disagree
strongly disagree
 or translated into Chinese   O   O   O   O

(p) If the textbook were written in Chinese students   strongly agree   agree   disagree
strongly disagree
 would find the subject much easier   O   O   O   O

If you would like to make other comments or recommendations about school textbooks (written in English) in your subject area, please do so below. <u>Thank you very much for taking the time to complete this questionnaire.</u>

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