The PRS-LTSN Journal

Philosophical and Religious Studies
Subject Centre of the
Learning and Teaching Support Network
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The PRS-LTSN Journal
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Welcome to the first issue of the journal for the Philosophical and Religious Studies Subject Centre of the Learning and Teaching Support Network.

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Thinking, believing and sharing: editorial

This is a new journal for the exploration of ideas and techniques for learning and teaching in the subject areas of philosophy, history of science, philosophy of science, theology and religious studies. We aim to publish peer-reviewed, innovative and original material from all these disciplines to stimulate a lively and respected debate on the scholarship of teaching and on pedagogical research.

George MacDonald Ross, the PRS-LTSN Director, sets out some of the background and objectives for this journal in his introductory piece on pages 4-5, so here is a very short account of two important kinds of scholarship of learning and teaching that will be of interest to all those in HE wanting to find more successful ways of engaging with students and sharing their enthusiasm for ideas and beliefs.

Most of us are aware that much is written about "generic" education methods and techniques. It is hard to avoid mailings from Staff Development Units about important new developments. But what many want to know is, "Can the generic be applied to subject-specific topics in learning and teaching for *my teaching*?" For example, articulate and literate philosophy students may baulk at logical symbolism and this specific issue may be not catered for in traditional educational literature and searching for generic solutions is definitely time consuming and often disheartening. But, of course, logicians and philosophers have already *successfully* dealt with this problem over very many years, sometimes through the application of generic solutions, sometimes in exciting and innovative ways. When looking at learning and teaching we should never forget the vast array of teaching experience and expertise in our communities and that many of us *already* are innovative teachers who have solved subject-specific problems. Given our existent skill and commitment to the promotion of our ideas and subjects amongst students and the wider public, there is indeed a great deal to "network" about and much for us to share with each other. It is we who are the experts on such subject-specific issues. The articles by Cantor, Cowley and White in this journal show this kind of thinking at work—taking issues of general educational interest and putting them to work in the context of Philosophical and Religious Studies.

But there is another aspect to the scholarship of teaching that may be closer to our research orientated hearts. Anyone seriously engaged with any of the subject areas covered will know that what they teach in itself carries a message about what can be taught, how it can change ideas and outlooks and how it influences the perceptions of students in tackling other topics. For example, a good course in history of science will almost certainly leave a student *better* able to tackle the rigors of competitive argument for funding for their physics project; and a dynamic teacher in religious studies may help students better understand their own life course and beliefs. These are topics never properly addressed outside our subject communities, and yet they are fundamental parts of the learning experience that arise directly from our being diligent and committed researchers. My colleagues and I sincerely believe we should all take a moment to really explore how we can have a genuine impact on the students' experience of education. As Bill Campbell's piece on page 25 illustrates there is more to thinking about teaching theology than just wondering about the content of an end of course questionnaire!

This journal is the best forum for a lively exchange in both these kinds of thinking—and I have no doubt there are other possible avenues as yet unexplored. I hope you enjoy reading the results and are encouraged to participate in this new direction in HE learning and teaching.

David J Mossley, Editor

Welcome from the Director

George MacDonald Ross

Director, PRS-LTSN
School of Philosophy
University of Leeds

Welcome to the first issue of the *PRS-LTSN-Journal*. This is an exciting new venture, which marks the beginning of a scholarship of learning and teaching in our disciplines.

The expression 'scholarship of learning and teaching' may sound like staff-development jargon—but it is useful jargon, which makes two important points about what the PRS-LTSN aims to achieve.

The first point is that the ultimate measure of our success as teachers must be what our students actually *learn*. We may give brilliant performances as teachers, but this does not always translate into brilliant performances by our students. We need to find ways of helping our students to become more responsible for their own learning, rather than treating them as passive recipients of what we teach them.

As it happens, I do not believe that anyone in our disciplines regards their students as mere passive recipients. Nevertheless, there has been relatively little public discussion of how to improve student learning in cost-effective ways, other than improving our performance as transmitters of information. One of the functions of the PRS-LTSN will be to promote research into, and discussion of, innovative ways in which student learning can be improved by what we do behind the scenes.

The second point is that we have inherited a culture in which publications count as genuine research only if they refer to previous literature on the subject. Our aim is to raise the status of research into teaching, so that it is on a par with traditional areas of research. This will be possible only if there is a body of literature to which authors can refer. Our website will provide a digest of existing literature, and the *PRS-LTSN Journal* will supply a growing resource of materials on which future authors can build.

The RAE panels have recognised that pedagogical issues qualify as a legitimate area of research, but publications will not have equal status unless they display scholarship. The PRS-LTSN will fill this gap.

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Most of what has been written about the scholarship of learning and teaching has been *generic*—that is to say, it is restricted to issues which are common to all disciplines. One of the distinctive features of the LTSN is that its focus is *subject-specific*, which is why there are 24 different subject centres. We believe that teachers in the disciplines covered by the PRS-LTSN will be much more interested in nitty-gritty issues to do with what they actually teach—and this is what we shall concentrate on.

The other distinctive feature of the PRS-LTSN, along with the rest of the network, is that it is bottom-up rather than top-down. That is to say, we are not here to tell you how to teach, but to help you to exchange ideas about common problems, and examples of good practice.

The *PRS-LTSN Journal* is *your* journal, and the PRS-LTSN website is *your* website. Please contribute to both, so that we can establish a genuine scholarship of learning and teaching in our disciplines in the UK. Although we are funded only for UK activities, we have an international remit, and anyone is welcome to participate.

With your help, we look forward to seeing the *PRS-LTSN Journal* as the main international resource for the scholarship of learning and teaching in Philosophical and Religious Studies.

Visit the PRS-LTSN website at:

http://www.prs-ltsn.leeds.ac.uk

for up-to-date articles and discussion on the scholarship of learning and teaching in Philosophy, Theology, Religious Studies, History of Science (including the History of Medicine and Technology) and Philosophy of Science.

The LTSN and the PRS-LTSN

LTSN

The Learning and Teaching Support Network is a network of 24 subject centres based in higher education institutions throughout the UK. It is funded by the four HE funding bodies in England, Scotland, Wales and Northern Ireland. It aims to promote high quality learning and teaching through development and transfer of successful practice in all subject disciplines.

Activities

The LTSN's core activities are:

- setting up, supporting and developing learning and teaching networks;
- promoting and sharing successful practice in learning, teaching and assessment;
- facilitating the transfer of knowledge between users, experts, developers and innovators.

The LTSN Generic Centre

There are also learning and teaching issues and practices common to all subjects which are disseminated and promoted by the LTSN Generic Centre, located in York. The Generic Centre will become a major national source of information and expertise on learning and teaching practices. It assists the subject centres, and HE providers generally, to make the best use of a wide range of approaches to learning and teaching, drawing on the expertise already present in HE.
Please visit their website for more information:

http://www.ltsn.ac.uk

The PRS-LTSN

The Philosophical and Religious Studies Subject Centre is based at the University of Leeds, and at a partner site at the University of Wales, Lampeter and covers the disciplines of Philosophy, Philosophy of Science, History of Science (including the History of Medicine and Technology), Theology, and Religious Studies. The name 'Philosophical and Religious Studies' is merely an abbreviation for these subject areas.

Activities

The PRS-LTSN is at the heart of a change in academic culture to foster the discussion of subject-specific issues in learning and teaching. The Subject Centre staff are engaged in promoting the network exchange of successful professional practice, and the encouragement of others to confer and publish about subject-specific learning and teaching issues so that research and publication in the scholarship of teaching is accepted part of academic life. It is worth noting that publications in learning and teaching are acceptable as submissions towards any future RAE.

Departmental Visits

In the next few months we shall be contacting your nominated departmental representative or Head of Department/School about our visiting your department to see how we might help, and also to gather information about already existing successful practice. Ask your PRS-LTSN rep (or HoD) for details.

The website, **http://www.prs-ltsn.leeds.ac.uk**

Alongside this new journal, burgeoning networks, the workshops and events (described below) there is an ever-growing and successful website covering a range of materials in all the PRS subject areas with articles, discussion pieces and reviews of books, journals and conference papers, software and on-line teaching materials; challenging pieces in our 'Contentions' section to stimulate debate; and all the Centre's news.

Pay the website a visit today to find out how your expertise can help others and how you can gain from networking with other successful practitioners.

Other Subject Centres

The other subject centres are listed below:

Art, Design and Communication
University of Brighton
http://www.bton.ac.uk/adc-ltsn

Bioscience
University of Leeds
http://bio.ltsn.ac.uk

Built Environment
Cardiff University
http://cebe.cf.ac.uk

Business Management and Accountancy (BEST)
University of East Anglia
http://www.business.ltsn.ac.uk

Economics
University of Bristol
http://www.economics.ltsn.ac.uk

Education (ESCALATE)
University of Nottingham
http://www.escalate.ac.uk

Engineering
Loughborough University
http://www.ltsneng.ac.uk

English
Royal Holloway, University of London
http://www.rhul.ac.uk/ltsn/english

Geography, Earth and Environmental Sciences
University of Plymouth
http://www.gees.ac.uk

Health Sciences and Practice
King's College London
http://www.health.ltsn.ac.uk

History, Classics and Archaeology
University of Glasgow
http://www.hca.ltsn.ac.uk

Hospitality, Leisure, Sport and Tourism
Oxford Brookes University
http://www.brookes.ac.uk/ltsn

Information and Computer Sciences
University of Ulster
http://www.ics.ltsn.ac.uk

Languages, Linguistics and Area Studies
University of Southampton
http://www.lang.ltsn.ac.uk

Law (UK Centre for Legal Education)
University of Warwick
http://www.ukcle.ac.uk

Materials
University of Liverpool
http://www.materials.ac.uk

Maths, Stats and OR Network
University of Birmingham
http://ltsn.mathstore.ac.uk

Medicine, Dentistry and Veterinary Medicine
University of Newcastle
http://www.ltsn-01.ac.uk

Performing Arts (PALATINE)
Lancaster University
http://www.lancs.ac.uk/palatine

Physical Sciences
University of Hull
http://www.physsci.ltsn.ac.uk

Psychology
University of York
http://www.psychology.ltsn.ac.uk

Sociology, Anthropology and Politics
University of Birmingham
http://www.c-sap.bham.ac.uk

Social Policy and Social Work (SWAP)
University of Southampton
http://www.swap.ac.uk

The LTSN Generic Centre

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Genesis 3
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QAA Benchmarking Project

The Generic Centre of the LTSN has embarked on a project called:

Research into subject benchmarking and its impact on academic practice: helping subject communities understand and make effective use of benchmarking information.

As part of this project, it is commissioning a number of articles covering a range of disciplines, on the theme 'Interpreting and Using Subject Benchmarking Information'. The PRS-LTSN has been selected to directly commission four articles to cover the subject areas:

- Philosophy
- Theology and Religious Studies
- Philosophy or Theology and Religious Studies from a contrasting institution, so that we can compare the impact on pre-1992 and post-1992 institutions;
- Philosophy/History of Science, so we can evaluate the problems of using more than one benchmarking statement (Philosophy, History, and a possible range of sciences).

Articles should be up to 6000 words in length, and an honorarium of £500 will be paid to the author, subject to acceptance by the Project Manager. The deadline for submission is the end of September 2001.

For further information on how to apply for a commission contact us at:
enquiries@prs-ltsn.leeds.ac.uk
or write to:

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Workshops, Events and Networks

In the last year there have been a number of successful workshops and events either organised directly by, or supported by the PRS-LTSN. These have included:

- Workshop on Teaching History of Science, Technology and Medicine (**report on pp. 61-76**)
- First Colloquium on Learning and Teaching in Theology and Religious Studies
- Workshop on Teaching Philosophy of Science
- Workshop on Teaching New Testament Greek
- Colloquium on E-Learning and Widening Access in PRS

From all these organised events have arisen ongoing **networks** of enthusiastic practitioners who take the discussion forward. Those taking part are not overburden in terms of the time they contribute to the network—their input is their choice. However, all are now benefiting from the ongoing dialogue. The forum is open to all interested parties and everyone is encouraged to join in. **Just email us to ask to join a discussion email list:**

enquiries@prs-ltsn.leeds.ac.uk

In the near future we will have on-line discussion lists available via the PRS-LTSN website.

Forthcoming events:

- 21st September 2001 – Regional Workshop for Part-time Postgraduate Teachers in Philosophy, University of Durham
- 27/28th October 2001 – Second Colloquium on Learning Teaching in Theology and Religious Studies

For further information, visit the website or email us at the address above.

Organising an Event

If you wish to organise a workshop, colloquium or event of your own then there are number of ways that we may be able to help with setting up, advertising and co-ordinating it (and in many cases funding may be available—just ask). We will also arrange ongoing networks to allow detailed discussion of issues identified during you event that need thought and analysis that is more detailed and to make future meetings easier to arrange.

A recent successful event that the PRS-LTSN supported financially was a **Workshop for Teaching South Asian Religious Traditions** at the University of Manchester's Centre for Applied South Asian Studies:

http://www.casas.org.uk

Database

We maintain the most up-to-date database of teachers in the subject areas we cover in the UK and can quickly identify practitioners with similar interests to your own.[1]

Looking for a way of helping students to use internet resources appropriately?

Visit our Virtual Training Suite link page:

http://www.prs-ltsn.leeds.ac.uk/tutorials/index.html

[1] Under the Data Protection Act we may not release your information to a third party without your express permission.

Articles and Discussion

Teaching Philosophy and HPS to Science Students[1]

Geoffrey Cantor

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University of Leeds

1. The problem introduced

Most teaching at university level is directed to the specific subject in which the student will graduate, which is usually one of the subjects that the student has studied at A-level. This generalisation needs to be expanded to include the proliferation of two-subject degree schemes, but their existence does not significantly affect the following argument. The present discussion concentrates on those students whose backgrounds do not prepare them adequately for the subject(s) they study at university, in particular those students who undertake some courses in the humanities but whose training has been largely or exclusively in the sciences.[2] A few students attempt this switch when they enter university. For example, undergraduates who possess A-levels entirely in the sciences who enter a course of study in, say, Philosophy, or perhaps a two-subject degree in Philosophy and Physics or HPS and Biology—such combinations being well-established at Leeds. Moreover, many science students register for an occasional module in the humanities; since this is a far more familiar pattern than a complete change from the sciences to the humanities, it will be my main concern in this essay. Thus many Leeds' students who proceed to a science degree may take just one or two modules in either Philosophy or HPS, either as options or electives. For example,

a significant number of science students enrol on one or more of our first-level Philosophy or HPS modules;

[1] This piece was written whilst the author was employed by the PRS-LTSN before July 2000.

[2] Although I shall refer to science students my argument also applies to most engineering students.

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the level 2 module "History and Philosophy of Physics" is a requirement for Theoretical Physics students and an option for other Physics students;

as part the degree schemes in both engineering and computing students can take modules dealing with ethical issues relating to their main subject.

In this discussion I shall identify some of the problems facing science students who take occasional modules in the humanities as part of their degree. In the fourth section I shall offer a few tentative suggestions how you might adapt your teaching to such science students. Although I shall be concerned primarily with the experience of science students taking humanities courses, it should also be noted that the teaching situation may be further complicated by classes being 'mixed,' in the sense that students from very different backgrounds attend identical lectures and tutorials. Thus, in a first-year Philosophy class we may find a Chemistry major sitting next to a single-subject Philosopher and a student taking a Joint-Honours scheme in English and French.

At the outset I wish to reject the crude stereotype that portrays science students as illiterate and culturally inept. By contrast, I am greatly impressed by a small proportion of science and engineering students who possess broad skills and interests and who experience little difficulty in engaging a humanities topic. They are intelligent, highly-motivated and possess enquiring minds—such students usually thrive when taking an introductory Philosophy or HPS class and, I expect, they would flourish if offered any intellectually-challenging topic. There is also a rather larger group of science students who studied mixed A-levels at school and will therefore have been exposed to at least one arts, humanities or social science subject alongside their science A-levels. One of the pleasing trends over the past decade or two has been the increase in the proportion of such students; the figure now stands at about 10%.

However, many science students—doubtless the majority—do not possess any significant educational experience outside the sciences and they usually encounter substantial difficulties when they take their first—and often only—module in the humanities. In the next section I shall try to identify some of these difficulties. I can cite my own experience as supporting evidence, since my A-levels were entirely in science subjects. Indeed, when at school I shared with many of my peers the (utterly depressing) view that science students are innately superior to

those taking humanities subjects, and that the sciences hold the key to the future. Only after obtaining a PhD in Physics did I change direction and commence working in the History and Philosophy of Science. I found that the transition from Physics to HPS both difficult and painful. During my teaching career I have been particularly aware that many science students encounter not dissimilar difficulties and I will now attempt to identify the main ones.

2. What are the differences?

We are familiar with the significant differences that exist between the skills and intellectual demands of different academic subjects. Although such differences are often apparent between subjects within a single faculty, they tend to be far more marked when we compare subjects from different continents on the academic map. For example, although departments of English Literature make far greater demands of their students to appreciate and develop skills connected with literary style than do Philosophy departments, yet science departments place very little stress on essay skills, although here too there are significant variations. Thus Biology students are usually expected to write a small number of essays during their undergraduate studies and even submit essays for degree assessment. By contrast, Physics students are rarely—if ever—required to write an essay for a Physics module.

Such differences do not, of course, appear only at university level but are to a larger extent formed and fostered at school. Here we see similar patterns, the most obvious being the different experience and preparation in essay-writing skills among those taking humanities subjects when compared with their peers in the sciences. But there is another significant factor that operates at school level, although it is becoming less influential. This is the arts-science divide and its implications for student choice at GCSE and A-level. While the number of students taking mixed A-levels is on the increase (as noted above), the 'Two Cultures' mentality is still prevalent in most schools. Limitations imposed by the timetable and the competing demands of the various departments[3] often force pupils to confront the diverging paths offered by the sciences and the humanities as one of their main choices. (I won't introduce the social science options since they fall outside the scope of

[3] Although the information I possess is limited to a very few schools, I know of cases where pupils have been misinformed by teachers steering them to a certain set of subjects – e.g. 'If you are going to take Physics you will also have to take Maths and Chemistry'. Also poaching is not unknown.

this essay.) Barriers are erected between these areas at an early and formative stage in a student's career. One implication is that many young people see themselves as *either* science *or* humanities students and thereby accept the 'Two Cultures' thesis. They often become increasingly unwilling to engage subjects on the other side of the great divide.

While schools play an important role in shaping attitudes to the various subject areas, other more basic factors already in play may receive confirmation and expression at school. Each pupil brings a set of attitudes that are framed by background, experience and personality. Thus, for example, having a scientist in the family may impel a student towards (or away from) studying the sciences at school and university. Again, only the exceptional student from a home where books are lacking is likely to be strongly attracted to English Literature. Public images of the scientist may also exert an influence; for example, it has been argued that such negative images as the male white-coated nerd frequently portrayed in cartoons deter students—particularly women—from science. Less easy to summarise are influence of personal factors, most obviously the student's social class and gender. As Liam Hudson and others have argued, there may be psychological reasons why women veer away from science and towards humanities subjects, while male students find science much more congenial. However, such gender stereotypes have been severely challenged over the past twenty years and an increasing number of women are now taking science A-levels and science courses at university. Nevertheless, some science subjects—most notably Physics and Chemistry—still recruit far fewer women than men and thus remain the bastions of gender bias. Whatever the reasons, many people feel strongly impelled towards the sciences and against the humanities.

The point of this detour has been to argue that most students who enter university possess a strong predilection for some subjects and against others. In particular, science students often perceive themselves as having chosen science and thereby positively rejected humanities subjects. Moreover, whatever antipathy they possess towards the humanities is accentuated by their lack of the necessary experience, knowledge and skills to operate in an area in which they have not been trained. In a strong sense students are self-selected in opting to choose the sciences over the humanities or vice versa. If this is so then we need to explore the situation facing a science student who—out of choice or necessity—finds him or herself taking a humanities class. In the final

section I shall address the question facing the teacher of how to engage such students in a Philosophy or HPS course.

3. Strengths and weaknesses

A) **Lack of Confidence**. The foremost problem faced by many science students taking humanities modules is a lack of confidence. In taking such modules they are aware that they are crossing the great divide that separates the "Two Cultures". For a minority this can be a liberating experience because they feel confident in engaging topics in which they possess some background experience but have been forced largely to ignore in favour of their highly focused studies in science. There are also a few science students who rebel against their scientific training and are keen to move to the humanities because they think it offers a more congenial—and possibly less-demanding—alternative. This latter group poses particular difficulties since it contains some who adapt well to the new mode of study while others founder and become increasingly disillusioned with the whole university experience.

However for the majority the experience of taking a humanities module proves a difficult experience that accentuates their lack of confidence. Perhaps realising that they lack an adequate background in the new subject they may feel disoriented, resentful and suspicious of the lecturer and the intellectual fare offered. Trying to appear 'cool' to their peers some members of the class may pose as uninterested—exhibiting body language, perhaps a slouch, which conveys their distance from the proceedings. Some firmly believe in the intellectual superiority of science and thus consider the humanities to be 'a doddle'.[4] Such aggressive attitudes arise from a lack of confidence in moving from the safe and familiar study of science to an unfamiliar form of education that has often been ridiculed and dismissed by their peers and sometimes by their teachers.

Science students are being trained to enter the scientific community through the standard school and university courses leading from GCSEs and A-levels to the degree of BSc and a career in science via a research degree. Although there has been much discussion of how science can provide a broad liberal education that would benefit those who do not opt for a career in science, the curriculum is usually directed to training the relatively small proportion of students who will enter

[4] I remember a physicist friend turning over in his hands a PhD thesis on French Literature written by his housemate. 'Mere words', he declared, implying that writing a PhD in Physics was, by comparison, very demanding and proper man's work.

scientific research in universities or industry. It is therefore highly oriented to providing such knowledge and skills that will be relevant for a career in research. The main forms of teaching are lectures (which provides the basic knowledge), examples classes (for problem solving) and laboratory classes.

Implicitly—rather than explicitly—most science students imbibe attitudes about their science, which they may contrast with the humanities. Very rarely are such students offered the opportunity to reflect on the nature of science or its impact on society, such diversions usually being clearly labelled as extra-curricular activities that do not impinge on the serious business of science education. Again, since science lecturers rarely teach these anomalous subjects, students consider them to fall outside the normal domain of science. Thus to take a module in, say, the Philosophy of Science, usually requires students to leave the safety of the science buildings and enter an alien part of the campus there to encounter lecturers whom they do not know from their science courses. All these factors accentuate the divide between the sciences and the humanities and the difficulty that science students may experience in taking a module in an alien area.

In the next few paragraphs I identify some of the skills that science students are often considered to lack. Science students are particularly aware of skills since their training places great emphasis on learning practical skills, ranging from mathematical skills (such as integrating complex equations and drawing graphs) to laboratory practices (e.g. performing a titration or reading the trace on an oscilloscope). Yet the extensive knowledge and skills that they possess may not be appropriate in, say, a Philosophy course and they readily appreciate that other skills—ones which they do not possess—are required in order to participate fully and gain a high mark.

B) **Problems with reading**. Although some scientists are avid—and wide—readers, many are not. Indeed, certain science subjects—especially Physics and Chemistry—may be particularly attractive to students with good numerical skills but who feel less competent with words. They may also possess a significantly lower level of literary than non-science students and/or a slow reading speed. However, Philosophy, HPS and most other humanities subjects require students to immerse themselves in books. The prospect of reading a book from cover to cover over a few days will be perceived as impossible by many science students, especially those with low reading speeds, but be accepted as perfectly

normal by a student from an English Literature background. Indeed, the prospect of reading large quantities of material may prove very threatening to the science student who has been trained to deal with mathematical formulae and scientific arguments but who has not been taught how to evaluate a text.

C) **Note-taking**. The student's experience of note-taking will depend on the particular science studied. If we take Physics as an extreme case, then the student will have little experience beyond taking down formulae or having these reproduced on a handout. The lecturer in Philosophy or HPS can—perhaps should—provide handouts containing the main steps in the argument and definitions of any technical terms. However, science students often face the difficulty of knowing what to do in lectures. Should they take down every point made by the lecturer, or should they completely forego note-taking? Their experience provides little guidance since they are not used to the types of narrative deployed by, say, lecturers in Philosophy. They are also unclear about which points made by the lecturer are important.

D) **Inexperience of writing essays**. Again this involves skills that many science students find unfamiliar, difficult and intimidating. Indeed, their decision to pursue a science subject may be explicitly linked to difficulties in producing pieces of extended writing. Thus when taking humanities courses science students often initially enquire about the form of assessment and are apt to express reservations when told that one or more pieces or written work are required. Not only will they have to engage a subject in which they have little or no experience, but they will be required to produce written work, often in the form of an essay. The prospect of essay writing may evoke fear and uncertainty since many science students will have no conception of what is involved or how to begin the process of essay writing.

E) **Lack of verbal skills**. In science education little emphasis is placed on verbal skills. In some science subjects—most notably Physics—tutorials are principally classes devoted to problem-solving where the exchange between tutor and tutee is confined to mathematical procedures with a minimum of verbal intercourse. (As an undergraduate I remember having just two such tutorials over a three-year period and I succeeded in remaining utterly silent on both sessions.) Science students often lack the confidence to speak in public and are also unfamiliar with

the pedagogic norms in humanities departments. For example, one difficulty often encountered by science students in tutorials (but also in their reading and written work) is the open-ended nature of the discussion and the tendency to explore the strengths and weaknesses of a philosophical position. The 'game' played in a Philosophy tutorial may therefore seem alien to students who have no comparable experience in their science courses.

F) Although the preceding paragraphs have identified some of the problems that science students may face when they take a module in the humanities, they also possess a number of strengths that the lecturer should appreciate and capitalise upon. The obvious similarities between mathematics and logic make the latter particularly attractive to those science students with a good grounding in mathematics. Science students are also generally well-disciplined and they therefore appreciate an intellectually demanding course in Philosophy or HPS. Many also have enquiring minds that can potentially be harnessed to engaging the problems raised in Philosophy or HPS. The stronger science students are also usually comfortable with ideas and can be encouraged to discuss them intelligently. Again, their first-hand experience of science should provide them with some of the necessary knowledge and motivation for studying the History of Science or the Philosophy of Science—although they also need to appreciate that their science training alone is insufficient and must be willingly coupled to other disciplines.

Even those science students who possess the above strengths often experience difficulty appreciating the significance of philosophical, historical and social problems that they encounter in Philosophy or HPS modules. As Thomas Kuhn rightly noted in his influential *Structure of Scientific Revolutions*, problem solving is a major part of a scientist's training. But the kinds of problem they encounter usually possess definite answers. Given this aspect of their training, science students tend to be pragmatists who may experience difficulty appreciating the significance of open-ended philosophical problems. In their science classes they will have become used to ascertaining the solutions to problems and may therefore become frustrated by philosophical discussion in which an issue is aired from various different perspectives with no clear resolution. For example, the arguments over realism/antirealism do not lead to any obvious solution but to a long series of arguments and counter-arguments. Some science students will lose patience with such discussions. The lecturer should therefore not

only be aware that the students' background lies in another discipline but some attempt should be made to convey the very different norms governing Philosophy and HPS.

4. Action points

It is not my intention to provide a checklist of actions that will overcome the difficulties discussed above. There is no straightforward solution; indeed, the main aim of this essay is to make the reader aware of these difficulties, especially if the reader has been wholly trained in the humanities and possesses no familiarity with the kind of education that science students have experienced. Yet, in order to generate further discussion I shall mention some of the procedures that my colleagues and I have employed.

Overcoming a lack of confidence may be difficult to achieve, but lecturers have some responsibility to build bridges with science students. While manifesting an enthusiasm for his or her own subject the lecturer should not appear unduly critical or dismissive of science or talk down to science students.[5] As emphasised above, science students often possess considerably potential for pursuing Philosophy or HPS, but that potential needs to be nurtured. Compared with some other branches of Philosophy, the Philosophy of Science offers many opportunities for the lecturer to make connections with aspects of science with which the students will be familiar from their science lectures; e.g. examples can be used that they will have encountered in their science studies. The barrier dividing the 'Two Cultures' can be breached by showing that science itself raises a host of philosophical (and historical) problems that many leading scientists have recognised as important. Contrary to the rather limited definition of science implicitly propagated by many science departments, the Philosophy (or HPS) lecturer can accentuate the continuities between science and the broader issues under discussion.

Although it is rare to find joint appointments between Philosophy and science departments, there may be opportunities for interaction so that the Philosophy (of HPS) lecturer is not a complete stranger to the students. A few years ago I co-taught a module on the History and Philosophy of Physics with a physicist who was working on a PhD in HPS and was well-known to the Physics students. This proved

[5] I know of one case where a science department refused to allow a particular lecturer to teach their students since he was thought to be stridently anti-science.

very useful historical and philosophical topics were made far mare acceptable by the presence of this familiar physicist.

Numerous strategies can be suggested to help science students—and other students as well—with any problems they may experience in reading, note-taking, writing and speaking. The reader will be able to add considerably to the few suggestions that follow.

Students should be encouraged to keep their own records containing précis of lectures and readings. They should be encouraged to highlight what they consider to be important in their own copies of texts and also write down the key steps in an argument.

Since science students are not trained to read extensive passages, the lecturer should evaluate carefully the quantity of reading material set and determine what can reasonably be internalised in the available time. It is preferable to assign a short and demanding passage that needs to be read carefully and analysed closely than to assign an extensive piece that the unconfident student will simply ignore. It may also help to provide the science student with a few lead questions that can help direct her/his reading so as to concentrate on the main issues expressed in the text.

The lecturer should offer adequate tips about how to write an essay—how it should be constructed, what the marker is looking for, etc. I usually provide students a one page hand-out containing such advice and also in a tutorial give them a sheet containing three very brief answers to a specific question; one answer being worth a first, one a fail and the other gaining a median mark. By comparing the strengths and weaknesses of mock answers students can readily appreciate some of the main pointers to a good essay. I also invite students to submit draft essays so that I can provide detailed and personal feedback, often supplemented by a meeting at which I try to boost the student's confidence while showing how the essay might be improved.

One issue raised at the outset was the particular problems that arise when a lecturer is teaching a class comprised of both science and humanities students. The former should find the scientific content unproblematic, while the latter will be more used to the norms of Philosophy/HPS (including essay-writing, etc.). It is generally appropriate to acknowledge at the outset that each group brings its own strengths but that each has something to learn from the other. In preparing lectures I usually try to make sure that neither group is disadvantaged but I may add a brief discussion of, say, some aspect of Newtonian mechanics that will not be known by the humanities students but should be familiar to the scientists.

Another difficulty in teaching a 'mixed' class is the different skills possessed by the two constituencies, especially the scientists' relative lack of essay-writing skills. There may be an argument for assessing the two groups by different methods, but that proposal may prove very difficult to justify. One partial resolution is to provide a range of essay questions that will enable both the science and the humanities student to find one or more questions with which they feel comfortable.

5. Concluding reflection

I want to end this section—and the whole essay—with a caveat. The position I have developed explores the difficulties that many science students encounter in engaging humanities courses and suggests that the lecturer takes due cognisance of these so as to try to ameliorate these difficulties. However, Philosophy and HPS are critical disciplines; critical both of their own content but also of the disciplines they analyse. In trying to make themselves congenial to the science student they must not treat science as beyond reproach, since one of the aims of a course in, say, Philosophy of Science must be to make the science student more self-aware and able to evaluate science critically. Given that science students—and scientists—usually dislike outsiders casting a critical spotlight on science since it feeds the anti-science movement, lecturers will have to tread a fine line between gaining the confidence of students and maintaining an open and critical stance towards specific aspects of science.

The Vision of God and its Impact on the Educational Process

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In the educational process the authority and power of the teacher are crucial factors. So whatever religion one adheres to, the image of God is of fundamental importance for one's pedagogical approach. Hanan A. Alexander has recently explored the significance of this for Judaism in his article 'God as Teacher: Jewish Reflections on a Theology of Pedagogy' (*Journal of Beliefs and Values* Vol. 22(1) April 2001, pp. 5-17)[1]. First, I will outline his main contentions and then consider how they may be relevant to or in need of adjustment for a Christian theology of pedagogy.

I A Jewish Perspective

In Judaism God is the ultimate role model—a holy God demands a holy people—a moral God requires Abraham to adopt his moral code. More significantly, the rabbis envisioned God in their own image as a 'talmid hakham', i.e. both as student and teacher. God in midrashic Judaism is the eternal student who learns with Israel. The creator even studies the halakhah. The rabbinic teacher represents God both symbolically, by imitating Divine behaviour, and pedagogically, by leading students to understand and embrace Divine teachings. The tradition received at Sinai is Torah, which literally means instruction or teaching, thus indicating a pedagogic aspect of the divine personality. Even the 'Shema' (Deuteronomy 6:4-8) has an educational orientation. The prescribed love of God requires taking to heart his words, impressing them upon one's children, reciting them, binding them as a sign on your person and your house. To adhere to the words of the 'Shema' is not only to follow

[1] For further detail see www.tandf.co.uk/journals

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Divine teaching, but also to imitate God as teacher. All this is predicated upon God's deliverance, redemption from Egypt and revelation at Sinai.

Divine Pedagogy

Two aspects of the Divine pedagogy are noteworthy. *First it is dialogical.* Children's questions are central in remembering the Exodus and Passover. The question and answer format appears in Exodus: "And when your children ask you what do you mean by this rite? you shall say …" (12:26-27). The asking of questions became so essential that the liturgy for Passover eve was built around four mandatory questions following the Exodus pattern. The dialogue of the Passover Seder is illustrative of the entire rabbinic pedagogic tradition, and the whole of the Talmud is built around the give and take of asking questions and positing answers among students and teachers. Indeed dialogue is essential to the Divine-human encounter. There are biblical examples of this dialogical pedagogy, e.g., when God asks Adam in the Garden of Eden 'Where are you?' or when he asks Cain, 'Where is your brother Abel?' Moreover, this dialogue is not one sided. Humans can also initiate it—both Abraham and Moses question God and God may even change his mind as a result.

Secondly *Divine pedagogy is not only dialogical, it is also relational.* The command to love God should be understood as responding to God's prior caring like that of a parent or teacher. The redemption and revelation of God were unsolicited acts of love that preceded the expectation of reciprocity. God's love is neither calculated nor utilitarian but unconditional. 'It is not because you are the most numerous of peoples that the Lord set his heart on you and chose you, indeed you are the smallest of peoples.' (Deut.7:7-8) God's concern for Israel is demonstrated by the gift of Torah; in response Israel is obliged to receive that gift and reciprocate by adhering to Divine instruction. This relational aspect is fundamental to the understanding of authority and obligation. Divine authority is not coercive as is often supposed. God does not force the Israelites to obey—to enforce compliance would deny the very idea of Torah as both law and instruction since the free will of those called to observe it is presupposed in, and essential to, a norm or any teaching. Coercive power and moral authority should be clearly distinguished. Power works from the outside in, but authority works from the inside out. Exercising coercive power is a good way to lose authority—to engage in power struggles with children or students results in certain failure. When we resort to coercive power, we leave children

with little choice but to rebel in order to exercise their own autonomy and forge their own identities. Since it is cultivated from within, moral authority is fostered by relationships in which feelings are shaped by the caring of one person for another, even though the relation may be asymmetric as with God and Israel. God's caring for Israel does not call for an equivalent act of caring toward God by Israel in return. It calls for another appropriate response, that of the one-cared-for. In the fullness of a caring relation the child cared-for feels free to respond as herself, to create, to follow her interest without fear or anxiety. Her response is thus not precisely predictable, nor even visibly related to the input of the carer but will represent a happy outgrowth in genuine reciprocity as one who feels free.

The emphasis on dialogue and questioning noted above rules out any mere blind or unthinking acceptance of Torah, antithetical to the very meaning of divine authority as conceived here. For a teaching to become mine, I must understand it and be able to interpret and apply it to my situation. This does not mean that there is no role for rote learning in Divine pedagogy. The 'Shema' states clearly that its precepts are to be continually recited even if they are not understood. But in the end mechanical or rote learning accomplished by means of training can only be justified when it leads to teaching and thus participates in the process of moral development. Indeed if training continues when teaching is in order it can become indoctrination; instead of empowering students with the capacity to act independently on the basis of their own understanding, in such a case, unintelligent and mechanical responses continue to be required thus thwarting moral development.

The Implications of God as Student and Teacher

If we take seriously the metaphor of God as teacher this can be understood as the basis for a significant tradition in which to ground the norms of teaching. God in this theology is the ultimate role model who enacts in deeds the words of Torah. The divine pedagogy is not didactic but dialogical, encouraging questions, embracing challenges and permitting discovery in a caring relationship with students in which instruction in a vision of the good life is lovingly offered. This is the God of Abraham, Isaac and Jacob (and Sarah, Rebecca, Rachel and Leah), not an abstract concept but a living being, not perfect but a God who learns and teaches. This contrasts strongly with Anselm's description of 'that than which a greater cannot be conceived', involving absolutes such as omniscience, omnipotence, omnipresence etc. If God

as teacher is a moral agent, moral agency requires fallibility. To take one example, if God were all-knowing then it would be impossible for students to discover anything new. There would be no reason to challenge or question God as teacher because it would be supposed that God had all the truth already. Questions could only be for purposes of clarification, never discovery; and no form of reciprocity would be possible since there is nothing God requires in return from the learner.

If the goal of teaching is to evoke the appropriate response from the one taught and cared for, that is to lead them to discover their best selves—the person one was meant to be—within the communal and moral framework provided by God's Torah, then God as teacher must be a good, not a perfect being, who is able to teach us by example to learn from our mistakes and return to the right path. That we can learn from our mistakes and chart the course of our own lives is probably the most radical of all Jewish ideas. It is a precondition for any coherent account of teaching and learning and should stand at the heart of all educational theory.

II A Response from a Christian Perspective

Despite frequent emphasis in Christianity on its radical newness, much of what has been outlined above is also valid for a Christian theology of pedagogy. The continuity obvious at certain points goes much deeper than is often perceived and what is presumed to be distinctly Christian, on examination proves to be Judeo-Christian. In fact there is little in the previous section that most Christian educationalists could not affirm. I will therefore limit myself to a few brief comments where emphasis may be rather different.

The most significant factor in the Christian vision of God is its Christological focus. In Christian thinking imitating Christ is an adaptation of imitating God. This should be understood in Paul's formula 'imitate me in as much as I imitate Christ'. Christians assume that obedience to Christ's commands and discipleship in accordance with his teaching is in effect the equivalent of adapting life and teaching to God as the ultimate role model. It is not envisaged that there would be conflict between Christ as role model and God as role model. Christians might argue that the mediation of Christ assists conformity to God's will in human terms and clarifies the obligations of believers. It has not always been clear, however, that following Christ is radically different from copying Christ and some traditions have become outmoded and irrelevant because they did not allow their faith to adjust to changing life

patterns. One result of this was a dead orthodoxy with little fresh thinking; another was that a gap opened up between adult believers and their children to whom outmoded answers were presented for acceptance.

In terms of human response, Christianity has not developed fully the dialogical emphasis present in Judaism. This is partly because of an emphasis on Divine sovereignty in the salvation process, which tends to make humans more passive, as if faith and passivity were identical. The Jewish emphasis on faith leading to action, and faith in action might be a useful corrective here; Divine initiative should not be mistakenly regarded as limiting or not requiring active human response. Faith leading to understanding through inquiry is a basic requirement for Christian education.

The Christian emphasis on fulfilment of God's promises through Christ has doubtless given Christians confidence and hope for the future and is an important aspect of Christian belief. Despite this it must be acknowledged that this realized eschatology can and has led to an uncritical complacency with the present state of society, as if individual salvation and security were the answer to all of this world's problems. Another aspect of the above emphasis is that it has resulted in an exaggerated concern with correct doctrines rather than with appropriate actions. Doctrines too can be learned and meaninglessly repeated without proper understanding. Knowledge as abstract truth divorced from life has sometimes dominated in Christian thought due to texts such as 'You shall know the truth and the truth shall make you free' (John 8:32). Christians historically seem to have had difficulty in humbly admitting to limits to their knowledge as well as to their freedom. People who consider they already possess the answer to all ultimate questions make very poor students and have little respect for the educational process, as well as for human freedom generally.

You can submit an article on any topic related to learning and teaching in the subject areas covered by the Philosophical and Religious Studies Subject Centre. It may describe a technique you have experimented with in your own lectures and seminars, or it may be more research orientated towards the very nature of learning and teaching in the light of a particular philosophical or theological position.

Educationally speaking, the great advantage of our contemporary multi-faith world is that we need not be in competition with each other

in the learning process. We can learn from each other's insights and experiences to our mutual advantage. An emphasis upon communal, relational and dialogical aspects of learning in a spirit of open inquiry would seem to be absolutely essential to a good education in the two faiths discussed here. Even though we recognize that our thinking, our culture, and our educational perspectives have been shaped by the particular religious traditions out of which we come, the educational process demands that we learn in and through comparison of differing patterns of thought. This will not lead to one universal norm for education, but it will contribute to true learning and mutual understanding. It may indeed result in an enhanced respect for, and a willingness to critically reconsider, our own educational traditions.

The Special Educational Needs and Disability Act: the Implications for PRS

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Amidst the extensive media coverage of the start of the 2001 election in Britain, it was easy to miss the announcement that the *Special Educational Needs (SEN) and Disability Bill* received Royal Assent on May 11, 2001, becoming an Act.[1] Whereas the *Disability Discrimination Act* (DDA) (1995) previously granted exemptions to educational providers, the new Act now places anti-discrimination at the top of the agenda for further and higher education. Issues surrounding the Act have been an underlying theme of recent work by organisations such as the *National Disability Team*, the *JISC* (Joint Information Systems Committee) funded service *TechDis* (Technology for Disabilities Information Service), and *SKILL* (the National Bureau for Students with Disabilities). Within the wider *LTSN*, a workshop at the LTSN National Conference (March 2001) indicated that this Act would be a key concern for subject centres. At the TechDis launch in London on May 11, 2001, the Act was a central topic of conversation. Generic themes and materials contained within this paper have been drawn from materials disseminated by these organisations at conferences and seminars, and are discussed with particular reference to the needs of the PRS constituency.

The Special Educational Needs (SEN) and Disability Act (henceforth referred to as 'the Act') raises particular issues for the PRS community, and questions of how much responsibility for implementation rests with institutions, departments and individual lecturers. Some of the issues are generic, and some are subject specific. Notions of liability have to be addressed, in relation to resource provision, pedagogy, inclusiveness, technology, and adjustments/integration into current practice. The Act suggests that, in

[1] The Special Educational Needs and Disability Bill was published on-line by HMSO: http://www.parliament.the-stationeryoffice.co.uk/pa/ld200001/ldbills/003/2001003.htm#aofs

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some higher educational contexts, there may need to be a cultural shift towards proactive provision of facilities and training to incorporate the diverse needs of students, thus widening participation and the range of abilities within the class setting. There are specific PRS concerns as well, relating to traditional delivery methods, access to texts, participation in seminars, and the moral and ethical agendas associated with special educational needs.

Key areas of the Act—which covers all publicly funded higher and further educational institutions in England, Scotland and Wales (not Northern Ireland) together with other 'designated' institutions—make it unlawful to discriminate in admissions, the provision of student services, and exclusions.[2] There are, however, some interesting areas in which the Act will not be enforceable because its definition of 'disability' is based around the DDA:

> The new Act is an amendment to the existing Disability Discrimination Act 1995 (DDA), and therefore only protects people who are defined as disabled according to that legislation. This is not ideal, because the definition of disability in the DDA is based on an individual's ability to carry out 'normal day-to-day' activities. So, for example, 'inability to concentrate on a task requiring application over several hours' is not considered disabling, because concentration over a long period, however common for students taking exams, is not considered to be a 'normal' day-to-day activity. It seems likely, therefore, that there will be a number of people who will not be able to use the new legislation. However, many of these students will continue to be provided for by the support systems within their institutions, and will continue to be eligible for Disabled Students' Allowances and other assistance.[3]

This means that 'less severe' forms of dyslexia and abilities are not covered by the Act, if a person can undertake day-to-day activities, and that it is up to the discretion of the institution to provide appropriate support. In PRS, this may have implications for assessing and providing support for 'dyslexic' students in examinations, and through the facilitation of improved text access. The DDA also raises some

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[2] Government information on Disability legislation can be found at http://www.disability.gov.uk/

[3] SKILL, National Bureau for Students with Disabilities, Sophie Corlett, "Special Educational Needs and Disability Bill", 15th May 2001, http://www.skill.org.uk/SEN_Disability.htm
Corlett's contribution to the TechDis launch provided several themes for this current paper.

interesting concerns relating to institutional and departmental definitions of 'disability', and the qualifications of those defining the term. During the recent JISC conference attended by the author, a delegate noted that the definition had been written by 'normal' people, and that the Disability Rights Commission needed to be lobbied in order that the definition was more responsive to 'disabled' communities' and individuals' understandings of the term.

PRS practitioners may be concerned that the Act will be an imposition, rather than a useful tool to facilitate wider access and improved inclusive educational standards for all. There are, however, some 'justifications' for discrimination, and the Act is not a manifesto for so-called political correctness. The maintenance of academic standards is one area of particular concern within PRS, and the Act seems to take account of this:

> Less favourable treatment of a person is justified if it is necessary in order to maintain (a) academic standards; or (b) standards of another prescribed kind.[4]

Some educational areas require specific skills or standards, and when an individual has substantial barriers that mean that these skills or standards cannot be met, there can be confusion as to whether preventing that individual participating in a course is tantamount to discrimination. The Act may assist students, departments and institutions in clarifying this situation.

The Act demands that educational providers take reasonable steps to ensure that all of their students are not placed at a substantial disadvantage. If a course is inaccessible to all, then the disadvantage to the so-called 'disabled' student is negated. A balance has to be made between facilitating individuals facing specific barriers to learning, and ensuring that standards are not lowered for other students. In PRS, there may be concern that accessible printed transcript notes on a tract or text, designed for 'disabled' students, represent a 'dumbing down', whereas they may in fact improve clarity of a text for all students. Adjustments made to facilitate disabled individuals frequently may benefit the wider student constituency, especially if the PRS practitioner has to reconsider how lecture material (which may have a track record of several years without adjustment) can be redesigned to accommodate a broader

[4] Special Educational Needs and Disability Bill, op. cit., 26:6

student base. Such considerations also influence assessment exercises, such as the QAA.

The Act demands that reasonable adjustments are made to incorporate students. For PRS practitioners, key areas include ensuring that course content is accessible and available in alternative formats, and that materials are available not just as a responsive measure, but in anticipation of future students with special educational needs. However, this raises particular difficulties for PRS practitioners, because it is not always possible to predict the needs of all students with special educational requirements. People with dyslexia and visual impairment have diverse requirements, which it would be impossible to predict.[5] It will be interesting to determine the types of measures that PRS departments are going to have to put in place, to make their courses fully accessible. This may involve some expense, for example in providing special versions of core textual resources. Additional teaching of students with specific requirements may be necessary, but also can cause resentment in the way that it erodes into time that might be spent on other academic activities that can also be integral to departmental development (such as research). Co-ordination and dialogue with institutional Disability Officers (or similar) is likely to intensify as the implementation dates for the Act draw closer.

The Act places emphasis on the institution in many areas, rather than the individual department, as being the legal entity that must resource, monitor, guide and be ultimately responsible for the activities within its departments. Institutions may judge what is 'reasonable' within the Act, in terms of academic standards, financial resources, practicality, health and safety, and the requirements of other students. Institutions are also being given capital funding by their respective government bodies in order that the adjustments required in the implementation of the Act can be made. The institution has a responsibility for the disabled student constituency at large, and the institution must be 'accessible' before a student with special educational requirements necessarily applies to undertake study. In this way, the Act seeks anticipatory strategies by institutions (and departments) to accommodate the broad needs of students. It has been noted that such strategies can be economically more efficient in the long-term, than rapid reactive facilitation of students. For example, the cost of converting a classroom in the short

[5] This is discussed elsewhere on the PRS-LTSN web pages – http://www.prs-ltsn.leeds.ac.uk. For example, see: Gary Bunt, 'Widening Dyslexic Access in PRS' and 'Widening Access in PRS for the Visually Impaired.'

term to accommodate a student with special educational requirements can be very expensive; the short-term availability of technicians, builders and support staff can be prohibitively costly, and special resources themselves can be difficult to obtain. In terms of expense, perhaps the greatest would be the 'worst possible scenario' cost of providing compensation (and legal fees) to a student who was not appropriately facilitated within an institution! The Act offers the means of some conciliation, but also of redress within the County or Sheriff Courts. However, there is a duty for students to disclose their particular needs to an institution in good time, in order that any minor adjustments can be made.

Some PRS practitioner awareness of the implications of this Act is important, especially for departments devising medium- and long-term strategies relating to course development, and methods of assessment. Awareness of funding opportunities for developing appropriate facilities for special educational needs could also be useful to those studying within the department as a whole, as improved facilities can often benefit the wider student constituency (i.e. improved working conditions in class rooms, clearer study materials, accessible computer resources, etc.) The Act itself demonstrates that simply waiting for disabled students to appear, and then facilitating their needs, is not deemed to be an appropriate departmental or institutional strategy. The legislation will come into force on 1st September 2002. There are two exceptions to this implementation:

> The exceptions are reasonable adjustments involving the provision of auxiliary aids and services (such as interpreters etc) which comes into force on 1 September 2003 and the requirement to make physical adjustments which is to be implemented on 1 September 2005.[6]

The Act may seem to some beleaguered and overworked PRS practitioners as yet another piece of legislation that has been sent to try their energy and patience. There can be tangible benefits, however, especially in terms of the quality of the learning and teaching experience that is provided within PRS departments. An early awareness of the Act's needs and requirements is clearly important for departments. There is already a substantial amount of material available on the Internet and elsewhere, which can act as a reliable guide. This can be obtained through the following sources.

[6] SKILL, op. cit.

The National Disability Team

The National Disability Team (NDT), seeks to provide advice, support and guidance based on effective practice in higher education, and "the integration of disability issues into the core business of every higher education institution." The NDT's special focus is improving provision for disabled students in England and Northern Ireland. Based at Coventry University, the NDT provides co-ordination services for forty-nine projects in institutions which have "identified themselves as having little or no existing provision for or experience of supporting disabled students and have designed programmes to rectify this."[7]

National Disability Team
Maurice Foss Building
Coventry University
Priory Street
Coventry CV1 5FB

Telephone: 024 7688 7818
Fax: 024 7688 7812
Web: http://www.natdisteam.ac.uk
Email: natdisteam@coventry.ac.uk

Skill: National Bureau for Students with Disabilities

Skill works closely with government, the higher education funding councils and the higher education institutions in the UK to promote wider opportunities for disabled people. Skill have been particularly active in the drafting of the *QAA Higher Education Code of Practice on Students with Disabilities*, and on discussing the implications of the Disability Discrimination Act.

Skill: National Bureau for Students with Disabilities
Chapter House
18-20 Crucifix Lane
London, SE1 3JW

Voice/text: 020 7450 0620
Fax: 020 7450 0650
Web: http://www.skill.ac.uk

[7] National Disability Team bulletin, Issue One, November 2000

Email: admin@skill.org.uk
Information Service voice: 0800 328 5050 (freephone)
Voice: 020 7657 2337 text: 0800 068 2422 (freetext)
Email: Info@skill.org.uk

TechDis

> TechDis is a new JISC (Joint Information Systems Committee) service set up to provide information and advice to the Further and Higher Education Sectors on the use of new and existing Communication and Information Technologies (CIT), to enhance access to learning and teaching, research and administration activities for students and staff with disabilities.

TechDis aims include the promotion of good practice for students and staff with disabilities, and provision on practical information on accessibility of technologies used in learning, teaching, research and administration. It seeks to co-ordinate a "coherent UK-wide approach to enhancing the use of technology to support students and staff with disabilities."

TechDis
Genesis 3
York Science Park
York YO10 5DQ

Tel: 01904 434792
Web: http://www.techdis.ac.uk
E-mail: Lawrie.Phipps@ltsn.ac.uk

For general technological information and advice, contact:

JISC Technologies Centre

> The Technologies Centre is funded by the Joint Information Systems Committee (JISC) and will work closely with the LTSN. It will investigate, develop and prove the applicability of new technologies in support of the whole education process in higher and further education. These will include technologies relevant to learning and teaching and their integration into wider student support and administrative systems.

Technologies Centre
Learning and Teaching Support Network
Genesis 3

York Science Park
York YO10 5DQ

Tel: 01904 434239
Fax. 01904 434247
Email (Administrator): mike.clarke@ltsn.ac.uk

Joint Information Systems Committee

> The Joint Information Systems Committee (JISC) promotes the innovative application and use of information systems and information technology in Higher and Further education across the UK.

The JISC is funded by the Higher Education Funding Council for England, the Further Education Funding Council, the Scottish Higher Education Funding Council, the Scottish Further Education Funding Council, the Welsh Funding Councils and the Department of Higher and Further Education, Training and Employment.

Tel. 0117 954 6850
Web: http://www.jisc.ac.uk (see Contacts page for several JISC postal addresses)
E-mail assist@jisc.ac.uk

Further discussions on the implications of this Act will be featured on the PRS-LTSN web pages. It is intended to organise a Colloquium on the subject for 2002, and it is planned to facilitate an electronic discussion on this subject during the next year. If you wish to discuss any of the issues raised in this paper, or contribute to the discussion, then please e-mail the author: gary@prs-ltsn.leeds.ac.uk

For more discussion pieces on widening access issues visit the website at:

http://www.prs-ltsn.leeds.ac.uk/access/discussions/index.html

Cultivating Transferable Skills in Philosophy Undergraduates[1]

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> Since the late 1980s there has been a growing emphasis by government upon explicit skills or competencies development alongside the traditional focus on subject-specific content. This has been due to the desire to produce more 'real world' skills, such as oral communication, leadership and decision-making. This has been seen by some academic staff as an attack on the discipline, and there are indeed some dangers. But it has challenged tutors to articulate clearly what skills are developed in students by a humanities or social science degree—what is important in their discipline.
> (Booth and Booth, p. 159)

Universities today no longer have reclusive self-propagation as their principal aim. Especially after the vast expansion of higher education in the 1960s, only a small minority of the new universities' graduates continue their studies to a doctorate and subsequent employment in the same university system as a 'scholar' or, less traditionally, 'researcher' (how the connotations of that first word have changed!). Universities, funded throughout most of the world by state money, now have a more broadly *educational* function, in the sense of being a non-compulsory extension of the primary and secondary school systems, for the non-scholarly elites of the future. Even though subsidised university is now available to many, it is a mark of the new moneyed leisure that so many can and are willing to postpone the beginning of their productive life, especially when their interest in the explicit subject matter of their chosen discipline is often inchoate at best.

As such, university departments now aim to provide far more than the core information that would have been demanded by the future scholars of yesteryear. Indeed, it could be argued that the subject matter

[1] This is a revised version of an essay submitted to the Graduate School of Education at the University of Bristol as a component of the requirements of a postgraduate teacher training certificate. I wish to thank Jeff Goodman for his helpful comments.

is merely a vehicle by which to convey a set of skills deemed important for the future elite, a set that modern business and government cannot afford to spend time developing in their new recruits. The question then arises about the degree to which the university should accept this development and strive more systematically and consistently to cultivate these secondary skills, and the degree to which it should resist in the spirit of its original non-vocational calling.

The contours of this debate are all the more striking in the university subject of philosophy. Philosophy has a rather odd status among the core disciplines of the humanities and social sciences. On the one hand, it could claim to be the oldest, having once encompassed all modern fields of enquiry, including what we now call physics and mathematics; it was simply the 'love of wisdom' where such wisdom pertained to the entire human endeavour. Nowadays, however, the British secondary schools with philosophy in their curriculum can be counted on one hand; and university philosophy departments, must assume their new first-year students to have no formal training, even in argumentative logic or critical thinking. In passing, this dearth is in marked contrast to neighbouring France, where, as far as I know, philosophy is a compulsory subject for every 18-year-old writing the national baccalaureate exam—but then again, the public stereotype of the swinging café philosopher was always more appealing than that of the stuffy Oxbridge don.

At the same time, philosophy claims to be the 'purest' of disciplines, at least in theory, in that it relies far less on palpable, given facts or on ever-developing knowledge and expertise, than any other discipline. The ancient philosophers *may* be studied as a closed and dusty history of who said what when; but the normal approach in the English-speaking world is to see the author in question as *suggesting* something, perhaps only in outline, and indeed suggesting it here and now as if he were a colleague ("I say, Immanuel, you're looking a bit pale, but your arguments are full of life"). And we may then enter a dialogue with him (and very occasionally with *her*), refuting his one move, anticipating his rebuttal, all in a search for some better way to deal with a plethora of persistent mysteries. For the one fact of philosophy, if you like, is that there are no facts, no unimpeachable beliefs, no sacred truths, no infallible prophets; everything can and must be questioned in the name of some elusive *higher* truth. The ancient philosophers are certainly consulted for their opinions, but they will 'inevitably' turn out to be wrong in most of what they claim; after all, while we cannot answer all

their questions we can question all their answers. Nevertheless, they can still be greatly admired for their insights and broad approaches to problems that stymied their predecessors and for their novel way of formulating the problem as a challenge for their successors. But the great problems of philosophy remain essentially the same now as they appeared to Plato, and countless number of ingenious solutions reveal not only just how intractable they are, but how fundamental they are to the way we perceive the world and our place in it.

This could lead to pedantry and self-indulgence; the persistent sophist or sceptic is unlikely to be very popular at the more fashionable parties, and we may again pity the aforementioned Oxbridge don. It is also unlikely that philosophers are very happy people, or very practical people of action. Sometimes their philosophy is downright dangerous, whatever the noble intentions of a theory's progenitor. But here I would stress that nowadays very few philosophy students become professional philosophers, and indeed, it could be said that *real* philosophers, if true to their principles (and perhaps independently wealthy), would eschew the modern academy in preference of sackcloth and sandals for their life of contemplation.

In smaller doses, however, I believe a philosophical training can provide the best sort of education and the best package of transferable skills a state's money can buy. True, a philosopher might not be able to follow the intricacies of international politics or of the dot.com revolution like her more learned fellow-graduates in politics, finance and computer science. But, once the details of this or that problem are acquired independently of any systematic training, it will be the *philosophically-developed* skills that allow her best to *deal with* such a problem—to her own and to society's overall benefit.[2]

[2] Two comments are relevant here, based on my own experience. I have been teaching two tutorials this year, one to a group of first years from other departments taking introductory philosophy as a subsidiary subject, the other a core second year ethics tutorial. Since the first years will not be continuing their study of philosophy, I am particularly sensitive to the skills they are acquiring in the process of learning a content that is not of primary interest to them. With the ethics tutorial, I am *also* sensitive to the another set of skills above and beyond the sets of transferable skills described in this essay: and these are the skills involved in behaving properly and becoming a good person. I am particularly eager to prevent discussions about ethics from 'deteriorating' into abstract metaphysical debates devoid of all application on the students' own lives outside the institution.

The primary and secondary skills

This introduction was important to set the philosophical training in its proper context; for the skills provided are not arbitrary in the sense of being responses to a need generated by this or that human activity, such as the skill to repair a car. Rather, in a broadly Aristotelian conception of human well-being, they are skills that are essentially required by rational human beings to function as such, whatever else they do; they cannot be taught directly as car repair can, so much as cultivated with only a minimal reference to overarching goals; and they are *supremely* 'transferable', to use the odious modern bureaucratic parlance to which philosophers have a more healthy disdain than most. As such the modern tutor has moved on from being merely a subject expert to being a 'learning facilitator' (avaunt, oh rude jargon!), helping students to learn the subject directly, but especially to learn these skills *in*directly. It is now time to take a look at these skills, and to ask about the methods used by the present philosophical discipline to teach and assess them in their students. Before I continue, however, I want to stress one crucial distinction: a *philosopher* studies philosophy as part of her search for truth and wisdom within a particular intellectual tradition, and *not* to cultivate these skills; a *general student*, who is still unsure of her interests, should be encouraged to study philosophy because of the skills the command of which she will thereby improve—regardless of whether she enjoys the subject or is interested in the truths and wisdoms it offers her. In this essay I am writing as a philosopher about general students, a philosopher, moreover, who believes in the importance of widely developing the skills without necessarily trying to measure and assess such development in the inevitably clumsy ways of the new teaching quality assessors.

I propose to divide the skills into primary and secondary. Due to a lack of space, I do not plan to deal with secondary skills too much in this essay; these are such skills associated with *studying*, and studying any subject—helping students to learn information more effectively. Any institutional curriculum will cultivate such skills by giving the students a carrot and stick motivation to practice their development. These skills are no less important than primary skills for orienting oneself in any complex institutional framework into which most students continue after graduation, albeit in return for sweeter remuneration. Such skills include time management (meeting deadlines, working under stress, organising work schedules etc.), use of information technology and other tools now indispensable in the workplace, networking with peers and impressing

superiors, training certain types of memory, decision-making, self-reliance and confidence, a sensitivity to power structures relationships, and how to negotiate them to one's advantage. Philosophy is probably *less* successful than other disciplines in encouraging other secondary skills such as teamwork, opportunism, self-interested negotiation and self-promotion. These last three, however, are clearly not unambiguous virtues, and philosophy will encourage a more reflective hesitation in letting one's natural self-interest override in matters of principle. With respect to the skill of teamwork (including trust and reciprocity), however, modern philosophy is admittedly less encouraging than it should be, preferring to promote a rugged individualism in the face of a no doubt exaggerated threat of irrational social persuasion and coercion. Certainly, teaching philosophy could and should adopt more group work, for example to the degree considered normal in the collaboration-based laboratory sciences.[3]

What are the *primary* skills of interest to teachers of philosophy, then? I could make a list, as do the standard textbooks on the subject:[4]

Problem-solving
Philosophy is about problems. Not only the means-end problems of most disciplines, but the much more intractable problems that cannot so much be solved as only *dealt with*. For most often there simply is no uncontroversial solution of the kind often available to mathematicians, or of the kind justified by sufficient reasons and calculations and evidence as in economics. But philosophy can alert one to the hidden complexity of a problem, can expose the unjustified assumptions and undesirable implications of otherwise elegant solutions, and can draw useful contrasts between different *types* or *structures* of problems.

Analysis (criticism, interpretation, synthesis, extraction of key ideas and arguments from a text):
A philosopher has to learn how to wade through the irrelevant adornments of a text to the marrow of the argument, she has to discover

[3] Apart from various group exercises within the tutorial, the best way I have found to foster teamwork is to demand the preparation of joint discussion-leading. Students are paired off and asked to prepare a discussion on the lectures of a given week, and encouraged to meet outside of the tutorial to plan it.
[4] The textbooks consulted have various taxonomies. The most useful I found was that of Booth and Booth, p. 83. However, I disagree with them in their placing "organisational skills" and "collaborative skills (working together, negotiation, tolerance)" on a par with analytical and communicative skills.

as quickly as possible what the main claims of a text are (and by extension, those of her own work during the all-important revision process). To this end, philosophers often use a formal propositional language to summarise arguments, allowing for greater clarity when challenging particular premises (including those insidiously tacit or hidden premises) and conclusions. Most importantly, philosophers are wary of simplistic solutions, and will always test the entailments, presuppositions and counter-intuitive implications of a given theory; they will be sensitive to the complexity of experienced life and moral intuitions (as focused by well-chosen examples), to context and to the differing points of view (not in the sense of mere opinion, but of the way of seeing the world) of the respective adherents. These last points are part of what Gibbs and Habeshaw (1996, p. 7) refer to as the 'Big Picture', and it is vital that this be repeatedly communicated to and understood by the students.

Justification of argument

Opinions and beliefs cannot be held on whim or instinct in philosophy, but must be justified, and this relentless process of justification will expose many unfounded assertions and dogma and prejudice hidden in arguments. Justification involves a belief in universal standards of rationality, from which we are all too prone to slip, be it out of intellectual laziness or expediency; we seek not only to persuade another person, but our own idealised selves of what is true, and therefore of what ought to be believed.

Communication (verbal and written)—listening, questioning, presentation of ideas, persuasion)

It might be argued that communication is a secondary skill, appropriate for all disciplines. But my placing it among the primary skills reflects the importance that philosophers give to it. Communicating well is fundamental to philosophy, since clear communication directly reflects clarity of thought *as opposed to* mere regurgitation. A subject such as history has a certain amount of information that has to be taken as given and *conveyed* before the interesting business of interpretation can begin; philosophy has much less of such information, and so it can move from conveyance to communication earlier. Communication also involves analysis and the attempted justification of one's own thoughts before they are communicated, analysis of others' arguments in an effort to understand what exactly they are saying and especially of what they are

trying to say: by seeking to understand where one's interlocutor is coming from and where she is trying to go we may join her in the enterprise.

Practical judgement and wisdom

I give three English words as clumsy translations of the ancient Greek word *phronesis*. This skill differs from all the others because it is hardest to teach directly or even indirectly in the sense we have been looking at. No philosophy department, or any other university department, for that matter, will state among its aims that it wishes to make its students wiser; indeed, there are no textbooks on how to become wise, no Nobel Prizes in wisdom, no way a bright teenager can learn the ropes. Indeed, it is not really a skill at all, but rather an attitude to life and to oneself, and as such it can probably only be gained with enough experience of a certain richness. Nevertheless, I would argue that philosophers are more sensitive to the importance of judgement, even if they do not and perhaps cannot cultivate it directly. Perhaps the first four primary skills, when honestly practised over the course of many years, will be more likely to result in wisdom. This results in a type of integrity, based on an compromising respect for the truth. As such it belongs on this list, if only because it was the supreme 'skill' of Plato's Academy (although he would not have recognised our word 'skill' in its modern guise). The rest of this essay, however, will deal mainly with the first four primary skills.

Teaching methods

Now that we have some vague initial idea of these four (five) very complicated skills, let us look at the way that a university department, and in particular the philosophy department, aims to cultivate them in its undergraduate students.[5] The standard loci for teaching and learning are the following:

Lectures

This is a modern invention to deal with the great numbers that are now being subsidised through all university departments. It is particularly inappropriate for philosophy, which by its nature is an intimate and interactive discipline which cannot be easily conveyed through space. Lectures usually have a more important secondary purpose, and that is to

[5] I stress, as before, that I am only discussing the Anglo-American university departments, since it seems that philosophy teaching is much different in mainland Europe, not to mention further east where the traditional academic disciplines may also be divided up in ways very different from those of the West.

organise a student's week, compensate for the reading they can no longer be expected to do (a classic example of where colluding with a necessary evil ends up condoning and encouraging it), and arguably provides a forum for all like-minded students to assemble. It also provides the basic core information and core structure to which all tutorials may consistently refer (and the lecturer then becomes arbiter in conflicts about policy or content).[6]

Seminars and tutorials

This is the ideal teaching environment for philosophy, with the smaller the group that a department can afford, the better. Reading and writing, while much more important in the long term in developing the four primary skills, require a parallel social and verbal element for a full balance. Verbal self-expression tends to be much more difficult, especially in front of critical and philosophically astute peers. There is also a crucial social element, which, while directly fostering much-needed secondary skills, is particularly beneficial for a philosopher to bring her down to earth, to remind her that her grand metaphysical theories are not to be applied to such an abstract (and therefore uncomplaining) entity as 'humanity', but to the complex beings she beholds before her; she is thus forced to place greater trust in her intuitions, even when challenging them. The metaphysical temptation is a constant danger in French-style philosophy, and indeed in the natural sciences everywhere, where problems are reduced to mere tests of one's egoistic ingenuity. Real philosophy is not so much about the world around us and detached from us, but about *our* world and the limits of our experience and understanding.

Reading

At the end of the day, there is never any substitute for wide reading, and this will apply to all disciplines. The distinctive feature of philosophy, however, is that the informational value of the text is less important than the exposure to skilled argument and reasoning. As such it is far more important for a philosophy student to be assigned only 20 pages a week to be read twice, and in depth, as opposed to being assigned 100 pages of history or literature to be skimmed through. This is not only a matter of the distinct jargon that has to be learned and manipulated with confidence, but more importantly a question of getting slowly accustomed to the disciplinary standards of rigour and argument.

[6] Adapted from Forster, Hounsell, Thompson, p. 6

Philosophers *wrestle* with a text rather than merely absorbing it (Gibbs and Habeshaw (1996, p. 6) speak of 'constructing knowledge' rather than 'recording it like a tape-recorder'). The emphasis is always on understanding what was said and defining one's own position—which may be or become diametrically opposed—in relation to it. After her undergraduate training, a philosophy graduate may well forget all the details of Descartes' method of doubt as applied to the problems *Descartes* was trying to solve; but she will never forget the method itself.

Preparation for exams

Like lectures, exams are a regrettable modern invention to deal with the mass popularity of philosophy departments (usually the largest alongside History and English Literature among the humanities). Arguably, these foster many secondary skills such as short-term memory, working under pressure, and organising one's thoughts into a tight space. However, they represent everything that philosophers traditionally fight against: rote learning, regurgitation, filling in gaps, stock responses, allowing students to be processed with a minimum of effort and a maximum of superficial fairness on the institution's part. It is argued that the preparatory reading is the important part of the exam system, but I would argue that such reading can never be philosophical, since it quickly becomes reading for mere information. (see below for discussion on the assessment function of exams).

Writing

Finally, this is the core of the modern teaching and assessment of philosophy. At some point, the seminar ends and the reading must stop and the philosopher has to write something. A philosophy essay is unlike any other piece of writing elsewhere in the university, since it stands or falls on the basis of its central argument, its 'angle' on the problem. Facts and empirical data are entirely secondary, and first-year students always have to be told *not* to mention any details about Hume's personal background. This encourages a purity, an avoidance of ornamental waffle, in philosophical writing. Students are told to 'get on with it', to declare their intentions clearly and forcefully all the way through their essay, and to anticipate criticisms too and to acknowledge weaknesses of their argument. Ideally, the student will submit a first draft for comments from her tutor, which will allow her to trim even more extraneous material and reorganise the components for maximum clarity and force (see my comments about drafts in the section on 'Assessment', below).

There have been complaints, as elsewhere in the university and throughout society, that philosophy's over-reliance on writing (again, a modern phenomenon, especially facilitated by information technology) generates little more than textual diarrhoea. Words, words, words, everywhere one turns, and students are indirectly encouraged to develop skills of filling space, 'making the word-count', picking even more nits for the sake of doctoral originality. Alas, academic philosophy does suffer from this too, and the lives of professional philosophers the world over has been exacerbated by this sort of 'publish or perish' mentality. Nevertheless, I like to think there are still standards between a good essay and a bad essay, and that philosophy students can be taught more effectively than most the sensitivity required to tell the difference, so that they will be able to later *refrain* from writing when they have nothing to say.[7]

Finally, philosophy encourages essays written in *dialectical* style. Rather than the standard comparative structure, where two theories are compared for plausibility, or two solutions to a single problem are compared for effectiveness and comprehensiveness,[8] philosophy essays will typically begin with such an approach, only to move on to the more important dialectic between the author and another philosopher's real and imagined claims—the classic Socratic dialogue. This appreciation of the dialectic is itself a significant transferable skill, not for the banal reason of encouraging toleration of dissent and disagreement, but because of the collaborative drive to bring different points of view to bear for a fuller understanding of a single truth.

Assessment

Finally, a word about the contentious subject of assessment, and its targeted use in cultivating transferable skills among philosophy undergraduates. As with many other disciplines there are two dicta relevant to this section. The first is that "unassessed essays are seldom written" (Gibbs, Habeshaw 1996, p. 11), and the second is the famous Law of Effect: "it is hard to make headway in any kind of learning tasks if you do not have a firm impression of how well you are doing" (Forster, Hounsell p. 51). "How well one is doing" would seem to refer to the first type of assessment, *formative* assessment (or assessment-for-learning). This involves providing valuable feedback and diagnosis to the

[7] A noble sentiment; but what if they will lose their job for so refraining?

[8] Adapted from Baume and Baume, Making Presentations, p. 7

student during the learning process to assure her that she is 'on the right track' and to motivate her to further efforts; an essential part of such assessment, of course, is detail about *what* she is getting right and where she has misunderstood the assignment. The other type of assessment, *summative* assessment (or assessment-for-grading), involves the question of achievement of some set of objective standards ('criterion-referenced') or ranking ('norm-referenced')[9] that will be intelligible both to the student as well as to all individuals beyond the assessing institution whom the student may contact. These two types of assessment will often overlap, of course, such as when an essay is returned with a numerical mark (mainly summative but also formative unless it somehow marks the end of the student's career studying that discipline) and comments (formative—if sufficiently detailed and constructive).

As I mentioned above, the installation of end-of-year essays has proved highly destructive to philosophy and to the cultivation of transferable skills through philosophy. The practical considerations that may have some force in the sciences are feeble when applied to the distinctive content and method of philosophy. In addition, the fact that the exam produces the sole summative numerical assessment in the first two years shifts the centre of gravity away from classroom discussion and thorough essay construction to intense cramming sessions based on ridiculously-condensed study notes on the subject. This has the undesired effect of increasing the stress associated with assessment mechanisms themselves as well as giving too undue an importance to factors of sheer luck or certain dispositional weaknesses entirely unrelated to the student's future success in the discipline. Finally, exams encourage a "creeping instrumentalist" approach to one's studies, whereby the ultimate purpose of all activity is to gain marks (Gibbs and Habeshaw 1996, p. 11).

What I would advocate is a return to the essay as the fundamental unit of assessment, perhaps supported by an assessment of classroom participation, but there I would hesitate, since natural shyness can persistently conceal bold philosophical talent—all-important verbal skills would be better to assess in one-on-one sessions with the tutor, if necessary. In terms of essay-writing, the Oxbridge system, from what I have heard of it, is truly the ideal that all institutions should aim for, as far as their funded teaching-hours will allow them. Submission and feedback, submission and feedback, and a summative assessment extended to include a large sample of submitted work, thus making up

[9] See the taxonomy of assessment in Booth and Booth, p. 158

for natural wavering in performance. Ideally, many of the essays could also be compulsorily submitted in draft form, to be returned with detailed notes by the tutor.[10] But instead of the comments being appreciated on a shoulder-shrugging basis with the words "okay, fair enough, I'll try and remember that next time", the student is required to deal with the comments when revising the draft. This revision is extremely important on its own, of course, and students are all too tempted to "get the thing out of the way" by submitting it without letting it brew for a couple of days. A compulsory first draft forces them to revise, and to fill in the gaps and anticipate the objections highlighted by the tutor, resulting in a much better final essay. It is my experience that the period between draft and final submissions is the most intensive learning experience for the student.[11]

Conclusion

Throughout the above processes, the student should be informed of the skills that are thereby to be imparted, that she might reflect on the process of learning itself, and become co-responsible for the outcome and for her decision to remain in the programme. More generally, this is one of the key aspects of active learning of both of the subject matter and the skills. Often the student may wonder about the point of studying this or that arcane branch of epistemology, and she needs a secondary set of reasons to fall back on, to wit, the epistemology unit being a vehicle for the development of her mind and of her transferable skills. This will contribute to meeting the student's on-going search for personal and academic meaning in what is, after all, a major activity in her life.[12] It is again important to remember that I have been discussing the general student, still unsure of her interests and goals. If she does in time discover an interest in the subject itself, then she will obviously no longer

[10] Even though the human contact associated with the delivery of verbal comments is important, I advocate written comments because they can be re-read, they can be more critical without so directly threatening the student's dignity, and they can be re-consulted later on her following up longer-term strategies. Very often an efficient choice of words or a bang-on description will 'stick' more when read and re-read.

[11] In passing, one exercise I have also tried successfully is to have students mark each others' essays, where both the author and the reviewer are kept strictly anonymous. This is only feasible after the students have written one or two essays and received detailed feedback on them. Articulating dissatisfaction with the work of one's peers allows the student greater sensitivity to a set of inchoate standards of good essay-writing which she can then apply to her own work.

[12] This paragraph was inspired by a list in Booth and Booth p. 129.

require the above incentives. Indeed, if and when she comes to see herself *as* a philosopher, then she will reject such a rationale as inevitably false, since by its very nature *philosophy can have no purpose*.

We might call this the procreative dilemma: the practitioners must reluctantly invent and publicly promote a purpose or rationale in order to attract enough initial commitment among non-practitioners to provide for the next generation, as well as to attract enough commitment among administrative and funding bodies to continue existing at all. What is distinctive and, I argue, *healthy* about philosophers is that they will *feel* this to be, at least sometimes, a pandering betrayal of their love of wisdom.

Bibliography

Baume, D., Baume, C. *Learning to Teach: Making Presentations*, Oxford Centre for Staff Development 1996

Baume, D., Baume, C. *Learning to Teach: Running Tutorials and Seminars*, Oxford Centre for Staff Development 1996

Booth, A., Booth, J. *Enhancing Teaching Effectiveness in the Humanities and Social Sciences; Tutor Guide*, Universities' and Colleges' Staff Development Agency 1997

Forster, F., Hounsell, D., Thompson S. *Tutoring and Demonstrating; A Handbook*, Centre for Teaching, Learning and Assessment, University of Edinburgh 1995

Gibbs, G. Habeshaw, T., *253 Ideas for Your Teaching*, Cromwell Press 1995 [1988]

Gibbs, G., Habeshaw T. *Learning to Teach: Powerful Ideas in Teaching and Learning*, Oxford Centre for Staff Development 1996

Double Marking *versus* Monitoring of Examinations

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In some subjects in which either, as in law, there is an identifiable body of facts which the students need to master to obtain a degree, or, as in mathematics, it will be relatively beyond dispute whether a student has or has not succeeded in proving what it is required to be proved, it ought to be relatively straightforward to devise an objective and fair method of assessment appropriate for deciding that a student has attained the relevant standard to obtain a degree of any given class. However, in other subjects, of which philosophy is perhaps the most obvious example, what constitutes excellence in the subject is far more a matter of judgment—and even controversy. Hence, there is a great need to scrutinise the method whereby we seek to ensure objectivity in examinations.

Traditionally the preferred method of assessment was 'double marking'—a method where every script was marked by two internal examiners who then meet to discuss the marks they have independently arrived at, to arrive at an agreed mark which is then submitted to the scrutiny of an external examiner. Latterly, a different method of assessment has grown up—'monitoring'—in which there is a first examiner who submits a set of marks to a second examiner, who samples sufficient number of the first examiner's marks on scripts to form a judgment of how far the two examiners agree. The monitor does not attempt to agree marks with the first examiner but writes a brief report on the first examiner's marking. This report is then discussed, and then, if necessary, the first examiner's marks are systematically adjusted. For example, if the monitor forms the opinion that the examiner has been too harsh, and succeeds in persuading the examiner that this is so, then the mark of every student may be raised somewhat. The scripts are then submitted together with the monitor's report to the scrutiny of the external examiner.

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There is no doubt that the system of monitoring has grown up in large part under the pressure of the increased workload created by such factors as worsening staff/student ratios, and the increased number of heads under which students are assessed under modularisation. Since it has frequently been adopted thus for reasons of expediency, there is a widespread feeling that this system is inferior to double marking and has only been adopted out of necessity.

However, since I believe that the widespread opinion that double marking is the superior way of examining is an irrational prejudice, simply based on the vague idea that two heads must be better than one, and that in fact in most respects monitoring is a method of examining which, properly done, is more likely to yield an objectively just result, it is worthwhile spelling out reasons why this is so. I actually advocated that we switch away from double marking long before the pressure of work led our own department to do so. This was as a result of studies of what actually occurred when people do in fact double mark that were conducted a long time ago by my colleague Timothy Potts and myself. Although these studies were conducted a long time ago, what we discovered then is still relevant to the current situation.

I initially became worried about the objectivity and rationality of our examination procedure shortly after I came to Leeds, as a result of a few cases where what had happened seemed difficult to reconcile with the idea that justice was done to groups of students taking those particular courses. (I will not identify the examiners involved: all are now retired.) At that time, double marking was of course a sacred cow, and the department was small enough to cope easily with the workload involved. (The externals also read every script: something which is now completely impractical: but that was the only feature of the system that could protect the examination from becoming a farce in the case that I shall mention. That safeguard has now long vanished.) The case that was most worrying, because it represents in an extreme form a situation that, even if only for minority of batches of scripts, does recur with sufficient frequency to be a problem for a system of examination. Here the two examiners had produced marks that bore no discernible relation to one another at all: one examiner would give a 1st to a script that the other examiner saw as low 2/2 (or even in one case a 3rd), and *vice versa*. As a result I did an informal study of the examination for all the courses for that year. The results were sufficiently disturbing for me to raise the issue of the objectivity of our examination procedure. This was followed up by Timothy Potts who, following my lead, did a complete statistical

breakdown of the marks assigned in examinations for the previous three years, comparing such things as the arithmetical mean mark, standard deviations and rank orderings produced by each pair of examiners for each course. What follows are some of the conclusions I arrived at as a result of the studies we had undertaken between us. (I am of course relying here on memory from a long time ago—there may be the odd mistake in what I say, but I am confident that for the most part my memory is accurate.)

1. There was far more variation in the distributions of marks produced by different examiners and on different scripts than I would have anticipated. Some examiners produced marks that fell in normal distribution curves, but there were also a large number of 'tri-modal' distributions—every script is seen as good, bad or indifferent—and quite a few bimodal distributions. The average marks assigned by the severest examiner and by the most generous examiner were almost a class apart. And, finally, some examiners had their marks widely spread out with a large standard deviation, while others had their marks bunched up—in some cases with the highest and lowest mark both within the same class. These differences already put great strain on the idea of the two different examiners of a particular script meeting to discuss and arrive at an agreed mark: if, as we shall see, the results of such discussions is usually to average the two original marks, it is hard to interpret the significance of averaging the marks of a harsh, bipolar, examiner with a large standard deviation with those of a generous marker whose marks are distributed in a narrow normal distribution.

2. The sets of marks with very few exceptions fell into one of three types. There were those cases where the two examiners were producing virtually identical marks throughout a batch of scripts, only very occasionally disagreeing significantly. There were those cases where the two examiners were producing different marks, but in a systematic way—the most common case being where one examiner was simply more generous than the other. The oddest case here was one where the two examiners had virtually identical rank orderings, but one had assigned marks in a normal distribution curve, whereas the other had produced a bimodal distribution. In all these cases, it is reasonable to suppose that the two examiners' opinions of the scripts were on the whole the same, but differed in the way that

they thought that opinion should best be translated into a mark. The third type was one where it was impossible to make much sense of the comparison between the examiners' marks, leading to the conclusion that the two examiners were not seeing eye to eye at all—were, *e.g.*, looking for quite different qualities in a good script. (In the case that originally prompted my attention, Timothy Potts discovered a statistically significant *negative* correlation *between* the marks awarded by the two examiners.) In a way it seems obvious that these should be the three types; what is not so obvious is the extent to which every set of marks fell recognisably into one of these three types, with few intermediate cases, and also that in each case the pattern (or non-pattern) would almost invariably be preserved throughout a batch of scripts. Of these three types, the second, where examiners diverged, but diverged systematically, was the most common, followed by the first. The third was less frequent, but there were sufficient cases to indicate that there was a problem worth thinking about.

3. Double marking consists in two examiners both marking a set of scripts, and then meeting so as to arrive at an agreed mark where there is a disagreement. In theory this mark is not arrived at by simple averaging but by a discussion that finally resolves the disagreement. In practice, looking at the marks awarded by individual examiners suggests that something very different occurs (even if the examiners think this is what they are doing). What we find in the great majority of cases is that the examiners have not simply averaged, but they have had a discussion and *then* they have simply averaged. That is, in far and away the majority of cases the agreed mark *is* the average of the two originals. There is another pattern which sometimes occurs—it is impossible to tell what lies behind this in each case: one examiner will systematically defer to the other so that the agreed marks are virtually identical to one of the two examiners' original marks. The cases where marks are awarded for particular scripts that diverge from one of these two patterns are a small handful.

Against this background, the questions arise, 'How well does double marking do as a method for arriving at a just mark on scripts?' and 'Is there reason to suppose that monitoring fares better?' I take monitoring to be the practice we have adopted at Leeds where one examiner marks

an entire batch of scripts, and then a second marker marks a significant sample, large enough to judge how well the first examiner has done their job—departmental policy says that 10% of scripts plus 1sts and fails should be looked at: I have always interpreted this as minimum, and where one is monitoring a small batch of scripts (*e.g.* a module with 20 or fewer scripts), it would be clearly inadequate just to look at two—what is required is to look at enough scripts to get a proper picture of what the first examiner has done.[1] The two examiners then meet to discuss how, if at all, it would be appropriate to modify the first examiners' marks. Departmental policy is that monitoring is a monitoring of *the whole examination*, and not the provision of second marks for individual scripts. **That is, the result of monitoring should not be the adjustment of individual marks, but to suggest a systematic modification of *all* the first examiners' marks.** The only individual marks that are adjusted are perhaps those at the very top or the very bottom, where it is a question of how a very good or very bad script is to be marked. Otherwise, adjusting individual marks is unfair either on those students whose scripts happen to have been selected for monitoring, or on those who have not. (The only exception I would, perhaps somewhat inconsistently, make to this rule, is where the divergence between the examiner and the monitor is explained not by a difference in judgment between the two, but by a definite indisputable oversight on the part of the examiner: for instance where the examiner overlooks a gross error of fact on the part of the candidate.) So, how do monitoring and double marking fare for each of the three types of sets of mark I identified in 2. above?

i. The first type of batches of scripts—where the two examiners turn out to be in substantial agreement throughout—is the most straightforward, and the one where double marking and monitoring both work equally well. The result of the process is simply that the second examiner/monitor endorses what the first examiner has done. The only difference between the two is that monitoring arrives at this result more quickly.

[1] In Leeds, we have also adopted the practice that the first examiner should supply the monitor with a statement of the criteria they have employed in marking, which facilitates the interpretation of the set of marks. If, as is usually the case, the first examiner is responsible for teaching the course, these criteria will also be known in advance by the students, giving them due warning of what is expected of them.

ii. It is with the second type of sets of marks that the advantages of monitoring begin to emerge. The point is that double marking is ill equipped to detect *systematic* differences in marking practice. The two examiners concentrate on the scripts one by one and so systematic differences running through the whole batch will not be readily apparent—this is particularly true with the first few scripts that they discuss: it will be only later on in their discussions that patterns in their disagreement will become apparent, if at all. This will have the effect that the two examiners will only too frequently fail to appreciate where the real differences in judgment between them occur. Disagreements can even be masked completely: for instance if examiner A is a generous examiner, but examiner B somewhat mean, A and B might both award a mark of 62, but for A this signifies the opinion that this is a somewhat average script, while for B this signifies that it is one of the best two or three of this particular batch. Here the examiners are almost bound to look at the fact that they have both given 62 and think that they can pass on without further discussion, even if this script represents their biggest single disagreement. On the other hand, they may well spend a long time discussing a script which A has marked as 50, but B as 40, asking which mark is appropriate for this particular script, whereas what is at stake is not a disagreement as to the quality of this particular script, but a general difference of opinion as to how to mark a weak script. By contrast, it is the primary task of a monitor not to mull over particular disagreements, but to look for a pattern in those disagreements that occur so as to locate the pattern of disagreement, and then discuss with the first examiner whether it is appropriate to adjust the *whole batch of marks* originally given. That is to say, the discussions between examiner and monitor are focussed precisely where they should be.

iii. It is the third type of set of marks that creates the greatest difficulty for any system of marking. Where there is no meeting of minds between two examiners it is frequently difficult to know how to proceed. Double marking provides no clear-cut, rational decision procedure for such a case, and, in practice, looking at what was actually done suggests that examiners simply 'split the difference'. But here the significance of a mark that is the average of two marks arrived at in very different ways is difficult to understand. The effect of such averaging for this type is a massive regression to the mean—

double marking will always produce some regression to the mean, but here it becomes completely pernicious: in the case I originally looked at virtually all the scripts ended up bunched up around the 2/1 2/2 borderline. If we assume that one of the two examiners was actually thinking along the right lines, this inevitably means that the students he had rightly seen as 1st class were deprived of their 1st on that script, and the ones he had rightly seen as weak were allowed to get away with murder. Unless one can give a good reason to suppose that when two examiners diverge wildly and unpredictably the average of the two marks they award is likely to be the right one, it seems that double marking copes with this case very badly. In fact double marking gives no rationally defensible decision procedure for this case: if we assume both the examiners have arrived at their original mark conscientiously, then they are marking in very different ways, or looking for very different qualities in a script. A brief discussion will at most reveal that fact, but not indicate a way to resolve the dispute, leaving little alternative but to average. At first sight it looks as though monitoring is in the same awkward position. The major advantage is, however, that the two examiners are *not* required to agree marks on individual scripts, and so not compelled artificially to concoct an 'agreed' mark where there has been no real meeting of minds. The function of the monitor is simply to produce a report on the first examiner's work: and in this case the report could even take the form 'I could not make head or tail of the marks examiner A was giving'. This at least flushes the situation out into the open. It does not remedy the situation, but at least alerts everyone to the need for a remedy. This will usually take the form of an appeal to a third party: at its simplest, a request to the external examiner to pay particular attention to this particular batch of scripts. In two cases a few years ago, where there was gross disagreement between the two examiners, a third examiner was in effect appointed: in one case, the external marked every script and his mark was taken as a final adjudication, in the other I was asked to come in and my marks were the ones sent to the external as the internal examiners' marks. Even if we only resort to such measures occasionally, they demonstrate the kind of remedies available under the monitoring system of examination.

Some Conclusions

The main conclusion I draw from the preceding is that the system of double marking, despite its reputation, is a deeply flawed system. The idea that it is the best system of examination is a myth, which is only sustained because it is not subjected to scrutiny—including the kind of empirical scrutiny which Timothy Potts and I subjected it to. The following defects emerge from the earlier discussion:

Surveying the 'agreed' marks actually given by two examiners suggests that whatever we think that we are doing, most of the time the upshot of the discussions between the two examiners is to produce a mark which is the average of their two original marks. If the examiners are in fact disagreed, either in the qualities that they are looking for in a good script or in the way that they translate their opinion of scripts into numbers, it is hard to believe that such average marks have much real meaning. (The most that can be said is, that if either of the two original marks was right, the average 'won't be too far out'—I suspect it is that thought which makes averaging attractive. However, that thought may well be depriving a student of a 1st class mark, if one of the two examiners has seriously underestimated the script.)

The effect of such averaging is a large-scale regression to the mean. This is perhaps both the most obvious defect, and the most vicious aspect of the system of double marking. When, as now, we are assessing students under a large number of heads, and then arriving at a class by averaging, the threat of regression to the mean is already real enough—even now we have a system where it is remarkably easy to get a low 2/1, but difficult to get a 1st or a 3rd. If we were to engage in double marking with our present numbers of students and under a modular system, we would have a system of examining which would make it impossible to differentiate students, apart from the very few that swam against the stream by being exceptionally good or bad in everyone's opinion.

The system of double marking is not designed readily to detect when differences between the marks awarded by two examiners for a particular script were the effect of *systematic* differences of marking practice between the two examiners rather than disagreements about this particular script. Such systematic differences should be dealt with systematically and not somewhat erratically on a script-by-script basis. Systematic differences between the marking practices of two examiners, which will affect a whole batch of scripts, and can have large effects on individual marks are probably far more significant than particular

disagreements in judgment, and yet are completely neglected by double marking.

The system of double marking does not have built into it a rational decision procedure for what should happen when there is no real meeting of minds between the two examiners. Looking at the results produced by Timothy's studies suggested that examiners were typically prone in such cases to produce an average mark as the agreed mark, even though in these cases such average marks are almost completely meaningless.

The defects noted above would to some extent be compensated for (at the time that Timothy Potts and I made our studies) by the role of the external examiner. At that time we were a much smaller department, marking a much smaller number of courses and the external examiners did read and mark every script, so that the vagaries of the internal examiners could be and frequently were overridden. However, the time when that was possible are long past, and also the pressure of exam load has increased in ways that would exacerbate the problems we detected. (There is now, for example., much less time for a full discussion between examiners, increasing the temptation simply to average marks.)

The system of monitoring is designed in such a way that it avoids all of the defects that I have specified: examiners do not agree marks on each individual script and hence do not average marks; as a consequence the system has absolutely *no* tendency to produce a regression to the mean; the task of the monitor is precisely to detect systematic differences of opinion which can then allow one to adjust a whole set of marks systematically; and finally the fact that a monitor's primary task is simply to make a report on the first examiner's work means that the situation of a radical difference between the two can be brought in the open to be then dealt with.

The only indisputable advantage of double marking is that there can occur cases where the first examiner makes an error of judgment on a particular script which is then picked up by the second, and the first examiner is persuaded of the error. However, looking at the extent to which practice is dominated by simply averaging marks suggests that this situation may occur less frequently than we think, and given that no examination system is ever going to be perfect, I believe there is an overwhelming case for saying that monitoring is on balance the vastly superior system, quite disregarding questions of the workload imposed on examiners by the two systems.

Report on a History of Science, Technology and Medicine Workshop, Leeds, 30-31 May 2001

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This was a well-attended workshop at which participants explored many important issues of pedagogy in History of Science, Technology and Medicine (HSTM) in a very constructive and amiable fashion.

On the first day, participants explored common experiences of challenging aspects of teaching HSTM to a wide range of undergraduate constituencies. Colleagues offered diagnoses of the relevant problems and suggested techniques and resources that could be effective in dealing with some of these challenges.

If you want to organise a workshop of your own, please do not hesitate to contact us to find out how we can help, and see pp 11-14.

The second day of the workshop was addressed to wider issues arising from two 'external' initiatives: QAA Benchmarking standards and the planned new AS level in History and Philosophy of Science. Responses to these were explored and some valuable suggestions were made on how the HSTM community might offer a positive input to these developments.

The workshop concluded with a discussion of specific topics in learning and teaching HSTM to which LTSN resources could usefully be devoted—either by co-ordination at the PRS-LTSN centre, or by HSTM practitioners undertaking research projects with or without the collaboration or sponsorship with the LTSN.

[1] This report is the product of feedback and comments from the workshop participants, to whom many thanks are due.

1. Problems experienced by students in learning HSTM: A Critical Response to Graeme Gooday's on-line paper *The Challenges Of Teaching History & Philosophy Of Science, Technology & Medicine To 'Science' Students*

http://www.prs-ltsn.leeds.ac.uk/hist_science/discussions/problems.html

In British Higher Education (HE) institutions, students come to HSTM courses with a wide variety of different backgrounds, motivations, interests and levels of skill. Apart from occasional trips to museums and brief exposure at the GCSE level, the great majority has not studied any HSTM before. In their first extensive encounter with HSTM at University, some students are quickly able to adapt well to the subject, whatever their prior educational experience. A significant proportion of students does not, however, adjust with such ease or dexterity to the learning styles and values involved. And it is not obvious to all HSTM teachers how they *can* effectively help students to adapt to new ways of learning in their field if such students only have one HE opportunity to study HSTM, typically in a single short 'elective' course or 'service teaching'.

It is all too easy to over generalize about the nature and intensity of challenges presented to both teachers and learners in these sorts of contexts. There are considerable differences between levels of study in any given institution and also great variation between the experiences of different kinds of H.E. institution; the Open University, for example, is arguably unique in the prevalence of mature skilled learners. A further complication in analysing these problems is that undergraduates can respond in ambivalent and unpredictably dualistic ways to the challenges of learning HSTM (see below). Nevertheless, we can usefully analyse the problems facing teachers and students of HSTM into two dichotomised categories:

a. Generic to all students vs. Constituency-specific
b. Process (learning) vs. Product (assessment)

Generic:

a. students can come to HE teaching of HSTM with expectations and learning techniques developed in secondary/further education that centre on producing a uniquely 'right answer'—an effective tactic to maximize A level results. They can thus resist or distrust more open-ended approaches to discussion-based learning fostered in much

HSTM teaching. There is, however, scope for optimism that this will change as new approaches are adopted in the teaching of A/AS level sciences.

b. many students tend to have a great deference to science (and to technology/medicine also?) and are often reluctant to hold critical discussions of it in classes and written work. Ironically, they can be much less reluctant to do so in informal or non-institutional contexts, but suppress their tendency to be critical or sceptical if they suspect (however wrongly) that such behaviour might run them the risk of getting lower marks.
c. students do not all come equipped with the skills for reading primary and secondary sources for HSTM in an informed and evaluative fashion. They can sometimes fail to see the point of looking at primary sources and or place undue trust in the authority of textbooks. Moreover, the IT-intensive nature of some students learning practices can lead them to uncritical use of on-line web sources rather than recommended course texts in writing essays. (see Section 3 below)
d. students are not uniformly skilled in essay-writing techniques and even those that do have relevant experience might nevertheless find that they need to adopt different conventions, styles or new level of refinement to perform effectively in HSTM essays—whether written for developmental or assessment purposes.
e. many students lack the confidence requisite for creative and critical thinking and fluent debate. They can very easily be daunted into passivity or resilient silence if teachers unduly flaunt their greater wisdom and expertise. Yet when they ask a question that is too difficult for the teacher to answer fully, the very same students then can paradoxically be disappointed that their teacher does not 'know everything' about the subject in hand…
f. in some contexts, students' response to the challenges of learning HSTM can be dependent on whether a course is 'optional' or 'compulsory'. In the latter case, conscripts can be much less enthusiastic or even hostile to the requirement to acquire new techniques of learning and to adapt to new kinds of assessment than those who have embraced the subject voluntarily.
g. Teachers of HSTM can all too often treat students learning challenges as problems created by the students and for them to solve. This is counterproductive since students' learning of HSTM is much harder if their teachers are inflexible, expect too much, are out of

touch, and unable to motivate their students. HSTM teachers can make a great deal of difference to students' success if they try out new approaches; don't impose unreasonable expectations, and find out what students do already know and what interests them about HSTM.

Constituency-specific:

Students can (but do not always) bring with them some counterproductive 'baggage' of fears, assumptions and convictions that might be specific to the learning culture of their specialist area of study. This topic was not explored in great detail at the workshop, but the following observations were made of some particular constituencies

a. history students without science qualifications (e.g. beyond GCSE) can be fearful of getting out of their depth in discussing science—showing their ignorance of it—in ways that can inhibit critical debate.
b. students in science, engineering and medicine can espouse a strongly whiggish conviction that HSTM essays should narrate how errors of the past were overcome in arriving at canonical present-day knowledge.
c. anthropology students can refuse to accept the pragmatic distinction between primary and secondary sources adopted in categorizing historical writings, and collapse all views on past events to being equally valid.

In considering how these problems might be dealt with it is important to differentiate further between problems that arise in

a. the ongoing process of students learning—in the student-teacher encounter in lecture, seminar, tutorial and supervision, or in feedback on developmental essays.
b. the final product of that learning process—work submitted for quantified assessment as essay, examination answer or oral presentation.

All topics above encompass these two dimensions, most notably students' reluctance to evaluate texts and their resistance to adopt modes of critical thinking.

The following solutions to some of these problems outlined above emerged in discussions at the workshop.

Solving problems of the learning PROCESS

a. The friendliness and informality of the learning environment can be a crucial factor in students' response. Enhancing the atmosphere of the lecture hall or tutorial/seminar room by suitable (re)arrangement of tables and chairs can make students feel more comfortable about the encounter with a teacher, and more prepared to give a new subject and new methods 'the benefit of the doubt'. Even if chairs and tables are fixed in the room, much else can be done by the teacher (or and or by the institution) to enhance or optimise the learning conditions, especially with regard to temperature, lighting and ambient noise.
b. It is crucial to manage the first encounter with students with great care in order to build trust, confidence, good will and to open communication channels in both directions. Part of this could involve building up a collaborative learning contract between students and teachers which lays out the respective rights and responsibilities of both parties.
c. Teachers should start by identifying the skills and understandings that students already have and build upon these, rather than working on unwarranted assumptions about what prior knowledge and abilities these student do have or 'ought' to have (assumptions drawn from previous generations of students can be unhelpful here)
d. Developing active institution-wide strategies for identifying courses that cultivate particular transferable skills, so that individual teachers are not expected to take on the burden of wide-ranging skill-development in a single course. (University College, London and the University of Leicester already do this, and Chester College is working towards this.)

Solving problems of the learning PRODUCT:

e. Actively build skill-developing component such as essay technique or presentation skills into the curriculum of a module.
f. Give students exemplars of good practice to emulate and of poor practice to avoid—perhaps leaving students to judge which is which without prior labelling. Students are better at learning from these than they are in following abstract rules of procedure that underdetermine good practice and can in any case be followed in divergent ways (as noted by Wittgensteinians!).
g. Experiment with new assessment techniques that utilize skills other than essay writing e.g. oral examination or tracking tutorial

performances, composing web pages. Especially useful could be the adaptation of existing skills that a particular constituency already has, such as the ability of science students in poster design; the HSS has attempted to develop this approach in the past. Further innovations in assessment tried by UCL include interviews, bibliographic essays and book reviews.

The next two sections address particular problem areas in more detail: critical/creative thinking, and use of on-line web resources.

2. Problems of stimulating and assessing critical/creative work by students

The problem alluded to in e) above is that of nurturing students often latent or self-suppressed ability to think critically and or creatively. This is of crucial importance since, in the British HE system at least, such abilities are usually requisites of attaining higher levels of marks in work submitted for assessment. Whilst there is little doubt that many students do have such abilities to some degree, it is evident that they can effectively disengage them when learning HSTM if they are unfamiliar with the materials, or are pragmatically aiming for low-risk 'right' answers. Launching into critical/creative discussion is especially important as a starting point for small group teaching to prevent it degenerating into a mere repetition of a preceding lecture.

Several strategies emerged in discussion about how HE teachers can try to pre-empt students 'switching off' in this way. Again it is useful to differentiate between process and product: the considerations of stimulating critical/creative work are quite distinct from those of assessing it, and there was considerably less consensus on the latter.

Techniques for stimulating critical/creative thinking in the learning process

Carefully selected pictures can serve as an effective ice-breaker in classes in diverting students them away from a search for uniquely 'right' answers. Useful examples presented in relation to the teaching of early modern science were the icon-laden frontispieces from Sprat's *History of the Royal Society* and Bacon's *Novum Organum* (*New Organon*). Such pictures can stimulate students' interest in the subject, and its much less risky for students to discuss in a forthright fashion than the seemingly authoritative content of textbook or lecture notes. If the picture is well-chosen with rich diversity of imagery, there is always more than one

response that students can offer and more than one pedagogically important point or issue to be drawn out from it.

a. presenting students with set of juxtaposed extracts from primary sources on a common theme can stimulate them to think about historical evidence independently of what has been said in lectures or written in textbooks. One example presented was a variety of letters and press cuttings by Einstein or about Einstein and the atomic bomb. Reading through these with heuristic questions can enhance interest and enable students to see that there is more than one perspective to be accounted for in past episodes, and more than one explanation of what occurred. From this experience they can perhaps develop greater empathy with past actors and think more critically about secondary sources on the topic.
b. there can be considerable value in sending students to a library to look at a complete original primary source for themselves. The sheer materiality and antiquity of the document can of itself evoke new interest among students and inspire them to read primary sources more intensively or carefully in developing a critical or creative understanding of their subject.
c. to help students deconstruct some of the categories and demarcations conventionally adopted in STM, carefully chosen boundary topics can help to stimulate student debate, especially if students are encouraged role-play to argue both sides. Strategically important here are topics where current expert discussion is not resolved e.g. the topic of UFOlogy can fruitfully be chosen to examine the question 'what is a science?'

Useful resources here:

a. University or local Libraries, archives or museums—although librarians can be uncomfortable with allowing undergraduates intensive access to valuable or rare items.
b. *Prometheus* web project for on-line pictures at the University of Oklahoma—this is still under development, but should eventually be free to use, although many US institutions charge for access to resources.
c. Primary source websites—although there is the problem of checking for authenticity and accuracy, as well as the loss of the sense of periodicity/materiality of the sources. Whatever the merits of using on-line primary sources, there is a *prima facie* need for HSTM scholars to share these as openly as possible.

d. specialist materials available from Open University and Leicester University.

Problems in assessing creative/critical work (for both summative and formative assessment)

Whilst we can develop techniques to encourage critical/creative thinking among our students, it is not so easy to know how to assess this since it is difficult to develop uncontentious criteria for what is most valuable in this regard. This is evidently the case despite the fact that we often (tacitly) expect students to exercise such critical/creative thinking in order to get the highest marks—especially 'First' class marks.

a. Notwithstanding the extensive educational literature on the general issues of assessing critical thinking, it is still difficult to specify how to reward creative/critical work in HSTM in a systematic and impartial manner - especially if such assessment has to be expressed in quantitative terms. Given the many ways in which students can be critical or creative, should we give equal weighting to each possible mode? This problem is compounded by the fact that some individual teachers might be inclined —despite their efforts to the contrary—to award higher marks to students who follow the teacher's line when developing a particularly advanced critical line and who use that teacher's work as a launch point for their own high level creative/critical discussion. (Further question: are our practices of internal or external examining sufficiently effective to curb this problem)?
b. colleagues can disagree about what kinds of creativity and critical work are appropriate e.g. can a highly creative approach to acquiring sources ever be sufficient for award of the highest marks, or is it also necessary to show effective critical use of them? Some consideration is needed of when it is appropriate to override or 'trump' standard assessment criteria when a piece of work is judged (unusually) meritorious but for non-standard reasons.
c. it is not always easy to specify unambiguously the kinds of critical perspectives that are allowable and those which are not. One important question is whether historians should award credit for critical (vis-à-vis explanatory) analysis where the student's critique is of the ethics of historical actors; obvious cases in point here are practitioners of eugenics or medical practice exploitative of women or ethnic groups. Is it reasonable to discourage students from criticizing the activities of such individuals in the past or even to

penalize them for this (perhaps because such criticism as is a diversion or digression away from the explanatory goals of the historian's endeavour)?

This is clearly an area on which further reflection and discussion is needed, especially in relation to Benchmarking issues (See session 4).

3. Problems of students' (mis)use of WWW resources

The World Wide Web evidently is a resource that can be of great benefit to both learners and teachers in HSTM, especially those involved in 'distance' and 'open' learning. There is no question that the WWW is here to stay – students will use it whatever we say, and there are plenty of ways in which HSTM teachers can turn it to their advantage. Yet it was agreed that there were pitfalls in using on-line resources as a supplement to conventionally library resources. Discussion at the workshop accordingly centred on and widespread concerns about its appropriate 'proper' usage for particular purposes and particular types of student constituency.

The RDN on-line tutorial 'Internet for History and Philosophy of Science'

This was generally considered to be a very useful resource for guiding students in use of the internet, especially its guidance in helping students to assess the reliability of sites.

a. From discussion it emerged that there was much scope future for development of this resource, principally the tutorial:
    a. could give a simpler introduction/map through the plethora of relevant resources
    b. could further refine the treatment of certain topics
    c. should be updated regularly as important new websites come on-line and others become obsolete or are withdrawn.
b. Following the RDN's identification of useful resources for teaching and learning HSTM, and development of the tutorial 'portal' to them, it is clear that there is plenty of scope for further web resources to be developed by HSTM practitioners. A particularly valuable addition would be an on-line guide to help students read paper texts (sic!)
c. Furthermore, HSTM practitioners needed an effective portal to good on-line primary resources and bibliographies, especially those that facilitate (expert) user evaluations of the websites in question. This

evaluative role could, for example, be undertaken by in relation to the planned BSHS Wheeler Virtual Library; while HUMBUL and SOSIG have already taken an initiative in future plans to develop an XML metadata/taxonomy facility for cataloguing on-line resources in specialist academic areas.

Pedagogical Problems in Web-based learning and teaching of HSTM

While some institutions—notably the Open University—are developing ways of managing students' use of web resources as an effective aid to distance learning, others are experiencing problems with web usage. The simplistic fallacy that WWW resources are necessary and sufficient for all effective study of HSTM has lead to two kinds of abuse in using web materials in assessed work. The following problems are persistent and increasingly widespread in UK HE institutions:

a. some ingenuous students use web sources in an uncritical fashion in preference to consulting recommended library materials in preparing their written work.
b. some disingenuous students plagiarize directly from web-resources, irrespective of the speed and ease with which search-engines can detect this.

Both problems can lead to radically reduced grades for the students in both categories, and potentially catastrophic results for the future careers of those in the latter.

To pre-empt these abuses turning Web-usage into a burden rather than a pedagogical asset, it is evident that HSTM teachers need some sort of strategy regarding when and how to introduce their students to internet-based resources for learning HSTM.

TRUSTING WEB SOURCES

There was no absolute consensus about this, and the following positions emerged regarding students taught in introductory level courses for HSTM:

a. Students on introductory courses should be discouraged from consulting WWW sites
b. Students on such courses should not be encouraged to cite Web sources in their essays
c. Students should not cite Web sources in essays at least until they are familiar with the scholarly use of conventional textual resources, and only then with proper guidance on which web sources can be trusted and how they can be used.

d. Students can cite Web sources in essays so long as they are given adequate guidance on which sources can be trusted and how they should be used.
e. Students can be trusted to be astute and critical consumers of visual/video web materials, so should be encouraged to use web resources in essay writing so that they can build up their confidence in handling texts before learning to read more traditional textual forms.

PLAGIARISM

There was more consensus here:

a. Students should be informed in the most explicit fashion how easy it would for us to detect their efforts at web-plagiarism and how serious the penalties are for this activity.
b. Since students can fall prey to accusations of plagiarism through incompetent source referencing, they should be encouraged to pre-empt this by develop note-taking practices that enable them to identify sources they have used with all due accuracy.
c. Development of more idiosyncratic/individualized courses and assessment tasks can make it very difficult for students to engage in web-plagiarism. Rotating essay questions on a regular basis (e.g. 2-3 year cycle) makes it much less likely that students on a given course will be able to 'sell on' their essay to future cohort. That being said, the wealthiest students can always illegally pay for specially 'commissioned' essays to be written. The only way of dealing with that problem is to set 'unseen' examination papers.

4. The issue of 'Benchmarking' standards for HSTM

The introduction of QAA 'Benchmarking' standards for future Quality Assurance exercises in HE teaching generated a fertile discussion, especially in relation to how the Benchmark statement for single honours History degrees might be adapted or augmented to accommodate the teaching concerns of HSTM.

It was noted that the QAA currently had no plans to compel HE departments to relate their teaching and learning activities to 'national' Benchmarking standards. Some participants considered Benchmarking standards to be a benign development, welcoming the opportunity for HE teachers to locate their teaching within a wider framework of

reference. Other participants actively disapproved of the apparently homogenizing principles embodied in the practice of 'Benchmarking'. Accepting such principles now might create a slippery slope towards later enforcement of complete uniformity in HSTM teaching at all HE institutions.

It was also recognized, however, that some kind of HSTM Benchmarking statement developed by HSTM teachers themselves could potentially present a means of justifying and defending the diverse provision of HSTM in UK HE institutions. It was accordingly agreed that participants should proceed to debate some form of Benchmarking for HSTM to supplement existing History Benchmark standards. It was not yet clear whether this could or would be an appendix to History Benchmark standards, or be a separate benchmarking statement for, say, History, Philosophy and Sociology of Science, Technology and Medicine. That would obviously depend on whether philosophers and sociologists of science considered that the Benchmark statements for Philosophy and Sociology respectively satisfactorily represented all their current teaching practices.

Important points that emerged from discussion of HSTM benchmarking

a. Much HSTM teaching is of the one-off 'service' variety to students in other disciplines that does not neatly fit the QAA model of progression. In Benchmarking statement such teaching would need separate treatment from 'progressional' teaching, and reference may be required to Benchmarking statements in relevant subjects of student constituencies taught.
b. although we might be able to identify some core components to degree schemes containing HSTM (e.g. scientific revolution?), HSTM practitioners concur with the emphasis in the History Benchmarks on the importance of maintaining diversity and discretion in the historical knowledge, methodology and period-range to be included in the curriculum. Beyond the basic introductory level, it is not appropriate to specify what historical topics periods or approaches must be included in—or excluded from—a degree programme involving HSTM. It is important for individuals and institutions to be able to teach their specialist areas of knowledge so that students taking HSTM courses (from highly diverse backgrounds) have maximum freedom to get most benefit from the particular scholarly expertise of teachers at their institution.

c. although allusion is made to *reflexivity* and *interdisciplinarity* in the History Benchmark statement, it was recognized that these would be particularly important in differentiating the distinctness of HSTM teaching provision. It is widely agreed that training in HSTM should ideally use a wide range of disciplinary resources to develop a deep understanding of STM and its past—and an understanding on which students were able to reflect in a self-critical fashion.
d. further discussion is required over the relationship between 'key skills' or 'key transferable skills' that are expected in defining 'graduateness' (e.g. at the Universities of Leicester and UCL) and the particular sorts of skills specifically nurtured in students taking courses and or degree programmes involving HSTM.
e. consultation would be needed with other scholarly historical bodies esp. BSHS, SSHM over the formulation of Benchmarking for HSTM and with the BSPS for the related field of philosophy of science.

Essay writing as a key practice in HSTM

In relation to Benchmarking issues, there was a further discussion of essay writing as the principal (transferable) skill for developmental work in students' learning of HSTM and for assessment. This discussion was formulated as a critical response to a pre-circulated piece by Dai Hounshell, 'Reappraising and Recasting the History Essay' in Alan Booth and Paul Hyman (eds.), *The Practice of University History Teaching*, Manchester University Press, 2000, pp181-93.

This piece analysed three different student conceptualisations of essay writing viz. argument, perspective and arrangement (of facts). It contended that the first of these should and did gain students the highest marks, and offered a paradigmatic feedback form for giving students developmental advice on the crucial areas of essay-writing skills. In relation to session 2, some participants disputed Hounshell's conclusion on the superiority of 'essay as argument' in ways that were not resolved during the session.

The skills and practices of essay writing in HSTM clearly require much further discussion, especially in relation to the issues of what kinds of essay writing students should be encouraged to adopt and which kinds of performance will be given the highest marks.

5. The planned AS Level in History and Philosophy of Science: 'Perspectives'

The workshop devoted some time to considering this proposed pre-University qualification, especially its historical component. Although there was not complete consensus on all matters, the following points emerged in discussion:

a. Whilst it was agreed that it was important to have such a course at sixth form, most participants expressed reservations about some aspects of it, and had some suggestions to make about it how might be improved. Participants welcomed the invitation for input from the HE HSTM community to develop full plans for its conception and curriculum.
b. It was agreed that whilst many sixth form students who took this course would not necessarily go on to take HSTM courses at University thereafter, it was nevertheless important to avoid students acquiring views and understandings that would have to be overturned by subsequent HSTM teaching in HE.
c. Approval was given to the emphasis on 'Science with a Human Face', the focus on 'Great Debates' and on introducing pupils to primary source materials. Yet there was no clear statement about the aims and objectives of the AS programme, and it was thought essential to have these articulated, especially in relation to the science AS levels to which it related.
d. It was noted that some of the language employed in the pre-circulated document concerning 'Key Thinkers' and 'Inspired Mistakes' was specifically geared towards attracting the interest of science teachers and science bodies. Yet it was agreed that it would be undesirable for such terms to enter directly into the final version as they were seriously liable to mislead students about the nature of science and its history. They would moreover deter many history teachers at sixth form from taking any interest in the subject. One way of proceeding would be to give more attention to the experimental and collaborative nature of science (rather than just 'key thinkers') and to refer to the 'fallible' nature of science rather than anachronistic discussion of 'mistakes'
e. It was nevertheless argued that students needed some sense of the important 'myths' about science that the AS level would be able to debunk. In that context such terms as 'Key Thinkers' and 'Inspired Mistakes' could have a pedagogical value in getting students to think about the concepts involved—but in that context only.

f. Examination of textbook material from an existing History of Medicine GCSE showed the dangers of course materials being produced for such teaching without the guidance of HE experts in HSTM. It was agreed that any textbook generated for the AS HPS course would need to have some kind of input from HE practitioners of HSTM if it were to avoid such pitfalls.
g. An ongoing programme of teacher training in history of science would be essential to make the teaching of this course effective in schools.
h. It was agreed that proper development of this new qualification would require substantial financial input to match that supplied by the Royal Society. A suggestion was made that the BSHS and BSPS might be approached about this matter.
i. there was a clear need for extensive field-testing in schools before the syllabus and teaching material could finalized.

6. Possible Future tasks for the LTSN and or HSTM practitioners

Concluding discussion at the workshop identified the following potentially useful areas in which research or supportive work could be undertaken by HSTM practitioners with the support or collaboration of the LTSN or other bodies.

Arising from Session 1:

a. Research into alternative methods of assessment for students taking service courses in HSTM e.g. posters, oral presentations, web pages

Arising from Session 2:

a. facilitating HSTM teachers' access to useful pictorial and textual materials for generating creative/critical thinking
b. fostering further debate on the assessment of critical/creative work (e.g. developing draft criteria as an alternative to those in the appendix to the History Benchmarking statement.)

Arising from Session 3:

a. in addition to further development of the RDN tutorial, we can develop a project to offer further guidance to students on how to develop their own HSTM web pages (e.g. in relation to Session 1 project above)
b. develop recommendations of useful HSTM websites for HE teachers to use

c. provide supportive guidance to HSTM teachers in effective means of using web-resources in their teaching practices

Arising from Session 4:

a. Develop draft HSTM benchmarking guidelines in conjunction with HSTM community
b. Liaise with QAA and BSHS, SSHM and BSPS about development/ratification of such benchmarks
c. Arising from Session 5:
d. Coordinating HE practitioners input to historical component for planned new AS level

Finally: future LSTN workshops could be focussed on the more specific topics of HSTM learning and teaching

a. Benchmarking in HSTM, possibly in relation to related fields in 'Science Studies'
b. The setting, writing and marking of the HSTM essay

Report on a Workshop on Teaching South Asian Religious Traditions, Centre for Applied South Asian Studies, University of Manchester, 18 May 2001

Jackie Suthren Hirst — *University of Manchester*
Mary Searle-Chatterjee — *University of Manchester and Manchester Metropolitan University*
Eleanor Nesbitt — *University of Warwick*

This one day workshop was attended by over 30 colleagues from institutions around the UK. Its aim was to examine the way in which South Asian religious traditions are taught within Higher Education institutions, to think about the ramifications of our practice, and to look towards the future direction of teaching such traditions in this context. The tone of the workshop was set by a series of questions sent out to participants by the organisers prior to the day. These questions included:

- Should we label the subject of our courses in terms of 'religions', traditions, regional traditions or cultures? What are the various advantages and disadvantages of different labelling strategies?
- If we focus on a 'tradition' how much emphasis should we place on diversity within it?
- How much emphasis should we place on historical and political study of the changing ways in which religious identity labels have been invoked?
- How serious a problem is the 'world religions' paradigm'?

Bearing in mind these issues, the workshop began with a presentation by Dr. Roger Ballard entitled *Challenging Paradigms: Popular Religion in the Punjab*. Dr. Ballard's presentation was supported by visual evidence gathered on a recent research trip to the Punjab. It problematised the appropriateness of teaching by '-isms' where popular religion is concerned.

Smaller groups then considered the implications of his presentation in relation to the teaching of Hinduism, Islam, Sikhism and

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Buddhism. These groups prepared posters which were discussed over lunch and presented formally to a post-lunch plenary in terms of particular analytical, pedagogical, and political issues.

In the afternoon delegates again split into smaller groups to consider issues related to teaching across religious traditions, teaching about texts, and teaching via the web, before reconvening in a plenary to discuss outcomes and models for the future.

Outcomes

- Realisation of the need to examine pedagogic practice in detail, and of the benefits of collaborative work on pedagogy
- Sharing of dilemmas and examples of good practice and suggested directions for future action
- Exploration of issues resulting from the disparities between popular religious practice and the image of religion propagated by elite institutions

Plans for future action included:

- Work towards the production of an annotated bibliography of pooled useful materials, to be made available through the CASAS website (http://www.art.man.ac.uk/casas)
- Work towards the production of a collection of papers on pedagogy
- Work towards the production of a book of readings with commentary for use in teaching across traditions (practice, belief, text and identity)

Unanimous agreement among participants that a second workshop should be held next year either in Manchester or elsewhere to continue work in this area. It was suggested that the next session could be based around short presentations on the merits and demerits of particular teaching approaches. For example: on thematic approaches; the use of 'cross tradition' devotional hymns; setting texts in a socio-economic context; case studies of incidents; fieldwork interviews; using a historical approach to show fluidity; and using biographies and autobiography

More detailed outcomes of particular sessions will be made available via the CASAS website (http://www.art.man.ac.uk/casas) .

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