

DESIGNING INTEGRATED ONLINE EXERCISES FOR ADVANCED SECOND-LANGUAGE USERS OF ENGLISH TO PRACTISE SUMMARISING TECHNICAL SUBJECT CONTENT

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Abstract

Effective summarising is not intuitive: it requires practising specifically-taught skills in an integrated process of reading, comprehending, note-taking, planning and writing (Johns 1988; Juan & Palmer 1998). For advanced EFL English students successfully to integrate these skills, detailed and nuanced online auto-feedback would be very useful, using a mixed collection of the auto-summarising technology that has been developed over the past decade (Endres-Niggemeyer 2000; Franzke & Streeter 2006; Sparck Jones 2007). Preliminary design thoughts are offered here, following diagnostic findings on difficulties faced by advanced EFL students in reading comprehension prior to summarising.

Purpose/Objective

To design integrated online tools with flexible, detailed, individual feedback for advanced EFL/ESL students' independent practice in summarising non-literary and technical-content materials.

Definition

For any use which avoids plagiarism, a summary is a much-shortened version of the original text which expresses all key ideas in different words using more efficient syntax within a given word limit.

Introduction

As Johns (1988) noted, ESL students need explicit, detailed instructions rather than general rules *and* practice in each step of the process if they are to master summarising. She linked the ability of ESL students adequately to summarise a reading text to its prior micro-evaluation. However, Juan and Palmer (1998) established that providing a set of

¹ My thanks go to Dr Victor Chan for expert technical advice on this paper.

general rules did enable upper-intermediate EFL users to produce more effective summaries than advanced EFL users lacking any guidance who merely plagiarised. Sporer et al. (in press, p. 1) recommend ‘explicit’ cognitive and meta-cognitive strategy,² including questioning and summarising, as part of teaching reading comprehension: their findings suggest bi-directional rather than unidirectional links between understanding content and being able to summarise it.

The English Language Teaching Problem

English language teaching generally encourages the use of more rather than fewer words and rarely teaches the details of how, exactly, to summarise. The only summary skills specifically taught in the three levels of the *Market Leader* series used by MPI’s School of Business prior to the final year are news headlines (Cotton, 2006, p. 112). Nor are the techniques of summarising usually explained in textbooks designed to improve Chinese students’ reading and writing skills (e.g. Li, 2007). The basic rules of summarising are more likely to be explained in communication textbooks (e.g. Bovee & Thill, 2008).

Moreover, in different writing genres (especially journalism and news reports but also technical writing), in-text referencing, connectives and other linkages, text organisation, sentence and paragraph structures are often used very differently from the literary techniques taught in EFL courses, causing difficulty in understanding what is read. As Nuttall (2000) emphasises:

The reading skill is of no practical use unless it enables us to read texts we actually require for some real life purpose . . . to discern relationships between the various parts of a longer text, the contribution made by each to the plot or argument, the accumulating evidence of a writer’s point of view, and so on. (pp. 31, 39)

Finally, even where the individual elements used in summarising are taught, precisely *how* to use them may not be, nor are they often integrated as sequential parts of the overall process of summarising. So, for example, MPI’s School of Business upper intermediate EFL students do get significant practice in some skills related to the summarising process: e.g., matching different expressions with similar meanings, vocabulary substitution, matching summary headings to paragraph

² Based on the DIME model linking “background knowledge, vocabulary, word reading, reading strategies and inference” (Sporer et al., in press, p. 2)

contents. But these separately-taught skills are not related to one another as parts of an overall process.

It is not clear why EFL/ESL teaching English has not yet taken on board Johns' (1988) findings, but is perhaps related to allowing students to acquire summarising skills by individual effort. Foster (2003) noted how important it is to teach such skills specifically to Chinese students, who are sometimes depicted as insufficiently independent learners.

MPI Requirements

MPI's School of Business requires all final-year degree students, in small groups, to undertake research, write up, and present their Graduate Research Report orally, in hardcopy and softcopy. Probably because effective summarising skills were not included anywhere in the syllabi, past report writing used extensive copy-and-paste techniques. However, from 2009, the softcopy must be passed by *Turnitin.com* for the degree to be awarded. Our EFL degree candidates obviously must first understand read content clearly in order to be able to summarise it.

Research Subjects

The Bachelor of Accounting and Finance (BAF),³ introduced in 2007, splits English reading and writing in the first semester from listening and speaking in the second, both skill pairs focusing on summarising. All BAF students have obtained higher diplomas in the medium of English rather than Chinese, with linguistic competence varying from bare pass to A grades, but all lack summarising skills.

Teaching preparation. BAF classes start with a PowerPoint which defines summarising, differentiates it from paraphrasing, and deals comprehensively with technique details, but students still have difficulty using these techniques⁴ despite repeated practice⁵ in the first seven weeks of the semester. By mid-semester most still try to read and then write directly, partly because they see step-by-step reading, note-taking and drafting process as inefficient: some absent themselves from in-class

³ The BAF differs from both the Bachelor of e-Commerce, where no English is taught, and the Bachelor of Management, where a skills-integrated course in Advanced-level English is taught for only one semester and students are briefly and passively exposed to model summaries of different kinds (Dubicka & O'Keeffe, 2006, pp. 35, 50, 80, 108–9).

⁴ Wilkinson (2008, p. 1) confirms that "Even when models are provided, they [ESL students] don't know how to begin."

⁵ 10 reading comprehension tasks penned in a variety of styles and five summary-writing exercises.

drafting. How far they have made up their initial skill deficit in summarising is assessed in the mid-term examination.

Advanced EFL Students' Problems with Reading Comprehension in Preparation for Summarising: Diagnosis

Exactly the same mid-term examination was used in two consecutive years.⁶ The exam comprised two parts: a reading comprehension test based on a specialist text written (by a practising executive auditor) for a financial newspaper and edited in journalistic style with very short paragraphs; followed by a word-limited written summary of its content (not considered here).

Hypotheses

Two multiple-choice questions tested specifically-hypothesised problems in reading and comprehending the text: the first cognitive and less difficult, the second meta-cognitive and much more difficult.

- Advanced EFL students may have difficulty in recognising extensive vocabulary substitution when answering reading comprehension questions summarising three points in two separate but linked paragraphs (Q6);
- Advanced EFL students may struggle to identify an overall 'big picture' argument composed of different strands not explicitly numbered nor following literary listing conventions while including many sub-points and examples often but not systematically separated into individual paragraphs (Q12).

Testing

Question 6 summarised two consecutive paragraphs from the original by offering five possible answers. Three significantly-rephrased options covered the three individual points; the correct answer was 'All of the above'; and a distractor ('None of the above') was included. No examinees fell for the distractor, but 28% went for only one of the three individual points despite the usual attractions of 'All of the above' as a default option.

⁶ The first set of students had exited English classes before the second set entered.

Question 12 tested the student's overall understanding of the article's argument and its main points; and, if answered correctly, provided one possible framework for the written summary as the second part of the examination. The first (and correct) option⁷ was an overall one-sentence summary, not presented last as a familiar 'All of the above' option. Each of the subsequent options covered one main point in the argument, summarising a number of different paragraphs using key words from the original.

Findings

Table 1: Responses to Question 6

Q6√	Q6x	Total
28	11	39

The 11 incorrect selections for Q6 were evenly distributed (three and four) over the three options.

Table 2: Responses to Question 12

Q12√	Q12x	Total
13	26	39

Only one-third, overall, answered Q12 correctly, compared to 72% for Q6,⁸ suggesting that by mid-term most had expanded their vocabulary sufficiently to cope with a question in which a standard paragraph linker was used, but still could not identify an over-arching (meta-cognitive) answer delinked from original vocabulary. The 26 incorrect answers to Q12 were highly skewed even though all four options used key concept words from the text itself: 17 chose the third individual point, which superficially might perhaps have seemed most directly related to the title of the article; seven chose the first; two the second; and none the fourth, which appeared in the final paragraph.

⁷ This ordering of the answer options may have been new to the students.

⁸ Although the proportion of correct answers rose from 25% among the first class to over 35% in the second class, the numbers were too small for this rise to be statistically significant.

Table 3: Combined Responses to Questions 6 and 12

Year	Q6x Q12x	Q6√ Q12x	Q6x Q12√	Q6√ Q12√
Total	6	20	*5	8
Total as %	15.4	51.3	12.8	20.5
Ave RC	12.2	13.3	10.2	15.1
RC range	9-14	9-18	8-14	10-17

Although not statistically significant ($\phi = -0.16$), the general trend was for most students (51.3%) to answer Q6 correctly but not Q12. Only eight (20.5%) got both correct,⁹ hinting at a progressive sequence which would start with the 15.4% who answered both questions incorrectly but in fact passed the mid-term exam quite comfortably, with marks ranging from 62-86%, suggesting that they had specific problems with vocabulary and summarising skills but were not weak overall.

But one combination does not fit into such a sequence: the five (12.8%) who answered the more difficult Q12 correctly, but got the easier Q6 wrong. Their average mark for the reading comprehension section was 51%, compared to 67% among those getting Q6 right but Q12 wrong (also the average for all students), and 76% among those who got both answers correct. Three of these five students were among the five¹⁰ who failed their mid-term exam, suggesting strongly that their correct answers to Q12 were probably randomly chosen or, perhaps, deduced from the way the answers to Q12 were sequenced.¹¹ The real sequencing, therefore, is shown in Diagram 1 below, and starts with those who missed Q6 but got Q12 right.

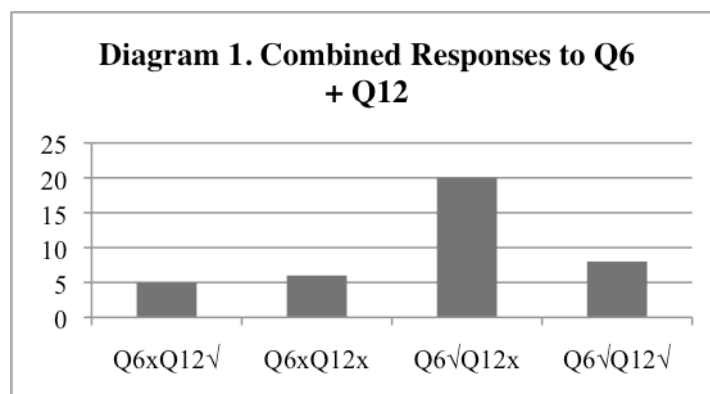
The improvement year-on-year in answering Q6, together with the students' continuing difficulty with Q12, suggests that more attention needs to be paid to the use of condensing language in understanding the 'big pictures' described in written texts. Grasping 'big pictures' may require undoing previously-taught techniques which link the understanding of overall content to specific cues such as connectors/conjunctives, location, and paragraphing (especially of minor related

⁹ Two of the eight students who answered both Q6 and Q12 correctly both had quite low overall mid-term results (64%, 58%), but advanced their final exam marks to 76% and 83% respectively, by significantly improving their final exam reading comprehension marks (50-76% and 75-90% respectively).

¹⁰ Of the five who failed, three failed the reading comprehension section overall, including two of those who passed Q12 but failed Q6.

¹¹ The only other two who failed the exam overall answered Q6 correctly but not Q12.

points and examples in journalists' writing); plus understanding that authors may deliberately break grammatical rules to emphasise, attract attention, or stand out from 'normal' writing styles. Practice would be most efficient individually online.



Current Online Resources to Practise Summarising

While summarising skills may not have been taught adequately in the past, today universities have vastly expanded their proportionate intake from age cohorts and many websites teach native-speaking high school and university students how to summarise,¹² in addition to those preparing foreigners for TOEFL, IELTS and other English examinations. However, most provide only general rules for summarising and none that I have viewed offer practice in summarising texts on specialist or technical subjects written in non-literary, non-academic genres. Having attempted to summarise general-interest English texts written in standard styles, users are then invited to 'compare' their own attempts with 'model answers'¹³ as 'feedback'.

Inadequacy of Current Approaches

As Endres-Niggemeier noted of SimSum (Simulation of Summarizing) which she helped develop and tested in her own introductory content analysis IT class, an effective online "tutorial system for teaching summarization to students" requires more guidance than Simsum offers, in "mixed-initiative dialogue with the students that includes short range feedback, acknowledging or refusing possibly every individual answer, and giving reasons" (2000, pp. 677–79). This level of detailed feedback is exactly what is needed for students trying to acquire summarising

¹² Including the BBC's Skillswise *Summarising* and innumerable university websites in Australia, the USA, and the UK.

¹³ Apart from the problem that one person's model answer is another's source of laughter, EFL students may be tempted to memorise those idealised as 'models'.

skills as well as IT students trying to develop search-and-delivery tools based on abstracting (and perhaps editing) information in order to summarise it.

Feedback Requirements

Even Summary Street®¹⁴ with its KAT engine based on Semantic Language Analysis (Franzke & Streeter, 2006) which gives more detailed but only quantitative ‘big picture’ feedback and does not offer flexible and detailed feedback on a myriad of individual points such as vocabulary options or the use of differentially-efficient grammatical and sentence structures. If students, especially EFL students, are to develop both summarising skills and their own individual writing styles, they need nuanced feedback on their experimental writing.

What Should Online Summarising Involve?

What is needed is to design online delivery for advanced EFL students to practise sequentially the individual steps in summarising technical content accurately, and to receive useful detailed feedback on each individual step as well as the final product. First, it is vital to identify each step in summarising in order to design and choose the most appropriate design and programming strategies. Each required skill analysed below is shown in Diagram 2.

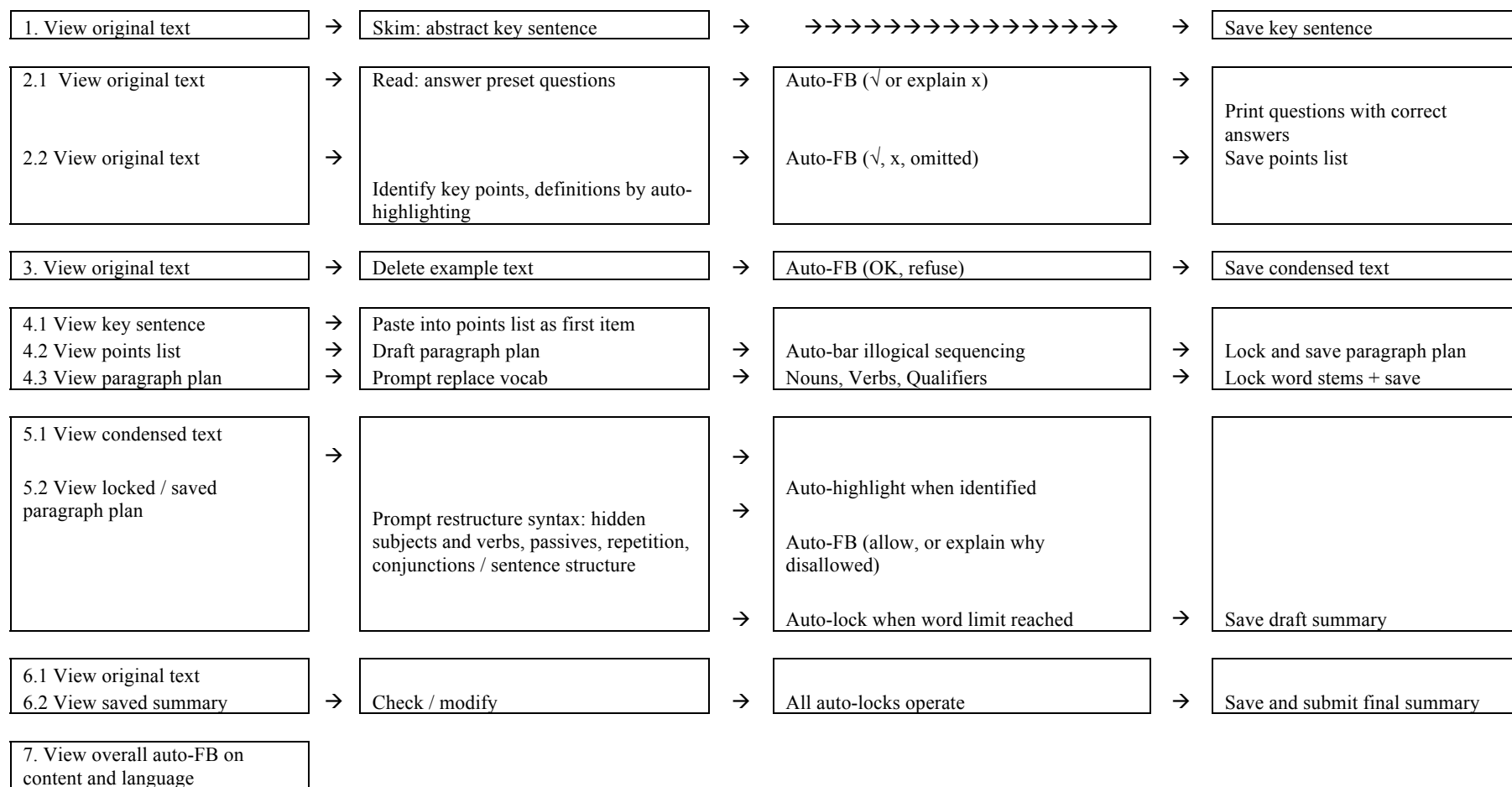
Reading

Two different types of reading skill are used, both of which can be time-limited online.

- Quick **skimming** to grasp the ‘big picture’ requires the reader to identify the main point(s) in limited time. This meta-cognitive understanding is then saved in a written, one-sentence condensation of what the text is about, *using original-text language* (abstracting technology could be used for feedback).
- The text is then re-presented for **detailed reading** and comprehension. Users could be encouraged to estimate and preset a personal time limit as an efficiency target, but fixing time limits externally would ignore varying individual needs.

¹⁴ http://www.pearsonkt.com/papers/Sst_FAQ.pdf

Diagram 2: Flow-chart for Programming Automatic Feedback on Different Steps in the Process of Summarising Text



Comprehending Content

Questions to isolate core points and definitions can be asked in a progressive sequence, each having to be answered correctly before proceeding, as used by the University of Surrey's *Skills for summarising and synthesising*.¹⁵ The process would be considerably speeded up by simply highlighting, underlining or clicking on the original text to identify its main point(s) and any essential definitional details, with auto-dialogue boxes explaining why each is required. Auto-feedback would also refuse to accept inappropriate selections and highlight any omissions. The list of identified core points and definitions, still using the original text language, would then be captured and saved for re-use.

Editing Original Text

Removing unnecessary text from the original could be done by deletion, with auto-refusal to delete core text explained by auto-dialogue boxes and prompts to delete if unnecessary text is retained. Highlighting could also be used to identify wordy language structures in the *edited text* that require changing. Both original and edited texts would be saved for re-use.

Planning

The one-sentence condensation from the skimming and the saved list of main points from the detailed reading would both be re-displayed in one editable window *without* the original or edited texts.

- Each main point would be allocated its own paragraph in a defined sequence (how many paragraphs would depend on the maximum summary length). While flexibility is essential, auto-feedback would disallow illogical (e.g. impossible time) sequencing and inappropriate combinations of different points in one paragraph, with auto-explanations.
- The original text vocabulary for each point would be replaced from a selection list provided,¹⁶ with context-specific auto-feedback on each theoretically-possible choice.
- When vocabulary replacement is completed, the paragraph plan would be 'locked'. After 'locking', each paragraph may have words added or deleted but the approved point order cannot be changed and replaced

¹⁵ <http://www.surrey.ac.uk/ELI/sa/thesis5.html>

¹⁶ Which would have to be constructed manually in advance for each specific text.

word stems cannot be deleted although their word forms can later be changed. 'Locking' would emphasise the importance of effective planning for efficient writing.

Draft Writing

Both the locked paragraph structure of the plan and the edited text (step 3) are re-presented in separate windows for time-unlimited drafting.

- In expanding each planned paragraph, the user will refer to the edited text. Paragraphs may vary in length, but the word total for all paragraphs counted together cannot exceed the preset word limit. When the word limit is reached, no further words will be accepted, unless existing words are deleted.
- As the user types, inefficient grammatical forms (hidden subjects, hidden verbs, repetitive parallelism, passive tenses, adverbial phrases, conjunctions) must be auto-identified and the writer prompted by auto-cue to change these structures to more efficient forms, possibly using auto-clues similar to SimSum's *relevant-texthint agents* (Endres-Niggemeier, 2000, p. 674)
- After all amendments have been made, the final draft will be saved.

Comparing Summary with Original

Both full original text and saved summary must be co-displayed in separate windows, for the user to check that all the main issues have been included, all examples and unimportant details omitted, and that the meaning is parallel. Optional modifications could be made within a preset time limit then saved.

Assessment Feedback

The finalised summary would then be submitted for overall feedback, possibly in synoptic form similar to that of Summary Street®.

How to Provide These Requirements?

Tuzi (1997) showed how macros and forms could be used in early versions of Microsoft Word to create online testing tools, and I have earlier used Excel functions for automatic marking (Cheater, 2006), but even Microsoft Office for Mac 2008 would not do everything I want. I am not a software designer or programmer, but it seems probable that the software I want would require a combination of relatively simple techniques (auto-highlighting, auto-dialogue boxes, preset selection lists) plus abstracting techniques and older parsing (trees)

within an overall framework possibly of a neural network, though I am advised that accuracy and reliability cannot be guaranteed in the current probabilistic stage of artificial intelligence techniques.

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