Open and Distance Learning in the Information Society

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Abstract

With multimedia computer networking becoming the dominant technology of communication, we are witnessing a gradual breaking down of traditional barriers in the domain of learning. In particular, distinctions crumble between university studies on the one hand, and open and distance education on the other. Hastings Rashdall's often-quoted thesis, according to which any proper form of higher education inevitably presupposes something like a traditional university setting - a definite location and a definite time interval to serve as the framework of protracted personal communication between teachers and students - is becoming obsolete. In the era of interactive, networked, multimedia communications the role of spaces, places, and locations is radically changing. As a consequence, established institutions of research and teaching will inevitably have to redefine their roles.

Keywords
open and distance learning, information society, computer networking, medieval universities, practical knowledge, virtual communities, virtual university

With multimedia computer networking becoming the dominant technology of communication, we are witnessing a gradual breaking down of traditional barriers in the domain of learning. Frontiers are dissolving between practical and theoretical knowledge.[1] Training and education meet.[2] Liberal arts and science education get closer to professional and technical education,[3] research gets closer to teaching.[4] Elementary, secondary and higher education intersect, and so do formal and informal learning.[5] On-site and distant learning merge.[6] And finally, distinctions crumble between university studies on the one hand, and open and distance education on the other. It is this last element of convergence I will focus on.

"Education", in the words of the classical scholar Werner Jaeger, "is the process by which a community preserves and transmits its physical and intellectual character."[7] Or, as Douglas Schuler puts it in his recent book *New Community Networks*: "Education ideally provides perspectives and tools for participating in society, for understanding society, and for shaping society." Schuler points out that the "widespread availability of electronic networks may propel substantial transformations in education in the near future", and emphasizes that education as such does not presuppose "teachers, schools, books, classes, or formal education".[8] Greece and Rome command our admiration even today; but certainly the great achievements of antiquity were based on relatively slight foundations of formal education. Young Athenians in the times of Pericles learned to read and write, but otherwise learned less from schools than "from the city itself, with its democratic political institutions, its festivals and its social gatherings".[9] By the fourth century B.C. the study of rhetoric became important for anyone wishing to enter upon a political career;[10] other subjects of the encyclic or liberal arts, however, were not pursued, except by a few specialists, beyond a quite humble level. Higher education in the ancient world was undertaken by private enterprises, specialist institutions in which a single subject was taught, and was completed at an early age. There were no examinations taken and no degrees conferred;[11] scholars were qualified by spending time at centers of learning where great teachers taught.

What is a university?

Those centers cannot properly be called universities, not, however, because they were specialist or professional schools. The notion that a "university" means, or has ever meant, an universitas facultatum is utterly unfounded. The Latin term universitas, both in Roman and medieval times, designated simply an aggregate of persons. Medieval universities were corporations - either of masters or of students. This is why Rashdall, in his classic *The Universities of Europe in the Middle Ages*, could say that "universities ... did not exist in the most highly cultivated societies of the ancient world", and that it "is entirely misleading to apply the name to the schools of ancient Athens or Alexandria".[12] Let me quote this passage at some length here. "If higher education is to exist", writes Rashdall,

"there must obviously be teachers to impart it, and it is likely that particular places will become famous for particular studies. But it is not necessary that the teachers should be united into a corporate body enjoying

more or less privilege and autonomy. It is not necessary that the teachers of different subjects should teach in the same place and be united in a single institution - still less that an attempt should be made to make the teaching body representative of the whole cycle of human knowledge. It is not necessary"

- Rashdall continues by saying -

"that studies should be grouped into particular faculties, and students required to confine themselves more or less exclusively to one. It is not necessary that a definite line of study should be marked out by authority, that a definite period of years should be assigned to a student's course, or that at the end of that period he should be subjected to examination and receive, with more or less formality and ceremony, a title of honour. All this we owe to the Middle Ages. Similar needs might no doubt in course of time have independently evolved somewhat similar institutions in a somewhat different form. But, in the form in which we have them, teaching corporations, courses of study, examinations, degrees, are a direct inheritance from the Middle Ages."[13]

A number of universities in the Middle Ages were almost exclusively occupied with professional education. As Rashdall puts it, it is simply not the case that "the great business of a university was considered to be liberal as distinct from professional education".[14] Let us add that up till modern times the distinction between scholarly and professional studies was not a rigid one. Scholarship, even humanities scholarship, had a markedly *practical* bent. The emergence and development of the humanities were initially bound up with the spread of alphabetic writing, and, subsequently, with the development of printing; the original task of the nascent humanities disciplines was a thoroughly *practical* one: to build up our knowledge of the characteristics of the new media with the aim of exploiting this knowledge in everyday life - for economic, educational, or political benefits.[15] In his *History of Classical Scholarship*, Rudolf Pfeiffer repeatedly makes the point that the conceptually articulated treatment of Homeric texts was initially a concern of *poets* in the Homeric tradition, who were eager to master the newly emerging technical devices as possible aids to their craft. The learning of the Sophists, too, was marked by a proximity to the concerns of life.[16] Similarly, the scholarship of the Early Middle Ages is entirely practical. It amounts to no more than the mere exercise of the (still rare) ability to write; for centuries the aim is simply the conservation of texts by laborious copying; the learning conveyed by the University of Paris around the 12th century culminates in the skill required for composing legal documents. The curriculum at the *artium facultas*, which constituted by far the largest segment of the University, began with Latin - that is, with grammatical studies, even with the teaching of writing, and concluded with instruction aiming at a practical proficiency in law under the title of rhetoric. Only later were theology and philosophy to become important, and here, too, it is easy to see the originally practical and political motivation of the relevant studies and discussions. Quite evident was the practical attitude of the *studia humanitatis*, the re-appropriation of the classical heritage in the Italian Renaissance. Petrarch's philological interests stood in the service of poetic aims. Petrarch's follower Salutati, chancellor of the Florentine state, maintained that the classical heritage can serve a better understanding of civic existence; the more articulate understanding of the classical texts which the new translations aimed at was meant to serve the perfection, the culture, and heightened communal consciousness, of the citizens of Florence. After the invention of printing, the later humanists take an active part in the technical production of classical editions; and it is printing which subsequently leads to new developments in the domains of grammar and letters - such as the emergence of unified standards in orthography, in syntax and vocabulary.

It is perhaps the main discovery of twentieth-century philosophy that *all* knowledge, ultimately, is constituted by practical knowledge. Certainly this is the common message of both Wittgenstein and Heidegger.[17] Thus not only the crafts, but the sciences, too, are specific *practices*. As John Ziman writes:

"The fact is that scientific investigation ... is a practical art. It is not learnt out of books, but by imitation and experience. ... The young scientist does not study formal logic, but he learns by imitation and experience a number of conventions that embody strong social relationships."[18]

The humanities, as I have suggested, provide practical knowledge pertaining, essentially, to the practice of communication in artificial media. Theory is reflection on practice, and is itself practice; however, theories reflecting on theories, and again on theories, might in the event become quite remote from the concerns of everyday life. This was certainly true for most of the humanities by the late nineteenth century. Modern man, Nietzsche complained, drags around with him "a huge quantity of indigestible stones of knowledge"; we have degenerated, as he put it, into "walking encyclopaedias".[19] In 1879, at the age of 35, Nietzsche gave up his chair of classical philology at Basel - turning his back on a university system he found to have become hollow.

Universities and the impact of information technologies

Educational institutions have at all times been formed by contemporary information technologies.[20] The medieval university, in particular, is representative of the European manuscript culture of the 12th and 13th centuries, with its scarcity of books, and still markedly oral communication patterns. The students' university was not just a political organization providing legal protection for its members; it was also a framework for collective learning and memorizing. As the Hungarian historian István Hajnal, discussing the medieval university system, writes:

"Though waxed tablets might have been widely employed in the course of quick composition and recording, the fact remains that the time honoured methods of the education of the clerici centered around severe

drilling in words of mouth... It is well known how teaching at the universities proceeded without books and without writing: at the lectio publica a strictly compulsory traditional book in the teacher's hand; there is lecturing, detailized explanation, repeated over and over again... But the students themselves at their hospitia are preparing in advance for the text of the daily lecture, their masters and seniors reciting it loudly into their ears, and as soon as lecture is over, they repeat the text again and again. ... It is simply indispensable for a student to have groups of mates, and elders around himself; they are his living educational tools, carriers of scientific material available for exercises."(21)

With the emergence of printing, and with books becoming abundant and relatively cheap by the mid-eighteenth century, individual reading supplanted collective memorizing. If the university, in essence, was still defined as a *place* of learning, that place, gradually, meant less and less a place for oral exchange, and more and more a place where collections of books were concentrated. The modern university is centered around the university library, in particular around the university library as an encyclopaedic *research library*. The paradigmatic event here was the founding of the Göttingen university library in 1737;(22) a major act within the same paradigm being the reorganization of Harvard university library in the 1870s and 1880s. The problem these libraries had to solve was that of information overload created by too much printed material becoming available. As Harvard President Neil Rudenstine says in retrospect:

"The real challenges ... were not those of space and money. They were organizational and conceptual. How should books be arranged for optimal use? What kind of cataloguing system could be invented to allow rapid access to the huge number of volumes that were now being acquired? How could convenient linkages be created among books and articles in different but related fields? How should library books be integrated into the university's programs of instruction; especially if the library owned only one or two copies of a book which fifty or sixty students were asked to read for class discussion?"(23)

The modern university is closely bound up with print culture in another way, too. The working language of the European universities of the Middle Ages was Latin. From the sixteenth century on Latin was gradually complemented by the new literary, "national", languages emerging in close connection with the spread of printed books. These new languages in turn became instrumental in the creation of modern nation states - in building up centralized bureaucracies and national job markets.(24) The university henceforth served as the apex of a national educational pyramid.(25) By the late nineteenth century, however, in the leading industrial states, a tension developed between the educational ideals, and teaching capabilities, of the traditional universities on the one hand, and the educational demands of a mass work force on the other.(26) The emergence of high-level adult education was the obvious result, a result regarded with ambiguous feelings by the university establishment. "Names are sometimes of more importance than is commonly supposed", Rashdall wrote in 1895, in the epilogue of his work. "Whether a particular institution should or should not be called a university may seem by itself to be a very small thing. But the name has got to be associated with education of the highest type: to degrade the name of a university is therefore to degrade our highest educational ideal."(27) For Rashdall,

"[t]he two most essential functions which a true university has to perform are to make possible the life of study, whether for a few years or during a whole career, and to bring together during that period, face to face in living intercourse, teacher and teacher, teacher and student, student and student. It would be a fatal error to imagine that either the multiplication of books or the increased facilities of communication can ever remove the need of institutions which permit of such personal intercourse."(28)

Distance learning in higher education

In discussions pertaining to issues of adult education, and open and distance education, one still regularly encounters this train of thought. The Canadian historian Harold Innis specifically referred to Rashdall in his report on "Adult Education and Universities" in 1947, warning administrators not to let higher education aims to be obscured by propaganda purposes.(29) The recent American Federation of Teachers report on "How Unions Can Harness the Technology Revolution on Campus" takes the position that no undergraduate degree programs in their entirety should be offered "at a distance". As the report puts it: "All our experience as educators tells us that teaching and learning in the shared human spaces of a campus are essential to the undergraduate experience and cannot be compromised too greatly without rendering the education unacceptable."(30) Of course there are different voices, too. According to James W. Hall, Vice Chancellor for Educational Technology and President of Empire State College, State University of New York, distance education

"is one of the most significant ways that the traditional university has sought to respond to scarcity. Distance education is, first and foremost, a movement that sought not so much to challenge or change the structure of higher learning, but a movement to extend the traditional university, a movement to overcome its inherent problems of scarcity and exclusivity. Distance education developed as a creative political response to the increasing inability of the traditional university structure to grow bigger."(31)

I will come back to Hall's argument presently; but let me first confront Rashdall's main contention, *viz.* that any proper form of higher education inevitably presupposes something like a traditional university setting: a definite location and a definite time interval to serve as the framework of protracted personal communication between teachers and students. I have the impression that, whatever the arguments for or against, Rashdall's university has long ceased to exist. Certainly my own student years had no formative effect on me; anything I have ever learnt I have learnt by reading books of my own choice, by attending conferences, and generally by belonging to an informal network of colleagues having similar or related

interests. As a university teacher I have not been invariably unsuccessful; but I am perfectly aware of the fact that, during all these decades, only a fraction of my professional energies was spent on students;(32) and practically none on fellow faculty members. Other people seem to have similar experiences. As a former professor at Harvard and at the University of California recently said: "I became a very senior, respected professor by publishing books and papers and by going around the world giving talks, not by being a good teacher. The more I was a good teacher, the more it took away from my publications and therefore my promotion possiblities."(33) In his book *The Emerging Worldwide Electronic University* Parker Rossman endorses the prediction of "the end of the university as most Americans picture it - four happy years on a resident campus". Rossman notes that half of American students in 1990 were older than the traditional college age, and that many people complete their college education or take graduate degrees on a part-time basis as commuters, taking courses across many working years."(34) No doubt the situation in Europe is, or is becoming, comparable. With lifelong learning becoming the dominant pattern, those first few years are hardly, anymore, crucial.

Now we all know that in the era of interactive, networked, multimedia communications the role of spaces, places, and locations has of course greatly changed.(35) In many respects physical presence has become unimportant. In many respects - but certainly not in all. Virtual communities cannot supplant real communities. Virtual communities, to some extent, need to be embodied in physical ones. Virtual communities *presuppose* physical communities; while it is also true that the former often lead to the development or strengthening of the latter. The idea is not that to each virtual community there should correspond a physical one; but, rather, that in a world of virtual communities strong physical communities, too, should abound. In the sphere of education, including higher education, this means that members of virtual study groups should also have access to face-to-face tutoring and discussions. The notion of local study centers is of course well-known in the distance education profession.(36) This notion is today increasingly complemented by that of *communities of learning*, i.e. by the idea that community networks should serve as the local bases of virtual education. As Schuler writes, "community helps support education (through information, tours, volunteering, and financial support, for example) and the educational system helps the community (through civic action, job training, and resource sharing, for example)."(37)

Distance learning can, and obviously will, play a major role in higher education. What are the consequences? I think three successive phases of development can be forecasted. The first is the one James W. Hall designates by the term *convergence*. "Because technology changes the meaning and efficacy of 'distance'", Hall writes,

"the niche occupied by distance education will become less defined, and certainly less undesirable to the traditional university. In short, the university is in the process of deep structural change, and that change will lead to a new structural concept: convergence. This change opens new opportunities for 'distance learning', but it will also bring the full weight of the traditional university into direct competition with specialized distance learning institutions."(38)

In this competition, Hall predicts, established distance education institutions are not at all doomed to lose; they might, and many of them probably will, themselves become universities of convergence.

The second phase is best called that of *partnership*. Individual institutions do not have the resources to develop all the materials they need. The natural outcome is one of "virtual collaboration through market differentiation in which different institutions specialize in the provision of different higher educational services".(39) There will be a division of labour in offering courses; and, obviously, a division of labour between teaching and evaluating. With this development, the concept of accreditation will become devoid of content.

The third phase - a utopian one, if you like - is that of an *organic learning environment*. It refers to a virtual and physical environment in which educational materials are sufficiently abundant, and sufficiently well-organized, to allow for spontaneous learning. In such an environment the need for examinations and certificates would become the exception; on-job confirmation of new skills acquired, the rule.

* * *

With open and distance learning becoming the dominant pattern in higher education, established institutions of research and teaching will inevitably have to redefine their roles. Let me say, by way of conclusion, some words about the way my own institution, the Institute of Philosophy of the Hungarian Academy of Sciences, is striving to find a new mission. We believe, first, that the gap existing in this country between the schools of higher education on the one hand, and the research institutes of the Academy on the other, might well be spontaneously bridged, once university walls begin to crumble. Secondly, we think that although the process should be, in the long run, spontaneous, a reflective understanding of its nature might serve as a helpful short-term prerequisite. Accordingly, we have launched, two years ago, the research project "The Changing Role of the European University". We have arrived at some first results; and we are trying to translate those results into practice. In fact we have started, thirdly, to build up the plan of a *virtual university*,(40) well aware of the fact, of course, that for that plan to materialize - or to virtualize, if you like - we need the help and partnership of those who have actual experience in distance education. And so we are really grateful that the Technical University of Budapest, a stronghold of the distance education movement in Hungary, has, fourthly, offered us just such help and partnership. We very much rely on this cooperation - and we rely on the cooperation and support of all of you.

Notes

1. See the discussion by Tamás Lajos in his study "Access to Higher Education through Student Mobility", Parma: Council of Europe, 1996, p.24. As Lajos puts it: "The fact that from the point of view of the professional progress of individuals and their competitiveness in the labour market, the importance of continuing education can be compared to that of initial education, must basically change the operation of the traditional education systems: the content of education, the relationship between the teaching of theoretical knowledge and practical training... - ... the role of special and practical knowledge increases to the detriment of general and theoretical knowledge. It is important that the curriculum is closely aligned to the previous practical experience and daily tasks of the students."

2. A rapprochement not easily achieved. "Despite sporadic convergence", writes Janet Jenkins, "deep-seated disjuncture between education and training sectors remains the norm. Those from education argue the value of broad general education and specialist in-depth knowledge. Employers ask why they should invest in training their employees in anything more than necessary skills." ("New Pathways to Lifelong Learning - The Potential of Distance Education", in: Frankl, Judy - Beryl O'Reilly [eds.], Lifelong Learning, Open Learning, Distance Learning. Proceedings of the 5th European Distance Education Network [EDEN] Conference, held in Futuroscope, Poitiers, France on 8-10 July 1996. Milton Keynes: EDEN, 1996, pp.17f.)

3. See e.g. "A Matter of Degrees: Colorado Governor Roy Romer on the Western Governors University", Educom Review, vol.32, no.1 (January/February 1997). Available (along with the other Educom Review materials cited below) at http://educom.edu/web/pubs/review/teachLearnIndex.html.

4. William H. Graves can speak of "the false dichotomy between research and teaching" and of "new patterns in academic professional life and institutional practices that inevitably will evolve as information technology frees us from the constraints of time, distance, and bricks and mortar", Educom Review, vol.29, no.1 (January/February 1994). Compare also, in the same issue, "Technology and the Changing Boundaries of Higher Education" by David Ward.

5. As Seymour Papert has recently put it: "The whole concept of curriculum, accreditation, and segregation by ages is entirely a product of outmoded ways of disseminating knowledge. ... The entire school is determined by primitive technologies of the past... The artificial kind of learning we call a school was simply proposed to get children to know things they didn't acquire naturally from the learning environment. As this need disappears, the institution of school will disappear" (Educom Review, vol.29, no.6, November/December 1994).

6. See esp. Jack M. Wilson, "Distance Learning for Continuous Education", Educom Review, vol.32, no.2 (March/April 1997).

7. W. Jaeger, Paideia: the Ideals of Greek Culture, Oxford: Basil Blackwell, 1946, vol.I, p.xiii.

8. "However", Schuler adds, "the need for facilitators of education traditionally called 'teachers', educational material ('books'), physical and virtual places where learning is the chief enterprise ('schools'), coordinated events that facilitate learning ('classes'), and courses of studies ('formal education' and 'curricula') will remain." (D. Schuler, New Community Networks: Wired for Change, New York: ACM Press / Reading, Mass.: Addison-Wesley, 1996, p.73.)

9. M. L. Clarke, Higher Education in the Ancient World, London: Routledge & Kegan Paul, 1971, p.1.

10. Ibid., pp.5ff.

11. Compare ibid., p.141.

12. Hastings Rashdall, The Universities of Europe in the Middle Ages. Vol.I-II. Oxford: Clarendon Press, 1895. New edition in three volumes, edited by F.M. Powicke and A.B. Emden, London: Oxford University Press 1936, repr. 1969, vol.3, pp.458f.

13. Ibid., p.459.

14. Ibid., p.461.

15. For detailed arguments see my "The Humanities in the Age of Post-Literacy", Budapest Review of Books, Autumn 1996 (vol.6, no.3).

16. R. Pfeiffer, History of Classical Scholarship: From the Beginnings to the End of the Hellenistic Age, Oxford: Clarendon Press, 1968, pp.16f.

17. For a detailed argument see my essay "Tradition and Practical Knowledge", in: Nyíri, J.C. and Smith, B. (eds.), Practical Knowledge: Outlines of a Theory of Traditions and Skills, Beckenham: Croom Helm, 1988, and the chapter "Heidegger and Wittgenstein" in my Tradition and Individuality: Essays, Dordrecht: Kluwer, 1992.

18. J. Ziman, Public Knowledge: An Essay concerning the Social Dimension of Science, Cambridge: Cambridge University Press, 1968, pp.7-10.

19. Friedrich Nietzsche, Untimely Meditations, transl. by R.J. Hollingdale, Cambridge University Press, 1983, pp.78f.

20. See esp. George P. Landow's recent essay, "Newman and the Idea of an Electronic University", in: Turner, F.M. (ed.), J.H. Newman: The Idea of a University. New Haven: Yale University Press, 1996.

21. I. Hajnal, "Universities and the Development of Writing in the XIIth-XIIIth Centuries", Scriptorum. International Review of Manuscript Studies, VI/2 [1952],pp.179f. - Hajnal was a truly seminal figure. His early work, published in the 1930s, had a marked influence on the so-called Toronto School, from which e.g. Marshall McLuhan emerged.

22. For a brilliant analysis see I.R. Willison, On the History of Libraries and Scholarship, Washington: Library of Congress, 1980.

23. Neil Rudenstine, "The Internet is Changing Higher Education", American Studies Journal, no.39, November 1996, p.50.

24. Compare esp. Ernest Gellner, Nations and Nationalism, Ithaca: Cornell University Press, 1983, pp.32ff.

25. It appears that in the case of small nations the practical importance of national universities is today diminishing. With the rise of a global economy and the resulting need of a global education, the pressures to uphold a nation-wide cultural homogeneity are weakening. By contrast, a new interest is emerging in local community life, local culture, and the local dialect.

26. Compare e.g. Raymond Williams, The Long Revolution, London: Chatto & Windus, 1961, pp.140ff.

27. "That universities should be multiplied", the passage continues, "is, within certain limits, natural and desirable; and it is by no means essential that all should conform exactly to the same pattern. It is natural and desirable again that efforts should be made to diffuse knowledge and intellectual interests among all classes by means of evening lectures. ... But it would be a delusion, and a mischievous delusion, to suppose thet evening lectures, however excellent and however much supplemented by self-education, can be the same thing as the student-leisure of many years, duly prepared for by a still longer period of regular school training" (Rashdall, op.cit., vol.3, p.462).

28. "A university, therefore, must have a local habitation", the passage continues. "It may in a sense be maintained that the bewildering accumulation of literature and the rapidity with which it is diffused have only emphasized the necessity for personal guidance and interpretation - for association in teaching, in study, and in research. Personal contact adds something even to the highest spiritual and intellectual influences... There is a kind of knowledge, too, which can only be secured by personal intercommunication, a kind of intellectual cultivation which is only made possible by constant interchange of ideas with other minds, a kind of enthusiasm which is impossible in isolation. To a certain extent of course these functions are performed by every sort of educational institution and every scientific or literary society. But it behoves us not to lose or lower the ideal of the university as the place par excellence for professed and properly trained students, not for amateurs or dilettantes or even for the most serious of leisure-hour students; for the highest intellectual cultivation, and not merely for elementary instruction or useful knowledge; for the advancement of science, and not merely for its conservation or diffusion; as the place moreover where different branches of knowledge are brought into contact and harmonious combination with one another, and where education and research advance side by side" (Rashdall, op.cit., vol.3, pp. 463f.).

29. Harold A. Innis, The Bias of Communication, University of Toronto Press, 1951, pp.203ff., see esp. p.212.

30. "Should Distance Learning be Rationed?" Interview with Larry Gold and James R. Mingle. Educom Review, vol.31, no.4 (July/August 1996). James Mingle, Executive Director of the State Higher Education Executives Offices, is critical of the report. "Admittedly", he said, "it is difficult for faculty to accept the transformation of higher education from a producer-dominated to a consumer-dominated enterprise. Actually, it doesn't much matter whether legislators, or accrediting bodies, or parents, or faculty, prefer one delivery mode over another - for we are not fully in control. It will be the marketplace that will decide whether 'distance learning' will thrive or die. This of course doesn't mean that professionals should abdicate their responsibilities to exercise quality control and establish integrity in our educational programs. It just means we have to negotiate our views with some powerful new groups - students and employers mainly - who have a whole new set of choices."

31. James W. Hall, "The Revolution in Electronic Technology and The Modern University: The Convergence of Means", Educom Review, vol.30, no.4 (July/August 1995).

32. Recently this has changed - as a consequence of having day-to-day e-mail contacts with my classes.

33. Donald Norman in the exchange "Transforming and Preserving Education: Traditional Values in Question", Educom Review, vol.29, no.6 (November/December 1994).

34. Parker Rossman, The Emerging Worldwide Electronic University: Information Age Global Higher Education, Westport, Conn.: Greenwood Press, 1992, pp.7f.

35. As George P. Landow writes, "computer networks promise to redefine the place of learning as radically

as did the inventions of writing and printing". Loc. cit., p.349.

36. See a number of important essays in Judy Frankl - Beryl O'Reilly (eds.), Lifelong Learning, Open Learning, Distance Learning, in particular those by Michel Arnaud ("Cooperative Learning in Knowledge Centers"), Sue Challis, Mollie Oatley, and Helen Tolley ("Widening Access in Rural Communities"), Judith Fage and Roger Mills ("New Technologies and the Inclusive Learning Society"), and Janet Jenkins ("New Pathways to Lifelong Learning - The Potential of Distance Education").

37. Schuler, op.cit., p.88. The idea is very much present in Sue Challis, Mollie Oatley, and Helen Tolley, "Widening Access in Rural Communities", loc.cit.

38. Hall, op.cit. - "One can visualize the university of convergence", Hall writes, "as a place of vast, perhaps limitless, exchange and interconnection, where research conducted by the most brilliant faculty is shared almost instantaneously with the relevant scholarly community and with the larger world. The rarest texts are available within a short time, and increasing numbers of serials are available electronically the minute they are published. These resources will be available to anyone, anywhere, and, within limits, almost without financial restriction. Students in the university of convergence will learn to engage with information, understand how to use it, and gain the skills and intellectual competencies associated with a university graduate. The faculties of the university of convergence will also take on aspects of the teaching role that have heretofore been less prominent or essential. The role of intellectual guide to the student, or mentor, will become more important as students pursue much of the formal instruction, formerly communicated through faculty lectures, in a variety of selfpaced, studentdirected modes. In fact, student planning and academic advisement is likely to move to the very center of the educational process for both students and faculty as both seek to find and use the most useful available resources. The traditional university never gave this critical function more than lip service. Most faculty time was committed to direct instruction and research with little time reserved for direct engagement with individual students. The university of convergence will require a dramatic shift of time commitment toward student advisement. So, although technology offers solutions to the problems and limitations of distance education institutions, technology will also allow the traditional university to address its limitations as well. With technology, the university of convergence will be able to overcome the historic problems that made distance education necessary in the first place."

39. Brian R. Gaines, "Institutional Transformation to a Learning Web" (1997), see http://ksi.cpsc.ucalgary.ca:80/KSI/

40. For details, see <http://www.idg.hu/uniworld>.