


In his "Two Dimensional Theory of Independent Study," published in 1972, Michael Moore made one of the first attempts to conceptualize distance education as a field of study. Since then he has lectured and published in many countries and, from 1976 to 1985, was an instructor, course designer, and senior counsellor in the British Open University. He currently is an Associate Professor of Education at Pennsylvania State University.

**A Discipline of Distance Education**

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**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 médias 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. 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 didactics, 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; it does mean that the value has to be demonstrated in terms of qualifications of mind, habits, and attitudes which will transfer from the course of study to the later field of work and life. Now where this latter 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.
7. Face-to-face sessions.
8. Counselling.
9. Institutional planning, organization, and administration.
10. Economics of distance education.
13. Distance education in developing countries.
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 representational 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 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:
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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 young people, an application that has been the object of scholarly study (Childs, 1963; Holmberg, 1973; Taylor & Tomlinson, 1985; Weisbrot, 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 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 Fera Universität 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 Ljósí 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 dropout 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 tacitless 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 prescribed.

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 Bäåth, 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 individualize his tuition with regard to the student’s previous ‘reinforcement patterns’ (Skinner), or
- facilitate the student’s ‘’autohemic 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).

(Bäåth, 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 system (videotelephone), 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 procedure 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 Røkkedal study of 1985. A basic assumption behind the two investigations is that students are likely to enjoy established relationships with 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 voice or a new setting.

This is a characteristic of the guidance rather than of the conversation.

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 correlation emerged, "in the sense that (the hypotheses could) 'prove their mettle' under fire—the fire of our texts" (Popper, 1980, p. 251), 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, Schnurer, & Overneiter, 1982).

Røkkedal'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. (Røkkedal, 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 Lehrer 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 Pauze et al. (1972) are desirable 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 has 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 or 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 looseness 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, combine needs of on-site courses, and so forth, and others within the 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


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 "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; Bäath, 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)

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**Computer Assisted Learning or Communications: Which Way for Information Technology in Distance Education?**

**Tony Bates**

**Abstract**

Two uses of computers for teaching in distance education are compared and contrasted: systems based on structured, pre-programmed learning materials (i.e., computer assisted learning, or CAL), where the learner communicates as if with the computer; and systems based on the communications functions of computers (i.e., computer-mediated communications systems), using electronic mail, conferencing and data-bases to facilitate communication between teachers and students.

It is argued that the two systems represent quite different educational philosophies, and for distance teaching at a higher educational level, the communications mode offers a more appropriate, humanistic, and pragmatic route for future development.

**Résumé**

Deux manières différentes d’utiliser l’ordinateur pour l’enseignement à distance sont comparées et contrastées: d’une part, les systèmes fondés sur du matériel d’enseignement structuré et pré-programmé (c.-à-d. enseignement assisté par ordinateur ou EAO), où l’étudiant communique avec l’ordinateur; et d’autre part, les systèmes fondés sur les fonctions communicatives des ordinateurs (c.-à-d. des systèmes de communication opérés par ordinateur), employant le courrier et les conférences électroniques ainsi que les logiciels de gestion de fichiers comme moyens de faciliter la communication entre enseignants et étudiants. Nous soutenons que ces deux systèmes sont représentatifs de philosophies d’enseignement fort différentes et qu’en ce qui concerne l’enseignement à distance au niveau supérieur, les modes de communication opérés par ordinateur offrent plus d’opportunités pour l’avenir, aussi bien du point de vue humaniste que pragmatique.

**Black Boxes or Networks?**

In this paper I shall be arguing that computers can be used in distance education in two quite distinct ways, and that underlying these two approaches are fundamental differences in educational philosophy.

One approach is to consider the computer as a black box which by and large replaces the traditional face-to-face teacher and, more relevantly to distance