

**ON-LINE ASSESSMENT AND FREE-  
RESPONSE INPUT – A PEDAGOGIC  
AND TECHNICAL MODEL FOR  
SQUARING THE CIRCLE**

**Kevin Palmer and Pete Richardson**

# **On-line Assessment and Free-Response Input – a Pedagogic and Technical Model for Squaring the Circle**

Dr. Kevin Palmer<sup>1</sup> and Pete Richardson<sup>2</sup>

<sup>1</sup> Director, Coleg Llandrillo Virtual Learning Centre

<sup>2</sup> ILT Champion and e-learning Advisor, Coleg Llandrillo  
Virtual Learning Centre

## **Overview**

This paper is a report on the context, progress and future of a project to develop a method of open-text response for on-line learning in Literature. In this context open-text response is characterised and enabled by a concept/device we at Coleg Llandrillo Virtual Learning Centre (VLC) call the Free Response Enquiry Engine (FREE). The device is attached to a learning object (an LO) and takes the form for the learner at the end of the LO of a type-in open-text box, a 'submit' button and then a textual response in the form of feedback to what has been typed.

The context of the project is the JISC funded x4I (Exchange for Learning) programme, for which Coleg Llandrillo's VLC is delivering two separate projects – one in Literature, the other in Key Skills. In the Literature project, the team decided to create LO's around a base knowledge-resource, but then in a number of cases to deliver an assessment that was based on open-text input rather than the more common or traditional assessments available in computer based or on-line learning and assessment. The reasons for this will become clear when we explain the pedagogic context of the project in more detail.

Progress in the project is that five prototypes of the FREE at two levels of complexity have been developed and tested on students in the project. The first level of complexity is premised on the student/user using or not using a key word that the FREE writer determines will symptomise the student's grasp of a concept in the piece of literature or a key feature of the text. This has been applied to works of poetry, drama and fiction, with differing levels of success. The poetry examples have been most successful, with the structural determinism of poetic language we think contributing to the relative ease of construction of poetry FREE's.

The second level of complexity attempts to recognise and feedback to the student/user using words in combination or relation. The FREE feeds back in response not only to the use of a key word (say, a word in the poem quoted in the user's input), but also to the relative use of a word that might signal further understanding. So the use of a quote in relation to a critical term suggesting intellectual contextualisation of the quote elicits a further dimension of feedback from the more complex FREE. This has again been more successful in poetry than in drama or narrative, but it has brought some key

intellectual difficulties in predicting what terms will be contextually combined, how the user's discourse will combine and express them, and where in the user's textual input we will be able to predict successful as opposed to erroneous combination.

The future of the project will be to develop and explore further and more complex prototypes and working models of the FREE. It will also be to deliver to the teaching and learning community honed and final versions of the products currently available. Finally, it will be to deliver to the teaching community an application that allows the non-expert (technically inexperienced) teacher the capability of developing from a graphical interface their own version of a FREE for a literary text (or other subject) of their choice. This development has been rather glibly expressed by the team as a 'really hot potato', referring to the relation between this project-objective and the success in the FE community of the Hot Potato suite of graphical interfaces for delivering computer based assessments. It is important, however, for teachers in the humanities and social sciences, in that it would if successful make available to them a simple, graphical-interface-driven method of delivering without technical expertise highly complex and rich forms of computer based assessment and feedback.

## **Learning Objects and Computer-Based Assessment – Pedagogic Considerations**

The first matter of pedagogic context to consider for the team was the predominant pedagogic theories to be employed in LO construction. Put briefly, the team looked at four theories currently seen as occupying LO constructors' minds and representing the choices available to the LO construction community. These are: Behaviourist; Constructivist; Cognitivist and; Humanist. This paper is not the place to explore the relative merits, hostilities and redundancies between these theories, but rather to characterise what the construction team saw as the key features of the theories and explain the choices made.

When the team looked at the key theories, then, the key characteristics appeared as follows:

### **Behaviourism:**

- The teacher decides what is important for the learner to know.
- A Behaviourist course design will contain detailed learning outcomes and be relatively prescriptive.
- The curriculum is organized in a carefully sequenced manner, reflecting objectives and the structure innate in the subject matter.
- Instructional cues help illicit correct responses.
- Drill and practice techniques build fluency (responses become progressively closer to the desired response).
- Activities include; recall of facts (discrimination), define and illustrate concepts (generalisation) and application of explanation (Association).
- Assessment objectively determines whether the criteria for the learning outcomes have been met.

- Assessment criteria are overt standards of achievement.
- There is a need for positive incentives as motivation to learn.

#### Constructivism:

- Teachers adopt the role of guide, mentor and facilitator while the course is much more facilitative in nature than prescriptive.
- The content is not pre-specified and learners participate in setting objectives (contracting methods) and are free to research and explore the subject.
- Activities are encapsulated (self-contained and independent of sequencing) and often involve active interaction and collaboration.
- Ownership is encouraged by learners being in control of the focus and pacing of the learning process.
- Learning activities are realistic, contextualised and meaningful and often use primary data sources.
- Error recognition and correction processes are emphasised by treating hunches and the making of mistakes as legitimate activities.
- Problem solving and higher order cognitive processes are emphasised while conceptual complexity is developed through spiral curriculum methods.
- Assessment is much more subjective often focusing on the learning process and self-evaluation by the learner (portfolio of notes, drafts, products and reflective journals)

#### Cognitivism:

- Cognitive theories highlight individual differences or cognitive styles.
- Provide diagnostic/treatment regimes for individuals leading to student-guided selection from a variety of content, form, strategy and method.
- Recognise individual differences in students by using parallel, alternative, style-related modes of presentation (e.g. visual/verbal, concrete/abstract).
- Activities stress the need to connect new information with existing knowledge in a rich (diverse) way.
- Explicit explanation, illustration, analogy and demonstration are emphasised as means of promoting the assimilation of information.
- A variety of explanatory forms are used; interpretation (What is .....?), description (How does .....?) and justification (Why do .....?).
- Concepts and their logical relationships are stressed by the manipulation of the subject matter and exploration of rules and examples.
- Use is made of the teach-back concept (discussion, reporting and explanation to peers or teachers).
- Promote assimilation and reinforcement through reflection and recall via different visual/verbal modes.
- Contextual information is provided before subject content, schemas are explored before detail and affective (personal/attitudinal) links relevant to the topic are included.

#### Humanism (Transformative Pedagogy):

- Uses critical inquiry to relate learner experience to broader social issues.
- Social awareness activities are used to promote cultural literacy and encourage democratic participation.
- Develops academic and critical literacy tools for social participation.
- Collaborative activities used to promote interest, discussion and participation.
- The course design and content are grounded in the lives of the learner and are for example multicultural, anti-racist and pro-justice.
- Activities are academically vigorous and culturally sensitive.
- Learners are encouraged to pose essential critical questions.
- Activities are active, participatory, experiential, hopeful, joyful, kind and visionary.

Given this overview, the team was aware that it was working largely, in the context of current thinking in LO construction, in a Behaviourist environment. However, this was and is in tension with predominant ideologies of learning in Literature (especially in the teaching of Literature to adults in Further Education), which are more Constructivist and Humanist in nature. Over a period of discussing pedagogic models with teachers of Literature in the project, with learners looking at the LO's we were making, and with other practitioners engaged in the LO debate in x4I and other JISC projects, the team decided upon an eclectic approach to the LO and assessment that took account of the following critical features:

- The need for some degree of prescription (both a classic Behaviourist approach and a presupposition of much teaching of the literary canon) of what learning would take place about what subject (from Behaviourism)
- The need for an assessment that would be referred to standards of achievement in the acquisition of knowledge and understanding (from Behaviourism)
- The importance of active interaction in the LO itself, and in the process of managing the learning process of which the LO is a part (from Constructivism)
- The recognition that the learner's response to the LO in Literature might still well be subjective, interpretive and experimental, even when doing an end of LO assessment (from Constructivism)
- The recognition that different users of the LO would arrive at understanding in different ways, and express that understanding in different, if largely predictable, linguistic manners (from Cognitivism)
- The use of feedback and 'teach-back' even within the LO's assessment, as a way of guiding further discussion and exploration (from Cognitivism)
- The use of the assessment in the LO to jump into further debate that is set within the context of the group and its own social/intellectual space (from Humanism)
- The delivery of an active, participatory and experiential assessment that we called the off-line task and which then becomes the input to the FREE at the end of the LO

We have therefore alighted on what we think of as the key pedagogic features determining the concept of the FREE and informing the construction of the LO leading to this type of assessment. These are as follows:

- Learning is prescribed in the form of a learning objective for every LO
- The LO assessment, even when it is a FREE, is set and fed-back to in the context of a 'model' or 'perfect' set of answers. Such and such a thing is good to say, and will receive positive feedback, whilst such and such a thing (or omission) is not good and will receive feedback designed to change the view of the learner/user
- The whole LO requires activity and interaction – small chunks of knowledge input are followed by formative self-assessments, at least four-six times in every half-hour LO-based learning prior to the final LO assessment
- The LO assessment is a FREE, allowing the user to provide subjective expression to their views in response to a question
- The FREE assessment is built to enable alternative forms of expression, and predicted responses include synonyms and antonyms
- The FREE, and the in-LO assessments leading up to the FREE, provide rich contextual feedback to the learner/user
- The feedback statements in the FREE response profile enable the user to reconsider his/her input, and encouragement is given to go from FREE input to FREE response to further study and exploration
- The FREE input by the user is actually formulated away from the computer as an off-line task, so that a more 'natural' experience of writing is achieved prior to inputting to the device

### **Limits to On-line Learning in the Humanities**

Having said the above about our pedagogic orientation, the team also feels it necessary to justify this eclecticism by reference to the current situation regarding on-line and computer based learning as it applies to the humanities and social sciences. What we are about to say here applies also, we feel, to the world of on-line learning in many other disciplines – it is just that the humanities in particular have been a difficult area for on-line learning, and that teachers and learners in this area have expressed the greatest degrees of disquiet and reluctance about the growth of on-line delivery. So it is important, bearing in mind what was said above about our pedagogic orientation, to be clear on what we think are the main limits to on-line and computer based learning for this particular community.

Firstly, we have already stated that the predominant ideology of learning in the world of the LO is Behaviourist, where the predominant pedagogy in Literature and the humanities is not. Learning Objects produced by the VLE/MLE vendors, by the National Learning Network, by Ufi Learndirect content suppliers and by the projects supported by the JISC in x4I and other programmes tend to subscribe, consciously or not, to a Behaviourist model of learning. Equally, the standards and specifications for learning content and assessment/testing, with their emphasis on sharable content, question-test-interoperability and the use of the LO support infrastructure to report progress

toward a pre-determined behavioural end-point, suggest that the underlying pedagogy of on-line delivery is Behaviourist, in tendency if not intent.

Secondly, the massive majority of assessments currently available from vendors, projects and the FE/HE community rely heavily on what we would call a closed input-output model. More importantly, the learner/user *knows* that the input and output are closed – whether the assessment medium is a yes/no exercise, a multiple choice test, a drag and drop exercise or some limited text input, the tendency is for very closed and very obviously closed forms of assessment. This often presents itself as a necessity of the technology – something to do with on-off switches, binary code, computer systems or bandwidth. We in the team recognised that technology carries limitations, just as language and discourse carry limitations. What we did not and do not accept is that we are anywhere near them with the range of assessment devices currently available to teachers and learners in FE and HE.

So the situation we found ourselves in when deciding on a pedagogy for on-line learning in Literature, and an assessment technology to go with it, was that of a tension. Predominant assessment culture requires a correct answer for the machine to recognise, where Literature teachers and learners value experiment and interpretation. Predominant assessment technologies require closed responses, where Literature teaching and learning values unpredictability and indeterminacy. And current technology development in the market sees a limit of what ICT can do to respond to open text, where teaching and learning in Literature are discursive and expansive.

The result of this tension, and the team's attempt to reconcile it with the eclectic pedagogy explained earlier, is a mixed intellectual platform to describe learning, and a mixed portfolio of assessment and knowledge provision in each LO. We can go on now to concentrate further on the FREE itself, and the pedagogic assumptions it makes, to show further detail on how it works.

### **The FREE and its Pedagogic Assumptions**

So we can see from the comments made above the range of assumptions we are employing about learning, and about what happens when a person encounters learning through technology. The key issue affecting the development of the FREE if we take this line and apply it to learning and assessment in the realm of Literature through the medium of technology is what we call the illusion of a natural-language-in natural-language-out experience. It is important to acknowledge that this is an illusion, because what we have also to acknowledge is that we are not delivering actual discourse analysis or intelligent system assessment at this stage in the development of the prototypes.

To unpack this notion of the illusion of natural language exchange between learner/user and technology, we should be clear about what the FREE really delivers and how it delivers it. We can do this by explaining first the simple version and second the complex version, and by quantifying in each case what inputs and outputs are available. Readers can also refer to the examples of the prototypes on-line.

First, we should bear in mind that each FREE comes at the end of the LO to which it is dedicated. By the time the learner encounters the FREE, s/he has been through the LO to focus his or her thoughts, and should be ready to deal with the specifics of the assessment task that the FREE is delivering. So the learner/user will have been pre-assessed on entry to the LO, then will have undergone five phases of learning to ensure understanding, and will at every phase have been assessed through closed assessments before continuing. So by the time the learner/user starts on the FREE s/he should be ready to deal with the specific task in hand. It is also worth noting that the task must be very clearly focused on the learning objective, and that the assessment question must give very clear instructions as to how to answer the question.

For the simple version of the FREE, then, the table below expresses the basic logic of the device:

	Word appears in FREE input by the user/learner	Word does not appear in FREE input by the user/learner
Word selected by the FREE creator as significant – in the context of this project, the words were actual textual items from the poem, passage of narrative or scene of drama.	Positive feedback, stating that we can see that the learner has identified the textual item and checking in the statement that the item is referred to correctly.	Feedback stating that this idea or term appears not to have been supplied in the input, and suggesting how the term could be identified in the task.

To give this specificity, in the FREE dealing with the poem Blake's London, which is sixteen lines in length and four stanzas, the number of textual items forming the background to the FREE is some 23. This gives the capacity to deliver 23 statements back to the user/learner, each one a choice from two. This is a fairly simple job, providing the learner knows clearly that the textual item is required to be input and not a synonym, and providing the FREE response table is properly constructed. It is also important to enable misspelling and mistyping of the textual items, providing these are seen as acceptable indication of the understanding required by the FREE assessment.

So what this design does is provide the learner/user with a natural language input (not an illusion at the input side), so that s/he can do with the poem what s/he expects to do, and what teachers and curriculum designers demand that s/he do – write about it. On the output side, the illusion of natural language comes in – the learner/user gets a series of statements saying in varied formulations that she has or has not mentioned such and such a thing, and



that she could consider *x* or *y* if she has mentioned it and *a* or *b* if she hasn't. It looks like feedback from a teacher, except of course that it is standardised, repeatable and immediate on the click of the button. Equally, it is routinised, impersonal and at this point in the development unable to recognise the subtleties of what has been said about the textual item quoted or evoked. If the writer were to say that Blake's London were a highly optimistic poem about the invasion of England by a race of kindly Martians, and quote the evocation of a hearse in the imagery to support this position, the FREE might simply congratulate them on spotting the hearse.

This takes us to the more complex prototypes. Here, the LO background to the FREE is the same in structure, but the FREE itself is more complex. We are not now looking for mere instances of quotation, but instances of quotation placed in the context of a formalistic, structural or technical understanding of the poem. Instead of being asked to comment on the poem in a way that would show understanding or not, the user/learner is asked to comment on the poem's language, meaning and formal construction. This demands of the user/learner that s/he make a comment not only on a textual item, but that s/he refer that comment to a comment on the rhetorical devices used in the poem.

So instead of giving feedback on the mention of the hearse, the FREE will look to see if the hearse is mentioned in the context of a comment about (for example) imagery in the poem. The table of options for this version of the FREE looks therefore like this:

Option in the input	Feedback output would be
Answer contains reference to textual item only	...you seem to have mentioned Blake's use of the word <i>x</i> – have you considered..?
Answer contains reference to rhetorical device only	... you seem to be aware of rhetorical device <i>a</i> – examples of this might be...
Answer contains textual device and rhetorical device in proximity	... it looks as though you are aware of Blake's...
Answer contains textual device and rhetorical device but not in proximity	... you have mentioned both <i>x</i> and <i>y</i> , but we are not sure whether you have seen the connection between them...
Answer contains neither textual item of rhetorical device	... we can't see whether you are aware of...

To take an example further, the learner/user is working on the LO covering imagery, hyperbole and personification in Blake's London. At the end, in the FREE, s/he has a writing exercise where she has to explain Blake's use of imagery, hyperbole and personification to create his depressing atmosphere. S/he has a range of textual items to draw on, and several of these work in a number of ways, as imagery and/or hyperbole and/or personification. The FREE will see and respond to whether she mentions the textual item, whether she mentions the rhetorical device, and whether she has put them together in

proximity in the textual input to indicate that she understands them and the relation between them.

In terms of the quantitative feedback possibilities now available to the FREE and to the learner, there is a considerable increase over the simple mention/not mention version. When we figure in the synonyms for the rhetorical devices, we find that the twenty-something textual items, the three areas of rhetorical consideration, the synonyms for rhetorical devices and the possibilities of mention/not mention and proximity multiply the number of possibilities to over two thousand. This is not to say there are two thousand sentences in the feedback table – there are actually about four hundred in the current version – but there are two thousand instances of choice being made.

So with the more complex model we have a much richer base of feedback to the learner, and much more capacity for the assessment to be smarter, more engaging, more ‘human’. However, we also have some far more serious intellectual problems, and these are currently taxing the development team:

- **Proximity** – it is difficult to predict the cognitive value of proximity, and even more difficult to determine the impact of clause-level punctuation and language in expressing the sense of a passage of text where two items might appear to be in proximity but be separated by a dismissing or negating punctuation or vocabulary item.
- **Multiple mentions** – it is difficult to ensure that multiple mentions of the same textual item or rhetorical device are ‘read’ by the FREE properly.
- **Error** – the FREE does not at this point take account of what happens when the user/learner says that something happens when it doesn’t, or *vice versa*. If the user/learner says that Blake does **not** mention a hearse (providing the user/learner **does** mention a hearse) the FREE issues the positive statement.

So with these items unsolved, it is possible for the user/learner to say that Blake’s optimism about the Martians is a matter of hyperbole in his not repeating the word ‘cry’. The linguistic features are all there for the FREE to reward, but the reading of Blake is eccentric beyond even the tolerance of a Humanistic pedagogy. Our view on this is that there are other discourse-analysis methods available to us to do background-checks on the input and get from these a reasonable predictor on whether the user/learner is likely to be dealing in an appropriate way with the task. Checking discourse structure, spelling, sentence length and passage-input length will go a long way to tell the FREE how this person is dealing with the input.

Also, though, we need to be careful to check our expectations of the FREE. In tests at Llandrillo, it showed high levels of consonance with human marking, and highly favourable responses from learners who simply could not believe that the computer could have read their answers and know how to reply. It also served as a method of starting debate about the poem, consolidating intellectual positions, providing a platform for exploration of further questions, and engaging learners with items in the poem that they otherwise might not have considered.

## **Future Developments of the FREE**

The current status of the FREE is that it is available in a number of forms as a result of the support of the JISC in the context of the x4I Project. However, this result is not what was intended by the project, nor is its further development likely to be funded by the JISC in the context of x4I. We have therefore to examine the development's sustainability with some degree of qualification – further work on the FREE at Coleg Llandrillo will be a result of commitment by the college to support workers developing the project, and this is due for review currently. In the light of this, the following represent what we currently see as ways forward with the project.

In developmental terms, we see the future as starting with the work done on the simple version, which is robust, and the complex version, which is not. It will therefore be necessary for us to determine the conditions of robustness for the complex version and develop a number of prototypes to test and assure this robustness. We also see a valid development in the creation of a graphical-user-interface application (the really hot potato) that will enable teachers and other practitioners to generate their own simple versions without any technical expertise. The work to deliver a test version of this interface as an executable file will be undertaken in the summer of 2003.

In pedagogic terms, we should note that the starting point for further development is the availability of a product that delivers feedback only, based on a fairly soft definition of what appropriate feedback should be. Issues to face with this include the delivery and implementation of standards in QTI – especially from the JISC supported CETIS SIG in assessment – questions of metadata for tagging and locating a given FREE in a repository or VLE, and questions of pedagogic validation for the judgments made in any given instance of a FREE. A whole further development from this is the possibility that a FREE could be used not only as a feedback tool but also as a marking tool. We have already said that the FREE's tested at Llandrillo stood up to comparison with teacher-marking, but this really is only a start, and the data range from this is too small and too subjective for us to predict a future. The next step would need to be a specifically designed development of a testing FREE rather than a feedback FREE.

In technical terms, we should say here that the work undertaken was delivered in html and ASP, and that this work clearly needs to be redeveloped for the FREE to have validity in the context of x4I using xml as the coding language. The xml versions of the FREE products currently being used will be delivered over the summer of 2003, and the executable interface is being made such that it will deliver xml products that work with the x4I demands as far as currently known and possible.

Finally, the developmental, pedagogic and technical work in this area needs to be continued by the team at Llandrillo, with the continued practical, technical and moral support of those people and organisations who have been involved to date. From what was seen as something of a bold idea in the context of a single x4I project, the FREE development work has grown from January to May 2003 to be a matter of interest to a number of agencies.

With presentations on the academic stage in Southampton (JISC SIG in assessment), Glasgow (Virtual Promise Conference), Loughborough (CAA 7<sup>th</sup> International Conference), and the University of Glamorgan (Dysg e-learning Conference) in May, June and July 2003, we hope to secure sufficient interest in the enterprise to take the next steps.

## **Bibliography**

Beavois, M. (1997)

*High-tech, high-touch: from discussion to composition in the networked classroom*. Computer Assisted Language Learning, 10(1), 57–69.

Becker, H.J., (not dated)

*Educating Practicing Teachers into Constructivist Pedagogy*

<http://www.crito.uci.edu/tlc/findings/conferences-pdf/site.pdf>

Black, J.B. and McClintock, R. O., (1995)

*An Interpretation Construction Approach to Constructivist Design*

<http://www.ilt.columbia.edu/publications/papers/ICON.pdf>

Brown, H.D. (1994)

<http://www.cuhk.edu.hk/ajelt/vol8/rev1.htm>

A review of: *Teaching by Principles: An Interactive Approach to Language Pedagogy*

Reviewed by Gail Schaefer Fu, The Chinese University of Hong Kong

Burton, G. O., (2003)

*Rhetorical Pedagogy*

<http://rhetoric.byu.edu/Pedagogy/Pedagogy.htm>

CELT, Institute of Education University of Stirling

*Task-based learning: a pedagogical blueprint*

[http://www.celt.stir.ac.uk/resources/ML21/ict\\_and\\_language\\_pedagogy.html](http://www.celt.stir.ac.uk/resources/ML21/ict_and_language_pedagogy.html)

CELT, Institute of Education University of Stirling

*The Celt resource summary*

<http://www.celt.stir.ac.uk/resources/ML21/ML21-bibliography.html>

Davis, N. (1997)

*Distance Education with Telematics for Distance Educators*

[http://telematics.ex.ac.uk/JISC/final\\_report/taiwp2.htm](http://telematics.ex.ac.uk/JISC/final_report/taiwp2.htm)

Desnet, C. and Hudson Ross, S., (July 24, 1998)

*Content Knowledge and Pedagogy in the Teaching of English Literature*

Deans' Forum Project Report

<http://www.uga.edu/deansforum/reports/EngLitCollab.htm>

Kennedy D.M. et al, (1998)  
*The Text Analysis Object (TAO): Engaging Students in Active Learning on the Web*  
ASCILITE '98

Magnusson, M. and Svenson, L. (2000)  
*Technology and Pedagogy in e-learning A case Study of Attitudes among Content Experts*  
<http://www.laboratorium.htu.se/publikationer/104-128-Svensson-electronic.pdf>

Maryland Collaborative for Teacher Preparation, (February 2001)  
*Essays on Constructivism in Education*  
<http://www.towson.edu/csme/mctp/Essays.html>

Meyer, K.A., (May 2003)  
*The Web's Impact on Student Learning*  
<http://www.thejournal.com/magazine/vault/A4401.cfm>

Parker, J.R. and Becker, K. (not dated – most recent reference, December 2001)  
*A Comparison of Constructivist VS Behaviourist Assignment Sets for CS102*  
<http://pages.cpsc.ucalgary.ca/~becker/Main/Papers/233asg-paper1.fm.pdf>

Paulsen, M.F., (1995)  
*The Online Report of Pedagogical Techniques for Computer-Mediated Communication*  
<http://www.nettskolen.com/pub/artikkel.xsql?artid=123>

Rosenblatt, L. (1995)  
*Literature as Exploration*. New York, MLA

Ryder, M. (June 2003)  
*Instructional Design Models – web information portal*  
[http://carbon.cudenver.edu/~mryder/itc\\_data/idmodels.html](http://carbon.cudenver.edu/~mryder/itc_data/idmodels.html)

Tucker, L.P., TETYC, (December 2002)  
*Liberating Students through Reader Response Pedagogy in the Introductory Literature Course*  
<http://www.ncte.org/pdfs/subscribers-only/tetyc/0282-dec00/TE0282Liberating.pdf>

University of Illinois – Teaching at a Distance Seminar, (December 1999) - report  
[http://www.vpaa.uillinois.edu/reports\\_retreats/tid\\_toc.asp](http://www.vpaa.uillinois.edu/reports_retreats/tid_toc.asp)

URL for viewing on-line versions of various examples of the FREE  
Email – [k.palmer@llandrillo.ac.uk](mailto:k.palmer@llandrillo.ac.uk)  
<http://vlcdev.llandrillo.ac.uk/pete/X4Lenglish/>  
and/or <http://www.hatserv.co.uk/x4lenglish/>