Education in the Mode of Information:
Some Philosophical Considerations[1]

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INTRODUCTION

The "information" in the last decade of the twentieth century is that we are entering the age of information and that our social and cultural life will become restructured as we "evolve" into the information society. The notion of information is also an important building block for the "reform" literatures which are guiding changes in western educational systems, and is presented as a fundamental key not only to economic success, but also to social success.

While the reform literatures have emphasized the importance of information, the necessary acquisition of skills related to information and, in particular, skills related to the electronic media and electronic communication, this has not been cited in a context of an explicit total rethinking of the *form* that this education will, should, or may take, but seems to be a continuation, though an extension of what has preceded. Thus electronic communication and electronic information are treated as being *extensions* of traditional print literacy in particular, but also of oral literacy. In general the "advance" of electronic communication and the move from the printed word to electronic language are not treated as being philosophically problematic in the educational literature. The intention of this paper is to make these issues problematic.

There are a number of philosophical issues here. First, there is a poverty of the concept of knowledge inherent in talk of information. This will be discussed initially. Second, there are a number of other philosophical issues: the availability of information; power and authority; and the nature of the self, among others. Given the emphasis on information in current educational documents, these philosophical issues, in so far as they impinge upon education, need to be explored. Finally I develop a critique of this approach to electronic communication.

KNOWLEDGE

In this section it is my intention to examine the espoused philosophy, and the account of knowledge underlying the curriculum "reforms."[2] My argument will be to the effect that I see the new curriculum as being "driven" by certain ideas of knowledge which, I believe, are highly contestable.

In the central philosophy of the proposals for the national curriculum,[3] with what are called the *Principles*, the *Essential Learning Areas*, and the *Essential Skills,* there is a stunning lack of concern with basic and fundamental questions about the nature of knowledge and pedagogy. Central to a consideration of curricula are questions about what counts as knowledge, how it is defined and controlled, and whose knowledge is selected for inclusion — who decides and on what basis? What counts as important knowledge also defines what is seen as *not worth knowing* and, consequently, the interests of different gender, class and ethnic groups may be

unequally represented in what is, and what is not, included in the curriculum offered. Reference is made to sound learning theory, to the needs and requirements of groups and society, to the essential knowledge which will allow individuals to take their place in society, and to succeed in a modern competitive society, but no consideration is given to whether the *nature* of knowledge determines how we can think, and whether our approach to education and pedagogy ought to be influenced by those considerations.

The term "knowledge" occurs a number of times in this document but in a lowly position, essentially to explain other definitions or principles.[4] In the nine major principles said to underlie the curriculum, "knowledge" does not occur in any of the formal wording of the principles. In other words knowledge is not considered important enough to occur in the wording of any one of the principles which "give direction to the curriculum in New Zealand schools."[5] It is used as part of the definition of "learning areas" and occurs again in relation to the curriculum,[6] but as "curriculum" has already been defined in terms of learning areas, this is merely tautologous and does not represent any new principled approach to knowledge as being crucially important. Knowledge is not mentioned at all in the four pages devoted to skills.[7]

In effect knowledge has been replaced by skills and *learning*. Everything which might have been seen as obtaining knowledge — an *object* of an activity — seems to have moved into an activity mode, where what is important is a *process*.[8] Knowledge, in the sense of knowing *that* something is the case, has been replaced by knowing *how*, with the explicit emphasis on getting skilled; and learning as process has replaced knowing some thing in the notion of learning areas, in getting skilled, and in the area of attitudes and values,[9] where it is an attitude towards learning (as a process) that is valued and not an attitude towards knowledge (as something known). It is the processes, the ever ongoing learning and reskilling processes, that are seen as of paramount importance.

In part this is because the outcome is no longer knowledge but instead *information*. And because it is (merely) information it has to be continuously "relearned," readjusted and restructured to meet the demands of the consumer in the service information industry. It is the consumer who determines quality (truth?) in the information industry. Hence the necessity to value "learning," and life long "learning."

When we search the curriculum document under the skills section, what we find are skills related to information retrieval and dissemination. Students are also meant to have problem solving skills which, on the face of it, seem the normal liberal educational set of critical skills as it is said, e.g., that fact should be distinguished from opinion. But even that "endeavour" rests in the mode of information, and on the schema of skills outlined would amount to testing bits of information against other bits of information because the fundamental concepts are in the information mode. At best there is a demand for quality of information in the cry for fact, but quality of information will be decided by the consumer not the provider. It is the consumer in the information industry who decides truth/quality.[10]

But this notion of information and the skills necessary for problem solving and decision making in the mode of information are needed in electronic communication. But more is needed. In order to understand what this might be we need a form of critical theory that is able to decode the new linguistic dimensions of electronic writing and new forms of social interaction that will accompany it.

OTHER PHILOSOPHICAL ISSUES

According to Poster:

> The prospect of instant universal information, introduced by electronic media, clearly has profound effects upon society, the extent of which are still to be determined. But the conquest of space and time by electronic media augurs more for institutions and for theory than a mere returning of practices and ideas to new communicational frequencies.[11]

For example when information is readily available on a scale never previously envisaged, it seems that it is not being freely disseminated. There is a politics of control which may deny access, or permit it only to those who have the technology and the assets to purchase information. In principle information is available to anyone, with traditional barriers of space and time obliterated by electronic communication. Why restrict access?

There are a number of related issues here concerned with the fragility of social networks, the breakdown of traditional authority structures associated with oral and written communication, new ways of exercising power relationships through these different forms of knowledge, and new ways of constituting the self, in the new realm of electronic communication.

Consider the form of face to face social network associated with oral communication. Compare it with the written word where the authority of the speaker — *who* that person is — is different from the authority of the *author*, and contrast both of these with the information encoded in the pixels on the electronic screen. The social networks associated with oral and written communication can become very fragile in electronic communication because of the introduction of say a virus, which may bring about a breakdown, or require the complete shutdown of the network. The information encoded by an emitter can be transformed on receipt by the recipient. Unwanted information can appear on the screen and this may be irrelevant, contradictory, intemperate, abusive or even obscene.

It is not just that the social networks are tender, but that the roles of speaker or author are instantly reversible, and not subject to the same social conventions that govern oral and written communication. Further, authority structures become tenuous. Both the authority that accompanied oral communication — that of *who* the speaker is — and the authority of written communication — where the notions of truth, evidence, and of being *an* authority are important — became tenous. But the authority to control what is said also becomes tenuous. If unwanted communication cannot be controlled then traditional notions of being *in* authority become very tenuous. Of course a "solution" to this is to control emitters and emittees so that they are passive senders and receivers.

This requires a particular "education" which concentrates on processes or activities as opposed to content, and emphasizes information as opposed to knowledge. What counts as good or authoritative information is checked, in the mode of

information, against other information assembled or transmitted by an emittee suitably "educated." If content has been replaced by process, and if knowledge and understanding have been replaced by skills and information, then there is no way out. It is as if one is enclosed in a circular system like a dictionary, where one can stay within the words without needing to check the reality or points of reference with the real world. It is knowledge and understanding which provides the way out of the information "dictionary" and it is this which is being lost, if not denied, in the new forms of education.

But knowledge should not be dissociated from power. Insofar as new forms of knowledge and therefore power are implicit in the age of information, so too we should expect new forms of subjectivity in the mode of information. It is in the writings of Michel Foucault, among others, that we meet with the notion that subjects are constituted.[12]

A notion of the self which underlies the reform literatures is that of the free autonomous chooser. According to Foucault, the Enlightenment notion of personal autonomy did not provide freedom. Nor will neo-liberal autonomous choosers be free either, as what I call busnocratic rationality and busno-power[13] will shape them as particular kinds of subjects so that they will choose in certain general ways. Furthermore, Foucault's bio-power, with its emphasis on the body, does not seem very appropriate in relation to electronic communication.

Foucault introduced the term "bio-power" as follows:

> The disciplines of the body and the regulations of the population constituted the two poles around which the organization of power over life was deployed. The setting up, in the course of the classical age, of this great bipolar technology — anatomic and biological, individualizing and specifying, directed towards the performances of the body, with attention to the processes of life — characterized a power whose highest function was perhaps no longer to kill, but to invest life through and through.[14]

Bio-power is exercised on the body, carries a specifically anatomical and biological aspect, and is exercised over individuals as members of a population, first, so that their sexuality and individuality are constituted in certain ways, but second, so that this connects with issues of national policy. Thereby docile and healthy bodies can be inserted into the machinery of production so that populations can be adjusted in accordance with economic processes.

Foucault discusses in considerable detail how the requisite techniques and technologies for the exercise of bio-power were developed.[15] These can be classified as technologies of domination and technologies of the self. Technologies of domination act essentially on the body, and classify and objectify individuals. The key to technologies of the self is the belief, now common in Western culture, that it is possible to reveal the truth about one's self. By telling the truth about one's sexuality, where the "deepest" truth is embedded in the discourse and discursive practices of sexuality, individuals become objects of knowledge, both to themselves and to others. In telling the truth, one knows oneself and is known to others in a process which is both therapeutic and also controlling. Eventually, according to Foucault, we learn how to do these things to ourselves. He refers to the conjoint effects of these two technologies as governmentality.

In the reform literatures students, parents, etc. are presumed to be persons not merely capable of deliberating upon alternatives, and choosing between alternative educational programs according to individual needs and interests, and the qualities of programs, but it seems to be presumed that it is part of the very nature of being human to both make, and want to make, *continuous* consumer style choices. But the notions of autonomy needed to make choices, and the notions of needs and interests, presuppose that such choices are the student's (or chooser's) *own*, that *as choosers* they are *independent*, and that needs and interests have not been manipulated or imposed in some way upon them.

It is not just that the individual should become an autonomous chooser, but also that this connects with wider government policy and economic theory. The autonomous chooser becomes a unit in an enterprise and in consumer driven market totality. These changed notions can and should be understood as involving *changes* in the forms that *governmentality* takes. But the power involved is not the bio-power of Foucault introduced above. Bio-power was directed at and through the body, at the health and sexuality of the individual, and through that, at populations. This new form of power, which can be called *busno-power*, is directed at the subjectivity of the person, not through the body, but through the mind, through forms of educational practice and pedagogy which shape through busnocratic rationality, choices in education and the subjectivities of autonomous choosers. Education, embedded in the frameworks of busno-power and busnocratic rationality, is the first step in the individualizing and totalizing functions of busno-power (cf. Illich's arguments that schools are the first step in the schooling mentality[16]).

Busnocratic rationality is developed from the notion of technocratic rationality, but rather than there being a sharp distinction between values and means, values permeate this form of "rationality" throughout, especially at the very micro-level.

In the Age of Information, and in relation to identity, the new self will be decentered and dispersed, as in post-structuralist theory, without spatio-temporal and bodily constraints. But, furthermore, the physical body has *nothing* to do with identity in electronic communication. It is almost as though the self has become invisible.[17] It is not just that the self can "transport" itself spatio-temporally, but it is almost that there is no self other than the self-reflexive signs of electronic communication — the pixels on the screen. But as the emitter's information can be obliterated almost immediately by the changing of the pixels in the process of receiving and transmitting information, then so too can the self be obliterated because of the self reflexive character of language in this new mode of information. At best, the self is in continuous instability as pixels change in the flow of information between emitter and emittee, who are also in constant "reversal" of roles. It seems as if the self becomes obliterated or unidentifiable in the flux, maze and buzz of information. But, because there is nothing other than the flux, the self cannot be obliterated, because in order for that to happen, it had to first exist and that is not possible in the flux of information.

But if the self is not identifiable, in principle, this poses problems for traditional authority structures and governance.

THE CRITIQUE OF INFORMATION[18]

Mark Poster is an analyst who recognizes the importance of a study of electronic languages which does not merely look at technologies, machines and the new efficiencies brought about in communication. According to Poster, "an adequate account of electronic communications requires a theory that is able to decode the linguistic dimension of the new forms of social interaction."[19] He argues that traditional critical theory is inadequate for the task.

Poster advocates, as a step in that direction, the concept of the mode of information which is, he says, a play upon Marx's notion of the mode of production. But as he defines the concept, it is more than this, for it bears close resemblances in two important ways to the mode of production. First he notes that it provides an historical category which divides and periodizes the past, but, second, it provides a metaphor for how certain activities are privileged. For Marx, of *The German Ideology*, the concept of the mode of production served both of these purposes.

Poster's definition of the concept of the mode of information is then, "By mode of information I similarly suggest that history can be periodised by variations in the structure in this case of symbolic exchange, but also that the current culture gives a certain fetishistic importance to 'information.'"[20]

With this definition he then designates three important periodizations of forms of symbolic exchange: first there is face to face and orally mediated exchange; second there are written exchanges mediated by print; and finally, electronically mediated exchanges. These are not to be seen as progressions, or improvements. But is the third stage just an extension of the second, and thereby just another form of printed exchange? Poster's major claim is that it is not.[21]

His two main arguments are concerned with meanings and the self in each of the three stages. Meaning, in the first stage of meaning, is characterized by symbolic correspondences; in the second stage, by representation; and in the third stage, by *simulation*. Poster accepts that language shapes both the individual and societies. Therefore, corresponding to these three stages of meaning, he talks of three stages of the self: in the first stage, the self is seen as established in face-to-face relations through a position of enunciation, as the person who speaks; in the second stage, the self is constituted as being personally/rationally autonomous and as the author endowing meaning to the printed page; and in the third or electronically mediated stage, the self is decentered, dispersed, and has multiple "identities." Although still essentially in the second stage of the mode of information, a number of post structuralist writers, including Foucault, have emphasized these themes.

Poster states some cautions, however. The stages are not to be "found" in the documents of each epoch, but instead are to be imposed by the theory to attain knowledge — here the test must be the value of empirical studies informed by the concept of the mode of information. Nor are they consecutive or sequential, as elements of all are in the present. Contrary to what many technically minded enthusiasts may believe, the third stage is neither privileged nor more progressive. The study of electronic communication cannot therefore be reduced to narrowly conceived questions of technology and efficiency.

Poster argues further that these matters and the restraints or enhancements upon them can govern with striking force the shape that societies take. For him, technicist approaches do not approach the heart of the matter, "the configuration of information exchange," or as he calls it, "the wrapping of language." He argues that the configuration of language is an analytically autonomous realm of experience,[22] especially with the rapidly changing modes of electronic communication that not only alter, but restructure networks of social relations and constitute subjects in very different ways from the personally autonomous agent of the second stage and any representational view of language. Changes in the wrapping of language then alter the way meanings are derived, restructure social relations, constitute the subject in different ways, and alter the relations between subject and the world.

But Poster's point is that even where language might be considered as having a representational function, the relation between word and thing has become tenuous. To illustrate the loss of the referent in ordinary everyday use he uses the word "money," tracking its referent from precious metals, to banknotes and, finally, to a configuration of oxides stored on a tape in a bank's computer department. This shows that the referential notion has become tenuous, and that in fact, words no longer stand for things, but come to stand *in the place* of things. This can be called the *self referential* function of language and it permeates the new forms of electronic communication.

Language is being wrapped differently by new configurations in electronic communications: there is the distance between addresser and addressee which imposes different relations from say face-to-face oral communication; there are new relations between message and context; and there are differences in the ways in which senders and receivers may represent themselves. This new wrapping of language imposes in turn new relations between science and power, between the individual and both society and the state, between authority and the law, between family members, and between consumer and retailer. There are immense philosophical implications here for education.

There are physical differences between the "print" of electronic text and the printed words of books. The pixels or picture elements of electronic text can be blown up, separated, and manipulated so that they no longer resemble the words or letters of print. Furthermore, we have come to believe that the letters and words of printed text are unmediated in that they just stand for thought. Yet there is clear evidence historically that words and text of the printed text had to be mediated, and that they were not a transparent window into thought.

Nor can there be an interaction between the reader and the printed text. The reader of print can write on the text (if it is owned), but it changes the text, perhaps in ways in which the author and owner of the printed text (protected by copyright which is itself unclear in relation to electronic texts) would not wish, and it is not part of the printed text. The critical comments and the interpretations are not *in* the text, or even part of the text, but the beginnings of texts about texts. Similarly, if a director of a Shakespearean play changes the ending quite dramatically — MacBeth is not defeated say — then it is not MacBeth.

However, in electronic text, the author or reader can alter, amend, or add to the text. The author can continuously update a text as his or her position shifts and changes. Or a number of scenarios to a text can be provided by the author so that the reader can interact and choose the desired scenario. Or the reader can shift text, add text, combine texts, or play with texts in ways that are possible with electronic text but not with printed text. In film, music and electronic media in general, the notion of "no final cut" has almost become commonplace.[23] Will this become the same in philosophical and/or academic texts?

Poster argues that an outcome may be that social life in part becomes the positioning of subjects to receive and interpret these electronic messages. Clearly this has important bearings on what has been said above about the emphases on information and electronic communication in relation to the educational reform literature, and the absence of knowledge and a critical examination of the mode of information.

The message given by Foucault, among others, is that language has an important capacity for constituting us as subjects. By distancing emitter and emittee, electronic communication disturbs relations normally conceived between speaker and hearer, or between writer and reader, and thus reconstitutes both subjects and their relations to symbols. Indeed, for a subject in electronic communications, there seems no longer to be a material world as normally represented by language, but just a flow of electronic language. Instead of a real world behind the language, we have instead a simulated world with simulcra and no real objects.

CONCLUSION

The conclusions which can be drawn at this stage are somewhat broad and tentative. What is being advocated is a broader view of critical theory and one which permits the new linguistic dimension of social interaction, in the age of information, to be decoded and become part of any theoretical reconstruction and description of social and cultural life. For education, it is critically important that a critical theory be able to decode the new linguistic dimensions of electronic communication, because of the epistemological shifts from knowledge to information and content to process, the problems of reference of signs in electronic writing, problems of identity and how the self is constituted, and new problems relating to authority and governance.

Here I would follow Poster and argue that critical theory, as traditionally conceived, is inadequate to the task.[24]

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1. I am indebted to the writings of Mark Poster on the mode of information and those of Michel Foucault in general. I am also indebted to a series of discussions held with Michael Apple and Mike Schapiro at Wisconsin-Madison in April 1995 which led, though slightly indirectly, to my interest in the mode of information and electronic communication.

2. My context is New Zealand, but I believe that the points can be generalized.

3. *The New Zealand Curriculum Framework* (Wellington: Ministry of Education, 1993).

4. Nor does Secretary of Education, Dr. Maris O'Rourke, use the term in her introductory justification of the curriculum document.

5. *The New Zealand Curriculum Framework,* 6

6. Ibid., 9

7. Ibid., 17-20.

8. Compare here the constructivist positions which seem to be permeating science and mathematics education.

9. Ibid., 21

10. Quality has been clearly defined in New Zealand education in terms of the consumers' interests, i.e., business. See e.g., Alan Barker, of the New Zealand Qualifications Authority, "The New Zealand Qualifications Framework: practical issues in its implementation" (Paper presented to the conference, *Successfully Managing Quality, Performance and Efficiency in Tertiary Education*, Wellington, 13-14 April 1993).

11. Mark Poster, *The Mode of Information* (Chicago: Chicago University Press, 1993), 3.

12. Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York: Vintage, 1979); "Governmentality," in *Ideology and Consciousness* 6, 5-21; *The Use of Pleasure: The History of Sexuality* vol. II (New York: Vintage, 1985); *The Care of the Self: The History of Sexuality* vol. III (Harmondsworth: Penguin, 1990).

13. See my articles, "Foucault and Neo-Liberalism: bio-power and busno-power," in *Proceedings of The Philosophy of Education Society 1995*, ed. Alven Neiman (Illinois: Philosophy of Education Society, 1996); and "Skills, Information and Quality for the Autonomous Chooser," in *Education, Democracy and Reforms*, ed. Mark Olssen and Kay Morris Matthews (Auckland: New Zealand Association for Research in Education, 1995), 45-60.

14. Michel Foucault, *The History of Sexuality*, vol. I (New York: Vintage, 1980), 139.

15. See f.n. 13.

16. Ivan Illich, *Deschooling Society* (Harmondsworth: Penguin, 1973).

17. I am grateful to Patrick Fitzsimons for this point.

18. Here I am indebted to Mark Poster, *The Mode of Information*.

19. Ibid., 5.

20. Ibid., 6.

21. Cf. Richard A. Lanham, *The Electronic Word: democracy, technology and the Arts* (Chicago: Chicago University Press, 1993).

22. Ibid., 8.

23. Lanham, *The Electronic Word*, 7.

24. See my "The Mode of Information and Education: Insights on Critical Theory from Michel Foucault," in *Critical Theory in Educational Discourse*, ed. Tom Popkewitz (Durban: Heinemann, 1996).