PRELIMINARY REPORT TO LTSN

Developing critical thinking skills in students in landscape-history in part-time continuing higher education

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Note: some of the work of the project is still under way and will be completed in August. The results are therefore preliminary and will be reported finally to the LTSN by the end of September. This preliminary report collates individual reports from each researcher under a common introductory report.

Aims
The aims of the project were:
  (1)   to investigate the effect of attention to critical thinking skills on student retention and success in attaining the learning outcomes of courses in landscape history;
  (2)   to experiment with the development of generic materials and teaching methods which explicitly address the development of critical skills in landscape history;
  (3)   to focus particularly on students who have difficulties in making the shift from description to critical analysis;
  (4)   to experiment with the development of straightforward diagnostic tools to help to identify these students at an early stage in the course.

Context
The 'independent learner' has increasingly become the focus of teaching in higher education, as educationalists emphasise the importance of student participation in and responsibility for learning – in essence, for student-centred learning (a process summarised by Knowles (1993) and elsewhere).   The project addressed the ideas outlined by Beyer (1995) and Wade (1995) which suggest that critical thinking is a fundamental aspect of active, student-centred learning.   The aim of this work was to achieve metacognition, fundamental to critical thinking, in students: 'the awareness of one's thinking as one performs specific tasks and then using this awareness to control what one is doing' (Jones and Radcliffe 1993, 10).

The project used identified characteristics of critical thinking, including Bloom's taxonomy, to develop teaching methods and materials which explicitly address this aspect of learning in the context of landscape history (Beyer 1995; Wade 1995). This was combined with the work of other scholars who have enriched our understanding of critical thinking skills in higher education, in particular the understanding and toleration of ambiguity (Jones and Radcliffe 1993; Strohm and Baukus 1995).   .

Recent government initiatives to widen participation in higher education make this approach particularly significant.   Students who struggle to achieve the learning outcomes of their courses are often those whose critical thinking skills are poorest. This study therefore has a wider relevance both because retention of students is becoming an increasingly important issue in full-time as well as in part-time higher education

This project has been particularly concerned with those mature students of landscape history who fall into the middle and lower ability ranges and who have specific difficulty in making the shift from description to critical analysis in adult continuing higher education.

The choice of this topic is deliberate:

- there is little literature on the teaching of students who have difficulties for these rather than for more obvious reasons such as dyslexia or other disabilities (though see Minton 1997 for an exception to this generalisation);
- it is important that part-time continuing higher education, which offers a second opportunity to students – many of whom left school at 12 or 14 – should not replicate the often unhappy experiences of education which many adult students carry forward from their schooling (McGivney 1993). A recent Open University survey has found that 60% of those students who enrol for 3rd level courses and who have no previous experience of higher education fail to complete their courses (*Sesame* 206). Experience of teaching these students suggests that it is this group which has most difficulty in achieving the required level of analytical – that is, critical – thought;

The problem

Landscape history is a complicated discipline. It seeks to discriminate among a welter of social, geographical and historical causes with documentary, archeological, botanical and various other forms of evidence. Its key functions are four:

    (i)   acquisition of substantive knowledge;
    (ii)   analysis of data;
    (iii)   synthesis of particular data with general patterns of knowledge;
    (iv)   evaluation, assessment or critique.

Students achieving these functions are well equipped to think critically and with independence. Thus, landscape history can make a highly effective contribution to the University's provision for work in the liberal arts.

However, it is evident from their results that students do not succeed consistently in realising their intellectual potential through the Institute's courses in this subject. The first two functions tend to be achieved satisfactorily but less the third and fourth. Therefore, the process of thought about landscape history needs more attention from tutors. The purpose of the first phase of the project was to develop principles for encouraging more consistent critical acuity in students.

To that end, the four functions were specified in more detail.

(i) Critical acquisition of knowledge demands awareness of three dimensions:
    historiographical concepts (e.g., causal priority);
    substantive information, i.e., data in relation to concepts (e.g., census data for assessing changing population density); and
    the methodological assumptions for linking 'fact' to concept (e.g., accuracy of censuses or maps);

(ii) To be adequate, analysis of data depends not only on particular historiographical techniques but, more basically, on logic, tests of relevance or intellectual parsimony, and testing by counter-argument.

(iii) The University ethos demands that students put their 'own "Little Twittering" into some larger-than-local-history context' (Aston 1985: 9) such as price movements or changing regional population density. This principle is related to the test of relevance.

(iv) Evaluation repeats the process – by 'metacognition' - from (i) to (iii) with attention to logic, relevance and, in addition, ethical and philosophical assumptions (e.g., about which causes prevail in a particular cultural tradition or physical environment or in general).

These four functions formed the basis for the method proposed for enhancing critical thinking. Academic criteria for grading written work at HE Level provide one way to describe the

general intellectual goals sought through encouraging critical thinking (e.g. *Tutors' handbook* 2002 pp. 14-5, 26-7).

Method

In recent years, landscape historians at the Institute – including those on the research team - have devised experiments for encouraging students to become more conscious of their own processes of induction and deduction. These experiments were particularly designed to develop the fourth function, of evaluation and critique.

We completed a project of practitioner research on these principles, carried out under the LTSN's auspices in 2001/2. Based on the experimental technique used in that research, the specifications for the first phase of the project were that it should develop a series of generic exercises for students, the results of which indicate, to tutors, students' respective strengths and weaknesses.

To that end, Table 1 sets out a scheme designed to develop competence and confidence with the four key functions of landscape history during a single term of study (a course of ten meetings). The functions, (i)-(iv), are set out in the left column. For each, the rows set goals for students to attain through a sequence of four exercises (I)-(IV) carried out during the course. The cells indicate levels of attainment to be expected from students (see Key). Departures from those levels should serve to indicate students' respective strengths and weaknesses.

Table 1: sequence for a single Term

function	I	II	III	IV
(i) concepts	?	?	+	++
(i) data	+	+	++	++
(i) assumptions	?	?	+	+
(ii) logic	+	++	++	++
(ii) relevance	+	++	++	++
(ii) counter-argument	+	+	+	++
(iii) general principle	??	+	+	++
(iv) evaluation	+	+	+	++
example (Addendum)	1	2	3	4

Key: ??   weak understanding
  ?   rough understanding
  +   general understanding
  ++   clear understanding

Experience has shown that adult beginners in landscape history are quicker to grasp certain functions than others. Hence the weightings in the cells of the Table. The process is easier to trace in courses of two Terms than in those running over just ten weeks; and tutors therefore expected a firmer grasp of the functions, including standard assumptions and discipline-specific stock reasoning, by the end of a second term.

The degrees of understanding indicated in the Table will not, of course, apply to all students at any one stage of a course: everyone has their own strengths and liabilities. Moreover, the members of the research team were to modify the pattern of attainment described along the rows through the course of exercises.

Discussion

In regard to the four key functions in landscape history, students tend to find it comparatively easy to recognize and manipulate basic data; and they can follow simple logical inference, so that, in principle, they can also understand the effectiveness of counter-argument or counter-factuals. They can appreciate patterns of association quite easily, so that they find the criterion of relevance

easy to understand if not always easy to apply independently. It follows that they can understand how data pertain to particular historical questions; but, until more familiar with general substantive principles (e.g., the long-term pattern of the inclosure movement), skill with counter-arguments and counter-factuals is hindered and, hence, confidence with basic historiographical concepts and general principles of landscape history too.

It follows that, while the principle of critical evaluation is not difficult to grasp, students cannot reliably evaluate either their own work in landscape history or others' until they have been coached adequately in the content of the subject (cp. Adler n.d.). That is why, after 'teaching thinking' at first, the US Army is now 'starting to "infuse" critical thinking' as the 'content' of courses is taught (Eichhorn n.d.). Landscape history, by the same token, is a distinct discipline.

It follows too that the tutor cannot easily concentrate on particular intellectual skills or functions week by week. The whole set of functions or the whole column of attainments has to be assessed in each exercise.

Methodology
The research team was headed by the Staff Tutor in Landscape History and Field Archaeology. The other four members of the team were Part-Time Tutors in landscape history at the Institute of Continuing Education.   One member of the team was unable to participate in the implementation of the project as his course failed to recruit sufficient students and was cancelled. Of the the four remaining members of the team, three taught courses for the Institute of Continuing Education, the fourth (also one of the Institute's part-time tutors) used students studying medieval recreational landscapes through visual sources at Dartington College of Technology.

The research was practitioner-based: the Staff Tutor and Part-Time Tutor used his/her teaching on one or more courses over a 10- or 20-week term to work on the main aims of the project.   This approach had several positive aspects: it is particularly cost-effective in that it allows small-scale research to be carried out with several groups of students, and maximises the opportunity to test the aims of, and draw conclusions from, the project; it allows for the comparison of results from several courses, thus allowing more sophisticated and, perhaps, ambiguous conclusions than might be drawn from research with a single group; it encourages the development of a research ethos within the team and the encouragement of staff development within a democratic framework.   Nevertheless, the sums available made it inevitable that this was small-scale, qualitative rather than large-scale, quantitative research.

The research was carried out within an ethical context, and was explained to students from the outset. Students' own evaluation of the project outcomes were an important part of the work.

Implementation

(1)   The project was undertaken in five phases:
        PHASE 1
        The first phase attempted to develop a simple preliminary diagnostic framework to identify
        those students in most need of help (other research suggests that the success of 86% of all
        students can be predicted before they begin their studies (M. Slowey, pers. comm.)), and to
        develop guidelines for the explicit development of particular critical thinking skills for use
        over a wide range of landscape history courses together with a suggested timetable.   Such
        skills include: the construction of argument; the evaluation of evidence; the identification
        and testing of premises and fallacies; deductive as opposed to inductive thinking; and the
        ability to generalise from the particular.

        PHASE 2

The second phase was the informal pilot of this framework among members of the project team, which culminated in a small in which these issues were discussed.

PHASE 3
The third phase was the implementation of this framework in seven 10- or 20-week courses which ranged from Certificate (Level 1) to Diploma (Level 2) and which depended on the teaching commitments of the research team.

All students were asked to undertake three small, focused exercises per term (6 in all) which might be related to their final assessment exercise. This work complemented, and was sometimes integrated with, the work which is usually done in each session in discussion, group-work and in formal teaching.

PHASE 4
The fourth phase of the project evaluated the effectiveness of the project within individual courses, with research reports from each Part-Time Tutor. Evaluation was carried out on the basis of
- students' reflection on the process of the project, and their perceptions of its effectiveness;
- students' performance in achieving the learning outcomes of each course, measured by the course tutor both over the period of the course (through observation of discussions, small- and whole-group work, and assignments);
- Part-Time Tutors' own reflections on the process as recorded in their journals.

PHASE 5
The final phase of the project was the initial preparation of this final report to the LTSN. This report attempts to synthesise the results of the individual research reports to reach more general conclusions relating to the overarching aims of the project.

Evaluation
Each course was evaluated through
- The reflective journals of Part-Time Tutors, commenting on the success of different teaching methods and on students' progress;
- The reflections of students on the course, through a qualitative questionnaire to be completed before the final session of the course. The questionnaire will be no longer than two sides of A4, and will invite students to discuss their feelings and evaluate their thinking at the beginning and at the end of the course, as well as to comment on their perceptions of the effectiveness of particular teaching methods and materials;
- A comparison between the students' (and, where appropriate, tutors') reflective comments, and student performance on the course will be undertaken once all the courses have been completed

Interim conclusions
The final conclusions of the project are not complete since the last project has only just been completed and the results will not be ready before the end of August. A complete final report will be sent to the LTSN at the end of September 2003.

There was no attempt at developing a formal diagnostic test. This was because research on the internet suggested that such tests were formal and lengthy and for both these reasons did not appear to be appropriate for students in continuing higher adult education whose pedagogy is interactive and egalitarian by comparison with the authoritarian, 'expert' appearance of these

tests. Moreover, the short time-scale within which most courses took place further militated against such formal approaches, since it did not seem possible that the results of the tests could be transmitted to students and undertaken as the basis for individual learning plans within the timescale of these courses.

Lengthy discussions among members of the course team before the implementation of the project concluded that such tests would be difficult to implement, and because students' interests spanned a range of periods and landscape, a generic 'test' through a case study was less easy to impose than in a course with a defined topic of study.

Interim results of the work undertaken are promising. An early achievement was the very useful briefing paper prepared by one of the team which was used as a basis for discussion and formulation of individual projects by the team (Appendix 1). Some elements of that report have been included in this overall report. The actual short exercises developed in this report, at the suggestion of the Project Leader, were not used in the project in the end as the topics of different courses were too diverse. The methodology which they embody formed the basis for a great deal of the project's work with students.

Early indications are that the success of the project depended crucially on this complete integration of subject and critical skills. Unexpected results were the very positive view of students of their learning on these courses and of the generic and transferable nature of their learning. This generic outcome surprised the members of the Project Team since each member had tailored the method to his/her own particular course. It is likely to form the basis of continuing exploration among landscape historians at the Institute of ways of developing generic teaching materials which also produce general critical thinking outcomes.

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Appendix 1 : Critical Thinking In Landscape History Research For University Of Cambridge Institute Of Continuing Education

N James

The problem

Landscape history is a complicated discipline. It seeks to discriminate among a welter of social, geographical and historical causes with documentary, archeological, botanical and various other forms of evidence. Its key functions are four:

    (v)   acquisition of substantive knowledge;
    (vi)   analysis of data;
    (vii)   synthesis of particular data with general patterns of knowledge;
    (viii) evaluation, assessment or critique.

Students achieving these functions are well equipped to think critically and with independence. Thus, landscape history can make a highly effective contribution to the University's provision for work in the liberal arts.

However, it is evident from their results that students do not succeed consistently in realising their intellectual potential through the Institute's courses in this subject. The first two functions tend to be achieved satisfactorily but less the third and fourth. Therefore, the process of thought about landscape history needs more attention from tutors. The purpose of the present report is to develop principles proposed by Susan Oosthuizen for encouraging more consistent critical acuity in students.

To that end, the four functions can usefully be specified in more detail.

(i) Critical acquisition of knowledge demands awareness of three dimensions:
    historiographical concepts (e.g., causal priority);
    substantive information, i.e., data in relation to concepts (e.g., census
        data for assessing changing population density); and
    the methodological assumptions for linking 'fact' to concept
        (e.g., accuracy of censuses or maps);

(ii) To be adequate, analysis of data depends not only on particular
    historiographical techniques but, more basically, on logic, tests of relevance or
    intellectual parsimony, and testing by counter-argument.

(iii) The University ethos demands that students put their 'own "Little
    Twittering" into some larger-than-local-history context' (Aston 1985: 9) such as
    price movements or changing regional population density. This principle is related
    to the test of relevance.

(iv) Evaluation repeats the process – by 'metacognition' - from (i) to (iii) with
    attention to logic, relevance and, in addition, ethical and philosophical assumptions
    (e.g., about which causes prevail in a particular cultural tradition or physical
    environment or in general).

The concepts of these four functions will be used in the method proposed for enhancing critical thinking, so it may be helpful to refer to the Institute's criteria for grading written work (*Tutors' handbook* 2002 pp. 14-5, 26-7). They provide one way to describe the general intellectual goals sought through encouraging critical thinking.

Method

In recent years, Dr Oosthuizen has devised experiments for encouraging students to become more conscious of their own processes of induction and deduction; and she has encouraged the author to follow suit. These experiments were particularly designed to develop the fourth function, of evaluation and critique.

We have just completed a project of practitioner research on these principles, carried out under the LTSN's auspices in 2001/2. Based on the experimental technique used in that research, Dr Oosthuizen's specifications for the present report are that it should develop a series of generic exercises for students, the results of which indicate, to tutors, students' respective strengths and weaknesses.

To that end, Table 1 sets out a scheme designed to develop competence and confidence with the four key functions of landscape history during a single term of study (a course of ten meetings). The functions, (i)-(iv), are set out in the left column. For each, the rows set goals for students to attain through a sequence of four exercises (I)-(IV) carried out during the course. The cells indicate levels of attainment to be expected from students (see Key). Departures from those levels should serve to indicate students' respective strengths and weaknesses.

Table: sequence for a single Term

function	I	II	III	IV
(i) concepts	?	?	+	++
(i) data	+	+	++	++
(i) assumptions	?	?	+	+
(ii) logic	+	++	++	++
(ii) relevance	+	++	++	++
(ii) counter-argument	+	+	+	++
(iii) general principle	??	+	+	++
(iv) evaluation	+	+	+	++
example (Addendum)	1	2	3	4

Key:　?? 　weak understanding
　　　　?　rough understanding
　　　　+　general understanding
　　　++　clear understanding

Experience has shown that adult beginners in landscape history are quicker to grasp certain functions than others. Hence the weightings in the cells of the Table. The process is easier to trace in courses of two Terms than in those running over just ten weeks; and tutors should expect a firmer grasp of the functions, including standard assumptions and discipline-specific stock reasoning, by the end of a second term.

The degrees of understanding indicated in the Table will not, of course, apply to all students at any one stage of a course: everyone has their own strengths and liabilities. Moreover, subject to agreement with the Staff Tutor, tutors may wish to modify the pattern of attainment described along the rows through the course of exercises.

The exercises should be regarded as distinct from the formal requirement of essays. Partly for that reason, they should be short – perhaps some 300 words each for the written ones (II-IV).

For a course of one term, it is envisaged that Exercise I would be carried out as a workshop in the first meeting, and Exercise II as an assignment to be taken home in preparation for the second meeting. Exercise IV would be carried out in time for the tutor to give the student comments by the time of the eighth meeting and before the dead-line for submission of the Term's main essay.

Adapting and developing the sequence, the same conceptual order - from technical analysis to conceptual analysis, to methodology - should be set for a course of two Terms. A similar pace of conceptual development should be set too. Greater learning should be expected by the end of a second term, of course. In particular, students should be expected to demonstrate greater understanding of the general issues and conceptual and methodological assumptions than they could normally acquire in a single Term.

Details of assignments for a single Term are described in the respective Appendices. The Appendices could be adopted unaltered but they are intended only as illustrations of the type of test recommended.

Discussion
In regard to the four key functions in landscape history, students tend to find it comparatively easy to recognize and manipulate basic data; and they can follow simple logical inference, so that, in principle, they can also understand the effectiveness of counter-argument or counter-factuals. They can appreciate patterns of association quite easily, so that they find the criterion of relevance easy to understand if not always easy to apply independently. It follows that they can understand how data pertain to particular historical questions; but, until more familiar with general substantive principles (e.g., the long-term pattern of the inclosure movement), skill with counter-arguments and counter-factuals is hindered and, hence, confidence with basic historiographical concepts and general principles of landscape history too.

It follows that, while the principle of critical evaluation is not difficult to grasp, students cannot reliably evaluate either their own work in landscape history or others' until they have been coached adequately in the content of the subject (cp. Adler n.d.). That is why, after 'teaching thinking' at first, the US Army is now 'starting to "infuse" critical thinking' as the 'content' of courses is taught (Eichhorn n.d.). Landscape history, by the same token, is a distinct discipline.

It follows too that the tutor cannot easily concentrate on particular intellectual skills or functions week by week. The whole set of functions or the whole column of attainments has to be assessed in each exercise.

Addendum 1: preliminary appraisal
Use C Taylor's analysis of Horningsea (Taylor 1973). The Ordnance Survey's 1:25000 map of Horningsea and Fen Ditton marks contours, parish boundaries, the River Cam, Horningsea Church, the Fleam Dyke at Fen Ditton, finds of Roman pottery, and other features. With a minimum of additional information, such as the Saxon derivation of the name, Horningsea, and evidence of Saxon origins for the church, students can work out for themselves Taylor's argument that Horningsea may enshrine a Roman estate.

This exercise has been used successfully for Madingley Hall at the start of courses of one Term and two, and in an extended residential course. It works well when the map is projected for all to discuss together.

Students tend to be struck by the concept of such historical continuity in boundaries and may be slow to recognize the supposedly simple principle of ownership at issue (i, iii); but they should be quick to accept the application and conjunction of quite independent forms of evidence (ii, iv).

Addendum 2: formative conceptual rumination
The RCHM (1972) showed that Swaffham Bulbeck underwent a series of distinct phases of development, responding to local physical geography, institutional history, and regional commerce. The Commission's analysis illustrates aspects of the historical logic of topography.

Like the first assignment, the second is a detailed technical analysis, designed less to explain substantive principles than to draw students into the subject by developing technical skills. Provided with a map (deprived of certain telling labels) and a chart of the Commission's dates for the buildings, students can work out the development of the village within an hour or two. They could be given the data to mull over at the end of the first class in order to come prepared to discuss interpretations of the data during the second. (N James has tabulated the chronological data and can copy them on request.)

Students should show progress in learning to distinguish effects of physical geography and social and economic functions, and they should become familiar with 'horizontal stratigraphy'.

Even if evidence for basic concepts of landscape units (properties) remain obscure (i), students may be expected to show progress in discerning the effects of different forms of economic activity (iii) and in using logical reasoning and appraising and testing alternative hypotheses (ii). A similar study which can be used to the same effect is JR Ravensdale's (1985) of Swavesey.

Addendum 3: the literature
Owing to universities' insistence on relating local detail to wider patterns, it is a serious mistake to postpone appraisal of the wider literature beyond the first five weeks or so of a course. As students, participants must learn to relate particular instances to general patterns (Aston 1985: 9).
      The third exercise can be devised by providing students with:
* either a couple of passages from one of the general books (e.g., Aston 1985, Muir 2000, Taylor 1983, Williamson & Bellamy 1987 on, e.g., commercial development at nodes of transport, or planned settlement, or industrial development, or emparking) and a map of appropriate scale;
* or one such passage and maps of two different places or districts.

Students can be challenged to take the material home and illustrate the gobbet or gobbets by reference to the map or maps. Discussion of students' respective readings in class is apt to be entertaining; and it should demonstrate participants' growing competence in both substantive aspects of landscape history and techniques of argument.
      This task addresses the third function of landscape history directly. It should produce distinct improvements in the understanding of general concepts, and enhanced appreciation for the selective nature of data and the working assumptions on which they are based, and perhaps skills of evaluation too. Thus it anticipates the fourth exercise.

Addendum 4: methodology
By the end of the course, students should have acquired a general appreciation of the nature of evidence and methodology. The fourth assignment is simply designed to ensure that that awareness is explicit.
      With a small amount of background text from the Victoria County History, a map of the village of Aldreth (Isle of Ely) can be used to exercise skill in the discrimination of topographical patterns, horizontal stratigraphy and the chronology of buildings, the effect of physical geography and of changes in the availability of transport by land or water, and in the interpretation of place-names. This is a comparatively detailed task best carried out at home before the results of study are discussed in class.
      Students should be asked to explain the methods and assumptions by which they reach their conclusions. They should display understanding, knowledge, reasoning and evaluation to a distinctly higher degree than they could at the start of the course. This exercise is especially apt for the second function in landscape history and may also serve to test progress with the fourth.

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Appendix 2: Developing critical thinking skills among students in landscape history – personal report

Susan Oosthuizen

Context

The research was undertaken with a group of students enrolled on a Level 1 Research Methods course in Landscape History. The group met once a month for four hours over 5 months between September 2002 and February 2003 (20 contact hours altogether).

The course was based on the expectation that each student would undertake a small-scale research project based on primary sources and/or physical evidence, within a wider theoretical context, and which would investigate an analytical question. The course was run on a seminar basis, and most of the time was taken up with students reporting on the stages their work had reached and contributing to discussion of methodological and theoretical issues arising from these reports. At the end of the course each student gave a short (15-20 minute) presentation on his/her research and almost all students submitted a report on their work, amounting to about 2,000 words. This work was made up of the following sections: aims, a critical evaluation of sources and methods, a critical evaluation of the wider reading, findings and conclusions within a wider context.

There were 15 students on the course, of whom 7 were new to continuing higher education; the other 8 had undertaken courses with the Institute before. The syllabus for the course is attached to this report as Addendum 1.

Aims

The aims of this part of the project reflected those of the project as a whole:

(5) to investigate the effect of attention to critical thinking skills on student retention and success in attaining the learning outcomes of courses in landscape history;

(6) to experiment with the development of generic materials and teaching methods which explicitly address the development of critical skills in landscape history;

(7) to focus particularly on students who have difficulties in making the shift from description to critical analysis;

(8) to experiment with the development of straightforward diagnostic tools to help to identify these students at an early stage in the course.

Methods

The first phase of the project was undertaken by Dr N. James with the collaboration of Dr Susan Oosthuizen. It involved a number of discussions and papers on the first, second and fourth aims of the course in the course of which an outline strategy emerged. This was disseminated to other members of the project team and discussed at a seminar. This paper is included as Appendix 1 of the overall report.

One of the proposals arising from this work, undertaken on behalf of the team by Dr N. James, was an attempt to map the way in which critical skills might be acquired over the course of the term (Table 1).

The small-scale project reported here attempted to implement this programme through three short exercises and through the final presentation undertaken by each student.

Table 1: sequence for a single Term

function	I	II	III	IV
(i) concepts	?	?	+	++
(i) data	+	+	++	++

(i) assumptions	?	?	+	+
(ii) logic	+	++	++	++
(ii) relevance	+	++	++	++
(ii) counter-argument	+	+	+	++
(iii) general principle	??	+	+	++
(iv) evaluation	+	+	+	++

Key:

??	weak understanding
?	rough understanding
+	general understanding
++	clear understanding

The researcher then attempted to define these in terms of landscape history more concretely first by defining the critical skills used in landscape history and then by mapping these skills against the framework of the paper developed by Dr James (Tables 2 and 3).

Table 2: Subject-related critical skills in landscape history

Evaluation   Is this a good source?
- Primary or secondary?
- What was its original purpose?
- Is it biased?
- Is it reliable?
- Does it assume anything?

Analysis   what are the components of the source?
e.g. field boundaries, roads, property boundaries

Interpretation   What does the source say about the topic? (e.g. do the boundaries align? What are the differences in the fabric of the church walls?)

Extrapolation   Is anything implied by, or can anything be inferred from, the source rather than explicitly stated?

(e.g. does the relationship between two components in the source imply anything that *isn't* immediately obvious?)

Synthesis   What conclusion can be drawn by combining all the components of the source?

Hypothesis   What processes might have been involved in the development of the landscape? And how might this be tested?

Counter-hypothesis   What other interpretations of this landscape might also be valid and what evidence might one expect to find had they been part of the development of the landscape?

Empathetic understanding   What was it like to inhabit this landscape?

Table 3 : Critical thinking skills and students in Landscape History: a proposed course framework

I.
Concepts
> *What is the general question being considered? (e.g. continuity of boundaries from one period to another; settlement planning; etc.)*

II.
Recognise and manipulate data
> *What kinds of evidence will help to answer this question?*
> *How reliable is this evidence?*
> *What flaws or biases might it conceal?*
> *How can we get around them?*
> *How can we tell which evidence is relevant to this question?*

III.
Logic
> *How does the evidence we have looked at help us to prove the answer to the question above is probably the right one?*

Relevance
> *Is everything we have used to prove the answer relevant to the conclusion?*

Assumptions
> *What have we taken for granted in creating this argument?*

Counter argument
> *Are there other explanations that would make sense of this evidence?*
> *How could we test them?*
> And what might we expect the results to be if another explanation were correct?

IV.
General principle
(a)   *What is the idea, theme, debate, conclusion or hypothesis in another piece of work which is tested by this case study?*

(b)   *How is this conclusion (a) similar and (b) dissimilar to the ideas, conclusions, themes, debates explored in other work?*
> *What overall conclusion can we draw about this idea, conclusion, theme, debate as a consequence of this case-study?*

V.
Evaluation
In the light of the work you have done this session, give your opinion on :
(1)   *How reliable this evidence is?*
> *What flaws or biases might it conceal?*
> *How we might address them?*

(2)   *How reliable do you think the method we have used to analyse this data have been?*
> *Why has this been a good method to use?*
> *What do you think the weaknesses of this method have been?*
> *What could we do to address this problem?*

(3)   *What are the flaws or weaknesses in the argument we have used to draw a conclusion from this evidence?*
> *How might we change the argument to improve this?*

Table 4 shows how this research attempted to map these skills against a 5-session course. This mapping was not undisputed within the course team and was partly based on this researchers attempt to balance more generic skills in constructing argument against the subject-specific skills involved in landscape history (Table 3). The author recognises, nevertheless, that this process may reveal as much about the author's own learning processes as about the project as a whole.

Table 4: Mapping these skills against the duration of a 5-session course

	Session 1	Session 2	Session 3	Session 4	Session 5
Concepts	*	*	*	*	*
Recognise & manipulate data	*	*	*		
Logic			*	*	*
Relevance				*	*
Assumptions			*	*	*
Counter argument			*	*	*
General principle (a)				*	*
General principle (b)				*	*
Evaluation (1)	*	*	*		
Evaluation (2)			*	*	
Evaluation (3)				*	*

The students were asked to undertake one exercise in the month separating each meeting. Each exercise attempted to meet overlapping and different elements within Table 1. They were also intended to allow students to undertake the writing of small sections of the final reports in advance.

The first exercise aimed to encourage students to begin to think analytically and theoretically about their chosen topic, by building on class work to formulate an analytical question with clear parameters within which they could undertake their work. It also attempted to develop in students a critical awareness of the sources they might be using and the beginnings of an awareness of differences between various kinds of evidence, judgements about relevance, and evaluation of reliability. It encouraged students to evaluate their sources and methods in relation to the research question from the outset.

The second exercise was built on this foundation and on the classwork of the second session. It asked students to refine their research questions and to discuss their research methods critically. It aimed to invite students to begin to think critically about the ways in which they constructed their arguments and in particular about the ways in which they interpreted, inferred and extrapolated from their sources and methods. Once more, evaluation of their work was regarded as a key part of the process.

The final (third) exercise attempted to engage students in the process of deriving general principles from their work. It attempted to move students from the general to the particular, by inviting them to consider the ways in which more general conclusions could be tested, rather than the other way around. This choice was based simply on personal perceptions of the process – that it would be easier to move from the general to the particular, than to try to explain or induct the process in reverse.

Before the last meeting, students were asked to report on their work to the group. They were asked to describe the question they had researched, to present a critical evaluation of the sources and methods, and a critical evaluation of the contextual literature as well as an assessment of its influence on their work. Finally they were asked to deliver their findings and to draw a wider conclusion from them.

Evaluation

The project was evaluated in two ways: through student questionnaire and through the Institute's Personal Statement of Learning (PSL), a reflective questionnaire about the course as a whole. Both these forms of evaluation are qualitative. Nine of the 15 students returned the student questionnaire; 15 students returned the PSL.

(a)   The student questionnaire

Q.1 How do you think you approach things differently now and how would you explain your change in perception?

Answers to this question were unexpected. The author had expected that students would comment on their ways of approaching and analysing different elements of the research process. That is, it was expected that students would raise issues relating to specific skills. Instead, students commented that they had experienced changes in the depth of their thinking in general.

> A *I do not think that any of the exercises caused me to think differently about my work. However – and I think this is a great plus from the exercises – they made me <u>think</u> about my work. The same applied to the additional exercise you set me. Each helped develop my thought process and after each my immediate direction adjusted to reflected the enhanced consideration process. But… the imposed discipline of the exercises was, I believe, vital. Without the requirement to write it down, I doubt if I would have gone through the process so thoroughly.*

> C. *Since I was a complete newcomer to this field, the effect of all the exercises was to make me think; to realise I had to organise the way I thought to make best use of what was available.*

> D. *Both the sources and methods exercises helped me to clarify my thinking and were useful for the final project report. The wider literature exercise introduced me to some interesting ideas and had an unexpected connection with my project.*

Q2. What did you find the most helpful part of these exercises?

The answers to this question focussed on specific skills in relation to specific parts of the research process, as expected. Student responses inadvertently also highlighted the ways in which the process helped them to 'learn how to learn' and provided positive reinforcement of the approach. This is particularly pronounced in the response from C (below) who commented on the resentment s/he initially felt on undertaking the tasks. It seems likely, from the range of responses listed below, that different students found the tasks most helpful in relation to different parts of the research process, which suggests an unexpectedly generic nature to the tasks.

> C. *The most helpful part was to make me stop and think about what I was doing. Initially I rather resented this, I thought it was unnecessary, the wider view however that the exercises demanded was so rewarding that I looked forward to each new sheet!*

> D. *For the sources and methods exercises, the most helpful part was the clarification resulting from writing it down. The most helpful part of the wider literature exercises was spending the time to understand the arguments and evidence in a particular paper.*

> E. *The 'wider literature' part as I needed to look critically at the paper chosen in order to address my problem. This section forced me to do so. However, if the paper or book chapter I had chosen had been more general than specific this answer might have been different.*

> H. *The 'bite-size' approach, giving a step-by-step attitude to prevent or ameliorate being overwhelmed by the size of the project.*

Q3. What did you find the least helpful part of these exercises?

Unexpectedly, none of the students had anything to add here, except for one or two who commented that they did not find any part of the process unhelpful. Since their responses were anonymous, the author hopes that this is more than just politeness.

Q4. Are there any aspects of your way of approaching this kind of work that you might be more conscious of in the future as a result of doing these exercises?

The author was interested by the wide range of responses to this question – wider than for any other part of the questionnaire. This range suggests that the exercises had broad applicability across the ability range, and could be used iteratively, on different courses, to encourage students to progress to more complex patterns of thinking. For example, some of the responses (e.g. A and H) refer simply to the process of documenting the research processes; the comments of E and F relate to a growing awareness that they are engaged in an intellectual *process* in which they are themselves active contributors. D's reply shows, one hopes, a student who has made a real intellectual leap, by being able to move between the general and the particular with increasing ease.

> A. *It would be nice if I could rely on my own discipline to do exercises of this nature on all projects. I think I might steal your blank forms and make it part of my routine. I think matters through, I write up notes but your format will be helpful.*
>
> D. *I have become more conscious of the fact that the effort involved in understanding someone else's work in an apparently unrelated area may provide a useful idea or insight in my own area.*
>
> E. *The 'contrary' things:*
> *a)   avoiding coming to a conclusion too early;*
> *b)   remembering that 5 months is quite a short time;*
> *I'm conscious that the question I eventually answered was only obliquely the same as the question I originally asked.*
>
> F. *I am very aware that evidence taken on its own is ambiguous. Conclusions can only be reached when more than one piece of evidence supports them, and when it is reasonable to assume that they clarify or enhance known or accepted theories, or when they challenge accepted thought.*
>
> G. *The necessity of starting to write up early on, or at least make notes.*

(b)   The Personal Statements of Learning (PSLs)[1]

Generally speaking, the PSLs were not as informative about the results of the research as it was hoped that these reflective accounts would be. The most interesting results appear in section 3 below where students explicitly mention improvements in their critical thinking skills.

1. What you have gained from the course
> J. *The course has been a catalyst and enabled me to think very carefully about the parish which is the focus of my long-term interest.*

---

[1] The letters ascribed to the PSLs to identify students do not correlate with those of the questionnaire explored in section (a) above. This is because it was not possible to correlate the two sets of evidence with any certainty, although the number of students submitting responses was the same.

> *K.*   *I think I have gained greater understanding of landscape history and of the way of approaching a research topic in it.*

> *M.*   *I have gained an increased awareness of the wider debates in landscape history.*

> *N.*   *Ability to .. weave other participants (sic) thoughts and lines of study into own work. Key to this is a reminder of broad range of research techniques and sources and methods available to interpret landscape evidence.*

2.   Comments on learning against Outcome 1 'demonstrate an understanding of a particular problem or theory in landscape history as well as of the more general context of the landscape history of the period in which the project is based'.

> *J.*   *I have found it difficult to relate published sources to my area of study, and am aware that I have not related my work to any other theory or context.*

3.   Comments on learning against Outcome 2 'demonstrate a critical understanding of and ability to evaluate sources, methods and theory related to the period and locality of the project undertaken'. P seemed to have made a real break-through.

> *K.*   *The project report is strong on sources and methods, but could have a better coverage of the theoretical context, The wider implications could also be extended.*

> *M.*   *This course has dramatically improved my confidence in being able to understand and critically evaluate sources, methods and theories in applied landscape history.*

> *P.*   *Before I was inclined to accept without question the reasons given and to feel I had learned the answer.*

4.   Comments on learning against Outcome 4 'undertake these tasks with greater confidence and competence than previously'.

> *L.*   *The exercises and final report have been very helpful in this respect.*

5.   Unplanned oucomes

> *P.*   *I certainly did not think I would become so enthusiastic about landscape history, not just for my project but for some of the others in my group. I have also seen at first hand how much is to be gained by pursuing quite single-mindedly theories which have not been generally accepted and proving one's point.*

Conclusions

This has been an extremely interesting project to be involved in. It has introduced the researcher to a whole field of pedagogy and research endeavour which she was only peripherally aware of. The lack of such work in landscape history and its related disciplines has been an interesting lacuna in the literature, and allows for the possibility of creativity in what appears to be a relatively new field. It would be interesting if the LTSN itself were prepared to initiate and co-ordinate a project in which many institutions contributing to the LTSN could collaborate. This would allow for economies of scale on the one hand as well as a sufficiently well-funded project overall which could deliver significant results across the HE sector, not only in the subject areas for which the LTSN has responsibility.

It has, however, left the researcher with the feeling that more questions were raised than answered. Some of this dissatisfaction comes from the relationship between the exercises and the theoretical framework developed by Dr James: further work will experiment with linking the exercises far more closely and, perhaps, explicitly to the ideas outlined in Tables 1-3.   Other questions arise from the unexpectedly generic nature of the students' responses to this work, and the wider applicability of the skills that the students themselves draw attention to, and suggest that the development of a more generic methodology might be a possibility.

Next term offers the informal and unfunded opportunity to continue with this project as a personal project through a 10-week evening class as well as through the offering of a similar course to the one which was the subject for this research. In those courses, further changes and additions will be made in order to refine the method and the development of a generic programme which could be incorporated into any course with ease. It seems clear from the students' comments that it was the integration of skills and content that made for the success of the project, a conclusion that is now widely-accepted across the HE sector. The challenge is to develop a sufficiently clear awareness of the skills element of the teaching that allows it to be transferred from one course to another in such a way that it can also easily be integrated into another course and deliver the same apparently-seamless academic coherence.

In particular,

(1)   the three sheets on sources, methods and literature will be used as the basis for new exercises which will, it is hoped, refine the questions so that they relate more closely to the skills and processes outlined in Tables 1 and 2;

(2)   further in-class and take-home exercises will be developed which address certain aspects of 'thinking like a landscape historian' more explicitly, specifically:

- the iterative relationship between the general and the particular throughout the research process from beginning, through the process, and through the findings
- the evaluation of the strengths and weaknesses of final conclusions
- such skills as counter-hypothesis and hypothesis-testing as research techniques.

This work will be reported to the LTSN, although it will be unfunded, in order that the long-term and unexpected effects of funding can be made visible.

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Appendix 3: Developing Critical Thinking in Adult Learners 2003

Twigs Way

Introduction

Adult students within the areas of landscape history (including garden history and field archaeology) are required to demonstrate the ability to critically assess the evidence which they use in their studies. Such critical assessment of source materials (both primary and secondary) is a fundamental foundation to their abilities and skills in constructing arguments, drawing conclusions and creating further theoretical generalisations.

However, many students have problems in developing structured critical thinking, particularly those whose education is predominantly from either backgrounds or periods where such thinking was not encouraged. In addition, attempts to encourage critical approaches implicitly within the courses have not been as successful with these students, who are less aware of the need to move beyond the narrative into argument construction and analysis.

Following on the successful completion of LTSN project on *Enhancing Achievement for Adult Learners* (where the issue of study skills was again highlighted), it was thus decided to focus on the issue of Development of Critical Thinking in 2003. Discussion of the strategies for this project centred on the framework of concepts; recognition and manipulation of data, logic, relevance, assumption and counter argument, principles and evaluation. Each of the lecturers involved in the project chose to emphasise some or all of this framework with their students.

This is an *interim* report of the Project implementation on two courses:

- Certificate in Garden History: Project Based Module
- Certificate in Landscape Archaeology: Archaeological Monument in the Landscape

The final report will be available after the completion of student project work in the autumn of 2003.

Aims

The overall project design was such that within the main structure, aims and implementation varied according to the courses on which the project was being implemented. To a certain extent these were also modified during the course of the project according to the tutor's awareness of the background of the students who enrolled, the overall structure of the syllabus, and the development of the students on a meeting by meeting basis.

The overall aims of the project were:

i. To assist students to recognise the need for critical thinking generally, and more specifically within the subject of landscape (and garden) history
ii. To enable and encourage students to develop critical thinking skills generally within their work, both implicitly and explicitly
iii. To specifically concentrate on critical thinking skills within the areas of concepts, recognition and manipulation of data, logic, relevance, assumption and counter argument, principles and evaluation. To enable students to place these within the framework of their own studies these were further structured into construction of arguments, drawing conclusions and creating further theoretical generalisations.

These aims were then modified and implemented with specific relation to the courses named above: These two courses had the following in common:

i. Research Based with a final substantial report being handed in several months after the end of the course

ii.   Students are expected to make considerable use of primary and secondary sources (as well as field evidence) in their project research, many of which sources will not have been met with by the students before.

iii.   Small numbers of students (four and two)

iv.   With a single exception, all comprised of students whose full-time formal education had been completed many years ago

v.   Teaching taking place at four fortnightly meetings and each meeting will develop a specific theme of the course, but integrate work students have carried out between meetings.

The two more general aims of the project were adhered to in total in its implementation on these courses. Due to the nature and focus of the project based courses, and the perceived needs of the students who enrolled on the courses, the project concentrated on developing critical awareness in areas of data recognition and manipulation, relevance, assumption and counter argument, and the drawing of conclusions.

The Project aims were explicitly outlined to the students.

Methods

As stated above, the aims of the project were explicitly explained to the students, thus immediately raising the profile of critical thinking during the course. However, building on previous experience, the project was integrated into the course rather than being allowed to 'stand alone', where it might be perceived as either optional or 'extra workload'.

A series of worksheets were devised by the tutor to address the aspects of critical thinking which were to be encouraged, and worksheets were given out at the end of each class with the expectation that they would be completed and discussed during the following class or at supervision.

On average the worksheets contained 5 - 7 questions. Each worksheet was designed to develop from one question to the next. For example Question 1 might ask what source materials the student had found, the next question would ask what information was contained, the next would move on to ask for some type of critical assessment of the information value or content etc. whilst the final question might concentrate on the role that that source could play in the building of a more general picture.

In addition to 'development' within the worksheets questions were also designed to develop throughout the course. For example earlier sheets concentrated on critical evaluation of source materials and the initial development of the students research, whilst in later weeks students were asked to consider the role of contradictory or 'missing' materials and how to address these, and the final week concentrated on limitations to conclusions, what might be the impact of new evidence or new theories on their conclusions etc.

Both classes were also asked to comment on the role and integration of fieldwork results with other types of source materials and to address the integration of wider contextual materials with their own work.

Questions were different for each of the two courses to take account of the difference in subject areas.

The strengths of this were:

• Emphasis on critical thinking within the course from the outset
• The necessary inclusion of all students within the project
• The necessity for all students to complete the work between each class (thus encouraging a pattern of development between classes)
• Encouragement of discussion of issues relating to critical thinking between students within the class

- The ability to ensure the students addressed the worksheets in the correct order of 'development'.
- The creation of a record for both the student and the tutor charting the student's development in critical thinking.

The weakness was:
The time it took out of available class time, leaving the tutor occasionally feeling that she was teaching a class on critical thinking, rather than a course on landscape/garden history which incorporated critical thinking!

In addition problems were encountered where some students were not as advanced in their project choices as others.

Assessment of the success (or otherwise) of the project will also hinge on the students final work, their worksheets, and the informal discussions within class. There was no attempt to set up a group of 'non participants' as a 'control' group as it was felt that this would be impossible with worksheets forming the focus of in-class discussion.

Interim Findings
At the time of writing (June 2003) the class element of the courses had been completed but neither course has had the student supervisions or handed in the final projects (due end Sept 2003). It is not therefore possible to comment on whether the project had an impact on the final reports which the students will produce. In addition, students have been encouraged to keep their completed worksheets until the end of the course and hand them in with their final projects, in the hope that this will serve as 'reminders' to them during their independent research/write up period.

However initial assessment of the project based on classtime discussions has been that in the vast majority of cases it has been an overwhelming success! Approaches to source materials in particular has been quite different to that usually encountered, with students showing strengths in evaluation, assessment and integration of different sources materials and types of evidence. In addition critical awareness of different methodologies has formed a focus for discussion with a real attempt by students to assess the role of different methodologies within their project area.

In the final week of each course discussions on their own research, and the possible impact of their own findings, displayed a high level of critical thinking; and interestingly also focused on the need to make explicit in their own work the methodologies, assumptions and source materials they had used.

The project also forced the tutor to re-examine critically the way in which the class was being taught, and develop a much greater level of student participation which has benefited both groups.

Interim Conclusions
Although, as outlined above, there was no attempt at setting up a 'control group' against which to assess the results, it would appear that the project has been very successful.

The project was accepted as an integral and valuable part of the course, and several students commented on how much they got from the course, including two who had already had considerable experience of carrying out source based research but who were weak in critical approaches to study.

Worksheets (briefly handed in to tutor at each class) were filled in with care and considerable display of development of critical thought. Worksheets also enabled the students to develop a habit of out of class work, and encouraged early choice of project subject.

Final conclusions have to await the completion on students work at end Sept 2003, however interim conclusions are that the project was a success in its aims in developing vital awareness and patterns of critical thinking in adult students within landscape history.

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APPENDIX 4: Developing Critical Thinking Students Of Landscape History Through Art In Full-Time And Part-Time Higher Education

Richard Almond

Background

The student group consisted of seven mature students, four full-time and 3 part-time, all following a option module of 12 credits as part of the first year (level 1) BA Joint Honours English and History programme. The option explores the landscape history of medieval deerparks and hunting through art historical sources. The group is exclusively female, aged between 21 and 40, and is thus fairly representative of the intake to this degree course.

The assessment for this module consists of two components: an in-course assessment (**ICA**) weighted at 25%; and an end-of-semester assessment (**End**) weighted at 75%. The **ICA** consists of one element: a presentation of 20 minutes plus 10 minutes discussion time, 30 minutes in total. The **End** assessment consists of an unseen examination of 2 hours duration, 2 questions to be attempted from a choice of 10. **ICA** presentations will take place during the class/seminar periods of weeks 10, 11 and 12. The **End** examination will take place in week 15.

The course taught over 15 weeks, through 12 lectures and seminars, 2 revision sessions and the final week of examination. Tutor-student contact is two hours per week. This is made up of two elements: a lecture of one hour followed by a seminar/class on a prescribed topic. Students must prepare for the seminar/class in advance. The lecture and seminar/class programmes are included in the Module Handbook, distributed to all students in session 1.

Aims

The aims of this module are to:
- introduce students to an outline of developments in the landscapes of medieval deerparks through late medieval period art and technology;
- introduce students to the different sources available, their inter-connection, and how they reflect medieval culture and society;
- introduce students to the technical and interpretative interplay of textual, visual and material landscape historical sources.

Method

The project consisted of a series of short questions to be completed by each student after every session of contact with the Tutor, to be submitted by the following session. The questions were incremental and progressive, reflecting increased learning and understanding at all levels, particularly the acquisition, development, demonstration and application of required knowledge and skills. Research and oral abilities were be demonstrated in presentations (**ICA**); understanding and written application were also be demonstrated in the unseen examination (**End**). Student sheets for appropriate sessions contained sections to be completed on both these modes of assessment. Self-assessment of presentations by the students will be particularly relevant in the area of critical thinking.

It was hoped that, throughout the programme, there would be an increasing awareness of self-progression on the part of the student, the result of a parallel improvements in critical thinking. It is hoped that the answers to the questions, themselves of increasing difficulty, will reflect both these factors of successful student learning.

Summary of Student Survey

Each year, I feel that the most difficult aspect of the Landscape Art module to implement with the students is that of **critical thinking**, one of the main elements and direct results of reading and analysis of art sources. Effective critical thinking is largely an acquired skill and is the logical, informed and balanced progressive result of the layman's defence against the 'expert' of, "I don't know anything about art but I know what I like." (Pointon, p.7.) Few people are fortunate enough to possess a good working sense of aesthetic taste, an important ingredient of critical thinking, so for most students, this skill has to be acquired over the course of a fifteen week semester. For some students this is a painful and laborious process; for others, it emerges fairly quickly. Perhaps the most difficult element of critical thinking for students to grasp is the effective application of critical thinking to their own thoughts, oral discussions, presentations and writings. In addition, they appear loath to criticise the comments and writings of members of their own peer group even in constructive ways, particularly during the short discussion periods after individual presentations, in themselves periods of intense stress for the student deliverer.

The Results

(a)   Sheet 1: issued at the start of the module

This module is an option for those following the BA Single Honours English route but compulsory for those on the BA Joint Honours History and English route, some of whom wish to change to BA History Single Honours in Year 2 at the University of Teesside. Significantly, the survey shows that students opted for this module as the subject was 'interesting' not because of its option status. Most students had only a vague idea of what Landscape History consisted of and admitted bringing few skills and knowledge to the class except research and communication skills which had been acquired during other modules in semester 1. However, they were fairly positive in stating the 'exciting' elements of the programme, as they perceived them from the introductory lectures and the Module Handbook. These elements included art (unspecified), art analysis and architecture. The 'daunting' aspects of the course included art analysis, acquiring a sufficient knowledge of the history of the period (including dates), and the end of module unseen examination. Interestingly, critical thinking was not an issue at this early stage. The process of learning was clearly perceived to be through lectures, seminars and self-study, particularly reading, using the provided bibliography.

(b)   Sheet 2: issued part-way through the module
There was some confusion over the sorts of sources which were available. Perhaps my question was ambiguous but at this stage, several weeks into the module, I considered the students had sufficient insight to be able to include textual and pictorial sources (both primary and secondary), galleries and museums, videos, television, electronic sources including CD ROMs and particularly Internet, as well as original art material. One student mentioned the difficulties created by iconoclasm to the corpus of evidence. All but one student had looked at a variety of sources, including books from the bibliography and visiting medieval sites. All had grasped the idea that a variety of sources was essential to the notion of competent appreciation and the formation of balanced criticism. All except one stated that advised texts were the single most useful source of information and potential progression in the subject. Most of the group were able to write a short but coherent paragraph on the changes and progression in the architecture relating to medieval hunting in England. This was aided by a comprehensive and illustrated hand-out issued at the beginning of the relevant lecture.

Sheet 3: issued at the end of the module
Responses to the 'most difficult aspect of the course' included the historical aspects; acquiring a sufficient corpus of knowledge; visualising works of art without provided illustrations; and 'no

difficulty with any aspects', a compliment to the course! Paintings led in the 'most interesting' aspect, without doubt the most difficult topic to teach and for students to grasp and fully appreciate, followed by field-visits. The methods of learning considered to be most useful in developing personal thinking were the presentation (**ICA**) including the prescribed post-presentation discussion period, together with seminar and other discussions. These allowed the exchange and consideration of individual ideas and knowledge within the group. Two one-day sessions at **Perspectives,** an consultancy, were also rated highly in developing appreciation of paintings and other art media and in the development of critical thinking. The skill of critical thinking was thought generally to be demonstrated in the successful delivery of presentations (**ICA**), discussions and improved writing, both in essays and the unseen examination (**End**). This was reinforced by a hierarchical list of 'effectiveness', led by presentations. Suggestions for improving the course included more field-trips and the increased use of accessing collections of art, possibly through the Internet. Suggestions for improving critical thinking included more presentations or short papers but on a smaller scale than the **ICA**; more field-trips and the increased use of other sources. Two students considered the present provision for developing critical thinking to be very good.

Conclusion
Although the summary of the results of this type of survey is necessarily subjective, significant aspects emerged. These include:-

- the main learning outcomes at level 1 were achieved;
- all the students successfully delivered a 20 minute presentation followed by a short discussion (**ICA**), achieving marks within the range 2i - 1st class;
- all the students successfully passed the unseen examination (**End**)
- the acquisition of critical thinking was progressive and closely tied to the learning process, especially the cumulative and intensive acquisition of a sufficient corpus of knowledge;
- both these processes were rapid, depending upon intensive delivery via lectures, and formal and informal discussion sessions;
- in direct opposition to the assumption of increasing awareness of self-progression, it appears that the individual student is largely unaware of the progressive implanting and development of critical thinking skills at level 1 until near the end of the course, by which time these skills are sufficiently embedded to enable successful management of the formal assignments of presentation and unseen examination. This embedding of subtle considerative and aesthetic skills could be termed **insidious learning**, perhaps the most important result of a carefully planned and balanced module syllabus.

Appendix 5: still awaited from tutor (one course)