Chapter 6 Learning resources

Graham Gibbs

Overview

This chapter is concerned with the way course design reflects the use made of learning resources other than IT-based resources, which are considered in Pack 5 of this series. All four extracts included here describe courses that emphasise learning resources and show how attention paid to them can change decisions made about teaching, student support and assessment. These extracts also show how course evaluation has focused on issues relating to the use students have made of learning resources. Six short case studies are also included.

One reason for devoting a chapter to this topic is that changes in higher education have increased the relative importance of learning resources. When I was an undergraduate, I was told that I was at university to ‘read for a degree’. Learning resources were central to my studies but they were not problematic. There were only 20 or so students on my courses and, when I needed a book on any of my reading lists, the chances were that it was in the library ready and waiting for me. The library was well stocked and was a quiet, largely empty place. I bought my own books as well — about 20 a year. I would have appreciated more and better handouts associated with my lectures and seminars, and a bit more printed support for the laboratory work I did. But, by and large, access to learning resources was not an issue for me. Today, the context in which students learn is rather different.

- Reduced funding per student has led to reduced class contact, obliging students to learn out of class — and to rely on learning resources — to a much greater extent. At Oxford Brookes University, the number of independent study hours that each hour in class had to support roughly doubled over a period of ten years up to 1995.

- Books have become very expensive, increasing in cost very much faster than inflation year after year. At the same time, the knowledge explosion and the proliferation of university courses have greatly increased the range of material that lecturers would like to place in libraries. Library budgets have not kept pace, and they have not been able to maintain their level of acquisitions or even replacements.

- Students, under more financial pressure than ever, are not buying their own books to the same extent that they were or, in many cases, not buying books at all.

- Journals have proliferated and have also become prohibitively expensive. Libraries have cancelled subscriptions and have made tough choices about priorities.

- Student numbers have more than doubled in fifteen years. Introductory courses have increased to the point that hundreds of students may be chasing the same references on the same day. Most libraries purchase multiple copies only for the most popular courses and few can afford to purchase more than one copy of journals or specialist resources such as law reports.

- Copyright laws have changed and have been enforced more rigorously, making it harder to provide students with photocopies of key material.
• An ever-increasing proportion of students are part-time, mature, living at home rather than on campus, or taking part-time work, limiting their access to conventional libraries.

• Space in which students can sit and study is more limited.

At the same time, there have been positive changes.

• Desktop publishing, together with cheap and quick reprographics, have made it easy for lecturers to make and provide their own handouts and materials, even at short notice.

• Electronic publishing (for example on a departmental intranet site) has made it even easier for teachers to make their lecture notes, slides and other material available, although this is not always appreciated by students who may have to queue and pay to print their own handouts.

• There is now a substantial body of well-designed, print-based distance or independent learning material available for most subjects which greatly reduces the need either for teaching or other learning resources.

• There is also a (smaller) body of computer-based learning resources.

• The internet explosion has provided access to a wealth of learning material, although it is not as well organised as conventional library resources and is of very variable quality because most of it is not refereed.

• Electronic library facilities have made it possible to search for and find resources, although this has not yet made these resources available to be read in full text form except in a minority of cases.

• Students have become more used to various forms of resource-based learning.

• Some institutions have remodeled their traditional libraries as 'learning resource centres', acknowledging the changes which have taken place in the nature of learning resources and the place that they take in students' courses.

While institutions differ in their learning support facilities and levels of funding, this changed context is now almost universal. The main implication of these changes is that student learning is now more dependent on learning resources, but these resources are not of the same kind that they were 25 years ago. This has changed course designs. Class contact time now tends to be used for briefing and debriefing the independent study of learning resources: in the past, this contact time would have been used to provide the main focus of learning, which would then have been reinforced by study. Resources move from the periphery to the centre of learning design. In this changed context, assessment may need to be used as a lever to encourage students to work conscientiously with resources (as in Extract 6.3). Freed from the constraints of timetabled classes, students may be able to learn at their own pace but may also need different forms of support from those which would be appropriate for teaching-centred courses. You cannot simply take class contact away, signpost the availability of learning resources, and expect your course to work well. This chapter, then, is not about the selection and design of learning resources, but is concerned with course design issues.
6.1 What are learning resources?

In one sense, learning resources are absolutely anything that students make use of in their learning, including lectures, the library, fellow students, the studio, or experiences in the workplace, for example. The term ‘learning resources’ refers to almost anything except teaching, for example the core ‘content’, supplementary materials, resource and study guides, facilities and people, as shown in the grid below.

**Activity 6.1 Learning resources you provide**

The grid below contains several types of learning resources and in the second column gives examples of each type. Consider your own courses and make a note of all the learning resources you currently provide for your students.

<table>
<thead>
<tr>
<th>Type of learning resource</th>
<th>Examples</th>
<th>What resources you currently provide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core ‘content’: the main material to be learned</td>
<td>Books, journals, handouts, distance learning units</td>
<td></td>
</tr>
<tr>
<td>Supplementary material: supporting examples and elaborations</td>
<td>Readers, maps, reading lists, photographs, case material</td>
<td></td>
</tr>
<tr>
<td>Resource guides: advice on how to use the main learning resources</td>
<td>Reading guides, annotated bibliographies, how to use the library, list of internet sources</td>
<td></td>
</tr>
<tr>
<td>Study guides: advice on how to go about the main assignments and tasks</td>
<td>Laboratory manuals, project guides, how to write essays, how to work in teams</td>
<td></td>
</tr>
<tr>
<td>Interactive resources: games, simulations and case studies</td>
<td>SIMSOC, a sociology game simulating a society; MACPUFF, an IT simulation of the respiratory system</td>
<td></td>
</tr>
<tr>
<td>Facilities: equipment, learning spaces, production facilities</td>
<td>Language laboratory facilities, studio availability, desktop publishing, group study rooms, photocopying facilities</td>
<td></td>
</tr>
<tr>
<td>People: tutors, other experts, other students, technicians</td>
<td>Tutorial timetable, access to visiting professionals, list of postgraduate research interests</td>
<td></td>
</tr>
</tbody>
</table>
6.2 Course design issues

Making existing learning resources accessible

Students are likely to make good use of learning resources available to them under certain circumstances.

- When they know what resources are available. You will probably need to provide reading lists, annotated bibliographies, library exercises or other forms of introduction.

- If students are clear what they need to do with these materials and when they need to do it. If the course is not paced by regular class contact, you may need to provide detailed guidance and a more comprehensive course schedule.

- When students can obtain the resources when and where they need to. Putting key resources in a reserve library collection that cannot be loaned may not help part-time students who can visit the library for only a few hours a week. Having only one copy of a journal article to which you have referred 200 students is also unlikely to be a successful strategy. You will need to check availability and past usage to develop a way of making resources accessible that works on your course. This may involve investment – in copyright clearance, print budgets or purchase of multiple copies of key resources.

- If students know what to do with them when they have got them. Students often lack the sense of purpose necessary to get much out of many of the resources that teachers regularly cite. You may need to set questions or tasks that can be tackled only by working actively with the resource material.

- If students have the background knowledge, or a conceptual map of the territory, to avoid getting lost or confused. You may need to use your lecture to provide this overview, or provide a handout as a reading guide.

Poor accessibility of learning resources is one of the most common student complaints and one of the least well evaluated or attended to.

Developing new learning resources

Traditionally, teachers presented course material orally themselves and referred students to learning resources – mainly in the library – produced by others. Increasingly, teachers now produce their own learning resources for their courses, and oral presentation is less prominent. For example Extract 6.1 describes a course for which the authors wrote a textbook, and then redesigned the course to make best use of the textbook in a way which involved fewer lectures. More commonly, teachers prepare handouts, create internet sites with links to useful websites, produce slide libraries of visual images, put together readers made up of copyright-cleared material, make their lecture notes and slides available electronically, and so on. Much more of teachers’ time is spent creating resources than previously. Designing courses today involves designing resources as much as designing classes.
Using assessment to orientate students to working with resources

Students tend to turn up to scheduled classes but, if learning resources are simply sitting there, will students study them? Possibly not. It is common, when placing more emphasis on learning resources, to increase continuous assessment and to link it closely to the resources so that only if students spend a reasonable amount of time with the resources will they cope with the assessment. It is no accident that The Open University, which relies heavily on specially prepared learning resources, also relies on frequent assignments and tutor feedback. Such assessment need not contribute to course marks, as illustrated in two contrasting examples.

At Oxford University, it is common for the reliance on independent reading and study to be reinforced by students writing an essay or two each week, which are then discussed in tutorials. Without the oral assessment, for that is what such tutorials involve, it is uncertain that students would undertake as much reading of such a focused quality.

At Oxford Brookes University, Green (1992) describes a resource-based physics course with weekly computer-marked tests relating to the learning package and textbook that students were using. The marks were used for entirely diagnostic purposes, so that students could tell if they were on top of the material and could then decide what additional study was required, and so that the teacher could decide what to cover in optional remedial lectures and problem classes. Without this regular assessment, it is uncertain whether the students would have taken their independent study responsibilities sufficiently seriously.

Replacing teaching with resources

Sometimes learning resources can provide direct replacements for what were previously face-to-face teaching sessions. More often, the extensive use of learning resources changes what you need to use teaching sessions for, and there is no direct replacement but a range of changes in methods and their functions is required instead. Extract 6.1 describes a course that reduces but does not entirely replace the use of lectures by adopting a textbook and guided study. Extract 6.2 describes a course that almost entirely abandons lectures and uses a new kind of face-to-face session: the ‘surgery’. Extract 6.3 describes a course that involves replacing expensive laboratory sessions with learning packages and computer-based exercises. The effectiveness of resource-based study often depends on the quality of the remaining face-to-face teaching, as with the tutorial system at Oxbridge. Even The Open University often includes a surprising number of evening tutorials, day schools and summer schools to supplement its otherwise ‘supported open learning’ system.

Supporting learning from resources

In class, students can ask questions and hear specially tailored explanations. When working independently with learning resources, they cannot, although some forms of computer-based tutorial involve interaction and feedback. If students are working for long periods primarily from learning resources, they are likely to need occasional access to tutorial support of one kind or another. The accountancy course described in Extract 6.3 provided students with fifteen hours a week when teachers were ‘on duty’ in a special learning resource centre, giving access to tutorial support on demand to deal with queries arising from their learning packages. The physics course mentioned above (Green, 1992),
included ten-minute 'surgery' slots which students could sign up for in the teacher's office, should the provision for student support in remedial problem classes not be sufficient. Students may also need more study skills to learn from resources, including better time and task management, better information and reading skills and different note-taking skills. If new types of assignment are introduced as a focus to working with resources, such as projects, then these assignments may also require the development of new skills. Skills themselves may be developed in a resource-based way. For example the University of Plymouth uses six videos and a learning package to develop biography-writing skills involved in a second-year project-based module (Reeves, 1994). And at the University of Northumbria at Newcastle, built-environment students learn library skills from a workbook (Holmes and Bent, 1994).

6.3 Teaching a course around a textbook

Extract 6.1 is concerned with the decision to teach a course around a textbook that, for the authors, was not a straightforward decision to make. However, the use of textbooks is taken for granted in many courses. One of the most popular books for new teachers in US higher education is McKeachie's Teaching Tips (1999). The second chapter, ‘A countdown for course preparation’, includes a section on choosing a textbook, and the fourth chapter – on meeting your class for the first time – includes a section on introducing the textbook to your students. In the USA, textbooks are ubiquitous in undergraduate education and students will often spend more time with their textbook than with their teachers, and will often learn more in this way.

In Extract 6.1, below, Healey and Illery describe how they wrote a textbook for a specific course that was not well served by existing texts, and redesigned several aspects of their course at the same time. The number of lectures was reduced, although the overall teaching effort was increased so this was not seen as a 'cheap' option. The extract reports evaluation evidence they collected using a 'hypothesis testing' questionnaire and also considers a range of advantages and potential disadvantages of using a textbook, also listed in Activity 6.2 which follows the extract.
**Activity 6.2** Consider using a textbook as a resource in your context

In Extract 6.1, Healey and Illery considered the potential advantages and disadvantages of using a textbook. Using their evaluation evidence as a prompt:

1. Decide which of the advantages and disadvantages listed opposite would apply to the use of a textbook in a course with which you are involved. Tick each box as appropriate.

2. Identify any additional advantages and disadvantages and make a note of them.

<table>
<thead>
<tr>
<th>Advantages of using a textbook</th>
<th>Tick</th>
<th>Potential disadvantages of using a textbook</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students like to have a text which covers most of the course material</td>
<td></td>
<td>Students could be exposed to just one viewpoint</td>
<td></td>
</tr>
<tr>
<td>The use of a textbook encourages students to be more self-reliant</td>
<td></td>
<td>Students gain little experience of selecting and synthesising material from different sources</td>
<td></td>
</tr>
<tr>
<td>Guided reading helps to cover more material than could be covered in lectures</td>
<td></td>
<td>Students may reproduce the views of the textbook rather than develop their own</td>
<td></td>
</tr>
<tr>
<td>A course text helps to alleviate pressure on library resources</td>
<td></td>
<td>Students may not have access to their own textbook</td>
<td></td>
</tr>
<tr>
<td>Other advantages...</td>
<td></td>
<td>Other disadvantages...</td>
<td></td>
</tr>
</tbody>
</table>
The chapter you are reading, and all the materials produced for H850, were written for the following reasons:

- It was felt that course participants would be unlikely to have easy access to a range of suitable primary sources – most university libraries stock few of the sources we would want to refer you to.
- You – as course participants – might be put off by the effort required to find and read suitable sources, even if they were accessible.
- Being relatively unused to reading books and articles about teaching and course design, some participants might find important sources difficult to make use of, or see the relevance of, without explanatory comment.
- You might find the reading material disparate and incoherent if we hadn't organised it for you.

You are sophisticated readers with excellent information search skills: more sophisticated and skilled than most students. And yet we were fairly confident that you would still find a series of 'readers' useful. We judged that the disadvantages were more than outweighed by the advantages. What is the balance in a course that you teach?

Generalising from the course described in Extract 6.1 to course design in broad terms, there are two main issues concerning effectiveness. The first issue concerns whether students can learn as well from reading as they can from lectures because, if they can, it might be more cost-effective to simply give students – whether in the form of a textbook, handouts or a specially written learning package – a printed version of what they might have heard in your lectures. Table 6.1 below is drawn from Bligh (1998) and summarises a number of research studies that have compared lecturing with independent study for the purpose of teaching factual information, instigating thought, stimulating interest in the subject, and changing attitudes. Here 'independent study' includes guided reading, independent reading and PSI: (the Personalised System of Instruction – see Extract 1.2 from Chapter 1 of this pack) that involves independent study and regular testing.

**Table 6.1 The effectiveness of independent study in achieving different learning outcomes**

<table>
<thead>
<tr>
<th></th>
<th>Number of studies reporting independent study to be more effective than lectures</th>
<th>Number of studies reporting no difference</th>
<th>Number of studies reporting independent study to be less effective than lectures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information</td>
<td>30</td>
<td>38</td>
<td>17</td>
</tr>
<tr>
<td>Thought</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Attitudes</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Interest in subject</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Popularity</td>
<td>13</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Overall</td>
<td>48</td>
<td>49</td>
<td>21</td>
</tr>
</tbody>
</table>

Adapted from Bligh, 1998, p. 269–85
Despite the large number of studies the evidence is not all that conclusive, although independent study appears to have some support as the best method for teaching information and for stimulating interest in the subject, and is also the more popular choice with students. There is nothing in this research evidence to support the decision to choose lecturing rather than independent study on the grounds of its superior effectiveness.

A second issue raised by Healey and Ilbery concerns whether the use of a textbook could reduce or narrow students' reading, and lessen their opportunity to learn how to locate and use a range of sources instead of relying on one secondary source. The argument could go either way. It is possible that the somewhat simplified conceptual framework provided by a textbook, with good references to other material, would provide students with the confidence to go on to wider reading which they would be more likely to understand and link together, while unstructured independent reading might lead to confusion and incoherence. Even if you believe strongly that students should learn from varied sources, it might prove difficult for students to gain access to these sources at the time they need them, especially if there are as many students as in the course described in Extract 6.1. But, in the end, such questions are unanswerable in advance of running a course and they require evaluation to see how, in practice, students go about their reading and how they benefit. As with many teaching decisions, you have to try it and see what happens.

The next issue of the journal in which Extract 6.1 was published contained a full debate between a number of geography teachers about the pros and cons of using textbooks, prompted by the article, so its views were not unchallenged! Different conclusions are probably appropriate in different contexts.

6.4 Using resources to support group work

Resource-based learning is often perceived as a solitary activity for students. It need not be. When groups of students are brought together for project work or some other form of collaborative learning, resources can be used to provide a focus for their learning activity and to support them in the absence of lectures. Extract 6.2 contains an account of the use of learning resources in architecture at the University of Liverpool. In this context, designing a resource-based course involved a great deal more than designing the materials. In particular, the teachers involved had to pay attention to:

- the induction of students into a new way of learning;
- the selection of students into appropriate learning teams;
- the design of the learning activity that students work on while they use the resources – in this case projects;
- the allocation of studio space for the groups to meet and work.
EXTRACT 6.2
USING SYNDICATE GROUPS TO UNDERTAKE AUTONOMOUS RESOURCE-BASED LEARNING PROJECTS IN THE ARCHITECTURAL STUDIO

Su Hall-Jones
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Reflection 6.1 Consider innovation in your context

At the time of writing the case study in Extract 6.2, full evaluation evidence was not available, though initial reactions are reported. Which of the authors' preliminary findings do you think might be relevant to the use of similar innovations in your own context, and what other issues might you expect to emerge?

Several points arising from this case study are striking.

- The authors involved outsiders in evaluation, in fact they called it a research project. This involved observation rather than just student feedback.
- Collaboration between staff seems to have influenced ideas and attitudes beyond the context of the specific course involved. It may be helpful to involve others when you innovate in your own teaching, or interesting to involve yourself in the innovations of others.
- Students did not, initially, like this approach at all. I have come across this phenomenon before, with students finding new methods uncomfortable, especially where they place more emphasis on independent learning. In my experience, students learn and adapt quite quickly and their knee-jerk reactions should not be taken too seriously. The careful induction would have helped to limit the strength of students' initial reactions.
- The authors were considering changes to the assessment system as a way to change student learning behaviour. This illustrates the way the use of learning resources takes place within a course 'system' in which everything is connected to everything else.

6.5 An open learning course

Open learning is a term used to describe course designs that provide learners with a great deal of flexibility or openness. Most conventional course designs have fixed aims, fixed start and end points, a timetable determined by scheduled classes, a fixed schedule of assessment deadlines, fixed topics, assignments, exams and assessment criteria. There are alternative models of course design that take theory about adult learning seriously, and which allow negotiation of various features with students. In the 1970s, several forms of 'independent study' developed in the UK and elsewhere (see Percy and Ramsden, 1980), which enabled students to negotiate their entire programme of study. The main learning resources in these courses were the library and the students' tutor or supervisor.

In the 1980s, forms of open learning were developed which involved replacing most face-to-face teaching with learning resources and, using the freedom from fixed schedules, this met the needs of students who wanted to study at home or work, study at a different pace or to start or submit themselves for assessment at different points. The Open University is an example of an institution that emphasises the careful design of learning resources rather than face-to-face teaching. The Open University retains fixed aims, start and end points, assignments, deadlines, assessment criteria and even, for most students, fixed learning resources. But within this structure, students choose when and where to study.
In the context of full-time study in conventional institutions, 'open learning' is usually not very open. However, replacing teaching with access to learning resources provides scope for flexible pacing, and ways to get tutorial advice to students when they need it, which has real advantages. Extract 6.3 describes a second-year course in management accounting, which the authors describe as an open learning course, designed to make learning more effective for 400 students. Its main features are:

- a comprehensive set of specially written learning materials, and a set of readings, totalling about 500 pages, which replace most lectures;
- a ‘scene-setting’ lecture for each section of the course;
- assessment at the end of each section of the course, which provides 40 per cent of the course marks and also information about student progress which is used by tutors when students are slipping or struggling;
- drop-in ‘surgeries’ available for up to fifteen hours a week in a special learning resources room.

Students attend ‘scene setting’ lectures if they wish, study the materials independently or in informal groups, seek help from tutors when they need it, and sit scheduled assessments at the end of each section of the course. In a course such as this, the learning resource has become completely central and the teaching serves supportive functions.
EXTRACT 6.3
USING OPEN LEARNING MATERIAL TO DELIVER MANAGEMENT ACCOUNTING

Peter Atrill and Eddie McLaney
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Evaluation evidence (not included in the extract) of the use of resource-based learning in successive years, showed that:

- up to 85 per cent of students reported that they preferred this approach to learning to 'the more traditional/formal lecture style';
- despite preferring this approach, students did not want to study all their courses in this way;
- exam performance improved and external examiners reported that standards had been consistently higher since the introduction of open learning.

To develop the course further, the staff involved gradually introduced computer-based material and exercises, negotiated with the library in an attempt to increase the use made of library resources, and spent about 50 hours a year updating the learning resources.

**Activity 6.3 Independent study in your design**

What features of the course described in Extract 6.3 could be of use to you in your own course design?

<table>
<thead>
<tr>
<th>Design feature</th>
<th>Comments on possible use in your own course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive set of independent learning materials</td>
<td></td>
</tr>
<tr>
<td>Lectures used to set the scene for independent study</td>
<td></td>
</tr>
<tr>
<td>A learning resources room within the department</td>
<td></td>
</tr>
<tr>
<td>Testing of student learning at the end of each section of the course</td>
<td></td>
</tr>
<tr>
<td>Student access to tutorial support for many hours per week</td>
<td></td>
</tr>
</tbody>
</table>

**6.6 Using resources to replace teaching**

From the case studies considered so far, it might be thought that specially prepared learning resources are only appropriate for introductory material. In contrast, Extract 6.4 is set in the context of a third-year science course at a research university and is concerned with learning specialist laboratory techniques. The 'learning package' not only included printed workbooks,
but also video and computer-based exercises. The cost of producing this package of resources was estimated to be much less than the cost of 'wet' molecular experiments involving annual expenditure on expensive chemicals and laboratory time.
Copyright material removed

OpenLearn
A number of advantages are claimed for this innovation.

- The alternative is problematic: conventional laboratory teaching in this subject is difficult to arrange, time-consuming and expensive, and also tends to compartmentalise techniques. It is sometimes sensible in course design to choose the least worst option.

- The ‘simulated’ research environment which the package created enabled the students to learn about molecular techniques in a realistic, problem-solving environment. It is interesting that a simulation can be experienced as more realistic than a ‘live’ experiment.

- Evaluation of the course showed that estimates of the independent learning time required were reasonably accurate, in fact, students were able to tackle what were thought to be demanding exercises quite quickly. It can be very difficult to estimate independent learning time in advance and it is crucial that evaluation pays attention to this issue.

- Students performed exceptionally well on the assessment. In fact, they performed so well that the teachers were obliged to change the assessment in order to produce lower marks!

- Students enjoyed it and wanted more of it. The proportion of students’ total learning time involved was quite small. In contrast, the students in Extract 6.3 learned from resources for a substantial proportion of their time and, while they preferred resource-based study, they did not want more of their courses to be taught in that way.

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**Reflection 6.2 Using resources to manage learning in your context**

There are at least two generally applicable features of the case study featured in Extract 6.4.

- The direct replacement of one learning resource (the laboratory experiments) with another which does the job better and cheaper. What is the most expensive or logistically difficult component of your own course, and can you imagine a way to replace it with a different kind of learning resource?

- The detailed control of student learning activity through a highly structured sequence of exercises. In this case the fact that the exercises were computer simulations or paper-and-pencil activities rather than hands-on lab exercises did not matter – indeed, it allowed more to be tackled in less time.

What aspect of your students’ learning would you like detailed control over so that, for example, you could take them step-by-step through a complex procedure? Could you achieve this control with a specially written learning resource of some kind?

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### 6.7 Case studies

The following brief case studies illustrate a variety of ways in which learning resources have been introduced into course designs in very different subjects and contexts.

**Case Study 1: The use of resources to develop basic drawing skills**

An HND (Higher National Diploma) Packaging Design course at West Surrey Institute of Art and Design found that students were arriving with
varied and sometimes limited basic drawing skills (Roworth-Stokes, 1994). They had little studio and teaching time available to remedy this lack of prerequisite skills, and had an already full timetable. They developed a print-based learning package containing a series of drawing exercises (for example on orthographic projections) and advice on how to carry out these exercises. Students were sent these packages during the vacation before they started, to be completed by the end of the first week of the course. Surgery time in the studio was allocated for students having difficulties, and student work was marked. The change saved 50 hours of teaching time and 56 hours of studio occupation. Student performance was as high as in previous years when there were smaller student numbers and less varied entry levels. Students have been able to apply their drawing skills successfully in subsequent project work, but have expressed a lack of understanding of what they were doing. Detailed evaluation has led to a number of changes to the packages, including increasing the amount of explanation involved, reducing the amount of practice required and introducing a form of self-assessment by students of their own drawing skills. The course team was particularly pleased with the way starting with resource-based learning activities 'had established an ethos of independence and resourcefulness which continues to be apparent' (Roworth-Stokes, 1994, p. 37).

Case Study 2: The use of learning resources to support teaching on all courses in a history department

Bath Spa College Division of History provides all students with a student handbook, a seminar book and a bibliography for every course, and an additional documents book for some courses (Hyland, 1994). These books vary in size from 40 to over 200 pages. Seminar books typically contain reviews, a reading guide, alternative sources and self-test questions and exercises to help students to prepare for seminars. External quality assessment reports described standards in this department as 'unquestionably impressive' (Hyland, p. 44), despite the limited library provision that prompted the development of handbooks in the first place.

Case Study 3: Use of resources in the form of case studies in urban design

The University of Manchester uses specially prepared case studies to support MA and Postgraduate Diploma studies. Groups of three students work with the case study material for one week and then give a presentation to the other students and staff, with role-playing allowing them the chance to re-enact the case studies. Each presentation is followed by a discussion. While the preparation of the case studies is acknowledged to take time, they are claimed to have a long 'shelf-life' and are enjoyed by students and support independent co-operative work which could not have been supported by published material (Marmot and Symes, 1985).

Case Study 4: Use of distance learning materials on a face-to-face course in physics

At the University of Wolverhampton, Open University course materials make up between 40 and 90 per cent of four face-to-face physics courses (Mooney, 1994). These materials include detailed distance learning tutorial texts, videotapes, audiotapes and tutorial sheets, to which the lecturers add face-to-face tutorial sessions and labs. Students respond favourably to learning from such resources because 'no class time is spent writing notes from the board' (p. 61) and because students can work at their own pace and find the approach an interesting change. The majority of students
think the approach should be adopted for other modules. Many such well-developed learning resources have been published which are designed to support extended independent study.

**Case Study 5: Resources to support an extended 'real world' project in building technology**

At the University of Glamorgan, building technology students undertake realistic semester-long projects supported by a substantial project brief containing introductory material, staged tasks, planning law, local authority requirements, maps, diagrams and other supporting material (Barthorpe and Whyman, 1994). Its use is considered to ‘reduce student dependence on staff and helps them to work independently’ (p. 60).

**Case Study 6: Integrating independent learning packages with lectures, labs and tutorials in control engineering**

Figure 6.1, below, shows how three specially written ‘flexible learning packages’ are integrated with more conventional face-to-face teaching to make a coherent unit on Boolean and Switch Logic at Napier University (Black, 1994). These packages contain flow diagrams (like Figure 6.1), aims and learning outcomes, self-assessment questions, in-text questions, tasks and summaries. Notice in Figure 6.1 how students are expected to spend six hours on the three learning packages (sessions 4, 5 and 6) and a total of five hours in face-to-face contact.

![OpenLearn](https://openlearn.open.ac.uk/courses/)

*Figure 6.1* Diagrams are used to explain the relationship between elements of the RBL courses and their sequence

(Black, 1994, p. 40)
Conclusions

This chapter has examined a series of case studies of courses that make substantial use of learning resources. They have illustrated a number of course design features that are common when learning resources are more central to the operation of the course:

- putting learning material into students’ hands, rather than expecting them to find it;
- the division of this material into discrete units;
- reduction in face-to-face teaching for the purpose of presenting information;
- the re-orientation of the remaining teaching towards briefing and debriefing independent study;
- provision for access to tutorial support on a one-to-one basis;
- mechanisms to provide regular feedback on progress or to assess students;
- attention paid to the development of the learning skills required.

You may not be in a position to develop such comprehensive resource-based courses, but these course design characteristics will always be relevant where students learn independently for much of their time.

References


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Text


Figures