A Theoretical Perspective

Emancipative Educational Technology

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First Published: Volume 16, Number 2, Spring 1987

Abstract: In a democracy, public education should contribute to the development of responsible. autonomous people. 'The usual communication media of schools tend to favor conformity. However, the close match between Habermas' criteria for emancipative discourse and the main characteristics of computer-mediated conferencing favor this medium for education. The skeleton of a theoretical systems model for computer-mediated conferencing is presented here.

Introduction

Almost any technology can be liberative or dominative; indeed most technologies are both, but to/for different people. What I mean by liberation or emancipation is increasing a person's abilities and opportunities to make rational choices about matters important to that person. Both advertainment and peer or colleague pressure are terribly dominating influences, the former largely mediated by technology. The main form of educational communications technology is TV/ Video in society at large, while in schools it is the paper copier. There is a vast difference between those two technologies; TV is mostly a few well endowed interest groups influencing vas numbers of people, whereas copiers usually involve many influence, or few to few many times repeated.

Emancipation or liberation is not simply freedom from involvement with other people concerning one's decisions but rather requires discussion with others where the outcome is determined by the best argument, not by promises or threats or captivating art or music. This notion of discursive emancipation is due to Jurgen Habermas (1981-1984). I find his perspectives very helpful in considering technological options, as opposed to the non-option of total rejection of technology. It seems to me that the ideal conditions for non-dominative, or liberative discourse which he puts forward can more easily be achieved through computer-telecommunications mediated communications than in any other manner. In this paper I am concerned to demonstrate why I believe computer conferencing in particular is best suited to provide emancipative educational learning situations.

Problem Area

People in our society are constrained by a double yoke: mechanical bureaucratic administrations on the one hand; and time-consumptive 'advertainment' on the other. Both seriously constrict our opportunities to make autonomous and responsible choices about the propagation of culture and the conduct of education

as cultural propagation. For example in Quebec, Law 101 and its language-police are an attempt to publicly control cultural propagation, but one which is not legitimate if all the people involved have not been able to participate in debates about the means and ends concerned. This is an unusual case, though, because there actually have been public debates about the issues. In other crucial areas such as class size, and timetable hours, decisions have been made by administrators on technical and financial grounds without any debate among those affected.

The other side of the yoke – the advertainment which gobbles up people's quality attention-time so that very little is left for debating educational questions – is all too easily exemplified by Coke(TM) commercials, and *Dallas*, etc. Concerned teachers, learners and citizens have no efficacious forum for debating key educational issues such as the relative place of fundamental intellectual skills versus peculiar vocational skills in curriculum and instruction Even at the (micro-) instructional level there is very little opportunity for rational discourse to negotiate and validate instructional objectives, criterion measurement methods, or choice of media and materials. Some teachers do hold discussions on the responsibilities and rights of both learners and teachers, but it is an uphill struggle to do so. 'Historically legitimated' bureaucratic norms prevail over the classroom, while tired learners with poor attention skills have had their best time leeched-up by advertainment to which they are addicted. Actual formal education has to make do with what little functional time and discretion is left between the pressures of the administrative, and the advertainment pincers.

Jurgen Habermas (1973/1975) envisions a possible way beyond the double impasse of modern society (which incidentally he refers to as our legitimation crisis). This way lies through the widespread practice of life-world validating discourse. So called 'practical discourse' is discussion of a fully rational kind about the validity of norms and rights, and rules, and factual propositions, where the only determinants of the outcome of the discussion are the solidity of facts and the logicality and comprehensiveness of the arguments (Habermas, 1981/1984). This contrasts with ordinary debate where rhetorical tricks, and threats or promises often determine the outcome. For discourse to provide genuine legitimation for norms and procedures it must be undominated; that is to say, threats and promises must be censored out, and so must aesthetic enticements or repulsions (Boyd, 1984). Free speech should mean freedom to state arguments and ground them in facts, not license to seduce or frighten people. If there can be some way for us to conduct liberative discussions about curriculum goals, instructional system configurations and individualization, expeditiously and freely, then we may be on our way to orienting activities toward our highest-level educational goals (such as promoting culturally rooted autonomy and potency) rather than making such a fetish out of tiny fact/skill low-level objectives.

Face-to-face discussion has two grave disadvantages when viewed in terms of Habermas' desiderata for life-world validating discourse; 1) it is difficult in ordinary meetings to arrange for each person to have a full and equal chance to contribute,

and to digest the contributions of others (especially if there are many vociferous people); and 2) unfair dominative speech acts cannot be ruled out of order until they have taken place if the actor insists on uttering them. By the time that the chair can rule a remark to be out of order it has already done its damage. "Ignore that!" is a weak command. For these reasons and some others, critics have considered Habermas' option of legitimative discourse to be merely an impractical ideal. However, it occurred to me when I came across Habermas, that perhaps computer-mediated teleconferencing is a medium through which his ideal discourse conditions can (very nearly) be met.

This is so because everyone can be given equal opportunity to enter arguments in the conference, and also because a moderator system can hide illegal entries from view. Threats and promises and rhetorical tricks can be archived, and dragged up after the main decisions have been taken if there is a challenge, but they can be kept out of immediate effect. It is crucial for liberative, life-world legitimating discourse that a centralized computer-mediating moderating conferencing system be used and not just exchanges of electronic mail. This is so, not only because illegal statements can be kept from influencing judgments, but in order that a permanent time-stamped archive of all transactions can exist and be publicly accessible. It may also be important to hold frequent anonymous discussions, with the moderator system archiving those who actually made which inputs, in case a serious *post hoc* challenge arises (or in cases like that reported by Karl Zinn (personal communication) where some participants masquerade as others, and try to play the pathological game "let's you and him fight!").

That computer-mediated conferencing can function to support and promote liberative discourse has been demonstrated by David Stodolsky's experiments at Irvine (1976) and in Sweden (18986). However, many questions remain open concerning appropriate system configurations and protocols for educational life-world building.

There are other technologies such as video-playback (Ryan, 1974) which can be liberative and should be combined with computer-mediated conferencing when possible (Boyd and Jaworski, 1985).

Theory

The relative theory for research on liberative educational computer-mediated conferencing has to be assembled from several sources. The whole system consists of participants (Paskian 'p' individuals), personal interfaces, the communications network, the mediating and archiving host computer source, software, and protocols. Another way of characterizing and modeling it is by using Helmar Frank's six dimensions of the pedagogic space (Frank, 1979). These are:

1) goal the learning objectives and meta-objectives agreed upon:
2) content – facts, skills, and their organization meshes;

3) *psychostructure* – the cognitive styles, schema and identity traits, entry level skills, etc. of participants;
4) *media* the communication and control media and environment;
5) *sociostructure* -the grouping of "p" individuals into coalitions, or dialog partners, or their separation as teacher, moderator, etc.; and
6) *procedure* -the algorithms, or heuristics, and rules of order etc.

These dimensions are, in order, answers to the questions: 1) To what end? 2) What? 3) Who? 4) Through what? 5) With whom? 6) How? Answers to these questions in the form of both structures and processes are required to model any learning system. Habermas' desiderata for legitimating discourse largely fall within the sixth dimensionprocedure, but they implicate aspects of all the others. Pask's conversation theory mainly relates to the first three dimensions and a little with the sixth (Pask, 1976). To tie all of the above together into a probabilistic casual model, or at least a good heuristic model which can successfully promote understanding, is a big job. All I can do here is sketch how I think it might be done.

There is one more essential piece, which falls into Frank's third dimension *psychostructure,* and that is a model of the participant's higher level aspirations and fears insofar as they are relevant to participation in the system. In any real system it is necessary to live and work together with people in order to grasp aspirations and fears, before intervening – even then the intervention becomes a conjugation with the others also intervening in the teacher's own life world. If one cares for real education there must be *reciprocity* of communicative control.

The actual goals for any educational teleconference will depend on many situational factors and the goals of each participant. My conjectural model of the functioning of 'p' individuals is that at any given time a 'p' individual (participating entity – see Pask, 1982) can operate or interact at one or more of three levels:

1) *Receptive-Acquisitive* level of merely attending to and capturing pattern-forms and adding some of them to one's active schema;
2) *Transmissive level* functioning as a conduit by repeating received forms (e.g., memes) and outputting them or imposing them upon any thing, or anybody – any other 'p' individual who seems likely to pay attention: and
3) *Conjugative – Propagative* level where the 'p' individual connects part of its own core identity form to some transmissible symbolic 'child' meme in such a way that some further 'p' individuals are likely to take up the form, and connect parts of their identities to it, and 'pass-it-on' indefinitely.

In short, each player at each 'play' can either: 1) accept or reject; 2) just pass-it-on; or 3) conjugate some 'self-pattern' with it and pass the changeling on.

This is a very rudimentary model, but I think it captures the most important communicative activities (actually there may be a sort of continuum between those

possibilities). The above seems to belong more to Frank's procedural dimension than to the goal dimension; they are closely linked. As I see it, human beings have a wired-in 'ought-that-is' or highest-level imperative to propagate portions of their identity. One might call them 'identimemes,' or even 'soul-memes'. This instinctual imperative is satisfied when I see some aspect of my own way of doing things being performed by others. That is the goal of the game. The highest payoff is to see such propagation when it has the appearance of being able to go on forever. The next best pay-off is to have someone copy something that you have taught them, even if it doesn't carry your own characteristic style.

Those are the desirable goals of the game in this model. They have their converse: at Level 1 a negative payoff occurs when one accepts and keeps 'garbage-forms' which are no use for helping make new messages; at Level 2 or operation one may be infected by and propagate parasitic memes which one doesn't own at all, but which use up one's attention time and communicative opportunities; at Level 3 one may be infected by a virulent parasitic meme which does couple to one's identity so that one is now a gambler, or an alcoholic, or some other kind of self-destructive contagious addict (pay-off minus infinity) (see Hofstadter [1985] for examples).

At the procedure level and also at the goal level it seems to be necessary to have a mediating variable, which is used to help allocate resources. This is 'status' or reputation (or in life off-line it may be money). In particular I have argued (Boyd, 1977) that relevant-credibility status is the most important moderator variable in knowledge development games. Normally, status increases if high-status persons pay attention to your transmissions, and that in turn draws the attention of others. A deviation-amplifying feedback loop exists so that those whose status starts to increase tend to get propelled to the top, while those who are initially ignored lose heart, do less, get fed less, get less support, and eventually drop out. Elaine McCreary's recent results (see 16(2) CJEC) tend to indicate a much more complicated role for status. There is also the difficulty that status in the computer-mediated conference may not correlate directly with status otherwise assigned.

This issue of status in the conference brings one back to Habermas (1984); for a message to be properly received and for the sender to be accorded full-participant status four essential conditions must be met: 1) truth of factual propositions; 2) rightness of collective norm assertion; 3) truthfulness of commitment; and 4) honesty of expressive parts of a communication. Failing on any of these weakens both the validity of the message, and the credibility status of the sender. These conditions seem to hold for any communicative act that has an open-ended on-going or heuristic property. This is defined in opposition to mere 'instrumental' knowledge that only allows one to extrapolate, or interpolate correctly, but has no leading-on quality (an operational test for understanding is whether the learner can *extend* the concept in an interesting and *valid* way).

The above is a gross over-simplification of the process of life-world building through message exchange. but I think it has the essential entities, goals and

procedures. Therefore, it should be possible to use it to understand computer-mediated conferencing and to situate research work, most of which lies ahead of us, notwithstanding the nice work of others in this issue, and of still others like Hiltz, Johnson and Turoff (1986) and Stefik, Foster, Bobrow, Kahn, Lannry and Suchman (1987).

Envoi

The foregoing may have given the impression that rational discourse for positing and criticizing validity claims lies at the heart of educational practice; it does, if the education has an emancipative meta-objective. But it is not all that lies at the heart of education. If we go back to Alfred North Whitehead's (1955) characterization of learning as a three phased cyclic process with an initial phase of *romance.* Followed by a phase *ofprecision* and completed by the *generalization* phase, then it would seem that text-based computer-mediated conferencing (notwithstanding Ferrarini, 1984) is best suited as a vehicle for the latter two phases.

It is fairly easy to see how precision, the clear definition of one's thoughts and procedures, can be facilitated by interaction via computer, and even clearer how multiple dialogs can aid with generalisation. Perhaps the *romance phase* needs solitude or museums, theatres and wilderness parks. It is more directly appropriate to imply aesthetic techniques (Boyd, 1984) to support the *romance phase,* and possibly also ritual (See the chapter on Mary Douglas in Wuthnow, Bergesen, & Kurzweil, 1984). Haberma's ideal discourse desiderata are to life-worrld construction what Karl Popper's *Conjectures and Refutations* desiderata are doing to science; necessary but not sufficient. What is left out in both cases are both the creative imaginative synthesis which enlarges our cultural worlds, and also the ritual observances through which we re-enact our affiliation with these worlds, through which we re-create our collective identities.

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