

Considering ESP Literature

by Phil Skeldon

Mike Ramsden's recent potted history of EFL (Language Centre FORUM 6) refers to the time in the seventies when EFL teachers first ventured out of the 'gentle landscape of language and literature' into 'the land beyond the mountains inhabited by illiterate and savage tribes called scientists, businessmen and engineers'. One MA in Applied Linguistics of my acquaintance spoke disparagingly of students' writing in a test, 'There's no *style*, no complex sentences, no adjectives'. The students had written instructions on how to change a wheel! This is an extreme case. On the other hand, it serves to remind us that many EFL practitioners brought a lot of baggage with them when they ventured into these new fields, and have still not entirely adjusted to the new landscape.

Certainly, a recent review of the catalogues of EFL readers suggests that some teachers and publishers still haven't even followed the pioneers into the new territory. The catalogues all refer to the wide range of genres. We can but agree with this claim, but only like the hapless editor in Evelyn Waugh's 'Scoop' who always replied to his proprietor's dubious statements with 'Well, ... yes, up to a point, Lord Copper, up to a point'. I perused the Penguin catalogue of about two hundred readers and made the following rough breakdown of the titles

Fiction	32%
Classic Fiction	41%
Film Adaptations	13%
Non-Fiction	12.5%

Judging from a survey of Oxford and Cambridge University and Macmillan catalogues, the main players seem to follow a similar policy. There is, of course, a wide range of genres covered by these readers – romance, comedy, thriller, police procedural, whodunit, historical fiction, social satire and so on. However, there is one huge lacuna. The small proportion of non-fiction titles is surprising. But, even more startling is the fact that, in the Penguin list, there is just one book about science, 'The Double Helix', James Watson's modern classic on the discovery of DNA. Oxford University Press does have their series of non-fiction 'Factfiles'. Of the thirty or so titles, a third are city and country guides. There are other miscellaneous subjects, and just six titles that might be included under 'Science and Technology', if we generously include UFOs!

Rainforests	Pollution
UFO's	Animals in Danger
Flight	Under the Ground

This disturbing lack of titles about science and technology reminded me of the sixties' debate about the two cultures. In 1959, the novelist and scientist, CP Snow gave a lecture about the two cultures, the literary culture and the scientific culture, and how the

members of each could only ‘manage a frozen smile across the gulf’ that divided them. The literary intellectuals looked at their scientific counterparts ‘in total incomprehension, as if they were talking Tibetan’. He famously asked how many of the arts establishment could answer the question ‘What is the second law of thermodynamics?’

Snow was attacking the narrow attitudes of the Establishment, and the consequent narrowness of the culture, the political outlook, and the education system in a particular time and place, the UK in the 1950s. A lot of these barriers have now fallen. However, is there not a trace of the old attitudes amongst EFL teachers and publishers, as reflected in the selection of titles for readers? Only one science title in nearly two hundred. Not even the dinosaurs make it!

Snow also described the literary intellectuals as ‘natural Luddites’. Titles like ‘Rainforests’ ‘Animals in Danger’ and ‘Pollution’, half of a miserable total of only six, do suggest a preoccupation with the negative aspects of science and technology. They overlook the fact that we wouldn’t have a clue about these environmental issues but for the work of scientists, and even less idea about how to go about responding to them. For example, where would we be without the scientific detective work that found the hole in the ozone layer in the first place, traced its causes and set up the controls on the use of CFCs?

In a Guardian ‘Learning English’ article about readers, Janet Hardy-Gould wrote of the need to ‘engage and inspire the reader without patronising them’, and an OUP editor referred to ‘fiction that is relevant for adults and respects the reader’. These comments struck a chord with me, but why only fiction? Are there no non-fiction books that would engage and inspire the reader? Are there no students who would like to read about science and technology? Are the predominantly arts-trained graduates who write, publish and buy EFL readers so unaware of, or indifferent to science?

In the non-fiction readers, there are only four biographies. One of them is ‘Prince William’, whose only achievements are to be his father’s son and to resemble his mother. Are we not patronising our students when we feed them this trivia, but don’t offer them biographies of Darwin, Faraday, Henry Ford, Marconi, The Wright Brothers and others who have shaped our modern world?

Again, should not classic literature include, as Mathew Arnold wished, works like Darwin’s ‘Voyage of the Beagle’ and ‘Origin of Species’, or modern classics like Rachel Carson’s ‘Silent Spring’? If it is thought that a best seller like ‘Banker’ by Dick Francis is worth adapting, why not consider Dava Sobel’s best seller, ‘Longitude’?

In neglecting science, EFL publishers have not caught a tide that it is running through the world of books. I read in the literary sections of the press claims that the novel is dead (again!) as readers turn to non-fiction. The Johnson Prize has been set up as the non-fiction equivalent of the Booker Prize. Furthermore, popular science has its own best-selling authors like Stephen Jay Gould, Richard Dawkins, Steven Rose, and Steve Jones.

Dava Sobel's 'Longitude' was an international best seller, and has been made into a film. Yet, the EFL publishers do not seem to be aware of this trend.

In fact, they seem to be heading in the opposite direction by reducing the number of science titles! This is more than ironic when the spread of English as a second language has been driven by commercial and technological factors. One writer suggests that the 'emblematic figures ... at the end of the twentieth century should perhaps be a Singapore-Chinese economic analyst E-mailing her American software-designer boyfriend about the latest Afro-Caribbean poet to win the Nobel Prize for Literature.' This is in stark contrast to the world epitomised by the kind of sentence I once encountered in a substitution table in an EFL textbook, 'What do you know about the works of Henry Wadsworth Longfellow?' It speaks volumes about the background and preoccupations of the author and publishers!

In the seventies and eighties, there used to be some science/technology readers by Norman Wymer, with titles like 'Oil', and biographies of Galileo and the Wright Brothers (both of which need updating). Also, Heinemann produced a series of 'Scientific and Technical' readers, to which I contributed one title 'Astronomy'. They were not a huge success, although they sold out their first print run. One problem reported to me was that they were too difficult. This sounds like an EFL teachers complaint, as my students have never complained when I have used extracts with them! Titles like 'Electricity' covered ground familiar from textbooks and had little appeal. However, I think a new series including some of the books I have listed below would not fall into this trap as they all have an exciting and important story to tell. Whatever their defects were, these early efforts have not been followed up. Indeed, the number of science/technology titles has shrunk to the point of extinction. Teachers and publishers seem content to plough familiar furrows in their familiar 'gentle landscape'.

This narrow outlook denies our students access to a wide range of stimulating topics of great interest, and of great significance in shaping their future. Furthermore, the narrow range of genres restricts our students reading experience to one type of text, i.e. narrative. Where is the opportunity to encounter other frequent text types, which recur in academic study? Florence Davies identifies a list of text types in her introductory book on reading, such as 'Problem-Response-Evaluation' or 'Theory/Hypothesis-Evidence-Evaluation'. Surely, all students should have the opportunity to read this kind of text. Also, would they not benefit from encountering maps, diagrams, tables, and charts in their extensive reading? Experience has shown me that students are not at all familiar with the conventions of these devices. For example, in a Before/After diagram, Arab students will tend to start on the right!

Also, students are missing out on experiencing in context that whole range of vocabulary that we call 'sub-technical' vocabulary, exemplified by words like 'measure', 'analyse', 'reflect', 'absorb' etc. These are not only essential to science students, but to all students. Just think of all the metaphors we use from science as part of our everyday language use.

One way of responding to these problems might be a series of adaptations of some of the classics of modern popular science, and original work derived from them. The series would not attempt to write a simple textbook in simple English, like the Heinemann title 'Electricity'. This would only be of interest to a trainee electrician, who would probably do better to learn his key specialist vocabulary from a subject specialist rather than an English teacher. It would not attempt to cover all the technical details, but try to convey the essential points and a sense of the excitement of discovery, the context of time and place and the personalities involved, and some sense of the significance of the discoveries. A series of biographies of important men in science and technology could accompany the series. Melvyn Bragg, the British novelist, wrote about the recent emergence of popular science books, 'I no longer felt left out. The chief way in which the twentieth century described itself was at least approachable. I was somehow present. I was not a player, but I was at the game'

It is an enormously exciting and fascinating game. It is a game that we should try to get our students into. I mean all our students, not only those who are studying science and technology. Unfortunately, the turnstiles are manned by the publishers who commission the books, and the teachers who buy them. If we can smuggle one or two titles through, the students would react positively to a wider range of genres and a more richly diverse selection of titles. Who knows? We might even push the number of science titles into double figures!

Footnote:

I learned long ago that the second law of thermodynamics states that in a thermodynamic system, the total energy remains constant, although it may be transformed from one form to another, for example, from mechanical energy to heat energy. In other words, the law of the conservation of energy. I was patting myself on the back for knowing this when I checked with the Larousse Dictionary of Science and Technology, and found that it is now the first law, because the first law has become the zeroth law! And yes, the word 'zeroth' does exist. OED defines it as meaning 'immediately preceding what is regarded as first in a series'. Make of that what you will, or can!

References

Bragg, Melvyn. 1999. *On Giant's Shoulders*. London: Sceptre.

Davies, Florence. 1995. *Introducing Reading*. Harmondsworth: Penguin.

Snow, C.P. 1993. *The Two Cultures*. London: Macmillan

Watson, James. 1999. *The Double Helix*. Harmondsworth: Penguin.

Waugh, Evelyn. 2000. *Scoop*. Harmondsworth: Penguin.

APPENDIX

How the World was One Arthur C Clarke	This is an adventure story of the growth of telecommunications, combining technical details, with business risk taking, and adventure and mishaps on the high seas. Also, fascinating details of social history. The technical vocabulary would cover electricity and electronics which are part of our everyday life but you would never find in the wordlist of any course book – wire, signal, transmit, cable, pulse, switch, plug, ... and so on.
The Making of Memory Stephen Rose	This might be forbidding at first sight, but I believe it could be adapted. It covers the science of memory and also debates the ethics of scientific research, chopping off chicken's heads to slice open their brains. It gives the non scientist an idea of the methodology of science and the daily life of the scientist
The Silent Spring Rachel Carson	This was the first great whistle blowing text in defence of the environment. The technical detail would need to be simplified greatly, but this would have a wide appeal. It is one of the most important books of the twentieth century.
The Case of the Midwife Toad Arthur Koestler	A scientific whodunit, based on suicide and fraud. It deals with the evolutionary ideas of inherited and acquired characteristics. It investigates the fraud of painting spots on the eponymous toad and also the related mysterious suicide of the leading evolutionary biologist Klammerer.
Darwin	The moving story of a man struggling to come to term with a truth that threatens his own peace of mind and his domestic happiness. A truth that has shaped our thinking in the C20th.
Galileo	This has already appeared in a Longman Readers series but a more up to date and scientifically and historically accurate version is needed.
Faraday	The classic rags to riches story of one of the giants of science whose development of electricity transformed our lives. It would cover the concepts and vocabulary that are now part of everyday life, but which do not appear in the 'general' course books.
Sir Cyril Burt and the IQ Fraud	The great scientific fraud of the century. A fraud with scientific skulduggery, tampering with results, and fictions that went undetected for many years, much to the embarrassment of the psychology profession. The IQ myth that still persists.
The Wright Brothers	The thrilling tale of the first men to take to the skies and change our world forever. Human interest and fascinating technical detail. It would also dispose of the myth that the brothers were just tinkerers in a bicycle shop, by detailing the careful experiments and observations which led to their success.
H2O	A brilliant biography of that amazing substance, water. It includes scenes from the earth's past, like the giant cascade at Gibraltar!

Heaven's Breath Lyll Watson	A study of the air. The science is mixed with amazing stories like the one about tornadoes in USA lifting houses and whole herds of cows into the air and plonking them down safely a couple of miles away!
The History of Medicine Roy Porter	It is a massive tome, but a selection of some of the important episodes would surely be of interest to all students, for example, Harvey and the circulation of blood. It would remind them too that until three hundred years ago, noone had a clue!
Language Instinct Steven Pinker	Again, it would need to be very much simplified but surely the basic facts about this amazing phenomenon, language, and how we learn and use it, might 'engage and inspire' some students.
Longitude Dava Sobel	A runaway best seller, translated into many languages because of the timeless appeal of the little man struggling against the Establishment, and winning. It also includes some tragic stories of sailors blundering around with little idea of where they might be.
Phosphorus	Another amazing substance. I learned from this book that it was the basis of the prosperity of my small town in the Black Country in England. Why didn't my teachers mention this?
Needham's Science of China	Again, this is a massive tome. However, there is already a potted version, which could be further 'potted' and include Chinese inventions like paper, clocks, gunpowder etc.
The Right Stuff Tom Wolfe	A best seller, from which a successful film was made. The human stories behind the exploration of space, the greatest adventure of our time. There is tension, but also humour, for example, the fact that the scientists did not think about making arrangements for going to the toilet!

In addition to these titles, there is a mine of articles in magazines like the New Scientist, Scientific American, Popular Science, Science et Vie etc which could be edited, collated and published as collections on current developments in technology, such as elevators that will go into space, solar sails that will boldly go to the farthest edges of the universe, nano machines that will move single atoms etc, etc.