TESL-EJ Teaching English as a Second or Foreign Language
The Electronic Journal for English as a Second Language

November 2023 – Volume 27, Number 3
https://doi.org/10.55593/ej.271071

Text Manipulation: What's Wrong With It Anyway?

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Foreword by Scott Windeatt

In this article, Vance Stevens makes a strong case in support of text-manipulation activities, using ideas drawn from the work of early CALL practitioners. He argues that such activities are justified on the basis that they involve an inductive approach to learning, encourage learner responsibility, can demonstrate certain aspects of authenticity, and encourage an intelligent and imaginative approach to language learning.

The author then effectively issues a challenge, inviting those who oppose his claims to provide evidence to support their opposition interpretation – an encouragement to carry out further research. His view is that decisions about whether and how a resource is to be used should be based on an understanding of that resource, and of how its use fits in with ideas about language learning and language teaching methodology. Teachers should be clear about the reasons for the choices they make; their criteria for making choices should be based on methodological principles; but they should remain open to considering contrary evidence if it emerges.

Because of the speed with which technology develops and becomes obsolete, we tend to assume that literature on technology loses relevance at the same pace. However, by focusing on only the most recent publications, we risk ignoring earlier work that, for many reasons, may still have lessons for us today. This applies especially to publications in which the focus is on methodologies that incorporate technology, rather than on particular technologies. The general approach in this article, embedded as it is in a concern with evidence-based principles, can be applied to any teaching resource. Vance makes a strong case for the principles he espouses, but the value of the article is in encouraging us to consider the relevance of those principles to more recent developments in technology, and in challenging us to explore our own ideas about language learning and teaching, and the principles we apply.

Abstract

Much has been written in favor of text manipulation as a device for promoting language learning through CALL. Yet many in our profession either ignore or disagree with this approach. This article addresses this question in two ways: first by presenting a rationale for the pedagogical value of text manipulation, and second by acknowledging the viewpoint of those who do not accept that rationale. This paper concludes that the first view is at least plausible and that the latter may reflect a lack of awareness of the rationale for text manipulation.

What is text manipulation?

In text manipulation, the computer has been programmed to rearrange or permute text in some way in order to present the learner with a tool or puzzle. The most economical form of text manipulation, in terms of courseware development time, is one where the program has been designed to use ASCII (plain, unformatted) text, so that users can accumulate textbases from a variety of sources and then use them interchangeably.

Supporters of text manipulation are advocates of instructional approaches weighted toward inductivity, authenticity, and learner responsibility for learning.

A typical form of text manipulation is text reconstruction, with activities like computer-generated cloze passages, jumbled sentences, jumbled paragraphs, sequencing tasks, etc. In text reconstruction, the computer is programmed to permute text in some way, and the student has to restore it to its original form. This approach is both economical and flexible because all one needs is a battery of programs that will perform the desired permutations, at which point one can simply supply additional texts according to student needs.

Another example of text manipulation is concordance. [Ed. note: see Tribble, p. 10 for more on concordancing.] Concordancing is also economical in terms of time to implement because it requires only a program plus a text base, where the textbase could bethe concatenated sum (or subset, or superset) of all the texts used for text reconstruction. Because text reconstruction and concordance programs can easily feed off the same text base, they can be combined. For example, Tom Cobb at Sultan Qaboos University (SQU) uses concordances as a form of help in his HyperCard cloze programs - when students want to know more about the nature of a clozed out word, they can see a concordance of that word used elsewhere in the text base, but with the word itself masked. Thus the computer is used to manipulate the central text base to provide both puzzle and tool functions.

There is of course a price to pay for the economy and ease of maintenance of a text reconstruction system, and this is that students must always restore text to its original form. Detractors of text reconstruction often consider it unacceptable that alternate correct answers are not allowed; but in order to achieve this, one could no longer use the relatively simple text reconstruction program, but would have to turn to an authoring system and program the computer to anticipate a variety of alternate correct answers, fuzzy misspellings, and so on. Text reconstruction programs "know" only the word or letter that should go in a particular place, and so can provide feedback to the learner amounting to gradual revelation of the single correct answer. Again, this can be done with no effort on the part of developers beyond the original programming, whereas to work within an authoring system to second guess the learner's every move in designing an "intelligent" feedback system requires an inordinate investment in time both for original development and subsequent fine-tuning. To compound the problem, an elaborately authored package may have a limited shelf-life -since the feedback is unique to a particular text, it can become obsolete when courses change. A text manipulation system, on the other hand, can be updated simply by changing texts. The text manipulation approach is obviously flexible and easily implemented, but is convenience its only benefit?

The rationale

The pedagogical value of text manipulation has been addressed repeatedly. Generally

speaking, supporters of text manipulation are advocates of instructional approaches weighted toward inductivity, authenticity, and learner responsibility for learning.

Whereas recent trends in language learning methodology incorporate these elements, not all in the language learning profession have embraced them, and there are many who look upon such approaches with skeptical interest while continuing to teach in traditional ways. Nor is there much empirical evidence to support such approaches; on the contrary, experimental results are most clear-cut for directed teaching methods where learning can be measured in discrete chunks. Therefore, to accept arguments in favor of text manipulation, you may have to accept that there is an aspect of learning that has so far been out of reach of purely quantitative experimental techniques, and you have to have experienced or observed these methods at work and decided that as a result of your experience or observations that you agree with most of what follows.

Inductivity

First of all. a rationale for text manipulation would have to stress the benefits of inductive learning. Much has been written on this topic; I've always liked to quote Stevick's (1982:131-2) remark that "The quality of learning that takes place when we focus our attention only on the items to be learned is different from (and probably inferior to) the quality of learning that is incidental to something else that we are trying to do...

Phillips (1986) addresses this point with respect to CALL, citing research he had previously done on student acquisition of language when focused on ancillary tasks. The point of all of this is that, to favor text manipulation as a viable pedagogical practice, one must accept the premise that language development follows from students' being put in the position of having to figure out rules or patterns from linguistic data.

Authenticity

Secondly, a rationale for text manipulation must take into account the high degree of authenticity possible with this mode of learning. The textbase itself can be easily derived from authentic sources. Johns (1988) develops this issue as the first of three assumptions justifying use of concordance for language learning. This first assumption, the importance of authenticity, has in turn three aspects:

a. authenticity of script: that is, the teacher's role moves from that of text preparation to text presentation;

b. authenticity of purpose: that is, “The text should be of value to the learner quite apart from its use in a language- teaching context” (p.10);

c. and authenticity of activity: “What is done with the text should be transferable to the situation outside the classroom room where the learner is trying to make sense of the language without the help of the teacher or of teaching materials” (p.10).

The first two of these seem to me to apply equally well to text reconstruction as to concordancing. The last one is debatable in the case of text reconstruction; however, Johns argues that text reconstruction is transferable “in the sense that piecing together coherent text from disconnected ideas or minimal clues lies very close to the heart of language learning and language use” (p.11).

Learner responsibility for learning

A third position taken by advocates of text manipulation is that there is value in learners' taking responsibility for their own learning. Continuing with Johns' assumptions justifying use of concordancing for language learning, the second and third deal with this shift of responsibility from teacher to student

A related assumption is that “The effectiveness of the teacher is potentially greatest when he or she is most at risk" (p.11). An interesting corollary to this is that "it is the teacher who most sedulously avoids risk who is, in fact, in the greatest danger of being supplanted by the new technology” (p.12). Teachers take risks when they allow their students to use text manipulation in its puzzle form, because the teacher may not know the one correct answer, and in its tool form, because teachers cannot predict what program output will be. Teachers become facilitators of the process of discovery made by students but cede control over that process.

1n practice, students and teachers may be uncomfortable with this state of affairs and prefer to remain in their traditional roles; certainly there must be a conscious effort to educate (or at least inform) students and teachers in what is expected of them in the new roles they assume when responsibility shifts. When these roles are little understood. when students and teachers approach text manipulation with re- versed assumptions about where responsibility for learning lies, then the result may be unsatisfactory.

Johns' third assumption justifying use of concordancing deals with metaphors for learning. Among the metaphors for consideration are the hypodermic needle (where learning is injected), gymnastics (involving exercises and drills), and the swimming pool (immersion). The metaphor which Johns believes best applies to text manipulation, however, is the research metaphor.

According to Johns, the research metaphor has four consequences for language learning. These are:

First, it entails a shift in the traditional division of roles between student and teacher, with the student now taking on more responsibility for his or her learning, and the teacher acting as research director and collaborator rather than transmitter of knowledge. **Second**, it implies a greater degree of awareness of language and how language operates on the part of the learner than would be allowed in behaviorist models of language learning. **Third,** it is crucial that the insights gained through research activities not remain at the level of 'knowing about' the language, but have direct pay-off in terms of use of the language and ability to communicate in it. And **fourth**, it requires that the learner have available appropriate research tools (p.14).

Learners exhibit intelligence and imagination when given control over their learning.

ln Johns (1989), this research metaphor resurfaces under the name data-driven learning (DDL). DDL is an approach that attempts to build learners' competence by giving them access to the facts of linguistic performance. As Johns puts it, "We simply provide the evidence needed to answer the learner’s questions, and rely on the learner's intelligence to find answers" (p.2). Although this holds true for other inductive approaches to language learning, DDL is distinct from these in three important ways (p3):

1. “The teacher does not know in advance exactly what rules or patterns the learners will discover."
2. “The second main effect of DDL is on the role of the teacher, who has to learn to become a director and coordinator of student-initiated research.”
3. “The third main effect of DDL is a revaluation of the place of grammar in learning and language teaching ... The DDL approach makes…possible a new style of grammatical consciousness-raising' (Rutherford 1987) by placing the learner's own discovery of grammar at the centre of language-learning, and by making it possible for that discovery to be based on evidence from authentic language use.”

John Higgins has become associated with yet another metaphor, the magister-pedagogue dichotomy, which is also related to this concept of learner responsibility. Higgins suggests that the pedagogue qualities of computers (slave-like, unimaginative) can be used to develop the opposite qualities in students, whereas a domineeringly proficient and intelligent magister would assume (and can actually promote) the absence of proficiency and intelligence in students. In Higgins' words (1988:51):

The mere fact that the machine carries out orders in a slave-like and completely unimaginative way can be a liberating factor when a human being comes to use it. There are times when the machine's lack of intelligence shows us things we might never have noticed for ourselves and awakens intelligence and imagination in people who have had little chance to develop them before. This is in contrast to those approaches to language teaching, regrettably common, which assume a teacher who is both proficient in the subject matter and intelligent about deciding how to present it, while also assuming a learner who has no proficiency and no intelligence.

What Higgins is saying here is that learners exhibit intelligence and imagination when given control over their learning (on computers), while the reverse is true when their mode of learning controls them.

I have yet to encounter a paper presenting a cohesive argument counter to the pedagogical approach inherent in text manipulation.

The problem

Having made such a compelling case for text manipulation, what then could possibly be the problem? The problem is that those having read this far (who are likely to be predisposed to what is presented here, or else they would have tossed this aside long ago) are not the audience we need to reach. The audience that is so flagrantly missed consists of the students and their teachers who have no idea why anyone should be wasting time reading an article on something as banal and irrelevant to them as text manipulation.

Evidence of the nonacceptance of text manipulation is commonly reported. For example, Johns (1988:9) remarks that concordancing: “tends to divide language teachers into two camps. Some have reacted with enthusiasm, a few going so far as to write and try out their own versions of the program, often with interesting extensions and improvements... Others have been puzzled by it ... they have failed to see that it could be of any use to a learner... This division has little to do with language teachers' alleged fear of computer technology, and a great deal to do with underlying assumptions about the nature of language learning and the

role of the teacher in that process."

In a separate instance, Higgins (1988:23) describes the reaction of teachers to a demonstration of computer-based cloze by Chris Jones. In this incident, the teachers are reacting to the fact that the cloze program, following the basic premise of all text manipulation programs, allows students to replace blanks with only the word that had originally been in the sentence rather than testing input for suitability. As Higgins describes it:

I was astonished at the extent to which this short.coming, if it was one. was resented by the teachers present at the demonstration. The machine was inadequate, they felt, if it could not give authoritative rulings on acceptability, if it appeared to mark a 'right' answer as 'wrong.' Many of them could not bring themselves to accept Jones's cowriter- argument that the machine's challenge did not involve notions of rightness and wrongness in language. The program was inviting the learner to restore a piece of written text which had been created by a particular writer on a particular occasion. Indeed the effort of guessing often makes students aware of stylistic variation and paraphrases which they might not notice otherwise. None of this carried any weight with some members of the audience, who clearly expected the computer to mirror what they would have done in class, namely give an absolute judgment on each proposed answer.

The problem here, as Higgins would point out, is that the teachers who were giving Jones a hard time were failing to think pedagogically. According to Higgins, much misunderstanding of the appropriate role of computers in language learning arises from magisterial rather than pedagogical thinking.

Further evidence for either misunderstanding or rejection of text manipulation is found in a recent review of a battery of text reconstruction programs (Garrett, 1988). Here, it is apparent that the reviewer either did not know or did not agree with the underlying principles suggested here as a basis for text manipulation. Accordingly, she writes:

“The pedagogical approach is the overall problem with this programming. If the activities presented in Text Tanglers appeal to a teacher as worthwhile learning tasks, this package may be quite attractive. This reviewer suspects, however, that many teachers will not want their students to spend much time doing this kind of task” (p.59). In her conclusion, Garrett continues:

"Whether or not teachers use Text Tanglers will probably depend on their assessment of the pedagogical value of its activities. Letter-by-letter decoding of words, sentences, and paragraph is not a very communicative or authentic activity no matter how many software programs use this technique" (p.61).

This last remark is diametrically opposed to Johns’ opinion in the matter, to mine, and perhaps to yours. However, this much of the above is indisputably true: whether or not teachers use text manipulation packages does depend on their assessment of the pedagogical value of its activities. Unfortunately, it may not be so much whether teachers agree with the work cited so far in this paper, this being only a small sampling of the literature in favor of text manipulation, but whether they know about it.

I have yet to encounter a paper presenting a cohesive argument counter to the pedagogical approach inherent in text manipulation; therefore it is unlikely that detractors of text manipulation are rallying around a contrary position in opposition to this approach. Rather, it

appears they are simply uninformed.

There is some evidence pointing to persistent ignorance of many in the profession to what CALL is all about Healey (1989:1), for example, decries “the ease with which the lab can be divorced from the curriculum and become an island unto itself, with one or two teachers who specialize in computer use and the rest of the staff indifferent to it” Windeatt (1990:8) alludes to the existence of this "indifference" (a symptom of ignorance) when he says, "I rather doubt whether teacher-training courses for CALL are primarily about computers at all. Their principal value may rather be in encouraging teachers to take a fresh look at what they do in the language classroom."

Perhaps those who reject text manipulation find they learn better with deductive, rule-based approaches, or that they prefer learning presented to them in efficiently digestible packets. Perhaps such people have never tried text manipulation, and don't really think they would like to. In other words, it is hard to say if such people would automatically benefit from text manipulation if they tried it, or if they could be trained to benefit from it (It is often pointed out in the literature on self-access learning that students don't naturally and automatically t.a1ce responsibility for their own learning; that they must be guided in doing so.)

This is precisely the problem with text manipulation: it is quite difficult to convey to casual users the benefits that can accrue from it As was pointed out in Stevens (1989), one may have fewer than five minutes to make a case for text manipulation when describing it to the student who has just popped in to see what is on the computers. A more cogent case can be made to teachers, but they in turn must interest students in the topic. If this is difficult for experts to do, then how can we expect teachers, who may doubt or misunderstand the efficacy of text manipulation, to promote this genre of CALL with their students? What is really needed to promote text manipulation is a three-minute spiel that will concisely state the benefits of text manipulation in a way that students and teachers can easily understand and relate to.

Conclusion

Predisposition to text manipulation requires acceptance of the notion that language learners can benefit from teaching materials promoting inductivity, authenticity, and learner responsibility for learning. Whereas these ideas underpin current language methodologies, teachers may tend toward traditional ways of instruction, especially when change involves massive retooling and when students seem most comfortable with traditional roles. Particularly where technology is involved, there is much ignorance, misunderstanding, and "indifference" to putting into practice new approaches to language teaching while acquiring new skills in operating complex hardware and software. Although text manipulation is conveniently implemented and consistent with current language learning pedagogy, its benefits are difficult to quantify; hence the genre is easily misunderstood. Education of teachers and students on their roles and responsibilities in learning, and the relationship of these to CALL, is a desirable solution to this problem.

About the Authors

The late **Vance Stevens** passed away in September of 2022 leaving behind a body of work from which a selection will be published in a collected volume by TESL-EJ. For more information on Vance, please see his obituary published in an earlier issue of TESL-EJ.

W. Scott Windeatt is a retired Senior Lecturer from Newcastle University, UK where he supervised MA and PhD students in topics such as computer-assisted language learning, teacher-training, teaching methodology, materials design, and language testing. He is the co-author of a number of books including *The Internet* and *Computer-Assisted Language Learning* with D. Hardisty (OUP) and has published chapters and articles on numerous topics related to ELT and technology.

To Cite this Article

Stevens, V. (2023). Text manipulation: What's wrong with it anyway? *Teaching English as a Second Language Electronic Journal (TESL-EJ), 27* (3). (Original work published 1990.) https://doi.org/10.55593/ej.27107s1

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