# Chapter 1

# Flexible learning: it's not just about distance

Flexible learning is becoming somewhat of a buzzword: everyone is for it, but often people have not thought further about it, except perhaps that it means something about distance education. In this chapter we introduce the first of our lessons learnt: that such vagueness is not desirable and is even counter-productive. To put the lesson into practice we show that flexible learning can involve
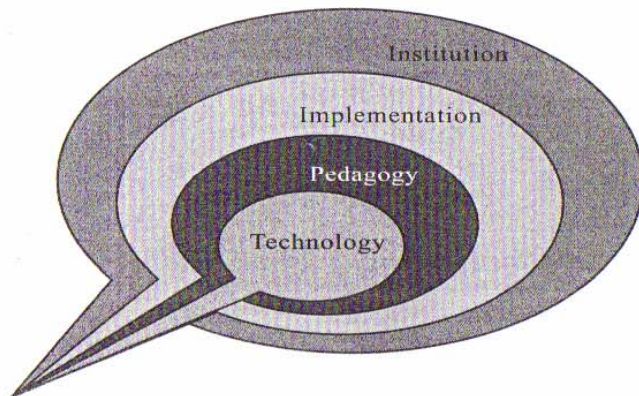


**Figure 1.1**    *Flexible learning in higher education – the four key components*

many dimensions, only one of which is related to location of participation. While flexible learning offers many opportunities, we also show that trying to implement it brings with it many problems and challenges. We introduce four key components of flexible learning – technology, pedagogy, implementation strategies and institutional framework – whose interaction forms the focus of this book. Although many combinations of these components have stimulated forms of flexible learning in the past, the new technologies of the Internet, particularly those of the World Wide Web (WWW), coupled with new pressures on higher-education institutions are bringing new possibilities for the realization of flexible learning, perhaps more than ever possible before. However, there is still much to be learnt from previous experiences with flexible learning and technology. We believe that lessons learnt from previous experiences with technology, pedagogy, implementation and institutional responses can shape and temper our expectations for the future.

## What is flexible learning?

Flexible learning is not a new phenomenon. Students in higher education have for a long time chosen from a variety of courses, studied their textbooks in a variety of locations and times, and selected from a variety of resources in the library. Learning also takes place outside of explicit course settings, as students interact with others or take part in events such as guest lectures or debates or use built-in tutorials to help them learn how to use a software package. But the term flexible learning is the focus of a new wave of interest. 'There must be more flexibility to meet the needs of the learner, through adaptability to different learner needs, learning patterns and settings, and media combinations' (Van den Brande, 1993: xxi). In this section, we take the first steps in responding to this conclusion by asking: what is meant by flexible learning? What are major opportunities and challenges in realizing flexible learning in a higher-education institution? Who is it that really wants it?

### Flexibility: more than distance

To begin, what is flexible learning? Flexible learning is often taken as synonymous with distance education. This is not necessarily so. As we will illustrate throughout this book, there are many ways to make education more flexible that can benefit students who are in full-time residence on a campus and even benefit those who are in the same room together. Flexibility can involve options in course resources, in types of learning activities, in media to support learning, and many other possibilities. There is more than distance that can vary.

In this book, we will use the term *flexible learning* in a broad way, with the key idea being *learner choice* in different aspects of the learning experience. (But as we will show later in the chapter, not everything can be flexible and still be scalable

**Flexibility related to time:**
Fixed time <=============================================> Flexible
1.  Times (for starting and finishing a course)
2.  Times (for submitting assignments and interacting within the course)
3.  Tempo/pace of studying
4.  Moments of assessment

**Flexibility related to content:**
Fixed content <===========================================> Flexible
5.  Topics of the course
6.  Sequence of different parts of a course
7.  Orientation of the course (theoretical, practical)
8.  Key learning materials of the course
9.  Assessment standards and completion requirements

**Flexibility related to entry requirements:**
Fixed requirements <======================================> Flexible
10.  Conditions for participation

**Flexibility related to instructional approach and resources:**
Fixed pedagogy and resources <============================> Flexible
11.  Social organization of learning (face-to-face; group, individual)
12.  Language to be used during the course
13.  Learning resources: modality, origin (instructor, learners, library, WWW)
14.  Instructional organization of learning (assignments, monitoring)

**Flexibility related to delivery and logistics:**
Fixed place and procedures <==============================> Flexible
15.  Time and place where contact with instructor and other students occur
16.  Methods, technology for obtaining support and making contact
17.  Types of help, communication available, technology required
18.  Location, technology for participating in various aspect of the course
19.  Delivery channels for course information, content, communication

**Figure 1.2**  *Dimensions of learning flexibility: options available to the learner (revised from Collis, Vingerhoets and Moonen, 1997)*

beyond a small number of students.) Flexible learning is a movement away from a situation in which key decisions about learning dimensions are made in advance by the instructor or institution, towards a situation where the learner has a range of options from which to choose with respect to these key dimensions. What are some of these key dimensions? Figure 1.2 shows 19 flexibility dimensions identified as a result of a multinational study supported by the European Union.

And this is not an exhaustive list. Distance relates only to Item 15. Clearly there is much more that can be involved in moving from fixed, or less-flexible, to more-flexible learning. How can this work in practice? We need to move from abstractions to options.

## Putting flexibility into practice: opportunities

Although a first step is being aware of different ways in which flexibility can occur, a next step is operationalizing it so that it is translated into opportunities for the student. Table 1.1 shows seven different aspects of flexibility from Figure 1.2 and indicates some of the sorts of options from which learners could choose for increased flexibility. Throughout this book we will illustrate these and others. In the table we use the term *course provider* to indicate the actors who make decisions about how a course will be offered to students. Usually this is some combination of institutional decision makers and, to a lesser extent, the instructor of the course.

**Table 1.1**  *Opportunities for more-flexible learning: options for the learner (revised from Collis, 1996a)*

| CURRENT SITUATION (FIXED OR LESS FLEXIBLE): | DESIRED SITUATION (MORE FLEXIBLE): |
|---|---|
| *Course provider decides in advance how the dimension will be offered in the course.* | *Options are offered to the learner* |
| *Social organization of learning:*<br><br>Course provider determines the approach to the social organization (face-to-face lectures or remote classroom), or individually oriented. | *Offer a choice:* (a) Does the learner prefer being part of a group that participates together throughout the course? (b) Does he or she prefer working individually, without a sense of having classmates? Or (c) does the learner prefer to make his or her own combination, selecting face-to-face for some course events, asynchronous group activities for others and individual work for the rest? |
| *Content:*<br><br>Course provider determines the selection of content, content sequencing and content approach (theoretical or practical). | *Offer a choice:* (a) Does the learner wish the course provider to specify the content, content sequencing and content approach (theoretical or practical)? Or (b) would the learner prefer making his or her own choices, entirely or partially as to content, content sequencing and content approach (theoretical or practical)? |
| *Learning materials:*<br><br>Course provider determines the learning materials of the course. | *Offer a choice* as supplements to the core resource (usually a textbook): options include educational software, distributed resources via the WWW (located by the course provider or the learners themselves), video resources, resources from multimedia databases, additional library resources. |
| *Interactivity:*<br><br>Course provider determines the major way or ways in which learner interactivity is to occur in a course. | *Offer a choice:* (a) Does the learner prefer real-time, human–to–human interaction? (b) Does the learner prefer written human–to–human interaction, asynchronously, so that time is available to reflect on his or her comments and to answer when he or she wants? (c) Does the learner prefer to interact cognitively with an appropriately designed computer program or other learning materials instead of via communication with a person? (d) Does the learner prefer a combination of the above, chosen by him– or herself? |

*Technology:*

Course provider decides on the technical platform for the course.

*Offer* a choice among major platform variations (or their combination): (a) a low-end platform, with television, telephone, video recorder and player, and a stand-alone computer; (b) a computer-network platform, with access to e-mail and the WWW via the Internet or an intranet; (c) a high-end platform, via a fast network connection, allowing video access on demand and real-time application sharing.

*Language:*

Course provider decides on the language(s) to be used in the course.

*Offer* a choice on the language to be used in (a) lesson materials, (b) asynchronous communication, (c) real-time two-way video or audio interaction, and (b) face-to-face contacts.

*Location:*

Course provider decides if course is to be experienced entirely at a distance, or with fixed events on campus.

*Offer* a choice: (a) Does the learner wish to experience the entire course at a distance, or (b) does he or she want to combine distance and self-study aspects with some number of face-to-face sessions?

Figure 1.2 and Table 1.1 show that flexible learning is not a simple goal nor does it necessarily mean only distance flexibility. Also, within each flexibility dimension, there are many possible options. Even within traditional distance education, for example, many variations exist that can limit flexibility related to distance, and students may not be offered an option about participating. Learners may be occasionally required to attend residential sessions on specific days or go to local study or participate, via technologies, at a preset time in distributed group discussions or sessions. All of these requirements impinge on the learner's freedom in choosing where he or she will learn.

No flexibility option is simple to carry out in practice. If an institution wishes to commit itself to flexible learning, it needs to make explicit choices as to which flexibility dimensions it will focus upon and what range of options will be feasible to offer within these dimensions. Dimensions being frequently chosen by traditional institutions currently include (Collis, 1998b):

- Improving *flexibility in location* of where the learner can carry out different learning activities associated with a course. Many of the learning activities in a course can be carried out from a location outside of the physical campus, allowing learners the choice of maintaining their home and work situation. However, many institutions are not offering flexibility for every aspect of every course. Some learning experiences, such as the first meeting of a course, are felt to be best experienced in a face-to-face setting and thus all students are required, or at least urged, to forgo flexibility of distance for these occasions.

- Improving *flexibility in programme*. Assuming the learner has relevant previous experience, subgroups of courses can be chosen in terms of his or her needs and interests. This implies in turn that instructors must be more flexible, in terms of prior expectations of the students and in providing extra resources and opportunities to compensate for different backgrounds.
- Improving *flexibility in types of interactions* within a course, so that, for example, students who benefit from group interaction and group-based project work can choose these sorts of opportunities, while other students, perhaps with families and work commitments, who benefit more from the freedom to organize their own times and ways of studying, can also be accommodated within the same course. Not all students need to work in groups, and not all students prefer social interaction as part of a learning experience.
- Improving *flexibility in forms of communication* within a course, so that learners and instructors have a wider variety of ways for more targeted and responsive communication than is the case when communication is limited to what occurs during face-to-face sessions such as lectures, or incidentally in the hallways. Students should be able to ask a question of their instructor from their own location and at their own time, but in turn the instructor should also have flexibility in managing his or her own time in terms of handling communication.
- Improving *flexibility in study materials*, so that the students not only have a wider choice of resources and modalities of study materials from which to choose than only what the instructor has previously selected for them, but also come to share in the responsibility of identifying appropriate additional resources for the course and even contributing to the learning resources in a course.

Thus an important first step in a move towards more-flexible learning is to take the time to develop consensus within the institution as to what is meant by this term. Flexible learning needs to be made operational, expressed in terms that can be turned into manageable options to offer to students. This operationalization has several benefits: it helps to guide and steer a change process in a practical and coherent way, it is a necessary step toward implementation planning (see Chapter 3), it facilitates a return-on-investment estimation (see Chapter 6), and it is critical in the selection of the most appropriate technologies for the decided new situation (see Chapter 4).

Also important, a concrete operationalization helps make it clear that flexible learning involves many possibilities in addition to time and distance flexibility. Even if an institution does not want to move away from face-to-face lectures, for example, it should still consider the potential benefits of other forms of flexibility, such as offering options with respect to the way students carry out self-study activities (for example, in groups or individually?); flexibility in the types of learning activities; and flexibility in the amount of monitoring from the instructor.

While it seems sensible to take this sort of care in terms of moving from a goal stated in general terms (flexible learning) to goals stated in specific and operational terms, it has been our experience that this is often not done, particularly in change initiations involving technology. A typical phenomenon with earlier waves of interest in computer-related learning has been the statement of abstract goals ('revolutionize education', 'individualize learning', or even 'increase economic competitiveness'), expressed in vague and non-concrete terms. One of the consequences of such vagueness is a subsequent lack of evidence of success. Another consequence is that decision makers move on after the vague statement of goals and leave it to the subsequent implementation manager to make the vision concrete. This may not turn out to fit the unspoken ideas of the original decision makers, leading to problems with institutional support and funding (see Chapter 2). Thus, we would like to introduce the first of our *lessons learnt* here, and continue to apply it throughout the chapter, and book:

**Lesson 1:** *Be specific.* We need to define our terms and express our goals in a measurable form or else progress will be difficult to steer and success difficult to claim.

## Putting flexibility into practice: challenges

Just as flexible learning is complex to describe and multidimensional, it is also complex to implement in practice. While there are new opportunities, there will be challenges of many different sorts to surmount relating to the extent to which options about learning dimensions can be offered to students and still be manageable for the instructor and institution. Some of the challenges as seen from the perspective of the instructor, the learner, the educational institution and those who validate the learner's learning experience in terms of accreditation and legitimacy are described in the next points.

### From the perspective of the instructor

When the learner is given more choices, the instructor is increasingly required to respond and individualize rather than plan and deliver. In some ways this is liberating for the instructor: he or she can choose from a wider range of approaches, of material, of learning settings, in order to make these options available in response to the wishes of different learners. In addition, instructors can alter their own times of working, responding to students late in the evening, at their homes, with a cup of tea in hand, instead of at a fixed time in the day. Thus more-flexible learning for the learner brings more options to the instructor as well, although not always reflecting the instructor's choice but rather in reaction to the learner's choices.

Moving to more-flexible scenarios will also have an impact on the instructor's pedagogical patterns. This also means that the time burden on the instructor and support provider will become constraints on the goal of flexible support for the learner. More-tailored training is more time- and effort-consuming than standardized approaches for the instructor. The more choices the learner has, the more demands and thus challenges there are for the instructor. (See Chapters 5, 7 and 8 for more about the impact of flexible learning on the instructor.)

### From the perspective of the learner

Flexibility for the learner brings him or her not only new choices but also new responsibilities. Instead of being told what to do by the chosen educational institution and instructor, he or she becomes more like a client in a supermarket. 'Modular structures, credit accumulation schemes, independent learning and so on, can create a supermarket system in which students wander freely, picking up this course or that, having as little contact with lecturers as supermarket shoppers have with anything resembling the friendly village grocer. These changes may empower learners' (Fleming, 1993: 321). However, such a cafeteria approach can confuse rather than empower the individual learner. Not all students want to make their own choices or be responsible for the quality of their choices. More flexibility brings with it more independence but also the need for more self-direction and more self-motivation. These traits are not automatic in many learners. Flexible study locations and time can mean solitary study, not comfortable for some. Giving learners their own choice of time, content, method, media, route and pace will mean less chance of group interaction and peer-to-peer communication. These are intrinsic problems in offering more learner-centred learning. Many learners will need or appreciate an expert making many of the choices for them. Thus, in flexible learning there still should be the option of selecting predetermined choices, as well as making one's own decisions. But again, this requires multiple versions of the same course or course components.

### From the perspective of the educational institutions

Flexibility options for the learner and the instructor will have significant organizational impact on the course-delivery institution. The institution will have to take the key decisions in order for flexible learning to occur on a meaningful scale (see Chapters 2 and 9). There will be conflicts from the point of view of course delivery and organization. If students are to be promised time flexibility, for example, at what times is a lecture scheduled? How can timetabling of rooms occur? When are extra sittings of final examinations to be held, where and with whom supervising? Handling student registration, accrediting student progress, timetabling rooms for contact sessions and examinations: these and many other logistical aspects can quickly become unmanageable for the institution even with sophisticated database systems.

More than this, the institution will have to deal with complaints: from instructors who feel change is being forced upon them, or is coming too fast, or is not occurring as they feel it should; from students who may feel they are being forced to incur new expenditures for technology; from governing boards who may doubt the financial soundness of the planning or its implications in terms of other key strategies for the institution.

From challenges such as these, and others, Table 1.2 summarizes some of the major barriers confronting the desire to make learning more flexible.

But the situation is not static and we should not sound overly pessimistic; there are ways to offer at least some aspects of flexible learning within human, organizational and societal constraints. This book is based not only on lessons learnt about problems and constraints, but also on lessons learnt about successes.

**Table 1.2**   *Factors constraining learning flexibility (revised from Collis, 1996a)*

| Key Constraints on Flexibility | Key Actors Related to the Constraints |
|---|---|
| Flexibility is unmanageable. | – Instructors cannot handle what can amount to individualized instruction because of time and also cognitive constraints if the number of learners increases.<br>– Instructors do not have the time or resources to anticipate the permutations of options that a learner may choose and produce cohesive, good-quality variations of courses available to reflect those options. |
| Flexibility is not acceptable. | – The legitimizing agency related to a course cannot handle a wide variety of course permutations in terms of recognition for the course.<br>– The culture of which the learner is a part is not oriented towards the idea of learner choice, but instead expects the course provider to be responsible for pre-specified decisions about the course offering. |
| Flexibility is not affordable. | – Each combination of options may require some *re-engineering* of the course; economy of scale is not likely to occur. Personal and technical implications of many learner choices are much more costly than any course provider could support. |
| Learning flexibility is not realistic. | – Learner flexibility may require an imaginative and creative approach to course redesign that is outside the scope of many instructors (relatively few persons are innovators).<br>– Some combinations of options are not compatible with one another by their very nature (if a learner prefers to work at an individual pace, choosing his or her own content and sequence of content, that learner cannot be expected also to be having real-time interactivity via video-conferencing with classmates; if a learner chooses to work in his or her own language and it is a language that others in the course do not speak, the learner cannot insist on a stress on human-human interactivity, either real-time or asynchronous). |

## Who wants flexible learning?

Given all the complexities, why continue? Who is it that wants flexible learning? Throughout the book we will respond to this question. The answer in general is: educational institutions and their competitors, technology specialists and students.

The changing characteristics of students in post-secondary education are among the most important arguments for flexible learning. Students in the normal intake routes, directly from secondary school and resident at or near the physical campus, are being joined by increasingly diverse cohorts. These cohorts are diverse in age, educational backgrounds, experiences, distances in which they live from the campus and even cultures and native languages (Langlois, 1997). These diversifying demographics are in turn a reflection of the need in society for *lifelong learning* particularly in the international context of increasing career mobility (Krempl, 1997). This need has at least the following aspects:

● Students will increasingly require educational programmes and a way of experiencing them tailored to their own situations, rather than fitting a standard model, especially when this standard model is based on young, professionally inexperienced, full-time students, living on the campus and needing a full range of courses for a certain degree.

● For some learners, there would be less time needed and lower expenditures for a particular learning event if it could be experienced as a module, instead of the learner having to participate in an entire course and if he or she could participate in the event in a time period and location convenient to him or herself.

● For the working person, better quality of results could potentially be achieved, in that only the necessary content, in the most up-to-date versions of resources, would be chosen.

● Theories and experience with adult education show such education to be effective to the extent that it is relevant to adult learners, is closely related to their own learning history, has transfer value to their work and is efficient in terms of demands on their time and energy (Van Enckevort *et al*, 1986).

All of these require individualization of learning experiences, and thus call for increased flexibility in learning alternatives. If higher-education institutions do not respond to this changing demand from students, other service providers will (see Chapter 2).

Thus, we identified flexible learning as a complex domain and one that could be experienced in many different ways. We have also seen some of the opportunities as well as constraints that will confront translating abstractions into practice. The demand is here, the demand is real and we must proceed. The next step is to consider components of flexible learning in the higher-education setting that interact with one another to determine the success of the change process towards more-flexible learning.

## Components of flexible learning in higher education

Although in Figure 1.2 we discussed possibilities for flexibilization in terms of five sets of dimensions (time, content, entry requirements, instructional approach and resources, and delivery and logistics) within which to offer learners choices, flexibility can also be expressed in terms of four main components necessary to make it possible in practice. These components are: technology, pedagogy, implementation strategy and institutional framework. They form the focus of the chapters in this book. We introduce them here.

### Technology

When we speak of *technology* in this book, we are generally referring to the combination of information and communication technologies. Information technologies involve computers; communication technologies will be taken as involving network systems, and in particular data networks running under the Internet protocol (IP). Because network connectivity is becoming standard for computers in higher-education institutions, the use of the term technology in this book generally refers to some aspect of computers connected to an IP network. Video-conferencing may or may not be classified as a computer-related technology; it depends on whether the video-conferencing system is experienced by the user as being associated with a computer (ie desktop video-conferencing) or not. We include video-conferencing in our general use of the term technology, because in the future there will be more and more convergence of analogue video-conferencing of the room-type variety with digital, network-accessible video-conferencing.

Computers and networks do nothing without software tools and applications; thus the term *technology applications* will be used (see Chapters 4, 7 and 8) to refer to the various categories of software that can typically be used for the learning-support process in higher education. Table 1.3 gives an overview. When we speak of a particular example of a type of technology application, such as a particular WWW site or a particular computer-conferencing system, then we will call that particular example a *technology product*.

In this book, particularly Chapter 4, we will focus on technologies and technology applications, but never in isolation from their place as part of an integrated system of which pedagogy is another major component.

### Pedagogy

Pedagogy is defined (at least in some countries) as '*the art and science of teaching... the knowledge and skills that practitioners of the profession of teaching employ in performing their duties of facilitating desired learnings in others*' (Dunkin, 1987: 319). Although there are other terms that could be used, for example *didactics* or *instructional approach*, we will use the term *pedagogy* in this book to

**Table 1.3**   *Types of technology applications related to categories of course support in higher education (Collis, 1999f: 38)*

| Major Educational Use | Examples of Technology Applications |
| --- | --- |
| 1. Publication, information dissemination | Word processing: HTML editors; WWW sites and the browsers to access them; WWW sites associated with database environments; software to facilitate file transfer and document attachments to e-mail; tools for cross-application format retention (ie pdf). |
| 2. Communication | E-mail systems; computer-conferencing tools, including WWW boards and other forms of WWW-based conferencing; WWW sites offering communication options for the direct sending of e-mail and forms for structured communication; software for Internet telephony; software environments for audio-video desktop conferencing, for voice e-mail, for creating video attachments for e-mail; software systems for text-based chat. |
| 3. Collaboration | Groupware, which includes application-sharing software, shared workspaces, WWW-based shared workspaces, WWW-based application sharing, workflow tools; WWW sites designed for collaboration support; tools to allow collaborative writing on documents that are then commonly available to a group. |
| 4. Information and resource handling | CD ROMs with resource collections, which may or may not be linked with a WWW site; WWW-based search engines; distributed database systems (WWW-based and proprietary); WWW sites designed for information organization, access and sometimes creation; tools to retrieve and display distributed multimedia resources stored as digitized audio and video (including streaming audio and video). |
| 5. Specific for teaching and learning purposes | Stand-alone software for tutorials, simulations, electronic workbenches, demonstrations of processes, collections of resources; interactive software (such as tutorials, quizzes, simulations) stand-alone or accessible via WWW sites; computer-based testing systems; video-capture tools for lecture or presentation capture; video-conferencing (point-to-point and multicasting) for lecture participation; WWW-based pages or environments. |
| 6. For course integration | WWW-based course support (or management) systems. |

indicate the manner in which the teaching and learning processes and settings in a course are organized and implemented by an instructor. Teaching in higher education most generally takes place in a course context with an individual faculty member responsible for an entire course, but many variations occur. For convenience in this book, and because it is the majority situation in traditional higher-education institutions, we focus on pedagogy within the course context, and use the term instructor in the singular.

## Pedagogical approach

There are many approaches that can be used to define the pedagogical approach used in a course. One approach is to analyse a course in terms of components, each related to categories of pedagogical activities involved, and within these components identify ways to meet goals such as more flexibility. One such set of categories is:

- *general course organization*, including administration and record keeping of student marks and absences, as well as general planning for the course;
- *lectures* and other forms of instructor-led class sessions;
- *self-study*: readings, activities and assignments, (perhaps) practical exercises;
- *major assignment* (essay, report, product, case study, etc) intended to synthesize various aspects of the course and usually expected to occupy a substantial portion of the student's time for the course – the assignment can be individually done, or done by a group;
- *testing,* (partially) to determine a mark in a course;
- *communication*, in addition to what occurs as part of the above categories.

We use this set of categories in Chapters 5 and 7. If the amount of time that the instructor spends on each category is roughly estimated and expressed as a percentage of the whole, a *pedagogical profile* of the course can be obtained (Collis, 1996d). Courses will vary in the amount of time and attention the instructor gives to each of these categories. The pedagogical profile of a course oriented around a lecture-textbook-essay-examination model will differ quantitatively and qualitatively from that of one oriented around students participating in a group-based project or one organized around a series of predefined practical activities. Each category can be analysed in terms of its flexibility and made more flexible for the students involved (Chapters 5, 7 and 8). Table 1.4 gives several examples of how WWW-based tools, environments and systems are being used to increase the flexibility of courses within each of these categories. Chapters 4 and 5 discuss this in more detail.

## Pedagogical models

In contrast to a pedagogical *approach*, which is a way of doing things such as illustrated in Table 1.4, a pedagogical *model* relates to the abstract concepts about the learning and teaching process that underlie the approach. Sfard (1998), for example, identifies two basic types of educational models, the *Acquisition Model* and the *Participation Model*. With the Acquisition Model, the focus of learning activities is on the acquisition of pre-specified knowledge and the development of predetermined concepts. With the Participation Model, the focus of learning activities is on becoming a member of a community of practice, learning from the community but also contributing to it. With the Acquisition Model, what is to be learnt is generally predetermined. Frequently the extent to which the learner has learnt is measured by a written test. Often there are predetermined

**Table 1.4** *WWW-based applications; extending flexibility within pedagogical categories (Collis, 199b: 55)*

| Pedagogical Category | WWW-based Applications |
| --- | --- |
| 1. Course organization | – A course calendar is available on the course WWW site via which relevant dates and times for different aspects of the course are highlighted. The calendar and updates are always available. |
| 2. Lectures, contact sessions | – Highlights of lectures are captured as digitized video and made available as video-on-demand via the course WWW environment, synchronized with lectures notes, for students not physically present.<br>– Follow-up reflections or questions can be posted and responded to via various WWW-based forms and communication tools in the course WWW site, at a time and location convenient to the student. |
| 3. Self-study, assignments | – Study materials are expanded and updated by using links to additional resources via the WWW; course assignments involve students contributing new resources to the WWW site, along with written comments as to why the resources are appropriate. |
| 4. Major assignment | – Tools to support group activities such as shared workspace are available; group members can have their own private communication areas within shared workspaces. |
| 5. Testing | – Password-protected (practice) test sessions are available, with automatic feedback when approriate to the test questions. |
| 6. Mentoring, communication not specific to nos 1–5 | – Convenient communication through an e-mail centre in the course WWW site can occur, where not only individuals can be messaged but also groups within the course, including instructor groups. |

right answers. In contrast, with the Participation Model, the interactions that the learner contributes to may serve to change the knowledge base of the community even as he or she participates. There are no right answers, but rather degrees of insight, belonging and participating. Table 1.5 summarizes Sfard's interpretation of these two fundamental educational models.

Sfard emphasizes that both models are needed in higher education. The Participation Model needs to make use of the Acquisition Model. Learners cannot communicate in a professional community if they do not share basic vocabulary and concepts; learners cannot participate in an apprenticeship without acquiring many basic skills of the domain in which the apprenticeship occurs. Thus the Participation Model is not enough in itself. But what is powerful about Sfard's analysis is her claim that the Acquisition Model is also not enough in itself. She makes her arguments for these claims in philosophical

**Table 1.5**   *Comparing the Acquisition and Participation Models (summarized from Sfard, 1998: 5–7)*

|  | Acquisition | Participation |
|---|---|---|
| Key definition of learning | Learning as knowledge acquisition and concept development; having obtained knowledge and made it one's own; individualized. | Learning as participation, the process of becoming a member of a community, 'the ability to communicate in the language of this community and act according to its norms' (p 6); 'the permanence of *having* gives way to the constant flux of *doing*' (p 6). |
| Key words | Knowledge, concept, misconception, meaning, fact, contents, acquisition, construction, internalization, transmission, attainment, accumulation. | Apprenticeship, situatedness, contextuality, cultural embeddedness, discourse, communication, social constructivism, co-operative learning. |
| Stress on | 'The individual mind and what goes into it' (p 6); the 'inward' movement of knowledge' (p 6). | 'The evolving bonds between the individual and others' (p 6); 'the dialectic nature of the learning interaction: The whole and the parts affect and inform each other' (p 6). |
| Ideal | Individualized learning. | Mutuality; community building. |
| Role of instructor | Delivering, conveying, facilitating, clarifying. | Facilitator, mentor, 'expert participant, preserver of practice/discourse' (p 7). |
| Nature of knowing | Having, possessing. | Belonging, participating, communicating. |

terms; we think however that support of the need for both Acquisition and Participation Models can be more directly seen in emerging conditions in society.

## Contribution-oriented activities

The need for participation is a reflection of current developments in society. Internationalization, the world being a global community, the fact that individuals can expect to work in different settings and as members of multifaceted teams, the need for social skills and the capacity to function effectively as a member of a team: all are commonly being described as characteristics of living and working that are rapidly gaining in importance. The Internet is stimulating the development of professional communities in which the individual interacts, not just once a year at a conference but regularly via WWW portals and mailing lists.

Even participation is not enough: the participant must also contribute in order to make a difference. Reigeluth (1996) itemizes major differences between the

industrial age and the information age that affect education and notes the bipolar pairs: adversarial vs co-operative relationships, bureaucratic vs team organization, autocratic vs shared leadership, one-way communications vs networking, and division of labour vs integration of tasks. These pairings can map on to Sfard's acquisition-participation dimension but also extend the participation dimension to include a contribution orientation.

Acquisition and participation are not new ideas, but contribution is less discussed. The tendency in education has been the overemphasis of acquisition. 'Unfortunately, most courses are structured to transmit knowledge... Putting disciplines into bite-sized units that are to be taught through lectures across a series of weeks has a long tradition' (Nicaise and Crane, 1999: 29). Sfard calls for the restoration of a balance. We too have seen the need for this balance in our own experiences. When participation/contribution-type experiences are graded in a course content, they are typically field experiences, such as practice teaching or residencies in a professional setting.

We agree with Sfard that it is a balance that should be found, not a choice between one model and the other. For some courses and learners, the balance will favour activities with acquisition goals, such as might be the case in an introductory course in a mathematics programme. But even in these, students could have the opportunity to contribute to the learning experience for themselves and other learners, for example via submitting an answer to a 'frequently asked question'. For other courses, the balance could shift towards contribution, while still including acquisition aspects. Because activities are the instructional experiences that learners participate in beyond getting input through reading or listening (Brophy and Alleman, 1991), we will speak of educational models with activity goals related primarily to acquisition or primarily to participation and contribution, and argue that a movement towards the latter in higher education is desirable. Because contribution cannot occur without participation (although the converse is not necessarily so) we will refer in particular to a distinction between an acquisition model and a contribution-oriented model. In Chapter 5 we will develop these ideas further and explain why we feel contribution is so important, and has new possibilities because of technology support. Because the educational models relating to activity goals are fundamental to our discussions of pedagogy throughout this book we summarize them here as a lesson:

**Lesson 2:** *Move from student to professional.* Learning in higher education is not only a knowledge-acquisition process but also a process of gradual participation in and contribution to a professional community. Pedagogy should reflect both acquisition and contribution-oriented models.

## Flexibility-Activity Framework

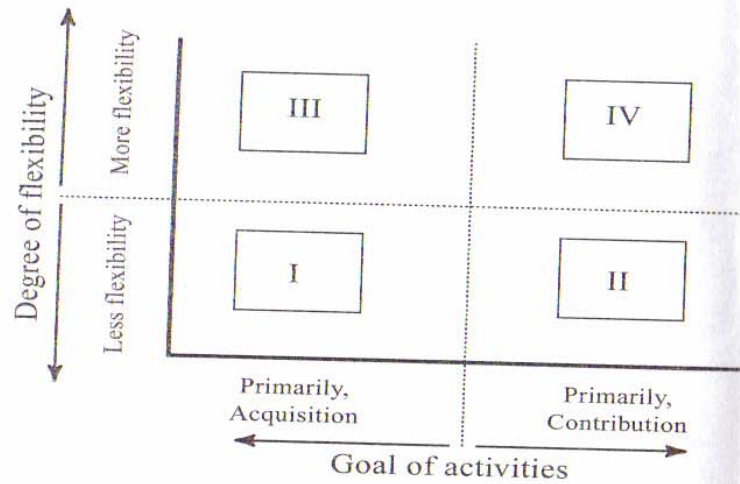By using the activity-goal dimension, we have a way to relate pedagogy to flex-

**Figure 1.3** *Flexibility–Activity Framework*

ible learning. By combining an educational-model dimension with activity goals focused on acquisition or contribution with a flexibility dimension with categories relating to less and more flexibility, we can define a *Flexibility–Activity Framework* as shown in Figure 1.3. We will be referring to this framework throughout the book.

Extending Sfard's analysis to include a movement towards more flexibility as well as toward more contribution, we believe that courses in higher education should become identified with Quadrants III and IV, with a tendency towards Quadrant IV. We believe they are now predominately in Quadrant I. We will illustrate opportunities for this migration throughout the book.

## Implementation strategies

Next to technology and pedagogy, the third component of flexible learning relates to its *implementation* in practice. A pedagogical theory means little if instructors do not apply it, and technological resources have no value if not used. A fact that has long been seen with computer-related products is that they are not used by the majority of instructors. In Chapters 3 and 4 we analyse why. Implementation is a critical component of a move towards more-flexible learning in an institution, because without implementation efforts stimulated at the institutional level it is likely that only pioneers will move forward. The

number of instructors who choose to be innovators with technology and pedagogy is limited. An implementation strategy, with incentives, a methodology for gaining instructor involvement, and an effective manager are necessary. We discuss these aspects frequently in the book, particularly in Chapters 3 and 7.

Factors that influence the implementation of a technology innovation in an educational setting have been well studied and are reported in Chapter 3. We see these factors as having a relationship with one another, which we describe by the 4–E Model (Collis, Peters and Pals, 2000). This model says that an individual's likelihood of making use of a technological innovation for a learning-related purpose is a function of four groups of factors: *Environment* (the institutional context), *Educational effectiveness* (perceived or expected), *Ease of use* and *Engagement* (the person's personal response to technology and to change), each expressed as a vector. In the 4–E Model, the Environmental factor determines the level of the success threshold; a stronger environmental climate pushes the threshold lower so that the vector sum of the other three vectors does not have to be as high as when the threshold is associated with a weaker environmental vector. Figure 1.4 shows a 4–E Model profile of an individual with a weak Ease
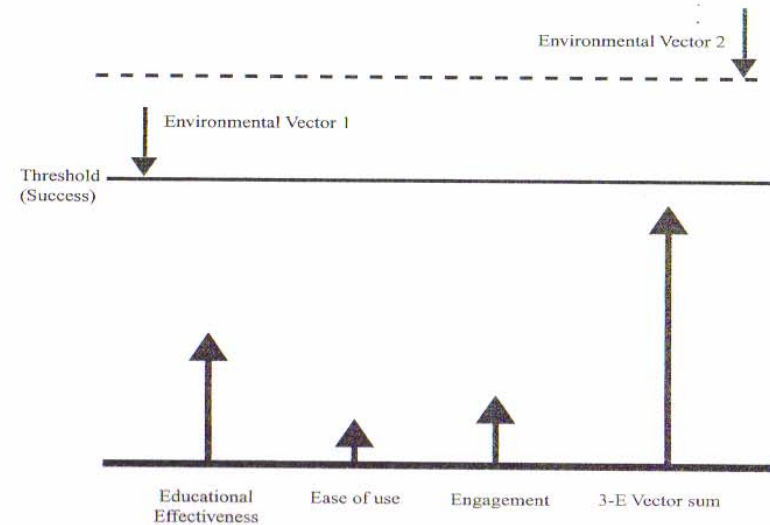


**Figure 1.4** *The 4-E Model, showing how educational Effectiveness, Ease of use, personal Engagement and Environment factors are interrelated in predicting an individual's likelihood of use of a telematics application for a learning-related purpose (Collis, Peters and Pals, 2000, in press)*

of use vector, a weak Engagement vector and a moderately positive Educational effectiveness vector. The individual's vector sum is (almost) high enough in Environment Condition 1 probably to make use of a telematics innovation in his or her teaching. In Environmental Condition 2, the push from the Environmental vector is too weak and thus the threshold is too far away; the individual is not likely to make use of the innovation.

We will use the 4–E Model throughout the book as an intuitive guide to predicting implementation success and shaping implementation strategies.

### Institutional framework

The manner in which pedagogy is carried out in a course and technology is used is influenced by many factors outside of the particular course itself. Courses are offered as part of a programme by an educational institution, and therefore must relate to that programme in terms of content and expectations for the students. Also, courses must occur within the operational processes of the institution, in terms of length, time-related aspects, admission criteria, examination procedures and in terms of the resources available to the students for carrying out course requirements. Thus, the pedagogical decisions of the instructor are constrained by many factors outside his or her control. They are part of the institutional framework affecting flexible learning.

Institutions also differ in the amount of support that is offered to the instructor relative to his or her teaching. This support can include direct support during the course itself, in terms of persons available to assist in some of the course-execution tasks; can relate to support during the preparation of the course; and can be offered more generally, in terms of helping instructors gain new skills and insights relating to their pedagogical practices. Support also relates to the library services and technological infrastructure available to the instructor for use in the teaching process. These are also part of the institutional framework.

There are other institutional aspects as well, some of which are more difficult to quantify. The social and professional climate in an institution, the management style of its leaders, the institution's previous experiences with technology-related change, and the vision of the leaders and of key persons with an influence in the institution all affect the movement toward flexible learning. In the 4–E Model, we visualized the importance of the institutional context on implementation success. We will discuss the institutional framework more, in Chapters 2, 3, 7, 8 and 9.

### Summing up

Flexible learning is a complex phenomenon even when expressed in terms of only four key components. We can visualize the relationship among the four components discussed in this chapter via the diagram in Figure 1.5.
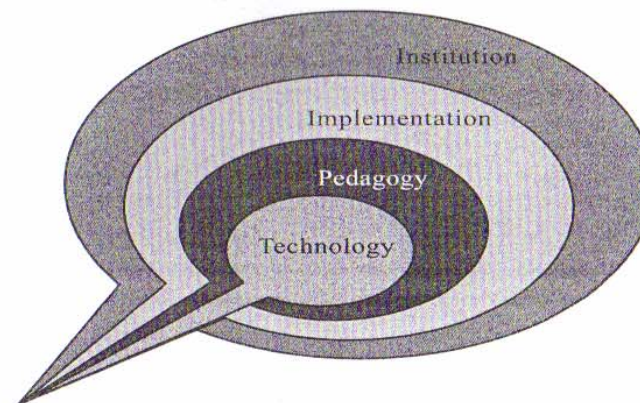
**Figure 1.5**  *Flexible learning in higher education – the four key components*

Using the components shown in Figure 1.5 there are different sequences that could be used to describe how flexible-learning activities are steered and carried out in higher education. Common approaches are from top down or from bottom up. From a top-down perspective we should start with the institutional context, then implementation, then pedagogy, then technology; for a bottom–up approach we should begin with technology and move through the increasingly complex levels. In this book we will choose the top–down level first (Chapter 2), because of the importance of the institution in any structural change involving flexible learning. From this, we will move to implementation (Chapter 3) and the 4–E Model. We will follow this with technology (Chapter 4) in order to show how pedagogy can work in practice for flexible learning (Chapter 5). All levels are however interrelated; thus we will focus in Chapters 6, 7, 8 and 9 on combinations of levels as well. The structure of the remainder of the book relates to Figure 1.5 as is given in Table 1.6.

In conclusion, a major portion of this chapter has been the attempt to define the term *flexible learning* in a way that can be made concrete within of the institutional framework that will shape and steer it, implementation strategies that will make it happen, pedagogical approaches that will give it learning value and technology that serves as its tool. The lessons we discussed in this chapter relate particularly to two important aspects of this relationship: the need to have a clear view of what is intended by flexible learning for a local context and the need for an underlying educational model for any change process involving technology. Repeating the lessons:

**Table 1.6**   *Components of flexible learning and chapters of this book*

| | | |
|---|---|---|
| Ch 2 | You can't not do it | Institutional framework |
| Ch 3 | Will they use it? | Implementation |
| Ch 4 | Something for everyone | Technology |
| Ch 5 | The U turn | Pedagogy |
| Ch 6 | Getting our money's worth? | Institutional, pedagogy, technology |
| Ch 7 | Getting started | Implementation, institution, pedagogy, technology |
| Ch 8 | Keeping going | Pedagogy, technology, implementation, institution |
| Ch 9 | A new economy? | Institution, technology, pedagogy, implementation |

**Lesson 1:** *Be specific.* We need to define our terms and express our goals in a measurable form or else progress will be difficult to steer and success difficult to claim.

**Lesson 2:** *Move from student to professional.* Learning in higher education is not only a knowledge-acquisition process but also a process of gradual participation in and contribution to a professional community. Pedagogy should reflect both acquisition and contribution-oriented models.

With this analysis, we are ready to go more deeply into the components of flexible learning shown in Figure 1.5. We begin, top down, with the institutional framework, in Chapter 2.

# Chapter 2

# You can't not do it

Flexible learning is related to major changes facing higher-education institutions throughout the world. For flexible learning to be meaningful in an institution, it must be more than the effort of occasional pioneers; the institution must commit itself to a change. In this chapter we focus on the institutional perspective. What sorts of changes are occurring? What factors have influenced institutions that have already made a commitment to more flexible learning and technology use? What motivates policy in these areas? The main lesson framing this chapter is: *you can't not do it.*
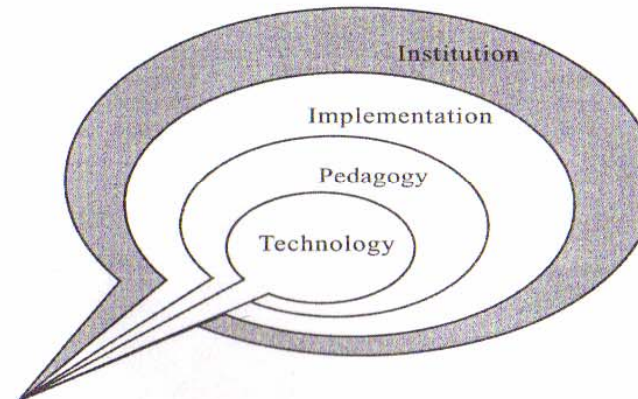
**Figure 2.1**   *Flexible learning in higher education — institutional perspective*