Relating Curriculum Content to Industrial Placement Experience

Dr. T. A. Pickles
Department of Industrial Technology
University of Bradford
United Kingdom

ABSTRACT
The prime purpose of the paper is to consider the connections between curriculum content in degree programmes and industrial placement experience. Following the introduction, and a short discussion of the benefits of work experience, four possible models relating curriculum to the work placement are considered. The paper then provides feedback on research carried out by the author on student opinion regarding academic work during placements. It is concluded that, although students on this evidence are not enthusiastic about having to complete what they see as extra work, nevertheless, integrating the academic with the work experience has a valuable synergistic effect.

INTRODUCTION
Few could deny the value of work experience as an integral part of higher education programmes, and for that matter of further education and high school education. The learning experience for students who engage in such activity is generally acknowledged to be of immense value; even on its own merits work experience can be justified for the enormous benefits derived by all participants, yet substantial additional value can be added, it is contended in this paper, if academic content of degree programmes can be effectively related to work placement experience.

The prime aim of the paper is to explore potential linkages between curriculum content and work carried out by students in placements. For the purposes of this paper we are concerned with the formal sandwich course, as contrasted with a situation where any work experience is accepted. In the sandwich course work is embedded, or integrated, with the programme of study and, in the UK context, usually takes the form of the 'thin' sandwich with, say, two placements each of six months, or the 'thick' sandwich with a one year placement. Clearly it is easier to relate curriculum content to work placement experience in a sandwich course situation where there is a definite structure and, quite likely, a planned programme of work for the student.

BENEFITS
The benefits of work placement, especially of sandwich courses where work experience is embedded, are well-known and well-documented (1). For the employer the placement provides an ideal opportunity to look for permanent staff—in effect a six or twelve month interview; the placements provide potentially useful links between academia and industry leading perhaps to effective long-term relationships: Further, 'links with academic institutions through placements are being used by many employers to help provide and reinforce a learning culture within organisations. Furthermore, employers who invest in a placement culture stand to gain a healthy return in terms of the enthusiasm and new ideas that students bring with them.'(1)

For students, again the benefits are manifold: the gaining of ‘employability’ skills in numerous ways; developing an understanding of the world of work, of work organisations and of the manner in which a particular employing organisation is organised and managed; and, crucially in the context of the present discussion concerning course-embedded work experience, ‘students who have the opportunity to experience a work setting as part of their course potentially benefit in terms of learning to apply their subject knowledge in a general work setting.’ (1); there is an opportunity to put theory into practice and thus create the opportunity to improve their academic performance; an opportunity to think about possible career directions and development is provided, and in some cases offers of permanent employment are made.

Academic staff in higher education institutions also gain in several ways from their involvement in sandwich course activity: the increase in maturity and confidence in their students helps create a better learning environment, for example in seminar discussions where they are more willing to participate; similarly the linking of theory and practice helps improve the learning environment; up-to-date practice and systems are seen by students and by visiting tutors which further improves the potential for learning and can be used in curriculum development; finally research and consultancy opportunities are to be found via staff involvement in sandwich courses.

LINKS WITH THE CURRICULUM
There are various means of making the connections between academic content of degree programmes and placement experience: one model requires students to submit an element of academic work during the placement period; another model draws upon aspects of the students placement experience in the teaching of some modules during the academic period; a third model requires students to make links in the placement with their academic work across a wide range of modules; a fourth model concentrates on key skills, taking the view that students should acquire core/key/transferable skills in both the academic and placement periods. In this model the student is required to relate skills acquired during the academic periods to the potential for making up any deficiencies via the placement experience.

The following section considers these models in more detail, bearing in mind that they are not mutually exclusive—that is, it is entirely possible to use all of them, or some combination, in a sandwich degree programme. Illustrative examples are drawn from the author’s direct experience in the Department of Industrial Technol-
ology that has successfully run such a programme for almost thirty years.

(a) Academic work during placement
The most obvious way of accomplishing this is to require the student to submit one or more essays during his/her placement period. A decision needs to be made as to the subject matter, the amount of work required and the date(s) for submission.

In the Department of Industrial Technology one 2500-word essay is a compulsory requirement for submission half way through the six-month period. Students can choose a title from a list of about ten and the ten titles are designed around five or six major curriculum areas: materials science, communications, industrial sociology, electrical engineering, industrial relations, information technology. Thus, the decision on which area to concentrate on—and, hence, relate to the curriculum—is left to the student. The drawback in this scheme, it might be argued, is that only one curriculum area is examined.

The major merit of this model, as well as the obvious curriculum linkage, is that students keep in touch with academic work—they remain 'in tune' with writing essays; it also forces students to learn to keep several balls in the air at one time. The disadvantage is that work for the university might detract from the work they are doing for the employer. (There is certainly evidence that students regard such work as a nuisance and an inconvenience as will be noted below, but this is hardly surprising!).

(b) Using placement experience in the following academic period
Failure to draw upon the students’ work placement experience is not only failing to use an opportunity to integrate theory and practice but is also to waste an excellent learning resource. In the period following the first placement—the student's second academic year—the author draws heavily upon student experience in the teaching of two particular modules: corporate strategy and human resource management.

In a workshop/seminar context students are asked to produce a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of their placement firm, or of a department in the firm, for the corporate strategy module. They also produce a mission statement, and talk about their firm in the context of social responsibility and environmental issues, amongst other aspects.

Similarly in the human resources module students are asked to give a brief presentation on relevant issues which they experienced in their placement firm, to list difficult/sensitive personnel issues, and then to work in small groups exploring possible strategies for dealing with such problems.

The assessment of student work in these modules takes the form of an extended essay and the questions are designed in part to reflect the case examples completed in seminars; by this means the good students who make a conscious effort to relate the academic to the industrial/commercial—theory to practice—are rewarded.

In a communications module students give a formal presentation based on an aspect of their first placement; this is video recorded, analysed by the rest of the group, and assessed. Following the second placement students take part in a poster session.

(c) Requiring students to make the links
A third model can be envisaged, the central feature of which is that the student is required to make the connections between his/her academic work and the industrial or commercial context of the placement. One version of this is the provision of a list of things that the student is encouraged to look for—or, stated another way—a list of possible opportunities.

A more formal/structured scheme requires the student to provide evidence of learning about a range of matters from management styles and structure, personnel issues, health and safety, etc. to more technical issues, manufacturing systems, research and development, etc. Such evidence might well form the basis of a final report.

The advantage of this type of scheme is that it encourages the student to learn about a very wide range of issues and to make the most of his/her placement. A disadvantage might be seen to arise if learning opportunities across the group of students are seen to be very unequal.

In the author’s Department such a scheme is used but in a very informal, voluntary way. Students are issued with a paper entitled “Making Intelligent Use of Your Placement” which contains a list of possible areas of interest. There is no requirement for the student to submit evidence and the activity, should he/she choose to engage in it, does not contribute to the placement assessment.

For the sake of completion it should be said that schemes such as this might well form part of the requirements of a professional body.

(d) Key skills
The fourth example—hardly qualifying as a ‘model’—is where key skills must be acquired in the placement as an important part of the degree programme. Clearly, some core/key/transferable skills will be acquired almost by accident in most work situations, be they improved communication skills, greater ability to work in a team, and so on. However, in the scheme outlined here we have in mind something more formal and structured.

The central point about this sort of programme is that a conscious effort is made to spell out the key skills, to create a greater awareness in students of the opportunities for acquiring them, and to ask students to assess their own strengths and weaknesses. Part and parcel of this is to expect students to reflect on what they have learned and, to this end, keep a logbook or reflective journal. A vital part of this will be to reflect on the key skills acquired which is surely likely to enhance the students ability to learn and generally to contribute to the management of their own learning—a key skill emphasised in the Dearing Report on Higher Education in the UK (2).
The current emphasis on work experience is symptomatic of the ever-more rapidly changing world of work. Work experience is increasingly sought by employers during recruitment and a range of relevant experiences will better equip graduates for the flexible workplace of the future. (1) To those involved in co-operative education there is nothing new in this in that the enormous value of work-based learning and sandwich courses is deemed to be virtually self-evident. In the UK the significance of work experience was given a boost by the Dearing commission in its report of 1997 (2) in which it recommended, inter alia, that “all institutions should...identify opportunities to increase the extent to which programmes help students to become familiar with work, and help them to reflect on such experience” (Recommendation 18).

Clearly then, work experience is at the top of the higher education agenda and, interestingly, we are seeing—certainly in the UK—a broadening of what seems to be acceptable and valid work experience; as one recent article suggested, skills can be developed, and opportunities for learning grasped, “even” from what at first sight might seem like mundane work such as working behind a bar: “Part-time and vacation work, such as serving up hamburgers in a fast food restaurant or pulling pints behind a bar, needs to be redefined in terms of the skills it can develop...” (4).

However, the principal conclusion to be drawn from this discussion is that yet greater benefits accrue from work experience that is integrated into the degree programme as a whole. As a recent UK report stated, “Work placements as part of the curriculum are not just about experiencing work: they provide opportunities for students to develop personal and social skills within a workplace environment. With appropriate guidance, feedback and reflection, students can enhance the high level skills... which they will need for success in employment....Their academic studies can be enriched by the new perspectives, experience and enhanced skills which they bring from their critical reflection.... More informed career decisions can be taken....” (5) Given this scenario, perhaps the most critical need is for effective planning of integrated degree programmes along with appropriate monitoring mechanisms.

REFERENCES
(4) The Times Higher, 8 January 1999.

* Author’s emphasis