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Learning and Teaching in Distance Education

Analyses and Interpretations
from an International
Perspective

OTTO PETERS



Chapter I

Taking stock

In this chapter, some essential elements of the pedagogics of distance education will be outlined and integrated into the discussion, and to do this five specific factors of distance education will be stressed that make it stand out against other forms of university teaching. These five factors are: the special *combination of some conventional forms of learning and teaching*; the special use of *technical media*; one special *structural handicap*; the special *type of student* encountered in distance learning; and, finally, the special *forms of structuralization*. The reader will be introduced to fundamental teaching problems that are found only in distance education. The purpose of this chapter is to show clearly the relevant consequences of the special factors described.

1.1 Traditional access

If we look at the process of learning and teaching in distance education from the point of view of pedagogics, in its traditional form it is a matter of a more or less integrated combination of the forms of learning that were developed in traditional universities. These include:

- learning by reading printed material (textbooks, manuals, lexicons, scientific literature, lecture notes);
- learning by means of guided self-teaching (counselling at the start of studies, counselling by tutors, reading lists, working in accordance with the Keller plan);
- learning by means of independent scientific work (preparation for written examinations, preparing papers, final examinations);
- learning by means of personal communications (consultation hours of university teaching staff, course counselling, discussions with other students, practical casework, seminars);
- learning with the help of tapes and audiovisual media (enrichment of university

- teaching by universities (places); and
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teaching by means of film, radio and television, internal television networks in universities, audiovisual networks of several seminar locations in different places); and

- learning by participating in traditional academic teaching (lectures, seminars, classes, laboratory work).

We can see from this that distance education is on the one hand neither new nor alien. It has its roots in, and makes use of, the teaching forms used in traditional universities. On the other hand, it is exactly these forms of teaching that demonstrate the special pedagogic structure of distance education, because it is in fact combined and integrated with other focal points, above all through the much greater (and almost over-) emphasis laid on *learning by reading* and the considerable restrictions on *learning by attending lectures, seminars and classes*.

It becomes clear here just how far and how much pedagogics for higher education is able to play the role of godfather in the development of the science of distance teaching. With such help it is possible to carry out a structural analysis of the six fundamental forms of learning listed above in order to describe their respective advantages, to establish and check hypotheses regarding their optimisation, and above all to develop effective models for their use in combination. We must get to know the *pedagogic core* of distance education much more exactly than before, be alive to its unique qualities for distance education, and maintain it, above all in the face of recent technological challenges. Up to now, the special interplay of these six traditional methods of learning and teaching has taken place largely in the dark; illuminating and interpreting this interplay may indeed be one of the first tasks facing us as we develop the science of distance teaching.

Just how important this kind of pedagogic foundation is for future developments is made quite clear, for example, when computer-based learning programs are demonstrated at congresses and are seen to ignore even the most elementary aspects of knowledge and experience on the subject. Their creators are more concerned with technical processes and performance than even the slightest regard for pedagogics, and regretfully they often even do this consciously and out of conviction. There is an anti-sociological feeling behind this, and even an anti-educational attitude.

This pedagogic core becomes even more important in the face of the intensive efforts being made by the relevant industry, led by hardware manufacturers, governments at national and European levels, and communications science. These efforts are aimed at creating a tightly knit information network for which distance education is simply nothing more than a new market. It appears to the representatives of such organizations that pedagogics is standing in the path of commercial or political success, or academic prestige, and considerations are therefore left by the wayside – if they get thought about at all.

1.2 The concept of the 'three generations'

Of course, it is no longer sufficient simply to refer to the pedagogic core of distance

education as described here, because trends are always developing still further, especially in the theory but to a considerable extent in practice as well. D Randy Garrison (1993a, 1989, 1985), the Canadian distance-education expert, therefore differentiates between three generations of distance education. The traditional core referred to above is Garrison's *first* generation, which is not replaced by the second and third generations but continues to have an effect alongside, or in correlation with, these.

The second generation is based above all on the possibilities provided by the different versions of *teleconferencing*. According to Garrison, they have such a great effect on distance education that we should really refer to a new paradigm for it, which itself might be a reason for rethinking and redefining the concept of distance education. At first glance this proposal may appear attractive, because it would mean that more personal communication and academic discourse – something that traditional distance education is lacking – might be combined with second-generation distance education.

However, we must ask ourselves what type this second-generation distance education should be. Here we come up against a fundamental problem of distance-teaching pedagogics, something that we shall be returning to again and again in the following chapters. At this stage, we can restrict ourselves in preparation to a few consequences, for the concept says goodbye to looking after very large groups of students, in other words to the principle of *mass higher education*, and instead brings together a manageable number of students in a virtual room and makes use of the opportunities of technologically imparted, simultaneous and dynamic dialogues between lecturers and students and amongst the students themselves. Can this be reconciled with the *raison d'être* of distance education?

The third generation of distance education goes on to integrate the opportunities provided by learning with the help of *personal computers*, which are able to intensify trends in both the first and the second generation. Firstly, by providing suitable software they can give direction and, through interaction, added value to the self-teaching of the student who is learning in isolation; and they also make databases (including bibliographical databases, in a possible scientific or academic intranet) easily available to help students gain knowledge independently of their teachers. In addition, they can supplement second-generation distance education by means of *computer-mediated communication (CMC)*. From the point of view of the concepts shown here for the first and second generation, the third generation is neutral in terms of pedagogics, which permits distance education even greater flexibility and an enormous potential for change.

Without doubt, because of these trends distance education will considerably alter its pedagogic structure. There is enormous scope for creative pedagogic design opening up in front of us in immeasurable ways. How will this development of design be used? Where will its focal points be? Should further development depend on the contingencies of the 'trial-and-error' method? Or will it be defined by corresponding industrial standards? On the basis of previous experience, educational policy necessities, and educational objectives, would it not be much better if we grew into the phases of the second and third generations with clear pedagogic concepts? Detailed technological knowledge, which many acquire instead of this, is ab-

solutely essential, but will have to reclaim distance education.

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D Randy Garrison's 'conditions' concept, has and related them to the *quality* of each interaction. A nub of a major dis-

In practice it is a matter (for example, in teleconferencing), the greater the number, the thinner the direct interaction trend, which can be a general distance-education trend to enable students to interact. Students must be able to interact, because the rule of thumb is that the more the better. This brings education to a characteristic for distance education.

Garrison himself has required and assimilated cognitive processes and certainly not education for successful learning.

Consciously, or unconsciously, distance-education is a degree of accessibility to be constructed. Distance education centres in which counselling can take place (eg the UK's Open University by the FernUniversität) institutes that focus on (expensively) preparing students in appropriate centres themselves around

olutely essential, but does not help us any further in this matter. For this reason, we will have to reclaim the primacy of pedagogics in the further development of distance education.

The concepts of the second and third generation have already had a serious effect on theoreticians and practitioners of distance education and altered their views. For many of them, first-generation distance education already appears antiquated.

1.3 A dilemma

D Randy Garrison (1993b), who was mentioned above because of his 'three generations' concept, has also highlighted two conspicuous features of distance education and related them to one another: the particularly high degree of *accessibility*, and the *quality* of each interactive learning and teaching process. In this way he has got to the nub of a major distance-learning/teaching problem.

In practice it is true that the greater the accessibility of students to their subject matter (for example, through the use of mass media such as print, radio and television), the greater the number of students and the more sporadic, fragmentary and thinner the direct and indirect interaction between teachers and students. This trend, which can be seen in larger distance-teaching universities, is criticized by several distance-education experts. Their attitude is that it is not sufficient simply to enable students to study in isolation with the help of distance-learning materials: students must be enabled in the first place to *discuss* with their teachers and other students, because this is the real foundation of academic teaching. This is why their rule of thumb is that the greater the accessibility, the poorer the quality of the studies. This brings educational policy and priorities into conflict with one another; it is characteristic for distance education on the whole and is the source of many disputes.

Garrison himself uses the rule of thumb. For him, a person's own grasp of the acquired and assimilated knowledge can only develop in discussion, whereby additional cognitive processes take place – often spontaneously and therefore not foreseeably, and certainly not empirically comprehensible, which he regards as being imperative for successful learning. He even regards this as the ideal of university teaching.

Consciously, or in part unconsciously, attempts have always been made, when distance-education institutes are being planned, to set up a balance between the degree of accessibility and the type and quality of the teaching-related dialogues being constructed. Distance universities that focus on guided self-study maintain study centres in which optional or obligatory seminars, tutorials, individual and group counselling can take place, and they also arrange study weeks at another university (eg the UK's Open University summer schools, or the weekend conferences held by the FernUniversität Hagen at the University of Oldenburg). Distance-education institutes that focus on face-to-face events make efforts to maintain carefully (and expensively) prepared study documents, and often make use of the help of experts in appropriate centres. In this way, different combinations are created, which group themselves around two ideal models.

One grouping is formed around the model that uses most funds and most effort for the professional development and production of qualitatively excellent teaching materials for the purposes of self-study, which are then distributed by post or other methods. No particular value is placed on attendance phases, although they are not dispensed with completely. The distance-teaching university of South Africa may serve as an example here: in the 1970s this university sent out a quarter of a million printed lectures each year but did not establish a single study centre.

The contrary model is exemplified by the distance teaching at the Radio and Television University in China, which provides for compulsory attendance for 24 hours each month in group lessons in a 'television class' in which the students discuss lectures broadcast by radio and television with a leader and several tutors. In fact, we should definitely refer to consultation studies in the countries of the former Eastern European communist bloc, in which the proportion of attendance events was relatively high, and in the former GDR amounted to as much as one-fifth of the courses to be taken at traditional universities, while printed course materials played a relatively subordinate role. Consultation studies can also be found in Vietnam. The proportion of a course requiring student attendance is therefore the cornerstone of this model. Many supporters of the first model in fact ask rather pointedly whether the second approach is distance education at all.

An interesting task for distance-teaching pedagogics might be to make clear through theoretical and experimental work whether – and if so where – the *pedagogic optimum* can be found between these two extremes. However, the local environment would have to be taken into account because the optimum articulation in teaching is naturally influenced by the dominant culture of learning found in traditional universities in each country. Universities that regard students as individuals to whom they grant the greatest freedom in the choice of and attendance at lectures, and which have not developed special additional counselling measures, have absolutely nothing against favouring the first model described above. In contrast, universities will favour the second model if their teaching takes place mainly in *classes* in which, it is claimed, the central point of teaching for both teachers and students is the class discussion, and in which the tradition of *tutoring* still has an effect. Similarly, universities in countries in which, for ideological reasons, the collective takes precedence before the individual are also likely to operate according to the second model.

A combination of increased accessibility and improved quality through greater stress on face-to-face phases can be achieved if a university decides not only to offer traditional studies and distance studies simultaneously (a 'dual mode'), but also to integrate the two types, which has taken place in several Australian universities.

1.4 The student

As we have already seen, those taking part in distance education are a special group. They differ from students in traditional universities because they are usually *older* adults. On average they are in their thirties, but it must be said that there is hardly

ever an upper age limit. Many have already completed their doctorate and are in a professional or managerial starting position.

- Students who have completed their doctorate and are in a professional or managerial starting position.
- They approach distance education differently from students in traditional universities.
- Most of the courses are part-time, and attendance is compulsory when the student is in a professional or managerial starting position. Most distance education courses are part-time, and attendance is compulsory when the student is in a professional or managerial starting position.
- Many of the courses are part-time, and attendance is compulsory when the student is in a professional or managerial starting position. The proportion of a course requiring student attendance is therefore the cornerstone of this model.
- There are differences in the proportion of attendance events between the two models.
- Distance-teaching universities in the former Eastern European communist bloc have finished the transition to distance education.
- Studying at a distance university is more attractive than with 19 traditional universities in a different country.

All these together with the fact that distance education is a profession who differ from students in traditional universities. In fact, the proportion of a course requiring student attendance is therefore the cornerstone of this model.

We are therefore faced with the question whether we should offer these students a choice between traditional and distance education. We should take into account the fact that distance education is a profession who differ from students in traditional universities. In fact, the proportion of a course requiring student attendance is therefore the cornerstone of this model.

The demand for distance education is increasing because most universities are not connected to their

ever an upper age limit – for example, a 68 year-old former teacher recently received her doctorate at the FernUniversität. The higher average age alters the pedagogic starting position as against traditional universities primarily in the following ways:

- Students will usually have a much greater experience of life. This means that they approach their studies quite differently, have a different attitude and assess it differently.
- Most of them bring considerable experience of working life to academic courses, and this also has an effect on the ways in which they study, in particular when the studies and the professional experience cover the same field. A serious consequence of this special feature affects the organisation of distance teaching. Most distance-learning students in fact have to study while they are working; in other words, they are part-time students.
- Many of them come from backgrounds in which academic studies were not offered when they were younger, and they use distance education as a second chance. The UK's Open University sees itself to a great extent as responsible for this type of student in Britain. Most students therefore differ greatly from younger students who are able to make full use of their first chance to study.
- There are distance students who want to reach a higher socio-economic status as a result of their experiences at work. These are the upwardly mobile students.
- Distance-learning students have more qualifications than students in traditional universities. Many achieved considerable success at school (even where they finished their education in evening classes, for example), and at university, and above all in their professions. This naturally has an effect on their motivation and their attitude to their studies.
- Studying at a relatively late age has in general a completely different function than with 19–25 year-old students because it fits into plans for life and life-cycles in a different way.

All these together show that we are dealing with a type of student for distance education who differs in several ways from the norm of those attending a campus-based university. In fact, the differences are so great that it is unreasonable validly to compare distance students with students at traditional universities.

We are therefore faced with a primary learning and teaching problem. Should we offer these students *the same* teaching as in traditional universities? Or should we take into account their age, their greater experience of life and employment, their different motivational situation, and even their double or triple load of studies, job and family? Put bluntly, should we develop a learning and teaching programme tailored to their special needs? Is it essential to plan and establish *adult studies*? Every educationalist will answer these questions with a 'yes'. It is quite natural that teaching is developed with regard to students in their special situations. But how this is done is then a complicated problem that also has pedagogic aspects.

The demand for the adaptation of studies to the special requirements of adults in employment has an unusual explosive effect in a distance-teaching university, because most university teachers reject it from the start. Why? Their attitude is connected to their academic socialization in traditional universities. As Schulmeister

(1983: 350) makes clear, traditional university education has primarily laid claim to a scientific approach to teaching, assuming that students are capable of learning, and has undervalued (or even ignored) the educational aspects. Expository teaching processes were the most suitable for this method.

The primacy of this 'scientific' approach to teaching was internalized by university teachers and created an attitude among them that there was only *one* form of teaching, which arises from the relevant research. This form of teaching must in principle be the same for all students. And in their opinion the reception of teaching and the acquisition of the corresponding knowledge is a matter for the students. This means that preparatory instruction has a low value, learning aids are not provided, and no concessions are made. Because in addition these university teachers deliberately teach in a *science-oriented* and *teacher-oriented* manner, they hold this viewpoint out of conviction. For this reason, adapting teaching to the different starting situation of older students and where necessary providing help for them to overcome learning difficulties specific to distance education does not usually enter their minds. For example, they find it difficult to plan greater *occupational* or *practical* references for distance students, to name just two dimensions of necessary adjustment.

This attitude can be seen in the FernUniversität as well. Help for students to overcome learning difficulties specific to distance education has therefore been developed to a slight extent only, or for some courses is not even available. The expository teaching process that dominates in traditional universities remains in place, in compliance with the wishes of the university's teachers. With great commitment they concentrate on developing printed distance-teaching units, but reject improved counselling and active support for students learning under particularly stressful or limiting local conditions; and if they do provide support, they do so half-heartedly. *How* students acquire knowledge is on the whole left to them, and this applies in the FernUniversität as well as other traditional universities. In the face of this startling situation, we can hardly expect student-oriented teaching at the FernUniversität. Most of the university's teachers would regard this as an undesirable school-like structuring of university teaching and would be greatly concerned about their academic dignity.

In this extremely difficult situation, the pedagogics of distance teaching has the task of making clear how learning and teaching can be *adult-oriented* and *distance education-oriented*, at the same time without losing any of its scientific character.

1.4.1 Adult-oriented teaching

Distance education can be adult-oriented if some of the principles of adult education pedagogics are taken into account that place the participants in the foreground from the very start. They can show the degree of activation, application and empathy on the part of teachers that is regarded as desirable, and the important part played by the subjectivity, identity and autonomy of adult students – who, after all, are the crucial element in the process. If we succeeded in transferring just a hint of this attitude to distance education, we would have achieved something.

A look at the pedagogics of vocational training can also be stimulating, in particu-

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lar as distance students are also found in this area as jobholders. The problem of adult-oriented learning (see Lipsmeier, 1991: 131) is familiar here as well and students' psycho-social situation is taken into account, identity-supporting forms of learning are preferred, and teaching contents are derived from existing vocational experience. And not only this: for some time, experts have referred to a 'changed learning culture' in which students in employment receive not only knowledge but also 'methodological and social competence' (Arnold, 1995: 303). In addition, a great deal of value is placed on the development of the students' *personalities*. These aims cannot be achieved solely through the method of the presentation and reception of neutral knowledge.

1.4.2 Distance education-oriented teaching

Learning and teaching is distance education-oriented if it takes account of the special conditions of the world in which distance students live and of the special conditions appertaining to distance teaching.

There are some interesting examples of this at the FernUniversität. Where topics for degree theses in the faculties of electrical engineering, computer science and economics are selected from the students' own working areas, students can capitalize on their own working experience. The vocational orientation of courses cannot be any more intensive. And where additional teaching software is developed in the computer technology department and supplied on disks containing training programs that help students when they have difficulties working through the teaching texts, this support is certainly distance education-oriented.

With distance education-oriented teaching, students must be continuously motivated, guided during studies they have planned and organized themselves, stimulated to communicate and cooperate formally and informally with fellow students, and, with the help of a differentiating counselling system, must be observed, addressed individually, and taken seriously. This is not possible without work in the study centres. And it is not only necessary to make learning more effective but also to intensify the degree of academic socialization, which is considerably less than in traditional universities, because it has to maintain its ground alongside vocational socialization (Miller, 1991: 50).

The special sociographical preconditions for students studying by distance learning are important for academic teaching and should not be neglected when planning, developing and evaluating this teaching method.

1.5 Three types of operating mode within institutions

Whether a university is planned and developed from the very start exclusively for distance education (*single mode*), whether a traditional university also provides distance teaching (*dual mode*), or whether a university provides several forms of studying parallel to one another and leaves it up to students to use these forms in

accordance with their own needs and opportunities (*mixed mode*), these are all operating modes that are in general decided upon through the criteria being set in educational policies and planning, higher educational or institutional and professional policies, and organizations and logistics. The pedagogical advantages or disadvantages are treated as secondary factors. Nevertheless, the pedagogical structure of distance education is different in each of these three institutional types, and this quite naturally has an effect on the processes of learning and teaching.

In fact, specific questions relating to distance-teaching pedagogics result from the different forms of the institutionalization, and these must be borne in mind. Put simply, three very different attitudes towards distance education and towards the expected learning and teaching behaviour may be combined here.

Many students take part in single-mode distance education, as practised in the larger distance and open universities. In fact, some of these universities have hundreds of thousands of students. Students are more or less left to their own devices because the counselling systems are insufficient. The type of distance students who work through their courses at home, separated from the university and isolated from teachers and fellow students, is the norm here. *Guided self-study* is characteristic of this type of learning and teaching.

The learning and teaching behaviour at a dual-mode university (such as those that have been developed in Australia, for example) is totally different. Here, only as many students are admitted to courses as can be taught in the respective *classes*. This means that the number of students is low. Their contact with the teachers who are responsible for them and with the university is closer and less likely to be broken off because they have to attend teaching events at the university on a regular basis. According to this concept, external students also 'attend' classes at the university, but at arm's length by making use of lecture notes, tapes and other teaching materials. The decisive pattern here is *indirect attendance at teaching events in a traditional university*. From the point of view of pedagogics, this is a fundamentally different concept.

Another form of distance education will be created in universities of the future, which will provide both face-to-face and distance teaching and make greater use of networked electronic information and communications media (*mixed-mode universities*). Such universities will be able to react extremely flexibly to the requirements of students, including adult students of any age. The dominant pedagogic pattern here will be *autonomous, self-guided learning*, in which students will decide whether they wish to make use of teaching offers available through various media and will use the considerable latitude on the basis of their own strategies – from intensive social contact in a small tutorial through to self-guided studies in a digital learning environment and the exchange of experience with other students using CMC and a network.

The task of distance-teaching pedagogics would be to examine these structurally extremely different types of distance education to discover their advantages and disadvantages, to describe the pedagogic guiding principles, traditions, conventions and ideologies behind them, and to analyse and compare the respective dominant learning and teaching strategies. However, they should certainly not be presented in an abstract form and with a purely theoretical intention; on the contrary, it will be

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necessary to interpret them in their respective historico-cultural context. The results to be achieved here could act as a catalyst in the expected process of the integration of methods of traditional university teaching and distance teaching.

1.6 Summary

Most authors who attempt to explain the phenomenon of distance education see the main characteristic as being the spatial separation of teachers and students and derive their fundamental concepts from this factor. This makes an infrastructural, and therefore fundamentally external, factor the starting point for efforts to determine the nature of distance education. Here I have attempted to describe distance education using the categories of pedagogics. The results show the following decisive peculiarities which distinguish distance education from traditional university teaching:

- 'Written' teaching dominates in contrast to 'spoken' teaching. 'Reading' learning is stressed as against 'listening' learning.
- As a result of the use of technical and electronic media, three distinct pedagogic structures have been formed which characterize learning and teaching.
- The sociographical status of distance students is quite different, in decisive ways, from that of students at traditional universities.
- Specific institutional and organizational preconditions are required for the development, control, and evaluation of learning and teaching.

Those who maintain in the face of the above that there are no essential differences between distance education and traditional university teaching are not thinking pedagogically but following different agenda. As the examples used and explained in this chapter show, distance-teaching pedagogics must be concerned with solving problems of its own nature which are not found in other combinations of teaching and studying. From the point of view of pedagogics, distance education is in fact a form of learning and teaching *sui generis*. For this reason, solving outstanding problems of distance-teaching pedagogics will have to be carried out with special theoretical approaches, interpretations, concepts and experience.