A Discipline of Distance Education

Börje Holmberg

Abstract

This paper examines the grounds for regarding the study of distance education as an emerging academic discipline. The number of studies of various aspects of distance education has increased enormously in the last ten years. This paper categorizes these studies into groups dealing with various larger issues. Besides the increasing amount of research, both theoretical and practical, some institutions offer distance education courses on distance education. The paper examines the developing trends in studies of distance education, including the questions of individualization and student autonomy, the amount of support necessary for adult students, and the proper use of media and methods. The actual rationale for distance education must also be examined in the ongoing search for a comprehensive theory of distance education.

Résumé

Cet exposé examine les motifs permettant de considérer les études sur l'enseignement à distance comme une discipline académique naissante. Le nombre d'études consacrées à divers aspects de l'enseignement à distance s'est considérablement accru depuis les dix dernières années; cet exposé classe ces études par catégories se rapportant à une variété de sujets de plus grande proportion. En plus du nombre croissant de recherches, tant théoriques que pratiques, certaines institutions offrent aussi des cours traitant de l'enseignement à distance. L'article analyse les nouvelles tendances des études concernant l'enseignement à distance, y compris les questions d'individualisation et d'autonomie de l'étudiant, ainsi que celles se rapportant au niveau de soutien nécessaire pour les étudiants adultes et à l'utilisation adéquate des media et des méthodes. Une véritable rationalisation de l'enseignement à distance doit prendre en considération la recherche en cours, recherche ayant pour but d'établir une théorie complète et détaillée de cette forme d'enseignement.

By the beginning of the 1980s the previous dearth of research on distance education had been replaced by a wealth of studies. When, in 1982, the present author prepared a research survey for the International Council for Distance Education, more than 300 studies of immediate and current relevance to distance education could be listed (Holmberg, 1982b). Most of them had been published in

the latter half of the 1970s and the beginning of the 1980s.[1] The research activities were and are geographically widely spread and a number of diverse areas are being investigated within the framework of distance education. Some are concerned exclusively with didactics and methodology, some with cognitive psychology and so forth, whereas others pay special attention to sociological topics, and so on. The study of distance education is evidently benefiting from knowledge and theory developed in disciplines established earlier. Most of the research done on distance education could be ascribed to these, for example to general education, pedagogics and andragogics, philosophy, psychology, sociology, history, and economics.

When such diverse studies concentrate on the concerns of distance education and emerge as consequences of a desire to attain expertise in distance education, it is possible to describe these united efforts as the beginnings of a new discipline, that of distance education. This is so when distance educators on the one hand test the applicability of existing knowledge to their particular type of education and their target groups, and on the other hand discover new knowledge and "new relationships within existing knowledge" (Jensen, Liveright, & Hallenbeck, 1964 [on adult education]).

The Rationale of a New Discipline

Any wish to establish a new discipline can be motivated either by the claims of organized and specialized basic research, on by the need to delineate areas of applied research and to train professionals in the field. This applies to distance education in the 1980s, as the presentation of research subjects and curricula below will show.

A clear distinction between applied and basic, that is, "pure" studies is hardly possible. Tibble, inspired by Medawar, comments as follows on the latter type of studies:

> In fact, what the study of a subject "for its own sake" in a university course really means is that the subject is studied *as if* the students were going on to be university teachers or research workers in the subject. This does not mean that the study has no value for those who are not; but it does mean that the value has to be demonstrated in terms of qualities of mind, habits, and attitudes which will transfer from the course of study to the later field of work and life. Now where this later field is the application of this subject in education, though at a different level from that in which it is learned, it should not be too difficult to make some provision for transfer without doing any violence to the nature of the subject at the advanced level. (Tibble, 1970, p. 232)

The marriage of the two concerns in distance education can be illustrated by the fact that a post-graduate course on the subject has been adopted by a professional body for the training of distance educators.[2]

Distance Education as an Emerging Discipline

When describing an emerging discipline it is necessary to identify the scope and limitations of the search for knowledge and the teaching with which it is

concerned. A sensible approach would then be both to make some sort of classification of its research and to list the subject areas included in curricula for the teaching of the new discipline.

Research

In the research survey of 1982 I identified fifteen areas on which serious studies had been published. These areas are

1. General analyses of distance education, philosophy, and theory.
2. Studies of student bodies and students' motivation.
3. Course planning and study objectives.
4. Course development.
5. Media.
6. Non-contiguous tutorial two-way communication.
7. Face-to-face sessions.
8. Counselling.
9. Institutional planning, organization, and administration.
10. Economics of distance education.
11. Evaluation.
12. History of distance education.
13. Distance education in developing countries.
14. Guidelines for distance educators.
15. Research on research.

Each of these areas can include rather diverse research interests. Course development can be taken as an example. It includes text learning from the points of view of cognitive psychology, readability, information theory, course structure, concept mapping, "relational glossary" (Zimmer, 1981), so-called mathemagenic questions, self-contained courses vs. study guides, graphic communication, questions of style in printed and recorded courses, organization, etc.

However, the areas listed can be—and usually are—brought together into more comprehensive logical units. The Institute for Research into Distance Education (ZIFF) of the German FernUniversität has defined its overriding goal as *describing, explaining, and contributing to optimizing distance education* and works toward this goal by research (and development work) in three areas, namely,

- target-group studies,
- investigations of the facilitation of learning by methods and media, and
- systems research.

The first of these includes the following of the areas numbered above: 2, part of 3 (motivation), 8, parts of 9, 10, 11, 12, and 13; the second includes areas 1 (partly), 3, 4, 5, 6, 7, parts of 9, 10, 11, 12, 13, and 14; and the third includes 1, 15, and parts of the other areas listed. Undoubtedly numerous other wide classifications of distance education research can be found.

Against both this factual background and the pervasive arguments in the history of distance education, the following reasonably articulated structure of the discipline of distance education would seem to emerge:

- Philosophy and theory.
- Distant students, their milieu, conditions, and study motivation.
- Subject-matter presentation.
- Communication and interaction between students and their supporting organization (tutors, counsellors, administrators, other students).
- Administration and organization.
- Economics.
- Systems (comparative distance education, typologies, evaluation, etc.).
- History of distance education.

Educational, psychological, sociological, organizational, economic, and other approaches are foreseen and have been applied to these various areas of research. The core is the understanding of distance education and the explanation of its processes and results. Various social and personal frame factors have to be considered as background variables. The explanatory task may lead to research-based development work.

Curricula for Teaching Distance Education

Several years ago training of distance educators began to be offered in the form of face-to-face courses, mainly for third-world participants, by bodies engaged in work for development (e.g., the German Foundation for International Development, Bonn; the International Extension College, London; SIDA, the Swedish authority for work in developing countries, etc.) and by some universities and other organizations (e.g., the University of Wisconsin, the International Council for Distance Education). Teaching distance education at a distance is a fairly recent phenomenon, which in this context is of particular interest since, like all distance teaching, its curricula, course materials, types of communication, and other procedures are entirely open to scrutiny. Such courses have been developed at and are being offered, primarily as post-graduate programs, by the FernUniversität in West Germany (FeU) (Bååth, 1984a; Holmberg, 1982a, 1983), and the South Australian College of Advanced Education (SACAE) (Willmott & King, 1984), among others.[3]

There seem to be some differences in the philosophical bases of these courses. The SACAE one evidently challenges "the heavily instrumental approach of distance educators," and claims to take an illuminative approach in the spirit of Parlett and Hamilton (Willmott & King, 1984, pp. 117, 119-120). Issues of principle related to this teaching have been discussed by Holmberg (1984a) and Willmot and King (1984). These courses also differ in format, with audiotaped components being included in the SACAE one, and the FeU course being based entirely on printed and written communication.

In spite of their differences, the content of these courses, as illuminating the views held of the discipline, shows great similarity. The concept, theory, rationale, and philosophy of distance education, the distant students, study motivation, course planning, and course development (instructional design), self-checking exercises, communication and support strategies, media, organization and administration, economics, and evaluation of distance education are

key elements in both. Different degrees of attention are paid to the various elements mentioned and to subject areas such as the history of distance education, information technology, and general concerns of adult education, but there can be no doubt that behind the courses there is an implicit common view of what constitutes the discipline of distance education. This view agrees well with the one emerging from research done in the field, as shown above.

Distance Education—An Established Discipline

From what has been said it is evident that there is in fact a discipline of distance education. It can be described both in terms of research programs and in terms of curricula for university study. While basically an educational discipline, it includes aspects not only of closely related disciplines like philosophy, psychology, and sociology, but also of history, economics, and organizational theory. In part it could be regarded as a special kind of adult education, but since in educational practice it is applied also to children and youngsters, an application that has been the object of scholarly study (Childs, 1963; Holmberg, 1973; Taylor & Tomlinson, 1985; Weissbrot, 1969), distance education cannot properly be subsumed under this designation.

Whatever its relations to other subject areas, distance education has *de facto* been established as a discipline for research and university study. The departments for distance-education research and development work in the distance-teaching universities and the so-called dual-mode institutions in various parts of the world, their documented work, the rich scholarly literature available, and the occurrence of distance education as a university subject in which courses are offered are the tangible signs of the existence of this new discipline.

Today's and Tomorrow's Trends

Within the research and teaching areas listed above many different approaches both to scholarly studies and to practice occur and many more are possible. From the identification of distance education as teaching and learning based on non-contiguous communication as a starting-point[4] constantly new approaches to problems emerging in different societies and under different circumstances are bound to be developed.

To judge on the one hand from statements made in connection with a FernUniversität comparative study (Holmberg, 1985b), on the other hand from discussions in learned journals, both theory and practice are increasingly becoming concerned with the issues discussed below.

Individualization and Student Autonomy

Distance study is normally a highly individual activity that the student goes in for at home on his/her own and usually in his/her spare time. It is an exercise in independence. This independence usually covers the planning, timing, and carrying out of individual study. The independence of distant students is often limited to the completion of study tasks decided on by others than the students themselves, however. This need not be so, as there are procedures which allow

students to influence or even independently to decide not only *how* they are to study, but also *what*. Constructive approaches engaging the students in the selection of study objectives have been developed both by Potvin (1976) and Ljoså and Sandvold (1976). Potvin "denies the institution and the tutor the right to prescribe what the learner should learn and how he is to learn it" (1976, p. 30).

The main reason why student autonomy and possibilities for individualization are often considered something of a guideline for distance education is, of course, that on the whole the distant students are adults. Combining study with other commitments raises particular problems which the adult student has to master. This is undoubtedly difficult to achieve and, it is argued, can be expected only of mature people capable of independent decision.

Distant students' views of themselves are of great interest in this context. An investigation of these has been made by Göttert (1983), who reports on an interview study of more than 500 FernUniversität prospective and real students. These students "saw themselves as more competitive, achievement oriented, and assertive" than the average general population and student groups investigated (Göttert, 1983). This may well apply also to other distant students than those of the FernUniversität, but for a fruitful discussion of the application of principles conducive to and in harmony with students' autonomy, some differentiation would seem to be necessary.

Students who have decided to pass an examination or acquire a degree or professional competence as quickly as possible are usually willing to accept and follow rather detailed plans leading them to their goal. Those students, on the other hand, who are intrinsically motivated and study to satisfy intellectual and scholarly interest are no doubt less inclined to follow paths prescribed by others than themselves. This differentiation leads to consequences of various kinds, for instance, for the demands on and the development of course materials. It evidently also has some bearing on the consideration of what is usually called the drop-out problem.

The questions raised by the claims for far-reaching individualization and student autonomy have been discussed since the beginning of this century. One of the early advocates was William Lighty (1915). Although he has had a number of followers and potentials of distance education for individualization have often been regarded as an essential part of its rationale (cf., Wedemeyer, 1981; Delling, 1975), both practice and explicit arguments frequently favour control in students' own "best interest." Further investigations of the possibility and scope of really independent distance study as well as considerations of its sphere of applicability will undoubtedly be required.

Respect Of Students' Integrity vs. Student Support

There is a school of thought that finds it tactless if tutors or other representatives of the supporting organization, without being asked to, approach mature students with questions about why they submit no work, why they work slowly, and so forth, and with offers of support. The view held means treating students as potentially independent people to whom it is

left not only to decide, but expressly to state, if and to what extent they want support or advice. Practice implicitly testifies more frequently to this view than explicit principles.

The opposite view, as typically represented by the British Open University, implies that it is a social duty to interfere, to prevent failure and to promote success. In this spirit Bååth, basing his presentation on well-known theoretical considerations, writes that

"It may be maintained that the tutor should get in touch, by mail or by telephone, with his newly enrolled students to

- be able to individualise his tuition with regard to the student's previous "reinforcement patterns" (Skinner), or
- facilitate the student's "mathemagenic activities" (Rothkopf), or
- be able to anchor the material of the first study units in the student's individual previous knowledge and "cognitive structure" (Ausubel), or
- get an idea of the student's comprehension of the basic concepts and principles of the course (Bruner), or
- establish a good personal relationship with the learner (Rogers).

(Bååth, 1984b).

The two approaches contrasted pose a problem to many liberal distance educators who would like to treat their students as mature, responsible personalities, but who still feel there is a duty to spontaneously support them and, if at all possible, prevent their experiencing failure.

Media and Methods

Information technology offers new means for presentation of learning matter and for student-tutor and tutor-student interaction. Video cassettes and video discs, view data systems (videotex), word processing, telefax, and various other types of computer use supplement the written word, radio, TV, and telephone as media for distance education. Interest in sophisticated media is great; some studies of importance have been carried out (e.g., Bates, 1984; Watters, 1985; O'Shea, 1984; McConnell, 1982), but there can be no doubt that much remains to be done in this area. Basic questions are whether screen-reading is a satisfactory way of acquiring information and whether or to what extent communication with a computer program can replace interaction with a human being. Neither possibly defective prodecure is a *sine qua non* in computer-aided learning. Problems belonging here are briefly discussed in Holmberg, 1984a. Studies of the educational implications of information technology are to be foreseen.

A number of methodological problems are constantly being looked into. From my point of view those concerned with personal approaches and with ridding distance education of its elements of anonymity and impersonality are particularly important. My own studies of the concept of guided didactic conversation represents one attempt to come to grips with this problem, and an

essential contribution here has been made by a Rekkedal study of 1985. A basic assumption behind the two investigations is that students are likely to enjoy learning more and be more successful than otherwise if personal rapport is established between students and their tutor and other members of their supporting organization.

A guided didactic conversation in my sense has the following characteristics:

- Easily accessible presentations of study matter; clear, somewhat colloquial language, in writing easily readable if the text is printed; moderate density of information.
- Explicit advice and suggestions to the student as to what to do and what to avoid, what to pay particular attention to and consider, with reasons provided.
- Invitations to an exchange of views, to questions, to judgements of what is to be accepted and what is to be rejected.
- Attempts to involve the student emotionally so that he or she takes a personal interest in the subject and its problems.
- Personal style, including the use of the personal and possessive pronouns.
- Demarcation of changes of themes through explicit statements, typographical means or, in recorded, spoken communication, through a change of speakers, such as male followed by female, or through pauses. (This is a characteristic of the guidance rather than of the conversation.)

I assume that if a distance-study course consistently represents a communication process felt to have the character of a conversation, then the students will be more motivated and more successful than if the course studied has an impersonal textbook character. This also concerns the use of assignments for submission. If used as a means to stimulate and facilitate conversation-type communication they are assumed to contribute considerably more to motivation and success than if used as a means to examine and evaluate students.

This thinking was developed into a formal theory which generated the following hypotheses:

- The stronger the characteristics of guided didactic conversation, the stronger the students' feelings of personal relationship between them and the supporting organization.
- The stronger the students' feelings that the supporting organization is interested in making the study matter personally relevant to them, the greater their personal involvement.
- The stronger the students' feelings of personal relations to the supporting organization and of being personally involved with the study matter, the stronger the motivation and the more effective the learning.

Three empirical studies testing these hypotheses (as one unified theory) have been undertaken on the basis of distance-study courses in two European countries and in two languages. The hypotheses were not refuted, but on the other hand, the empirical investigations cannot be said to have given any

conclusive evidence in favour of them. Very strict falsifying attempts were made through testing procedures extremely unfavourable to the hypotheses. While no statistically significant corroboration emerged "in the sense that (the hypotheses could) 'prove their mettle' under fire—the fire of our tests" (Popper, 1980, p. 261), the tendency in all three studies favoured them. The students taking part in the investigations stated that they felt personally involved by the conversational presentations; their attitudes were favourable to them and, in the third study, which was the only one concerned with students' achievements, those taking a course version developed to meet the requirements of the guided didactic conversation did marginally better than those taking the original course (Holmberg, Schuemer, & Obermeier, 1982).

Rekkedal's (1985) study led to more satisfactory statistical conclusions. It investigated the consequences of a personal tutor-counsellor system including introductory letters in which the tutor-counsellors introduce themselves to their students, short turn-around times for assignments, and frequent telephone contacts with students. The study comprised a comparison between an experimental group offered these services by a personal tutor-counsellor while studying 3-11 courses of a course combination leading to a professional qualification and a control group following the usual pattern of the school concerned (NKI in Oslo).

> The main difference between the treatment of the experimental group and the control group was that the experimental students communicated with one personal tutor integrating administrative, teaching, and counselling functions, which normally are separated. (Rekkedal, 1985, p. 9)

Statistically significant differences were found between the two groups.

> The students in the experimental group had a higher completion rate, they were more active in their studies and completed a larger number of study units and courses during the experimental period. (p. 13)

In spite of the success of this personal, style some distance educators prefer a more neutral, less personal approach avoiding intervention in students' learning situation, because of either academic tradition or a conscious choice. Compare this to the discussion above of the respect of mature students' integrity and the FernUniversität comparative study (Holmberg, 1985a). Further analyses of the background, potentials, and consequences of personal approaches would seem to be called for. The philosophical issues bearing on this in relation to student autonomy, individualization vs. ready-made systems, are looked into in Lehner and Weingartz (1985).

The Rationale of Distance Education

The very rationale of distance education would seem to require further consideration. Sometimes distance education is introduced to increase the number of places for students in certain programs or to offer extended adult education or further education services. Lifelong learning and recurrent education in the spirit of Faure et al. (1972) are *desiderata* which may be practicable through distance education. In other cases distance education is preferred for

financial reasons, as its cost-benefit relations are considered particularly favourable (cf., Holmberg, 1985b, Chapter 7). Interest in educational innovation, methodological concerns, and wishes to improve social equality and/or to serve individual learners are other impetuses of importance, often referred to as reasons behind the creation of the distance teaching universities.

The varying background and conditions of distance education in different cultures have not yet been given sufficient attention. The same applies to the influence of organizational structures, which are largely dependent on social and cultural circumstances. Social factors evidently influence the position of distance education in relation to mass communication and individualized study, to strictly controlled, programmed learning versus discovery learning and problem solving, to information dissemination and communication, to study aiming at examinations or other formal qualifications versus more idiosyncratic learning, and so forth. The interrelationships between, on the one hand, social frame factors and organizational structures, and on the other hand, study facilities offered, control and guidance, and media and methods will no doubt be investigated to illuminate the rationale and potentials of distance education.

The question of the basic character of distance education belongs here: Is distance education nothing but a vehicle of distribution, or is it a type of education in its own right that "can only be described and analyzed to a limited extent using traditional educational terms" (Peters, 1983, p. 96)? The large-scale and small-scale approaches of institutions such as the British Open University and the Australian University of New England are cases in point. The former implies rather radical deviations from the traditions of university education. Courses and services for large numbers of students are developed and offered by groups of subject specialists, course designers, media specialists, tutors, and so forth. There is a division of labour based on each team member's expertise. Economies of scale are attained by large editions of courses developed. Here distance education, mainly relying on non-contiguous communication, appears as a type of education in its own right. The latter, on the other hand, favours more traditional procedures and often includes the maximum amount of face-to-face interaction possible. It makes use of distance education distribution techniques for some of its teaching, which is otherwise characterized by a certain closeness between author/tutor and student.

Both approaches can claim that they represent individualization. Thorpe (1979, p. 1) stresses that "in the Open University the course teams provide the reading material (e.g., texts, broadcasts, kits) for hundreds or thousands of students *in general* and the course tutors and tutor-counsellors teach the students as *individuals*."

Toward the end of the 1980s a tendency to use what has so far been considered distance study procedures in on-campus university study is referred to frequently, as it was at the world conference of the International Council for Distance Education in Melbourne in 1985. One example of this is the so-called contract learning, which requires on-campus students to study independent of lectures and other face-to-face teaching. Another example is the growing use of

distance study courses by on-campus students and the application of information technology, which makes it possible for students on and off campus to make use of computer terminals and combinations of microcomputing and telephone communication. In this way the distinction between traditional education and face-to-face communication may become blurred.

The needs of distant students without recourse to face-to-face teaching organizations for special study support will remain, however. These needs will have to be met by suitable methods, media, administrative procedures, and organizational patterns. Further development of distance education is thus to be foreseen at the same time as distance teaching procedures are used in residential study. We may have to think of gradations of distance in a literal and a figurative sense. Some students far away may wish to take part in study centre activities, concentrated residential courses, and so forth, and others within comfortable reach of the university, school, or other type of supporting organization may prefer entirely non-contiguous communication. It is difficult to imagine a future in which distance education will be *de trop*.

Search for a Comprehensive Theory of Distance Education

Some theoretical approaches aimed at identifying essential characteristics of distance education are well known, including Charles Wedemeyer's (1979, 1981) liberal, individualizing "independent study," Manfred Delling's process model (Delling, 1985; cf. Graff, 1970, p. 44), Otto Peters' (1983) view of distance education as an industrialized form of teaching and learning, Michael Moore's theory of independent study classifying educational programs on the two dimensions of *autonomy* and *distance* (Moore, 1977a, 1977b), David Sewart's (1978, 1981) support model, called "continuity of concern," and Kevin Smith's (1983) student-centred small scale approach (see further Keegan, 1986).

These and other theoretical analyses illuminate the basic character and varying applications of distance education. Only in part, however, do they meet the well-grounded requirements expressed by Desmond Keegan:

> A theory is something that eventually can be reduced to a phrase, a sentence or a paragraph and which, while subsuming all the practical research, gives the foundation on which the structures of need, purpose and administration can be erected. A firmly based theory of distance education will be one which can provide the touchstone against which decisions—political, financial, educational, social—when they have to be taken, can be taken with confidence. This would replace the *ad hoc* response to a set of conditions that arises in some 'crisis' situation of problem solving, which normally characterizes this field of education. (1983, p. 3)

Attempts have been made to meet these tough requirements. As early as 1970 Kurt Graff developed a decision model on the basis of a study of the structure and process of distance education, but concluded that the great problems are to be found beyond calculation (Graff, 1970, p. 54).

The present author has ventured other suggestions as steps on the path toward a theory of distance education (Holmberg, 1985c; in press). These suggestions consist of:

- descriptive and characterizing "basic statements,"
- a "general view of distance education" bearing on its organization, and
- a theory of teaching for distance education generating testable (falsifiable) hypotheses in Popper's spirit.

My teaching theory is summarized as follows:

> Distance teaching will support student motivation, promote learning pleasure and effectiveness if offered in a way felt to make the study relevant to the individual learner and his/her needs, creating feelings of rapport between the learner and the distance education institution (its tutors, counsellors, etc.), facilitating access to course content, engaging the learner in activities, discussions, and decisions, and generally catering for helpful real and simulated communication to and from the learner.

This theory, partly based on the view of distance education as guided didactic conversation, discussed above, has generated eleven testable—and, in fact, partly tested—hypotheses.

Although probably more predictive than explanatory in Popper's sense (cf. Holmberg, 1985c, pp. 4-5) the theory has some explanatory power and provides an applicable general outline of effective teaching in distance education. It identifies suitable initial behaviour (student participation in goal considerations, subsumption under existing cognitive structures), it prescribes essential pervasive characteristics of course materials implying clear recommendations for course development work, and it specifies requirements for mediated communication, all relying on personal approaches.

Conclusion

The work done so far, the investigations that can be foreseen, and the theoretical attempts referred to evidently bear witness to the tangible substance of the discipline of distance education. We are thus entitled to the conclusion that this discipline is not only, as shown above, now *de facto* established as both a research area and as an academic teaching subject, but is also a field of study intent on future developments.

If, with Popper, we accept that the task of scholarship is both theoretical, to bring about explanation, and practical, to provide for application or technology (Popper, 1972, p. 49), we seem to be in a position to allow ourselves the claim that distance education, however humble the achievements so far may be, is progressing as an academic discipline.

The above presentation largely coincides with parts of a forthcoming book by the present author (Holmberg, in press).

Reference Notes

[1]As early as 1971 Mathieson had published a list of no less than 170 contributions to the subject.

[2]The Fern Universität course referred to below under "Curricula for Teaching Distance Education" is used in the professional training program of the Association of European Correspondence Schools.

[3]The Open Learning Institute in British Columbia, Canada also began the development of such a course (Kaufman, 1984), but stopped work on it before it was completed.

[4]Cf., my widely accepted definition of distance education (Keegan, 1980a, 1980b; Bååth, 1981):

> The term distance education covers the various forms of study at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises, but which, nevertheless, benefit from the planning, guidance, and tuition of a tutorial organization. (Holmberg, 1985b, p. 1)

References

Bååth, J.A. (1979). *Correspondence education in the light of a number of contemporary teaching models.* Malmö: LiberHermods.

Bååth, J.A. (1981). On the nature of distance education. *Distance Education,* 2(2), 212-219.

Bååth, J.A. (1984a). Essentials of distance education (review). *Teaching at a Distance, 25,* 120-122.

Bååth, J.A. (1984b). Research on completion and discontinuation in distance education. *Epistolodidaktika,1-2,* 31-43.

Bates, A.W. (Ed.). (1984). *The role of technology in distance education.* London: Croom Helm.

Childs, G.B. (1963). Supervised correspondence instruction. *The Brandenburg memorial essays on correspondence instruction I,* 22-23. University of Wisconsin, Madison.

Childs, G.B. (1971). Recent research developments in correspondence instruction. In O. MacKenzie & E.L. Christensen (Eds.), *The changing world of correspondence study.* University Park: Pennsylvania State University Press.

Delling, R.M. (1975). Distant study as an opportunity for learning. *The system of distance education, ICCE,* 58-59. Malmö, Hermods.

Delling, R.M. (1985, August). *Towards a theory of distance education.* Paper presented at the ICDE Thirteenth World Conference in Melbourne, Australia.

Faure, E. *et al.* (1972). *Learning to be. The world of education today and tomorrow.* Unesco. London: Harrap.

Göttert, R. (1983). *Fernstudieninteressenten. Ihr Selbstbild und weiterer Studienverlauf.* (ZIFF PAPIERE 47). Hagen: FernUniversität.

Graff, K. (1970). *Voraussetzungen erfolgreichen Fernstudiums. Dargestellt am*

Beispiel des schwedischen Fernstudiensystems. Hamburg: Lüdke.

Holmberg, B. (1973). Supervised correspondence study—a Swedish case study based on experiences within the school system. *Epistolodidaktika, 2,* 29-34.

Holmberg, B. (1978). *Fernstudiendidaktik als wissenschaftliches Fach.* Hagen: FernUniversität (ZIFF).

Holmberg. B. (1982a). *Essentials of distance education (a distance-study course based on a handbook and a reader).* German version: Grundlagen des Fernstudiums. Hagen: FernUniversität.

Holmberg, B. (1982b). *Recent research into distance education.* (Vols. 1-2). Hagen: FernUniversität (ZIFF).

Holmberg, B. (1983). Distance education as an academic discipline. *ICDE Bulletin, 2,* 50-53.

Holmberg, B. (1984a). On the educational potentials of information technology with special regard to distance education. *ICDE Bulletin, 6,* 49-53.

Holmberg, B. (1984b). Professional development courses in distance education: A reply. *Distance Education, 5*(2), 237-238.

Holmberg, B. (1985a). *On the status of distance education in the world in the 1980s—a preliminary report on the FernUniversität comparative study.* Hagen: FernUniversität, ZIFF.

Holmberg, B. (1985b). *Status and trends of distance education.* (2nd rev. ed.). Lund: Lector Publishing.

Holmberg, B. (1985c). *The feasibility of a theory of teaching for distance education and a proposed theory* (ZIFF PAPIERE 60). Hagen: FernUniversität.

Holmberg, B. (in press). *Growth and structure of distance education.* London: Croom Helm.

Holmberg, B., Schuuemer, R., & Obermeier, A. (1982). *Zur Effizienz des gelenkten didaktischen Gespräches* (ZIFF Projekt 2.6). Schlussbericht mit einer englischen Zusammenfassung (with an English summary). Hagen: FernUniversität, ZIFF.

Jensen, G., Liveright, A.A., & Hallenbeck, W. (1964). *Adult education. Outline of an emerging field of university study.* Adult Education Association of USA (no place of origin stated).

Kaufman, D. (1984). Practice and theory of distance education: Course blueprint. *Distance Education, 5,*(2), 239-251.

Keegan, D. (1980a). On defining distance education. *Distance Education, 1*(2), 13-36.

Keegan, D. (1980b). *On the nature of distance education* (ZIFF PAPIERE 33). Hagen: FernUniversität.

Keegan, D. (1983). *Six distance education theorists.* ZIFF.

Keegan, D. (1986). *The foundations of distance education.* Beckenham, Kent: Croom Helm.

Lehner, H., & Weingartz, M. (1985). *Konfektionierung und Individualisierung im Fernstudium* (ZIFF PAPIERE 58). Hagen: FernUniversität.

Lighty, W.H. (1915). Correspondence-study teaching. National University Extension Conference, *Proceedings of the first conference,* pp. 75-83; reprinted in O. MacKenzie & E.L. Christensen (Eds.). (1971). *The changing world of correspondence study,* (pp. 14-22). University Park: The Pennsylvania State University Press.

Ljosá, E. & Sandvold, K.E. (1976). *The students' freedom of choice within the didactical structure of a correspondence course,.* Paris: EHSC (also printed in *Epistolodidaktika (1983)1,* 34-62, and in K. Sewart, D. Keegan, & B. Holmberg (Eds.). (1983). *Distance education. International perspectives,* (pp. 291-315). London: Croom Helm.

Mathieson, D.E. (1971). *Correspondence study: A summary review of the research and development literature.* New York: National Home Study Council/ERIC Clearing-house on Adult Education.

McConnell, D. (1982). CYCLOPS telewriting tutorials. *Teaching at a distance, 22,* 20-25.

Medawar, P.B. (1965, August). Anglo-Saxon Attitudes. Z *Encounter.*

Moore, M.G. (1977a). A model of independent study. *Epistolodidaktika, 1,* 6-40.

Moore, M.G. (1977b). *On a theory of independent study* (ZIFF PAPIERE 16). Hagen: FernUniversität.

O'Shea, T. (1984). Computer assisted learning in distance education. *Finn spring workshop 1984.* A collection of conference documents. Helsinki: EHSC/Markkinointo Instituuti.

Peters, O. (1983). Distance teaching and industrial production: A comparative interpretation in outline. In D. Sewart, D. Keegan, & B. Holmberg (Eds.), *Distance education. International perspectives,* (pp. 95-113). London: Croom Helm.

Popper, K. (1972). Naturgesetze und theoretische Systeme. In H. Albert, (Ed.) *Theorie und Realität.* Tübingen: Mohr.

Popper, K. (1980). *The logic of scientific discovery.* London: Hutchinson.

Potvin, D.J. (1976). An analysis of the androgogical approach to the didactics of distance education. In G. Granholm (Ed.), *The system of distance education: Vol. 2 (pp. 27-30).* . ICCE. Malmö: Liber.

Rekkedal, T. (1985). *Introducing the personal tutor/counsellor in the system of distance education.* (Project report 2: Final report). Oslo: NKI.

Sewart, D. (1978). *Continuity of concern for students in a system of learning at a distance* (ZIFF PAPIER 22). Hagen: FernUniversität.

Sewart, D. (1981). Distance teaching: a contradiction in terms? *Teaching at a Distance, 19,* 8-18.

Smith, K.C. (1983). Putting the student first: Some personal perspectives or a tale of two serpents. In J.S. David, M.A. Stroud, & J.R. Thompson (Eds.), *International Council for Distance Education 1982 conference report and handbook (pp. 27-30).* . Athabasca: Athabasca University/ICDE.

Taylor, P., & Tomlinson, D. (1985). *Primary distance education: Population, problems and prospects.* Nedlands: National Centre for Research on

Rural Education, University of Western Australia.

Thorpe, M. (1979). The student special support scheme. *Teaching at a Distance, 15,* 1-14.

Tibble, J.W. (1970). Some applications. In J.W. Tibble (Ed.), *The study of education.* London: Routledge and Kegan Paul.

Watters, J. (1985). *Fonctions et tâches des intervenants en formation par téléconférence.* Université de Montréal: Faculté des sciences de l'éducation.

Wedemeyer, C.A. (1979). Criteria for constructing a distance education system. *Canadian Journal of University Continuing Education ,VI(I),* 9-15.

Wedemeyer, C.A. (1981). *Learning at the back door: Reflections on non-traditional learning in the lifespan.* Madison: University of Wisconsin Press.

Weissbrot, E. (1969). Specific aspects of supervised correspondence study with school children. Paris: *8th ICCE Proceedings,* pp. 163-177.

Willmott, G. & King, B. (1984). Professional development courses in distance education. *Distance Education, 5* 1, 116-130.

Zimmer, R.S. (1981). The relational glossary: A tool for effective distance learning. In F. Percival, & H. Wellington (Eds.), *Aspects of Educational Technology XV,* Distance learning and evaluation (pp. 73-79). London: Kogan Page.

Since 1975 **Börje Holmberg** has been a professor of the methodology of distance education at the FernUniversität in Hagen, West Germany. Since 1976 he has directed its Institute for Research into Distance Education (Zentrales Institut für Fernstudienforschung). He was president of the International Council for Distance Education (ICDE) from 1972 to 1975.