

in James Hartley (ed) *The Psychology of Written Communication*, Kogan Page, 1980.

These two discussion papers were part of a series distributed at the Open University. Below is an excerpt from James Hartley's introduction.

GAINING ACCESS TO THE TEXT: COMPONENTS WITHIN THE TEXT

There are, of course, other ways of signalling functions to readers in addition to manipulating typographic cues within the text. There are many devices, or components of text, which can be marshalled in order to improve its clarity. One might consider, for example, the use of contents pages; indexes and glossaries; abstracts and summaries; headings and numbering systems; text directives, and so on. There is some research on the effectiveness of the presence of some of these components (see Hartley, 1978) but much of this research is unhelpful for practitioners. The reasons for this are complex but one particular one noted by Waller (1979) is that most researchers seem to assume – mistakenly – that readers read steadily from start to finish.

The contribution of Waller's 'Notes on transforming' (of which two are contained in Paper 3.2) is to redirect our thinking about much of this research. Waller considers that these textual components are not there to assist comprehension (at least not primarily). The function of these components is to help readers find their way around the text: to make it more accessible.

Waller has so far circulated five sets of 'Notes on transforming' at the Open University and published a related overview article (Waller, 1979). Notes on transforming no 1 was concerned with the idea of transforming itself. Waller states that Otto Neurath first used the word 'transformer' in the context of written communication. Neurath founded the Isotype Institution in the inter-war years to develop an international system of pictorial communication (see Neurath, 1974). Neurath found it necessary to include among his staff 'transformers' whose role was to interpret facts and statistics provided by subject-matter experts and to present them in pictorial charts that ordinary people could understand. A transformer in the context of this present book, then, is a person who mediates between the sources of information (the writers, editors, designers, printers, etc) and the public. His speciality is his multidisciplinary understanding of all aspects of written communication.

In Notes on transforming no 2 Waller discusses three functions of text presentation: (i) the enabling function – which provides a clear channel of communication; (ii) the aesthetic function – which provides an attractive reading environment; and (iii) the access function – which identifies and structures particular aspects of the text. In Notes on transforming no 3 the idea of the access function is developed further in connection with the fact that readers can choose what they want to read, when they want to read, and how they want to read.

Notes on transforming nos 4 and 5 (included in this text) differ in their approach and style. No 4 is a close analysis of the use of numbering systems to structure text. No 5 is a broader statement about dimensions of quality in educational texts.

3.2 Notes on transforming nos 4 and 5

ROBERT WALLER

(The two papers presented here were first distributed at the Open University between May 1977 and January 1978 but have been slightly revised for this text.)

4 Numbering systems in text

Numbering systems are used to organize information in many different ways. How should they be used and when is it appropriate to use them?

There is actually very little guidance available. None of the major style manuals of graphic design textbooks say very much on the subject. Information scientists have thought about the problems of using numbering systems to classify subject areas but not to organize educational texts. Psychological research on the role of short-term memory in the use of numbers is summarized by Gallagher (1974) and research on the legibility of numbers is discussed by Tinker (1963). They are sources of useful information on the design and readability of numerals but they do not attempt to offer advice on the application of numbering systems.

It is very easy to imagine that there is no problem. Firstly, reference books, instructional or service manuals, and rule books – the sort of publications that use numbering systems – are less accessible and visible than other publications. Secondly, one of the frequent effects of a numbering system is to make information look well organized, even when it is not.

But there is a problem and we have it at the Open University. Here are some examples.

MST281 (Open University courses are usually referred to by numbers, and rarely by name.)

The correspondence texts for this course are numbered 1, 2, 3, 4, 5, 7, 8, 9, 11, 10, 13, 14, 15, 16. The reason why 14 units are numbered

There's not much advice around

Perhaps because the problem is hidden

But take a look at some OU texts

26.1.2 A modern coastal environment

The idea of interpreting the past in terms of the present sounds extremely simple, but there are many practical difficulties. An insight into the extent of these can be gained by considering a present-day environment from a geological point of view.

So, you should now read the section in Chapter 13 of *Understanding the Earth* entitled 'environmental analysis – the beach' (pp. 180-5).

When you read this section, examine Figure 14 in Appendix 3 (p. 34), which summarizes information on the sediments and faunas of a modern beach. Plate A and TV programme 26 are about this area. *Make sure you have examined Figure 14 thoroughly and have read pp. 180-5 of Understanding the Earth given above before viewing the television programme.* The post-broadcast notes will refer you to Appendix 3 which describes a 'geological model' of this stretch of coast and summarizes the sequence of 'rocks in the making' in this environment.

Either now, or after you have viewed the TV programme, consider what you would measure on a present-day beach in order to describe quantitatively such an environment; pay particular attention to the materials and processes which would be preserved when the sediments became rocks.

You should compile your list under the following headings:

- (1) Topography
- (2) Climate
- (3) Water conditions
- (4) Flora and fauna
- (5) Sediments

DO NOT READ ON UNTIL YOU HAVE ATTEMPTED TO MAKE A LIST.

Figure 1. This is page 10 of S100 (the Science Foundation course), unit 26. There are cross references to 6 different numbering systems, not including the 2 systems that identify this page (26.1.2 + p.10): Chapter 13 pp. 180-5 Figure 14 Appendix 3+1 Plate A TV prog. 26.

from 1 to 16 is that units 6 and 12 are 'rest' periods to allow students to catch up. A unit is not a text, apparently; it is a week's work. Well, usually . . . but no one seems very sure what it is. There is probably also a very good reason why the mathematics faculty has used the interesting numerical sequence 8, 9, 11, 10, 13.

PE261

Some units of this recently replaced course use as many as seven different numbering systems – unconnected in any way. There are separate systems for paragraphs, activities, footnotes, tables, figures, parts, pages.

D203

The main teaching text in Block 11 starts with Part 2. Part 1 is the introduction. Part 2 has its own introduction in addition, as does Section 1 of part 2.

A201

This course uses as many reference systems as it has authors. Unit 1, for instance, is divided into sections with paragraphs numbered separately – thus, section 3 starts with paragraph 19. Units 4, 17, 19 and 28 only have section numbers. Units 8-10 are bound together and number their paragraphs continuously – thus unit 8 starts with para 1, unit 9 with para 118, and unit 10 with para 142. Units 20-27 have yet another system: units 20 and 21 contain sections 10.0-16.2 although the contents are also organized as Topics I-X; units 22 and 23 contain sections 20.0-23.2 and units 24 and 25, sections 30.0-34.10, and so on.

Phew!

What are they used for?

If our numbering systems were the products of careful planning and were as consistent and rational as the term implies, they would surely not defy description in this way. Their chaotic state seems to reflect confusion about their purpose.

For cross reference

Numbering systems are used for two main purposes. Firstly, they provide a means of reference. It is useful to be able to refer to particular parts of texts for several reasons – for cross reference within a text, for course team discussions of drafts, for tutorial discussions of units, and so on. Secondly, numbering systems

and
to show the
structure of
the text

are often used to display the relative status of different parts of the text — thus the sequence 1, 1.1, 1.1.1 describes three levels of a hierarchy.

The two uses of numbers are obviously related — something labelled 3 must be preceded by something labelled 2, and order of presentation often implies relative status. Nevertheless the distinction between reference and structural purposes of numbering systems is a useful one. It is useful because it isolates the source of most of the confusions we have found — namely the misuse of structured numbering systems.

Structured
numbering
systems have
serious defects

Whereas reference-only systems (like page numbers) are neutral and status-free, structured systems embody all the deep curriculum design and writing problems that authors of educational texts will always have. Although such systems may be entirely appropriate in some publications — Acts of Parliament, for instance, or parts catalogues — they have some rather insidious effects on educational texts.

The coding
is hard to
understand . . .

Firstly, they are cryptic. The principles of a structured system are almost never explained and only exceptionally well thought-out and well applied systems are self-explanatory. One difficulty arises from the fact that these systems look like ordinary numbers and yet use mathematical notation in quite different ways. Whereas 1.1 and 1.10 normally represent the same number, in a numbering system they may both be part of the sequence 1.0, 1.1, 1.2 . . . 1.9, 1.10, 1.11.

and is
visually unclear

Systems with this many items in a sequence usually go to 1.1.1 for the next level in the hierarchy, while systems that never get as far as 1.9 often use 1.11 to mean the same thing. Even when the notation is clear, numbering systems are still inadequate when used on their own to show the structure of a text: 1.12.3, for instance, does not look very different from 1.12.4 — most of the digits have remained the same. There is a useful rule of thumb that says 'precise construction does not guarantee accurate perception.' Applied here it means that the signalling of a new section of text will need more than a change of one digit in a long marginal number — it may also require extra 'redundant' signals like a line space, or an indent or a subheading.

3	General Rules for Copy Preparation
3.1	General instructions
3.2	Standard page
3.2.1	Size
3.2.2	Typing
3.3	Headings
3.4	Sections, sub-sections
3.5	Footnotes
3.6	Cross references
3.7	Quotations
3.8	Figures and tables
3.8.1	Artwork
3.8.2	Tables
3.8.3	Captions

Figure 2. This part of the contents list from the Open University House Style shows that numbering systems are not adequate to show the structure of text on their own. These numbers are mistakenly aligned at the right (like a sum). The longest and so most prominent numbers refer to the least important categories.

Few teaching
texts are
genuinely
hierarchical

Secondly, structured numbering systems are insincere — that is, they purport to aid the reader while in fact they often mislead. Textbooks rarely have the sort of structure that numbering systems display. These systems originate in taxonomies — classifications of things or concepts. They are hierarchical organizations of items that claim to be both complete and discrete — that is, there is nothing outside them that should be in, and there is nothing included that should not be. These are not claims that Open University course units should be making. The concepts, arguments, facts, examples, and so forth that make up an academic discipline are connected not as a hierarchy but more as a network. The nature of written language, though, means that subjects have to be represented in a linear way. It is part of the skill of a good teacher to structure ideas for the purpose of explanation without preventing the student perceiving the network in the way that suits him best. It is not easy to make all the necessary connections and allusions without losing the thread of an argument. It certainly cannot be done without some redundancy — some ideas have to be mentioned more than once. Structured numbering systems, though, imply that the ideas mentioned in paragraph 2.2, for example, are definitely in a different branch of the hierarchy from, say,

para 8.6.2. The chaotic state of many of our numbered texts results from the fact that authors find that this is not so. Not only do subjects not fit easily into hierarchical prose, but the systems are unable to cope with the various other kinds of discourse that also appear in teaching texts — questions, study hints, summaries, and so on.

*and they
create the
wrong atmosphere*

Thirdly, numbering systems are officious — they give Open University texts a rather phoney air of authority. They reinforce the insidious notion that originates from the educational technology of programmed learning and that quietly lives on in many OU courses — the notion that textbooks are static and can only be read in one way. Although course units often are excellent examples of scholarship they must nevertheless remain 'tutorials in print', maintaining the distinction between correspondence texts and set books. Numbering systems contribute to an atmosphere of closedness and precision that is out of place. Some of the original sources for numbering systems are illustrated at the end of this paper. They are all texts whose essential qualities include thoroughness, precise ordering of thought and language, and authority. It is worth mentioning that numbering systems in texts are not the only numbers the Open University uses — we also number everything else in our educational system that is quantifiable — students, tutors, assignments, courses, study centres, regions, weeks of the year, broadcasts, and so on. These all set up a relationship between teacher and learner that is hardly welcoming to the beginning student; they also add considerable poignancy to the term 'distance teaching'.

*Numbering
for
cross reference*

Besides structuring the text the other main purpose of numbering systems is to provide a means of cross reference. To discuss reference systems, though, brings us back almost immediately to a discussion of the hierarchical numbering systems that we have just left — because the most common sort of cross references in texts are references to concepts. And concepts are what structured systems purport to display. To refer to a concept solely by number, however, is inadequate. A reference like 'see 3.1' is ambiguous on two counts. As an instruction it is too vague — should the reader re-read or just glance at 3.1? As a connector of ideas it also fails. It neither reminds the reader of the content of 3.1 nor tells him why it is significant.

*Page numbers
are fine ...*

*but figures,
tables, etc
cause more
problems ...*

*especially when
there are only
a few ...*

*so why not
combine them
with
chapter nos?*

*What numbers
should look
like ...*

Instead I would suggest that numbering systems should only be used to refer to locations in the text, and to genuinely quantifiable series of items. 'Locations' means pages; series of items include figures, exercises or activities, tables and broader subdivisions of texts such as chapters or parts.

A corollary to the advice 'use page numbers only' is: 'use plenty of subheadings and marginal notes'. These not only restore the specificity of reference that is lost where structured paragraph numbers are left out, but the significance of reference to a subheading is self-explanatory.

Page numbers need little comment but the numbering of series is more problematical. The reader finds the right page by flicking through the book looking at all the page numbers until he finds the right one. He is using the context of the series to find the particular page he wants. In most publications page numbers appear on every page and there is no problem; but although tables and figures have to be located in exactly the same way, there are often very few of them. In other words, to find Figure 3 means finding Figure 2 or Figure 4 first. If there are only a few diagrams in the whole book, context is of little help to the reader. The alternative, referring to 'Figure 3 on page 32', sounds like an admission of defeat by the editor. One quite promising solution to this problem may be to use the division of the book into chapters to narrow down the field of search. Thus Tables 1, 2 and 3 may, instead, be referred to as Table 2/1, Table 2/2 and Table 5/1. Oblique strokes are used instead of points to avoid confusion with decimal systems. It may also be possible to incorporate all numbered items in the same series — eg Table 5/1, Table 5/2, Exercise 5/3, Figure 5/4 etc.

Besides the context of the system, the sensible design and placing of the numbers are also important aids to the reader. Some design issues have been the subject of research. Tinker (1930) found little difference between the legibility of ranging numerals and the non-ranging numerals of old-style typefaces which vary in vertical alignment. Perry (1952) showed conclusively that Arabic numerals are much superior to Roman. The numerals of all conventional printing types would, then, seem to be fine. It is worth noting at this point an

interesting idea found in *History of Architecture and Design* (A305). The correspondence texts contain a large number of illustrations and the references to them in the text are printed in bold type. This helps readers who are browsing through the pictures to locate the text which discusses them.

and where to place them

The placing of the reference numbers has not been the subject of experiment, although a greater variation is found in practice. It often happens, in typographic research, that the issues most often researched empirically are those that are least problematical and thus most easily and uncontroversially defined. The skill is to make the numbers prominent enough to see on scanning, but to ensure that they are not intrusive. In practice, this often means placing them in the margin rather than within the text, using discreet numerals in a prominent position. Instead of placing figure numbers or paragraph numbers (if used) always on, say, the left of the column of type, it will help the scanning reader most to place them consistently nearest the fore edge of the book — thus on right-hand pages they will be on the right and on left-hand pages they will be on the left. Two-column texts present different problems — numbers appearing between the columns require more space than is usually available in order to be clearly visible and unambiguous. Here, it may be best to place the numbers on the outside of the page — on the left of the left-hand column and on the right of the right-hand column. Texts with three or more columns may have to incorporate the numbers within the column of type.

Conclusions

Numbering systems are obviously not a primary problem of our educational system. But every component must be thought through if we are to produce functional and approachable texts.

For most educational texts, then, the 'best buy' system can be summarized as follows.

- Use numbers mainly for reference. Chapter, page and figure numbers are almost always perfectly adequate for continuous prose texts.
- Consider incorporating figure numbers, exercise numbers, and so on in the chapter numbering system, particularly when there are too few figures for easy location or when too many different systems would cause confusion.

- Use Arabic numerals not Roman ones.
- Place the numbers near the fore edge of the book so that it is easy to see them when flicking through.
- If in-text numbering has to be used, place the numbers in the margin rather than within the column.

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5 Dimensions of quality in educational texts

How can authors best approach decisions about the presentation of course texts? This paper sets out and expands on some thoughts on this issue that were put to the Technology Foundation Course team in Autumn 1977, who had perceptively recognized the need to consider presentation and design at the earliest stages of course production — even before the curriculum had been decided and authors assigned. The problems were: how can we co-ordinate decisions that are normally made at different stages in the production process so that earlier decisions do not unduly constrain later ones? How might research inform those decisions?

At the moment there is no general view of what presentation is, how it affects the quality of our courses, or how it can be evaluated and improved — yet we produce course units with sophisticated printing methods even for courses with only 100 or 200 students a year. But although the Open University as an institution is in this sense committed to the view that presentation does matter, in practice few course teams manage to do it in more than a fairly haphazard way. For example, most course teams are organized so that designers only rarely attend course team meetings; courses are developmentally tested in rough typewritten drafts; sometimes strange decisions are reached, as in one course team that was recently asked to use a smaller typesize because it would look more 'scientific'!

The approach taken by course team members to problems of presentation is often coloured by assumptions, prejudices or misunderstandings that have arisen in various ways. They may come from traditional textbooks that make few concessions to the student — it has sometimes been argued that badly organized texts are just one of the hoops that an academic training should make students jump through. Sometimes there is straightforward misinformation — for example, a course team was recently told that the reason it could not use the wide margins for headings was that the cost of the extra two inches of film

for the platemaking would be prohibitive. There might have been a good reason but that was almost certainly not it.

Sometimes the course team's approach is the result of a personal hobbyhorse of one particular member. Recently observed examples include behavioural objectives, bias, reading purposes, headings, questions, readability, illustrations, typography or many others. There is an opposite effect too – all of us have gaps in our knowledge and so the advice we give will be biased accordingly.

We would often like a theoretical framework or research data to inform our discussions. There are a number of disciplines or subject areas that we can turn to – psychology (of various kinds), sociology, educational technology, typography, literary criticism, and so on. If we limit our attention to only one of these areas, though, our advice is bound to be biased, because they all have very different suppositions about writers, texts and readers.

For example, typographers sometimes see a text only as printed letters on paper, paying little attention to its content. A specialist in the subject of the text, on the other hand, might only be interested in the accuracy of the content. An educational technologist interested in the sequencing of the concepts lies somewhere between these two extremes. It is possible, in fact, to place the interests of many other specialists in a similar way.

Figure 1 displays this in a diagram. It ranges various different approaches to text on a continuum from 'message' to 'medium', borrowing from McLuhan's familiar catch-phrase. This reflects the fact that in practice, if not in theory, you cannot usefully consider 'what to say' separately from 'how to say it'. The continuum is useful as a framework for course team discussion because it corresponds roughly to the course production process. This is essential if it is to be of use. It is the experience of many colleagues, both in course development and research, that any advice they give, however theoretically neat, must relate to the practical problems being experienced by course teams at any particular time. In fact, it is better that the advice is ready before the problems are met. It is essential that decisions taken at any particular stage take into account problems and opportunities that will be met at a later stage – so there is a need to consider all aspects of quality – whether they be of content or presentation – in a co-ordinated way. Figure 1 tries to do this practically as well as theoretically by relating the 'issues' to the division of tasks in the production system and also to the collection of student feedback for the evaluation and refinement of the text.

The first column lists some of the areas where research literature is available (to varying degrees of quality and quantity) to inform course team discussion, and course team evaluation.

The second column shows the span of responsibility of various roles. They vary, of course, according to individual skills and in different course teams. Just as it is hard to say where 'content' ends and 'presentation' begins on the continuum, so it is hard to say precisely where different roles divide. Some of the tensions that exist at present in our production system are at the borderlines between roles – between

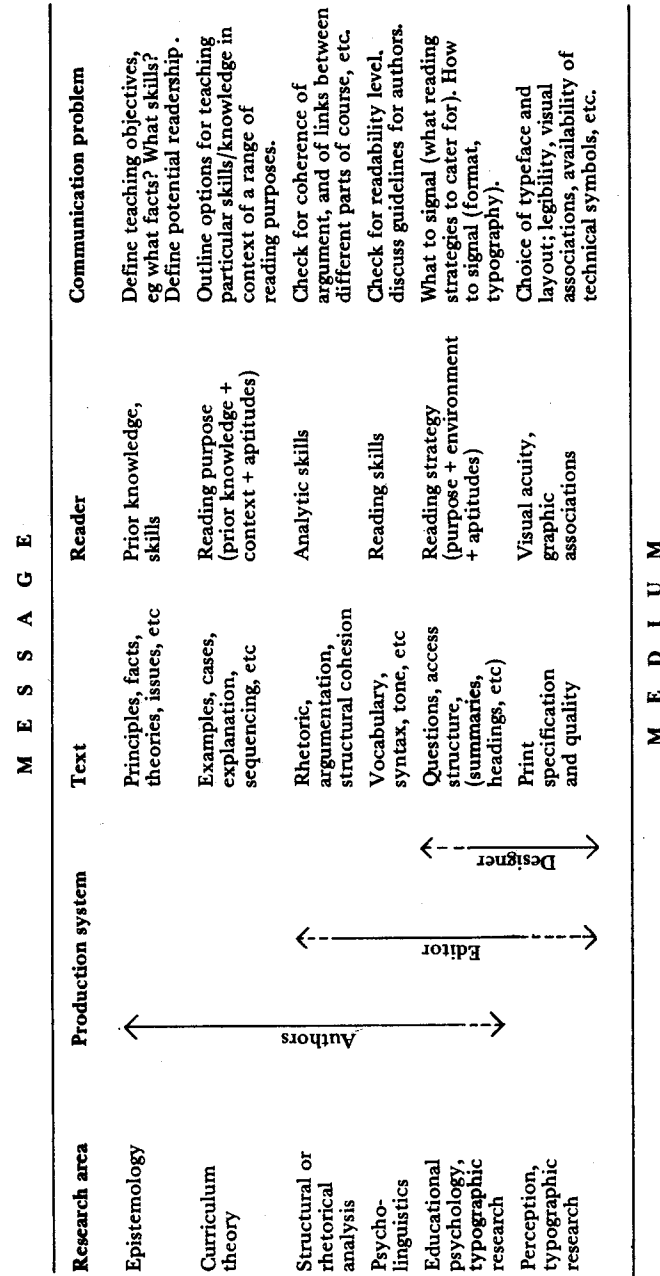


Figure 1. A continuum of factors affecting the quality of educational texts

author and editor, and editor and designer. In the diagram these points of tension are represented by the overlap of lines. Obviously one person cannot do all the work or be completely familiar with all the problems. It is clear, though, that the various mechanisms for co-operation need careful managing – the course team, the ‘handover’ system, the house style, even the physical accessibility of individuals. The notion of ‘transforming’ that this series of papers is exploring does not therefore call for one superhuman intellect so much as a team of people with appropriate skills working within an appropriate management structure, with the appropriate ethos and objectives.

The next three columns show in more practical terms the factors that affect the quality of a text. There are corresponding factors in both the reader and the text. Considered together they form ‘research issues’ for course teams to discuss, and to direct the collection of feedback from students. Problems of quality arise from a mismatch between the two – for example between the prior knowledge of the reader and the specialist vocabulary used in the text.

‘Quality’ is a vague word – what is meant by it, and what is it that our careful course unit evaluation and developmental testing is meant to improve? If the mismatch idea is correct, then ‘quality’ means the effectiveness of the interaction of the student with the text. To evaluate this, then, we must look at both. We know quite a lot about the analysis of text from some of the research areas in the first column of the diagram, but the criteria for quality must ultimately be student-centred; the failure to accept this is a reason why some of these disciplines offer so little to practical communicators. Text cannot be judged from formal criteria, but must only be evaluated in relation to the purposes and achievements of its readers, in terms both of their personal and of institutional goals. So formal analysis of course content will not itself tell us whether it is biased, or pitched at the right educational level, or interesting.

I have deliberately used the rather vague word ‘quality’ so as not to be misunderstood as assigning particular effects to particular levels on the continuum. Mismatches at any level can affect all aspects of the reader-text interaction. It is a mistake to assume, for example, that ‘motivation’ is only affected by graphic design, or that graphic design only affects motivation. But when course teams (and, indeed, designers) discuss design it is often almost exclusively in this context. It is not necessarily true that superficial judgements are only made from surface-level features of text, or that more substantial judgements result exclusively from deeper levels of the text content. Instead, a whole range of conditions – from motivation (selection, attention, perseverance, etc) to learning outcomes (recall, comprehension, etc) – may be affected by features of the text placed at any point in the continuum. People rarely select a book to read simply because it is well designed; it is also because that book fills a need – personal or curricular – and it appears to be written at an appropriate level of language, entry knowledge and interest. Conversely, learning is not just affected by clear sequencing and explication of content. Educational psychologists have sometimes looked as far down the continuum as

graphic design. Rothkopf (1971) has published a study of the effect of the position on the page of a fact on its ease of recall, and Duchastel (1978) has recently discussed the retentional role of illustrations.

What is the nature of the interaction between reader and text, whose effectiveness we have been discussing? Most models of the reading process are rather restricted in scope, being mainly concerned with the cognitive processes that enable readers to extract meaning from marks on paper. This may be theoretically interesting to some, but at the level of fluency we can expect from our students we are not likely to find many problems there. Instead it would be interesting to have a global model of the reading process, so that we might predict the effect of reader-text mismatches on reading behaviour.

Hatt (1976) presents an interesting framework for the discussion of the reading process which is deceptively simple. It is based on three parts.

1. A reader finds a text.
2. He reads the text.
3. He uses the message (or not, as the case may be).

As we have seen, many theorists confine themselves to the cognitive processes that occur within 2. Most, though, now reject the early information-processing model (transmitter-message-receiver) as casting the reader in an unduly passive role. Instead we now see readers as not simply *receiving* messages but as *seeking and finding* them. Hatt extends this idea by studying patterns of entry and patterns of exit from the reading act.

A problem with Hatt’s framework is that it appears to be unduly sequential. It may also be that aspects of all three of his behaviours can occur cyclically or simultaneously. Figure 2 uses column headings loosely based on Hatt’s framework. All three parts are ‘ongoing’ rather than sequential. So reading cannot continue satisfactorily if there is no motivation, no effective strategy, or no outcome perceived by the reader.

The columns are open-ended and different observers may classify some things differently. But compare the factors in Figure 2 with the various levels of the continuum in Figure 1. Figure 1 relates the existing state of the perceived readers (knowledge, aptitudes, etc) to the assumptions made by the text. As we have seen, each level on the continuum may affect the experience of the readers at more than one stage in the process of reading and learning, as it is displayed in Figure 2.

A mismatch, for example, may be found at the level of readability; the syntax and vocabulary may be too difficult for a particular student who has done no full-time study previously, or for whom English is a second language. In terms of his reading behaviour, this will demotivate him (he will not enjoy reading or feel he is achieving enough), it will slow him down (prevent him from skimming, perhaps), and may result in a less satisfactory learning outcome (he may miss subtleties, or not perceive the overall structure of the argument).

A mismatch at the level of the access structure of the text would

Motivation	Strategy	Outcome
Attention recommendation	Reading style	Goal achievement
obligation	browse	personal objectives
attraction	skim/preview	course objectives
Selection	search/scan	assessment
relevance to:	intense study	
course objectives	review	Knowledge
personal objectives	Purpose	memory
flavour	criticize	insights
context	memorize	skills
register	revise	Pleasure
Perseverance	understand	amusement
enjoyment	assignment	excitement
achievement	make notes	fascination
	Environment	
	home, library, etc	
	distractions	
	lighting, health,	
	comfort, etc	

Figure 2. Three aspects of the reading process

also affect reading behaviour in many ways. It might be hard for the student to see the relevance of the text to his needs, because he cannot overview the content. It will restrict his reading style because it assumes a relatively passive linear strategy. It will restrict the learning outcome because he cannot so easily read for specific purposes, and because the text, having no surface structure, offers him no aids to memory.

In summary, the quality of text presentation is a function of many interconnected factors. At present the discussion and control of these factors is rather arbitrary, being dependent more on the experiences, prejudices and philosophies that particular course team members happen to have, than on anything resembling a systematic approach. In addition, the tacit assumptions and the tensions inherent in a rather conservative production system can make innovation unduly problematic. Text quality is dependent on a match between reader and text, and the research, planning, production and testing of texts should aim to minimize potential mismatches. But the various dimensions of quality in texts (Figure 1) do not necessarily correspond directly with particular stages in the reading process (Figure 2). This is because the component factors of any model of the reading process contain elements largely outside the control of the producers of texts — elements determined by the context, strategy, purposes and achievements of the reader. Nevertheless, they are factors which producers of text should endeavour to understand and predict.

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