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Sundeep Sahay

University of Oslo, sundeeps@ifi.uio.no

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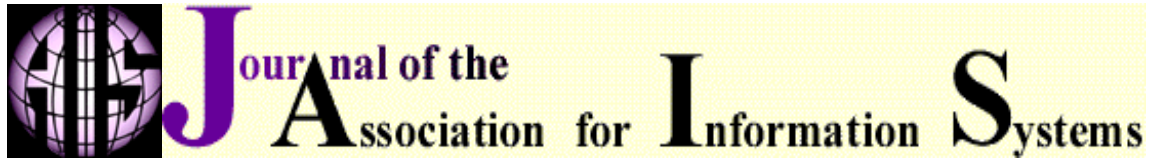
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IS RESEARCH PERSPECTIVES ARTICLE

Beyond Utopian and Nostalgic Views of Information Technology and Education: Implications for Research and Practice*

Sundeep Sahay

Department of Informatics
University of Oslo
sundeeps@ifi.uio.no

Abstract

Education is in a state of rapid change. The influx of new information and communication technologies (ICTs) lead us to question: "How do we find the balance between continuity and discontinuity whilst critically renewing our educational traditions?" The paper develops a philosophical understanding that transcends utopian and dystopian claims that IT is either "becoming education" or "destroying the essence of education," respectively. This philosophical perspective is developed around: (1) the question of student autonomy and the potential of its being undermined through ICT and (2) the processes through which students can potentially resist these threats. The paper develops and applies the philosophical understanding to the question of student autonomy. First, the paper emphasizes the importance of considering student autonomy in the debates around the relationship of ICT and education. Second, the paper proposes a conceptual model of autonomy, drawing upon some important ideas of Habermas and pragmatist thinking. Third, the paper identifies some systemic threats on educational processes arising from globalization and corporatization. Fourth, I outline the Habermasian response to these threats as a means to understand the nature of student response. Finally, drawing upon the conceptual ideas of autonomy presented, I consider five specific approaches to examine the question of the reform of MIS education.

Keywords: ICTS, MIS Education, Habermas, Philosophy, Autonomy

Introduction

The large-scale introduction of new information and communication technologies [ICTs] in education is raising multiple debates over the substance, trajectory, purpose, and implications of ICTs in this domain. While some argue that ICTs rob education of its traditional association with books and scholarship, others see ICTs as ushering in a new and exciting era of education. Aviram [1993] describes three schools of thought with

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respect to these debates. The “technocrats” primarily see ICT as a means for education and hold the view that educational institutions will survive this current ICT influx as they have other technologies in the past. The “reformists” believe that the introduction of new ICTs necessitates new didactics and teaching/learning methods. Thus, they perceive that the introduction of ICTs will be accompanied by the reform of various educational processes. Finally, the “holists” emphasize the need to understand the influence of the socio-cultural context in the use of these educational technologies. Aviram and Bar-Lev [2003] argue that in Western education there are few examples of the holistic approach, as most initiatives can lie between technocratic and reformist. When formulating policy, administrators tend to favor the reformist approach, but in practice they are generally technocratic.

One consensus within the debate is that ICTs are becoming ubiquitous and that, at least in the context of Western higher education, appropriate strategies for their use need to be developed. The large-scale availability of ICTs implies that more importance is being given to the means of acquiring education than to the content of education itself. This shifting balance between the “means” and “ends” of education raises the concern that ICTs can potentially become an end in themselves rather than a means to support the process of education. While large investments are being made to acquire new technologies, incommensurate effort is being put into evaluating their effectiveness [Borgmann 1999], thus raising more questions than answers about the value of ICTs in education [Beynon and Mackay, 1993].

While ICTs promise to open up new opportunities for students, they also create new challenges, including those to student autonomy. Opportunities come in various forms, including employment possibilities for people with ICT skills and assistance for students who cannot physically come to classrooms or who have learning or other challenges that interfere with their ability to be active in a class. The notion of autonomy is situated within a broader socio-cultural-economic framework. In Western societies autonomy is intertwined with societal trends toward greater flexibility where individuals are expected to become more autonomous about the choices they make with respect to education and employment [Beck 1992]. Aviram [1986] describes the quest for autonomy in Western education as follows:

When the modern liberal is asked to describe the aim of education in and for democracy, his or her most probable answer will be “autonomy.” The term autonomy like (other terms used synonymously such as “independence” or “freedom”) is the jewel in the crown in the conceptualization of education within liberal democracies. In many cases it is cited as its final aim and raison de etre. [page 187]

Drawing upon John Mill’s conception of liberal democracy, Aviram and Bar-Lev [2003] describe autonomy to be a key goal of contemporary education, and position new ICTs via those inherent material characteristics that promote interactivity, individuality, and non-linearity. These are thought to be the primary vehicles to reach this goal. They have developed a proposal for an Autonomy Oriented Education (AOE) in Israel emphasizing the role for ICTs. They write:

We believe that this new [AOE] paradigm should be guided by the basic values of liberal democracy, which are the enhancement of liberty, equality and fraternity in society at large....the most natural educational derivatives of these general

democratic values are the development of autonomy, morality and belonging in young people (page 1).... The three basic features of IT, interactivity, individuality and non-linearity, are also fundamental features of reflective experimentation in living - the educational process basic to the AOE paradigm. [page 7]

On the other hand, feminist writers (for example Braaten 1995) and the communitarians (for example, MacIntyre, 1981) have issued various critiques regarding this quest for autonomy as a Western ideal. Given such cultural-historical structures as patriarchy, these critics question the extent to which individuals can actually possess self control. Winner [1989] questions this as well in light of the growing complexity of technology, and instead makes the case for an "autonomous technology." Similar to the historical argument of the feminists, Beck [1992] describes individual choices and assumptions of control to be situated within broader global templates that are defined within a capitalist logic. He argues that the individual choices through distance education are limited, considering that courses and their locations are determined by the profit motives of large corporations that tend to view education primarily as a lucrative market. As a result, the level of self control that an individual is supposed to have over educational choices through distance education may in reality be more limited than what at first appears.

ICTs do create the potential for students to access a variety of educational opportunities within different time and space conditions. While having autonomy implies that students maintain a degree of control over the processes by which ICTs are deployed in their educational experience, I question to what extent this is actually possible in different situations. Opportunity and autonomy are interrelated and represent two sides of the same coin. As students possessing ICT skills gain employment opportunities, administrators increasingly tend to view education in terms of cost savings and increased access, and in the process take educational content for granted. Systematic attempts to maximize gains in efficiency tend to be driven by a market logic that promises increased choices to institutions and individuals, and sees education as a service or commodity [Borgmann 1999] that needs to be delivered efficiently and cost-effectively. The adoption of such logic tends to supersede the educational needs of students and raises real dangers for the student autonomy that is assumed within a liberal democracy. This logic also threatens the qualities of independence, self-control, and critical reflection [Aviram 1986]. This paper responds to this potential danger, and the central issue for discussion is the following:

While the use of ICTs opens up significant opportunities for students, does the large-scale use of these very technologies inhibit student autonomy?

This question translates to the following more specific objectives:

1. Discuss the role of autonomy in education and present a conceptual model.
2. Discuss the threats to educational processes and the responses to them.
3. Building on the notions of autonomy, threats and their responses, discuss specific approaches to MIS educational reform.

In Section II, I discuss some examples of ICT initiatives and the issues they raise, especially relating to the question of autonomy. In Section III, I articulate a conceptual framework to examine the relation between ICTs, education and autonomy. This framework provides the basis to examine some of the potential threats to student autonomy arising from the processes of globalization and corporatization introduced in

Section IV. I then draw upon Habermas in Section V to discuss how a response to these threats can potentially develop. Finally, in Section VI, I discuss a philosophical agenda for reform that can also provide a practical basis to develop a perspective on the role of ICTs in MIS education and pedagogical research.

ICT and Higher Education: Examples, Issues and Debates

Information and communication technologies are being deployed in university settings all over the world. These initiatives range from developing course Web pages to offering complete courses, or program modules, or even entire degree courses over distance. In this section, I present two examples of the use of ICT in higher education, and then analyze some of the issues and debates that arise from them.

Examples of ICT Use in Education

Example 1: Case of the Western University's program offering on Business Information Systems

Western University describes the **aims** of its Masters program in Business Information Systems on its website to be the following:

- To offer students in-depth experience with leading commercial-standard ICT packages so that they can produce sophisticated documents, financial and other models and charts, powerful databases, and generally operate with confidence in a modern "electronic office" environment.
- To help students develop a systematic configuration of ICT tools appropriate to their professional needs.
- To critically examine current business and information studies course content and structures.
- To encourage students to reflect on the ways in which ICT has changed the nature of the world of work.

The website goes on to describe the **learning outcomes** of its program as follows:

- Students will be competent and confident in the use of industry-standard computer office applications.
- Students will have addressed successfully issues concerning the teaching of such applications.
- Students will be aware of the applications requirements of ICT-related courses.
- Students will have focused on the effects that ICT development has had upon the business environment and the world of employment generally, including education.

The above aims and learning outcomes reflect some of the issues surrounding ICTs in a higher education setting. The stated aim of the program is primarily to equip the students with ICT-based skills so that they are well prepared to meet the needs of businesses and their "electronic office" environment. Both the means and ends of this particular education program seem tightly connected to the use of ICTs, and influenced greatly by the perceived needs of the industry. On one hand, the university can be complimented for being current with market trends, and the job-centered focus of the program has the employment opportunities of the students as a key concern. On the other hand, it can also be argued that the program threatens the "essence" of education: autonomous

learning, critical reflection, and growth within the framework of a liberal-democratic perspective.

These two varying viewpoints, taken to their extremes, can be seen to reflect “utopian” and “nostalgic” positions, respectively, on the relation between ICT and education. A utopian view equates technology with learning and knowledge. For instance, Perleman [1997] argues that nations that replace their existing educational and training institutions with new ICT-supported learning systems will be the world’s economic powerhouses through the twenty-first century. In the same vein, James Stukel, president of the University of Illinois, describes the Internet as the third modern revolution in higher education [Stukel 1997].

In contrast, the “nostalgic” view can be seen as a pessimistic one, and assumes that ICTs undermine the essence of traditional education. Noble [1999] argues that education is becoming a commodity which is metaphorically produced in an assembly-like fashion in a mill powered by ICTs. Borgmann [1999] likens educators to store managers directing students to the latest products prepared with new technologies. Similarly, Postman [1993] believes that culture is subservient to technology, and that technology is a “dangerous enemy” that “intrudes” into a culture, destroying the vital sources of our humanity. Furthermore, he believes that technology is a difficult enemy to negotiate since it does not invite a close examination of its own consequences and even eliminates alternatives to itself. In the absence of inspiring narratives like those of Christianity and Democracy, Postman [1998] feels that education is in crisis. The present day technology-focused narrative, which is based on the values of convenience, economic efficiency, business needs and prosperity, is uninspiring and contributes to this crisis [Postman 1998].

The view taken in this paper is that both the utopian and nostalgic views of education tend to be totalizing and incomplete to a certain degree, as they ignore both the contextual nature of ICT applications [Walsham 1993], and the role of technology itself in shaping use [Latour 1999]. A utopian view assumes ICTs to be both a necessary and sufficient condition for change in education, and ignores the potential for user dissent, and also how their use can lead to other unintended effects. A nostalgic view first assumes that education has *had* an essence and that it is being destroyed through the introduction of new ICTs. Both these viewpoints ignore the new possibilities that may be created through the use of ICTs. An example of such potential exists in the case of the African Virtual University.

Example 2: The African Virtual University [AVU]

The World Bank established AVU as a response to a crisis in tertiary education in Africa. A World Bank representative based in Washington [Aboderin, 2000] described this crisis as arising from the extremely low acceptance rate of students into universities (25-30%), particularly in science and technology (16% in 1995). To respond to this crisis of limited capacity, various stakeholder groups, including the World Bank, national governments, universities, and private corporations, came together in the AVU initiative described by a World Bank brochure as follows:

The AVU is a “university without walls” that uses modern information and communication technologies to give the countries of Sub-Saharan Africa direct access to some of highest quality learning resources throughout the world. AVU is bridging the digital divide by training world-class scientists, engineers,

technicians, business managers and other professionals who will promote economic and social development and help Africa leapfrog into the "Knowledge Age" [World Bank Brochure 2000].

The AVU delivery model combines satellite and Internet technology to allow professors located in North America to deliver classes using the central uplink facilities in Clarksburg, Maryland, USA. AVU beams lectures through satellite to learning centers across Africa. Each learning center has an inexpensive satellite dish to receive the digital signal, Internet access, and at least 50 computers, large screen projectors, and television monitors. Aboderin [2000] reported that during the 3-year pilot phase initiated in 1997, AVU established learning centers in 15 African countries, and provided 2,500 hours of interactive instruction in English and French to more than 12,000 students and 2,500 professionals. Engineering and science were the primary areas of focus. Of the 32 courses offered, 30 originated from North America, and one each from Ireland and Belgium. AVU also organized forty seminars for professionals on popular management topics such as Y2K, advanced e-commerce, balanced scorecard, and global competencies. Ninety percent of these seminars originated from North American universities and consulting houses, and the rest from Belgium¹.

Based primarily on number of learning centers opened, seminars and courses offered, and student enrollments, the World Bank evaluated the AVU pilot phase as a "success" and prepared to enter the operational phase offering full-fledged undergraduate programs as revenue-generating entities. In the subsequent "transition to Africa" phase, programs were to be transferred to African universities headquartered in Nairobi and governed by a 100% African membership board. The World Bank proposed to develop the AVU business model based on Executive MBA, professional development, and IT certification. The AVU considered proposals to develop a system whereby the courses they offered were accredited by American agencies.

With educational content dominated by a techno-commercial and North American forces, the AVU is raising questions about the possibilities students have to take alternative courses, for example in the social sciences and humanities. In attempting to develop financial sustainability, AVU allowed the interests of corporations and businesses to become stronger, regardless of the relevance of the educational content to the local context. A number of Norwegian academics and policy makers, while appreciative of AVU efforts to establish a large-scale complex infrastructure, were critical of it being primarily used to transmit standardized North American courses. The Norwegians pointed out that a seminar on "advanced e-commerce" meant little in a situation where even "simple e-commerce" is not in place. The Norwegians made a constructive proposal to further the initiative by using the World Bank infrastructure and brand name to develop relevant content. The strong and ongoing long-term collaborations that exist between many Norwegian and African universities, they argued, could provide the domain understanding for developing relevant educational content. While AVU claims that IT can promote advancement [AVU Brochure 2000], others have called AVU a representation of the "Americanization of education" and a "re-colonization of Africa" [Brock-Utne 2000].

¹ The details of the seminars, courses and institutions were provided by the World Bank staff who conducted a seminar on the AVU in Oslo in 2000.

This brief overview of a complex and large-scale initiative highlights various issues with respect to higher education and ICTs, including those of relevance, quality, and the nature of guiding interests. The AVU initiative reflects globalization processes through which education in the traditional settings of Africa become deeply implicated in the actions of international entities like the World Bank, accreditation bodies, North American universities, and transnational corporations. Facilitated by the technical possibilities offered by ICTs and the will of powerful corporate and global actors to make significant investments in infrastructure, changes can occur in educational systems, but not without questions about the nature and relevance of the trajectories of these changes.

The argument that ICTs will inevitably destroy the “essence” of African education can be and has been challenged. Following Aboderin’s presentation, a number of Norwegian academics and policy makers, while appreciative of AVU efforts to establish a large-scale complex infrastructure, were critical of it being primarily used to transmit standardized North American courses. The Norwegians pointed out that a seminar on “advanced e-commerce” meant little in a situation where even “simple e-commerce” is not in place. The Norwegians made a constructive proposal to further the initiative by using the World Bank infrastructure and brand name to develop relevant content. The strong and ongoing long-term collaborations that exist between many Norwegian and African universities, they argued, could provide the domain understanding for developing relevant educational content.

Alternative discourses as articulated by the Norwegians provide the potential to undermine the dominant efficiency focus of the World Bank. Whether the Norwegian proposal is ultimately accepted is another question, but of relevance is the point that the potential for alternative discourses does exist. For Habermas [1975], a crisis would occur in education when the possibilities for such alternative discourses no longer exist. These alternative discourses reflect the criterion of “communicative rationality” that can potentially destabilize processes of “instrumental rationality” based only on efficiency considerations. Further, these alternative discourses can potentially help students, in different and often unpredictable ways, to render control of their educational experiences in ways they think appropriate.

The example of AVU points to some interesting issues surrounding the notion of autonomy. First, the infrastructure provided under this initiative helped to electronically connect groups of students to teachers and administrators in North America, as well as to students in other Sub-Saharan African countries. This led to an inclusion of groups of people previously excluded from particular educational networks. How and with whom a person can communicate influences his or her sense of autonomy. However, the content of that communication may very well negatively influence a person’s sense of autonomy. If the course content is seen by the student as irrelevant to his or her existing problems, he or she can feel powerless because of an inability to define meaningful course content, and to build capability to solve problems that he or she believes need to be addressed.

Issues and Debates

Drawing from the above examples, I have summarized the utopian and nostalgic perspectives on the use of ICTs in educational processes in Table 1 below.

Table 1. The utopian and nostalgic view	
The Utopian View	The Nostalgic View
<ul style="list-style-type: none"> Educational choices need to have ICT at their core, both as a means and ends for education, especially relevant to MIS education. 	<ul style="list-style-type: none"> The aim of education is to develop an independent, critical, self-reflective and intelligent learner.
<ul style="list-style-type: none"> Education should be made more relevant to industry needs that are increasingly becoming ICT-based. 	<ul style="list-style-type: none"> The learner should be made suitable to function effectively within the liberal-democratic framework of Western society.
<ul style="list-style-type: none"> ICTs provide autonomy to students with respect to the educational choices they are provided and with that transcend time and space limits of the past. 	<ul style="list-style-type: none"> ICTs tend to undermine the goal of an autonomous learner as techno-economic considerations dominate those of scholarship and independent thinking.

Both the utopian and nostalgic perspectives can assist in analyzing initiatives. A given initiative can be seen on the one hand to emphasize student autonomy with the opening of new opportunities for learning, access, and employment possibilities. On the other hand, ICTs can undermine autonomy by closing out certain opportunities of study that are not in the interests of large corporations and funding agencies. In both cases, ICTs play a key role in opening up and closing out certain opportunities. For example, the bandwidth of the network allows for learning about North American experiences [say of advanced e-commerce], but can also possibly close out opportunities for studying how to deal with locally relevant problems [say about the existing informal nature of market mechanisms].

The manner in which an ICT is used to design learning environments also is a determinant of what opportunities will be opened up or not. For example, innovations in technology - such as multimedia, hypermedia, video, the Internet, and virtual reality - provide interesting possibilities to designers of learning environments. Designers have the potential to experiment with the interactive capabilities and the possibilities they give learners to explore at their own pace. Similar arguments about the agency of designers to create systems with different degrees of "restrictiveness" have also been made by Silver [1990] in the context of Decision Support Systems. In the context of Problem Based Learning and Experiential Learning situations, Nulden [1999] argues that such approaches encourage open minded, reflective, and critical learners. At the same time, these approaches can be a threat to teachers who seek to maintain control over what is to be learned and how it is to be learned, and who thrive on passive students. The power of such interactive and active learning to strengthen appropriately designed ICT-based learning environments reinforces John Dewey's argument made in 1916 for learning-by-doing and learning-in-doing.

While one may agree or disagree with the utopian or nostalgic views, the important point is that ICTs' increasing role in education cannot be ignored. This role is especially evident in many business schools in North America where structures are being created through funding initiatives, revision of curricula, and the introduction of new courses.

These structures help to gradually institutionalize and legitimize the role of ICTs and create a trajectory of use that may become difficult to change in the long run. Trajectories are defined by present experiences, and if we want to shape the nature of these trajectories, it is important to engage with these issues now. Thus we must understand more deeply the relation between ICTs, education, and student autonomy.

The relationship between Technology, Education and Autonomy

This section begins with a conceptual schematic model of autonomy [See Figure 1 below] that brings together the notions of education, ICTs, and student autonomy, and then elaborates on the various linkages in the model.

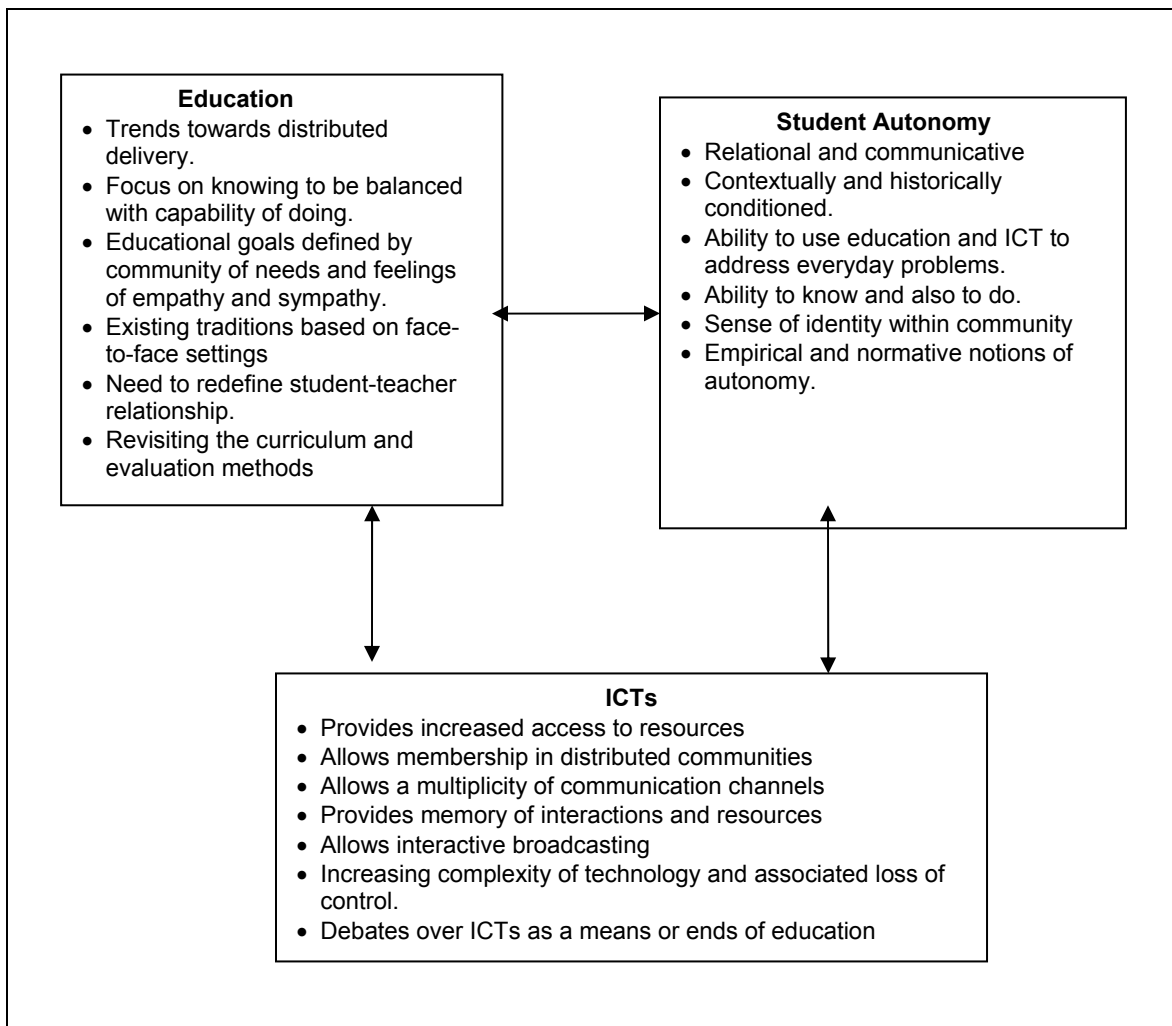


Figure 1. Conceptual Model of Autonomy as it relates to ICTs and Education

Autonomy

The original concept of autonomy, deriving from the Greek “autos” [self] and “nomos” [rule], did not refer to personal control as it has come to mean today, but to the independence of the city-states in ancient Greece. The modern view of personal

autonomy is connected to the notions of reason and rationality deriving from Kantian and post-Kantian philosophy of the freedom of the moral will from patriarchy, particularly the church and political authority. Personal autonomy is concerned with the notion that each one of us has a life to live and that people need not use their lives to serve the goals of another, unless they so choose. It is legitimate for people to acquire the capacity to choose and sustain the most desirable way of life for themselves, subject to the requirement that they respect the rights of others to do likewise. Education provides us with the ability to build such a capacity [Jonathan 1983, White 1982].

In Western contemporary societies, autonomy is strongly associated with the notions of “freedom of choice” and the “market.” The particular interests of institutions and people driven by a market-based logic shape their “first-order” choices. For example, one might choose among an array of MIS distance education programs being offered through the Internet. The dominance of such interests raises the need for a hierarchical approach, and the development of a “second order” choice, where higher order desires can reject lower order wants that are seen to be negative. For example, one might ask, “Are distance education MIS programs what I really want to take, and how will they influence the nature of my overall educational experience?” Smith [1997] quotes Dworkin [1988] to describe such a hierarchical view of autonomy:

A second order autonomy refers to the capacity of persons to critically reflect upon their first order preferences. By exercising such a capacity persons define their nature, give meaning and coherence to their lives, and take responsibility for the kind of person they are. [page 20]

Communitarian critiques of this view of personal autonomy emphasize the need to take into account both social and institutional life, and various conditions of human knowledge and experience [MacIntyre 1981, Sandel 1982]. MacIntyre argues that individual rights can only be spoken of as those that derive from our position in society or in relation to certain others, for example, a friend or the community to which we belong. These qualities vary with the roles we play, and the societies to which we belong [Wringer 1997]. Similarly, Sandel argues the logical impossibility of an unsocialized and “unencumbered” self freely choosing its way of life without reference to the social and historical context in which it finds itself. These ideas of autonomy are now considered more specifically in the context of Western education.

Autonomy and Education

The Western model of education emphasizes the individual, even solitary, learner. The study of literature, the rise of the novel, and the act of creative writing, all celebrate the lonely individual defying public opinion [Knights 1992]. Such a view downplays the notion that individual intelligence is a function of the group we find ourselves in and the possibilities it provides to express ourselves, take risks, and venture tentative ideas [Smith, 1997]. Cuypers [1992] criticizes the atomistic conception of autonomy, arguing that people want to see their children becoming devoted and sociable people instead of detached observers. In addition, Benhabib [1992] maintains that autonomy must be viewed in “interactive” rather than “legislative” terms. An atomistic conception of autonomy presupposes the Kantian ideal of rationality, and Braaten [1995] believes that instead, the self should be seen as being contained in relationships centered in the ethics of caring or having sympathy and empathy. In such a view

it is possible to study literature through study-groups that can help to bring different perspectives on “what the author meant.” In interacting with other group members, students potentially can learn about mutual tolerance, respect, and patience.

This interactive- or dialogue-based notion of autonomy argued for by Benhabib [1992] also finds support in the works of constructivist scholars like Vygotsky [1978], who emphasize the social nature of learning where the lives of individuals are inextricably conditioned by the technological efficacy of the community to which they belong. The learner is not seen as one to be filled with knowledge, but one who actively constructs his or her knowledge structures from experiences with the learning environment [Bjorek 1999]. While dialogic expressions do not guarantee that others will not use us for their own ends, it helps to understand that we should choose the company that we consider appropriate from the perspective of autonomy.

The notion of autonomy in education is not only restricted to the process of “knowing” but also concerns the process of “doing” or “carrying out.” Bridges [1997] describes the risk associated with a traditional view of autonomy that focuses only on knowing:

An education or curriculum founded on these perspectives of personal autonomy would produce a superbly reflective, analytical, critical individual who might be totally incapable of performing the basic tasks required for survival. [page 158].

The deep-rooted link between learning and doing finds its origin in the philosophy of pragmatists who stress the relation of theory [reason] to praxis [action] without recourse to Kant’s *a priori* categories. Propositions are not judged true independently of their consequences, but rather are seen as a function of how well they serve to organize experience. Influenced strongly by the American pragmatic tradition, Habermas [1973] also seeks to unite theoretical and practical concerns [Bernstein 1992]. From Pierce he appropriates the idea of an on-going community of inquirers always open to criticizing their own validity claims. With Dewey, Habermas believes in the normative ideal of a democratic society where all share and participate, especially in advanced technological societies. Habermas sees traditional social philosophy as being incapable of relating to praxis and political theory to have the practical intent but without the scientific character. Habermas’s has thus developed a historically-based theory of society conceived with a strong practical intention. On the one hand, he explains theoretically the historical complex of self-interests in knowledge; and on the other hand, he analyzes the historical interventions of an action-oriented theory. This commitment to unifying theory with practice provides the basis for the conceptual framework in this paper to analyze the relation between education, ICTs, and autonomy.

The two perspectives of learning - individual versus social - can be seen to have different implications on the considerations of autonomy. The individual-based approach focuses primarily on the development of the power of the intellect, and the capacity to think independently. These qualities are considered appropriate in a liberal-democratic framework. In contrast, a more social-based approach seeks to ground individual learning and education within the broader context of community and society. The possibility and ability to engage or not to engage in broader community-oriented processes has positive or negative influences on our notions of autonomy.

ICTs, no doubt, provide the potential to mediate in the relationship between education and autonomy as a result of their capability to influence the content of what we learn, how we do so, and the value of the learning experience both to ourselves and to the wider community. Basing my argument on Habermas, in this paper, I take a more communicative and social approach to education, and draw upon this argument to examine the implications of ICTs on autonomy.

Education, ICTs and Autonomy

ICTs introduce new dimensions into discussions on autonomy, as they both reinforce the model of the “solitary learner” interacting with the computer and at the same time help to place students within a global network of people and resources not possible in earlier times. An interesting analytical question here concerns the nature of community and solidarity that a student experienced in traditional educational systems and how that is different from contemporary ICT-based educational models. A communicative view of autonomy needs to involve a deeper understanding of “community,” that defines who is communicating with *whom*, *how*, and about *what*. The notion of community in a traditional educational setting was based on a teacher and group of students face-to-face in a classroom using blackboard or whiteboard and overhead projectors. In contrast, ICT-based educational communities can potentially communicate with multiple others [fellow learners and also teachers] who can be separated by time, space, and national-cultural boundaries. Of analytical concern is how these different communities grow, what the role of technology is in the process, and the possible implications that arise for student autonomy. A comparison of the traditional and ICT-based processes will examine the question: “What level of self-control do students gain or lose in the context of ICT-based education?”

Etzioni and Etzioni [1999] describe a community as reflecting multiple intersecting relationships between members, and the existence of a shared historical identity and culture. They identify several aspects on which the process of community building depends. **Access** relates to the ability of a member to send a message to others. In traditional educational settings, access was primarily defined within a particular time [class hour] and space [classroom], while ICTs now can potentially allow greater access with more people over time and space. Another issue is the kind of **knowledge** one has about other members; thus it is important to have information about the **identity** of other members, the ability to **trust** the messages that are exchanged, and **accountability** on part of the members for the messages that they send. In traditional educational settings, gaining this knowledge was not difficult, as teachers and students knew each other by face and name. Gaining this knowledge in ICT-based settings is more problematic. To some extent, this can be addressed with better authentication and validation procedures.

An important aspect of a community is the ability of its members to share bonds, values and emotions by broadcasting messages to multiple recipients. In traditional settings, this broadcast [of pre-prepared text] was typically [one way] from the teacher to the student, and constrained by time and space. In contrast, ICTs provide the potential for more effective interactive broadcasting to multiple recipients in different locations using varying channels. The memory on which these broadcasts is based is not constrained to what is in the head of the teacher and/or in the course book, but can draw upon elaborate electronic resources such as those available on the Web. Teich et al. [1999] have argued that users of electronic communication can engage in political advocacy, receive and give counseling, and engage in commercial transactions without disclosing

their identities by agreeing on an appropriate level of disclosure among the group. Such a cloak of anonymity, though not without potentially undesirable consequences, can support processes of education in settings where people may be unwilling or hesitant to identify themselves.

Students can thus be described as participants in different communities, such as the two kinds of educational settings described above. Differences in the communities are manifested in the types of people they can interact with, the channels and content of their communication, and the various technologies in use. Both settings have advantages and disadvantages, providing the potential to design more “hybrid” and effective settings by combining the positive features of both. The manner in which technologies are used in education raises questions both for *empirical* autonomy [to what extent a student is autonomous] and *normative* autonomy [what can be claimed as a right]. The empirical question concerns the choices students make to pursue their educational aims with or without the mediation of ICTs; and the normative question emphasizes students’ rights in defining the role of ICTs in their educational choices. Both these questions reflect a second order of autonomy that supersedes social and political values connected with the first order rights of utilitarianism [increased efficiency and access] and libertarianism [greater freedom of choice] [Howarth, 1985, Higgs, 1988].

The implications of ICTs for both the normative and empirical forms of student autonomy need to be considered from a historical perspective by comparing contemporary educational settings to those of the past. What choices did students have in defining the traditional pedagogical models of giving lectures and testing? The traditional educational model was characterized by transmission and repetition, and learners had a limited choice of tools (blackboard, whiteboard, overhead projector, notebook), which were primarily dictated by the teacher. Thus, what autonomy is gained or lost as ICT-based learning environments overtake traditional settings?

Autonomy is thus a historical, political, and moral conception that brings together the ideas of freedom and control [Winner 1989]. To be autonomous is to be self-governing and independent. In education, autonomy is intimately linked to the students’ sense of loss or gain of mastery as they engage with technology, and their ability to know, judge, and control the technical means. Control refers to the ability to exercise a dominating influence or hold over the use and effects of technology. This control becomes problematic as networks used to support distance education become larger scale and diffused. The increasing complexities of these networks heighten the potential for unintended effects that by their very nature are out of the control of the individual.

A purely instrumental linkage between education and technology can create a sense of dependency and threaten autonomy. Such a linkage potentially restricts the conditions wherein students can discuss, dissent, and critique their educational experience. As students lose autonomy, the technology becomes increasingly independent and develops its unique criteria of evaluation. Latour [1999] describes this process of the shifting balance between humans and technology as “autonomization.” Winner [1989] describes an extreme condition of autonomization manifested as an “autonomous technology” that somehow goes out of control and follows its own course, independent of human direction. While this extreme autonomous technology position can be seen as untenable in the manner in which it undermines the power of human agency, it is useful in analyses of the potential danger of the reversal of the relationship between education and ICT and the relative and growing inability of the individual to stem this reversal.

Habermas [1984] further develops the relational and communicative account of autonomy by conceptualizing a relational model of the self and its constitutive connection to others. At the same time he emphasizes the "self's ability to transcend temporarily the contexts of meaning in which it is located at any given time" [Cooke 1999, page 185]. Students maintain a network of relations [of fellow students, faculty, administrators, friends, ICTs], and are capable of engaging in various forms of communicative relationships. For Habermas [1984], students are not just entering, or not, into relationships, but are understanding an internal structure that represents the "validity basis of speech." In the autonomous subject, assumptions of emancipatory interests and freedom are presupposed. Drawing upon the power of reasoned argument, the autonomous subject is able to rise above the limitations of dogmatism and achieve inter-subjective understanding through the process of discourse. A Habermasian [1984] process of dialogue to achieve inter-subjective understanding reaches its limits in the "ideal speech situation," which specifies the conditions for fair dialogue. A Habermasian approach urges us to question how large-scale use of technology can distort or help achieve this ideal speech situation both through the content of education and the means by which access is provided to students.

Habermas' [1984] concept of the ideal speech situation has many critics. One line of criticism comes from feminists like Braaten [1995] who argue that Habermas' purely procedural form of consensus ignores emotions and feelings linked to the cognitive and intellectual maturity of the subject. Braaten proposes a view of autonomy based on "communicative thinking" rather than "communicative rationality," and emphasizes individual truth positions and needs. Braaten views Habermas' notion of communicative community to be limited because even if the community is committed to justice for all, it is not a necessary and sufficient condition for building solidarity. Braaten argues that communication needs should be supplemented with feelings of sympathy and empathy in order to develop solidarity. Rather than using a theory of justification to build the notion of communicative community, Braaten argues that the logic should be reversed and the community should form the basis for the development of theory. Solidarity need not be limited to communication, but can be based on any aspect with which we identify most, for example, with a particular place or supportive relationships.

As described in the AVU example earlier, the high-quality technical infrastructure in itself is insufficient to provide relevant education, as solidarity between the education providers and recipients is absent. The starting point needs to be the community of interests rather than the conditions within which [more efficient] communication should take place. Braaten emphasizes the limitations of placing procedural concerns for appropriate conditions of discourse as the starting point in the discussion of autonomy. Instead, the *needs* of communities should provide the starting point within which ICTs are deployed to help create and nurture appropriate conditions for discourse.

In summary, I base the proposed conceptual framework to study autonomy on two key principles. First, autonomy is relational with respect to the networks of people, membership in particular communities, and available resources and technologies. Second, autonomy is "communicative" and shaped by the communication linkages a student has with other people and resources. Such a conceptualization of autonomy endows students with the capability to evaluate their educational experience in terms of both instrumental and communicative rationality, and discuss it with concerned others without having to only consider the technical efficiencies achieved [Habermas 1984]. As

reflective agents, students can take action to correct the sense of loss and imbalance they experience. A communicative perspective helps to analyze the capability of students to communicate in new ways using contemporary ICTs. The capability of the designers to create learning environments that can enable multiple forms of communication and approaches to community building provides students with varying choices that have implications for their sense of autonomy.

Given this relational and contextualized conceptualization, I analyze challenges to autonomy represented by processes of globalization and corporatization. Drawing on a Habermasian perspective outlined in this section, I then discuss the potential response of students to these threats. I summarize the conceptual approach adapted to understanding student autonomy in light of the above discussion on the education-technology relationship in Table 2 below.

Table 2. Key aspects of the conceptual approach adopted to understand student autonomy	
Key Features to Understanding Student Autonomy	
	<ul style="list-style-type: none">• Autonomy is relational and communicative.• Students not only have technical, but also emancipatory and practical interests.• Autonomy is not only concerned with “knowing,” but also with the ability of “doing.”• Autonomy should be based on community needs rather than the means of communication and how that can be enhanced through ICTs.• Autonomy is concerned about both “first-order” and “second order” choices.• Material properties of ICTs have implications on autonomy.• Autonomy has both empirical and normative components associated with it.

Globalization and Corporatization: Challenges to Autonomy

The perspective on autonomy presented in the previous section challenges us to examine the contextual conditions that influence autonomy. In present times, the context of education is influenced by the systemic processes of globalization and corporatization. Both these processes reflect and also draw upon the “steering-media” of power and money, the hallmarks of a capitalist society [Habermas 1987]. While power and money were also significant in feudal times, the distinguishing aspect today is their increasing influence on the spheres of culture and education that in the past were seen as being less susceptible to processes of commodification.

The Threats of Globalization

Proponents of globalization argue for a neo-liberal ideology based on free enterprise and open markets in which the corporate entity plays a key role. Processes of globalization are significantly influencing education, like most other contemporary systems. For example, Al Gore [1994] urged business leaders to provide free Internet links for all schools, hospitals and libraries, which would come with the logic, values and goals of a market economy. This market logic significantly shapes educational processes and influences on student autonomy.

Winner [1997] uses the term "technoglobalism" to describe the central role of ICTs in spreading a neo-liberal agenda, surrounded by the increasing presence of business and corporate discourses within education, and the use of rationalistic efficiency arguments to save time and money and to improve access. With funding directed to new technological infrastructure, such as in AVU case, the creation of more efficient virtual environments often becomes a larger concern than the development of appropriate educational content. The nature of the blend between the technical infrastructure and the educational content is what is being called into question.

One of the key arguments for the use of ICTs in education is the potential to provide for distance education [Noble 1999]. Once a matter of organized letter-writing by hand and sent by post, distance education has over the years developed into a significant global industry sponsored by large corporations. And students are opting for distance education programs for reasons of convenience, costs, access to global programs, and the ability to "choose and mix." Nobel [1999] criticizes the power of the global corporations in promoting education:

But this second transformation of higher education is not the work of teachers or students, the presumed beneficiaries of improved education, because it is not really about education at all. That's just the name of the market. The foremost promoters of this transformation are rather the vendors of the network hardware, software, and "content" - Apple, IBM, Bell, the cable companies, Microsoft, and the edutainment and publishing companies Disney, Simon and Schuster, Prentice-Hall, et al. - who view education as a market for their wares, a market estimated by the Lehman Brothers investment firm potentially to be worth several hundred billion dollars. "Investment opportunity in the education industry has never been better," one of their reports proclaimed, indicating that this will be "the focus industry" for lucrative investment in the future, replacing the health care industry.

[<http://dliis.gseis.ucla.edu/people/pagre/rre.html>, 1999]

Further, in an attempt to meet the challenges of distance, educational institutions are standardizing course content across sites and countries. Dreyfuss [2000] maintains that distance education, or "hyperlearning," reflects an extremely limited "shelf life" of knowledge. Noble [1999] defines training as preparing you to work for some one else and education as integrating knowledge and the self. Noble argues that in distance education, education and training are often conflated because training is more suited for distance delivery than education. These criticisms question whether ICT-enabled programs refer primarily to "first-level" autonomy, and if so, how "second-level" autonomy is achieved.

Education necessarily entails an interpersonal relationship between people [student-teacher, student-student], but, the commodification of education suppresses the exchange of all interpersonal interactions. Noble [1999] argues against attempts to distill the educational experience into discrete and salable packages of course materials. Such attempts turned these relationships into commodities, removed from the context from where they were produced and freed from constraints of time, space, and national jurisdictions. Nobel argues that facilitating such a free and efficient movement of goods is the hallmark of the capitalist marketplace, with a primary focus on the instrumental rationality of profit making.

Habermas [1984], although acknowledging the historical dominance of instrumental rationality, would maintain that Noble's argument fails to do justice to a different type of communicative rationality that is aimed at developing a mutual understanding and consensual action. Habermas would seek to examine the set of conditions under which distance education takes place, and question whether all concerned have greater or lesser opportunity to voice their concerns. Contrary to Noble's stance, it can be argued that since distance education involves interactions of people from different social-cultural-ideological contexts, the potential for alternative communication rationalities may be enhanced rather than suppressed. But what happens in practice is an empirical question, and depends upon the opportunities that people actually have to access these communicative facilities..

The Threats of Corporatization

The term "corporatization" is used to refer to the process by which large corporations, especially transnational corporations, wield significant influence in shaping educational issues. The budget for educational technologies in the Western world was estimated to be well over \$200 billion in 1997 [Oberg 1998], attracting many corporations to this fast-growing profit industry and also providing them access to potential future consumers of technology. Corporate logic, when introduced into education, seeks to apply business principles like those related to standardization and ownership of intellectual capital to seek higher efficiencies and profits. Various consultancy companies are trying to develop a standardized set of courses that can maximize their reach across the student population. Such a focus on standardization might shift the focus of educational products from how students are best able to learn to how students are best able to maximize the profits of education providers.

A potential threat of corporatization arises from alliances between corporations, politicians, and academics in defining educational policies. Large phone companies, with the backing of international agencies like the International Monetary Fund [IMF] and the World Trade Organization [WTO] play a key role in establishing infrastructure in educational institutions and, in the process, become increasingly influential in defining educational agendas [Moll 1997]. These alliances can be especially risky when faculty members have a financial interest in the firm responsible for establishing infrastructure. Such examples have been reported, as in the liaison between UNext and the University of Chicago where UNext's head is a University of Chicago trustee [Blumenstyk 1999].

Winner [1997] discusses various corporate trends that are being introduced into education. Like virtual organizations, many educational institutions have embraced the concept of virtuality through interactive learning, distance learning, virtual classrooms, and virtual universities. As educational institutions attempt to become "lean and mean" corporations, they downsize using a similar logic to that used by corporations to inform budget cuts and rationalization. Outsourcing is another trend that is evident, and instead of investing their own resources, educational institutions can choose to outsource their activities to other institutions [for example, through distance education]. Winner notes that just as the corporate world is now staffed with temporary workers, many universities now prefer visitors and adjunct faculty. As tenured professors leave universities, their positions are not filled by permanent faculty but by temporary staff, often unemployed professionals with doctorates [Feenberg 1999].

As the involvement of teachers in policy-making forums decreases, there are few left to take student concerns into account [Newson 1996]. As evidence, Winner [1997] describes participant make-up of a 1996 National Summit of Education focusing on curriculum which included 49 corporate leaders, 41 state governors, 30 education experts, and few teachers and students. Winner goes on to argue that the "social sub-contract that formally linked education to industrial society is now being renegotiated to respond to the business and technological realities of the new economy" [page 169]. Yet it must be argued that a strong student- faculty relationship is an important pre-condition for making distance learning work [Chickering and Ehrman 1997]. While the nature of this relationship will take on a different form and quality in distance education, it can never be eliminated.

In summary, I present a number of threats to student autonomy identified as arising from the systemic processes of globalization and corporatization in Table 3 below.

Table 3. Threats to student autonomy arising from systemic processes of globalization and corporatization	
Nature of Processes	Potential Threats to Student Autonomy
Globalization	<ul style="list-style-type: none"> • Focus shifts from content of education to the infrastructure required to create the virtual environment. • Students are provided standardized course materials that may not be very useful to solving problems relevant to them. • Training may get conflated with education. • Knowledge may take on limited shelf life, and be driven by the needs of new markets rather than their practical relevance. • Primary focus may shift to instrumental rather than communicative rationality.
Corporatization	<ul style="list-style-type: none"> • Corporate principles of standardization and ownership of intellectual property tend to hold sway over educational aims. • Alliances between politicians, administrators and academics may be developed to define content which can suppress pedagogical concerns. • Outsourcing of teaching responsibilities can contribute to the development of short-term and instrumental relationships between teachers-students and teachers-institutions. • Excessive teaching by temporary and industry people can lead to a drop in educational standards, as it is not supported by quality research. • Student voices may be suppressed by powerful corporate interests that are supported by university administrators.

Having presented some of the threats to student autonomy arising from the processes of globalization and corporatization, I now discuss potential responses to these threats. Habermas [1973] provides a basis to conceptualize the nature of these responses as he maintains that the threats to autonomy reflect tendencies that are characteristic of a society in an advanced state of capitalism. In such conditions, education takes on an increasingly technical focus and is less defined by the discursive formation of the will of students and teachers. Instead, university administrators under influence from global and corporate interests make decisions on new technology initiatives in order to maintain the stability and growth of their educational system. Habermas [1973] would argue that although globalization and corporatization represent real threat to education, it is not at

all a historical necessity that student autonomy might be permanently distorted and replaced by a capitalist ideology.

The Habermasian Response

Habermas' (1994) philosophical perspective helps to understand how actors can potentially respond to threats to their autonomy. Habermas seeks to self-critically renew our traditions by finding the balance between ongoing process of continuity and discontinuity. His ideas are relevant to education where existing traditions are being strongly challenged by the influx of new ICTs, supported by the processes of globalization and corporatization. Changes through the use of new ICTs render educational traditions vulnerable, placing a significant responsibility on the present to shape these processes of change and the future possibilities. Habermas focuses on fashioning a rational reconstruction of the past from which the possibility of positive change in the future can develop. While recognizing the colonization of the life-world by systems rationality as the most powerful tendency of advanced technological societies, he does not subscribe to the notion that progress as self-destruction. Instead, he takes on a more nuanced view recognizing the present position as being systematically ambiguous with respect to future [White 1988]. .

Habermas [1984] turns to Weber as his point of entry to theorize modernity, modifying Weber's ideas on rationality in accordance with the communicative model. His aim is to provide a richer account of what Weber saw as the costs of modernization and rationalization – the loss of freedom in an increasingly bureaucratized society, and the loss of meaning or unity in a fully disenchanting world. Autonomy is threatened with this loss of meaning and the helplessness individuals experience in their lives. Habermas combines the structural characteristics of capitalism with the communicative model to critically examine institutionalized expertise and its relation to the social life of individuals. It is this complex learning potential of modernity that Habermas emphasizes, not just the ability of mastering science and technology as a means to external control. Habermas [1973] would describe ICTs as robbing education of its lost glory as a symptom of a larger reaction of dogmatism in the times of crisis that represents a faith in things for their own sake. The subtle interpretative framework that Habermas provides allows for the consideration of a wider range of possibilities of the implications of ICTs than just the extreme positions of “utopia” or “nostalgia”.

Habermas [1973] does not claim an absolute, universal validity of knowledge, but instead focuses on the validity claims of **truth**, **legitimacy** and **authenticity**. As the validity claims used by communicatively competent actors to develop inter-subjective understanding are redefined, a potential dissolution of the existing cultural heritage takes place. The **truth claim** concerns how people relate to others in the objective world. In education, this claim changes as students need to relate more closely to issues concerning technology, employment potential, and corporations rather than to books, teachers, scholarship, and classrooms. The **legitimacy claim** that gives communication its “accepted by all” quality is redefined as the norms of efficiency and convenience become the guiding discourses for education rather than scholarship or the moral character and expertise of the teacher. The **authenticity claim** concerns believability in education that is linked to the idea of how effectively the “virtual” environment can replicate or not the “real” thing, and the “virtual ambiguity” which results [Borgmann 1999].

Habermas's [1984] notions of social and system integration are crucial to understanding the interconnection between the macro and systemic forces of globalization and corporatization and student autonomy. While social integration operates through coordinating the communication and action orientations of individuals, systems integration works through the "steering media" of money and power. Habermas [1988a] claims that in modern societies, social and system integration are clearly differentiated from each other. System integration processes raise the concern of capitalist forces undermining the capacity of students and teachers to engage in a social conversation and potentially having crippling effects on students' maturation. Habermas argues that as capitalist societies grow in material terms, they methodically undermine the processes by which a rationalized life-world is symbolically reproduced. In a capitalist society, structural phenomena facilitated through money and power generates crucial constraints on the rationalization of action and invades spheres of life that were previously integrated by communicative action.

While Habermas [1984] believes that systemic rationalization processes threaten us today with the "colonization of the life-world;" he sees no conceptual or historical necessity that systemic imperatives must destroy the life-world. This notion of "selective rationalization" [Bernstein 1994] provides a powerful and hopeful concept to examine future possibilities. The commitment to practical and emancipatory interests guides us not to yearn for a return to the past or a master narrative, but to engage in a reasoned discussion, or rather many particularized discussions, about both the potential for and challenges to student autonomy that computers provide. Which tools are made available and the affordances they enable are under the control [to a large extent] of the designer of the learning environment. So, what was once a limiting environment in some respects [of access and multiplicity of channels] can [if designed effectively] potentially become a rich and dynamic environment because of the multiple levels of interaction made available through the use of ICTs.

With Habermas, I reject the traditional Marxist view that the transition from capitalism to socialism is a historical necessity, despite the strong possibility of corporate and global interests manipulating education in such a way so as to indefinitely imbue capitalist processes in education. The optimism about change derives from the view that interests shaping education are concerned with communication, not just manipulation, which might lead us to find that educational processes are insufficiently justified as capitalist systems. Communicative abilities can be enhanced through effectively designed learning environments. Thus, there is always an ongoing response to the challenge posed by the potentially manipulative techniques of educational systems managers, which makes the implications of ICTs in education largely indeterminate. Drawing upon some of these Habermasian concepts outlined here, the next section discusses the potential response of student community to threats to their autonomy.

Student Response

Student responses to threats on autonomy are best understood not only through their ability to enter into communicative relationships, but through their understanding of the validity basis of speech [truth, legitimacy and authenticity], and how they are redefined in educational conditions through the introduction of ICTs. Students are accountable to the extent that they provide reasons in support of the validity claims that these new technologies raise. A student may choose to justify a claim like "the Internet is a great

medium to learn Java programming” with reasons such as the Internet allows learning to be “independent” [truth claim] or “convenient” [legitimacy claim], or more “experienced” [authenticity claim]. Through processes of social integration, these different claims are reciprocally accepted (or not) by relevant others, and in constant use lead to the creation (or not) of inter-subjective understanding. When systemic forces impinge on these communicative processes and impede the potential of students to engage in actions that are the basis of social integration, their autonomy is threatened.

The internal structure of communication based on different validity claims provides insights into the nature of student responses to the systemic challenges of globalization and corporatization. These systemic processes resting on the logic of purposive rationality confront a social life that is situated in traditions, history, and social structures that could be at odds with the criteria of efficiency and technical means that systemic forces imply. Habermas describes the life-world that “stores the interpretive work of preceding generations” to serve as a “conservative counterweight to the risk of disagreement that arises with every actual process of reaching an understanding” [1984, page 70]. The life-world of students shaped by interactions in face-to-face settings [classroom] is challenged by ICTs that raise demands for new types of communicative processes and underlying validity claims. Their ability to understand the validity basis of speech in these new settings becomes more important than their increased choices of new arrangements.

The life-world is reinforced through processes of cultural reproduction, social integration, and socialization [Habermas 1984]. Cultural reproduction, which refers to the continuation of valid knowledge, changes with new ICTs, since what is considered “valid” and “knowledge” itself is redefined. A marketing student now not only needs knowledge about the marketing domain but also requires sufficient expertise in computers and statistics to be able to conduct, understand, and act upon the statistical analysis of trends using software packages. Social integration, which refers to the stabilization of group solidarity, changes as the mechanisms of communication between group members are redefined, and also the definition of a “group” changes. Groups are no longer limited to co-located presence but include multiple networks of people from various inter-disciplinary and cross-cultural settings. As these networks become primarily electronic, they change the timing, spacing, and cultural context of communication. Socialization, which concerns the formation of responsible actors, changes as the nature and meaning of responsibility is redefined. For example, the large-scale computerization of health care systems implies that doctors become responsible also for the privacy of patient computerized records, which was not a direct concern of theirs in the past.

Changes in the educational system through the introduction of ICTs are not just a technical redefinition but also involve a change in the contextual conditions of interaction, and also in the very content of education. The changes are thus complex and multi-dimensional, varying with technologies, contexts, and the educational objectives of individuals and institutions. Variations in institutional objectives [say, of education versus training in David Noble’s sense], and the nature of applications that ICTs support [for example Internet or Multimedia-based] can lead to very different implications of ICTs. Sensitivity to the potential for varying implications emphasizes the need to adopt a “basket-by-basket” approach to analyze the particular experiences of recipients without resorting to totalizing generalizations. Such an approach is also reflected in the work of designers engaged in developing ICT-based systems to support work practices. For example, Conway and Sharkey [2002] describe a flexible delivery

system for a nurse that takes into consideration the demographic particularities of the nursing students, the varying contextual conditions of work, and also the flexibilities of different timetables.

New ICTs provide opportunities for students to identify new areas of interests, which might not have been possible in earlier settings. For example, a student browsing the Internet is able to get information about courses offered by other universities, and may change his or her line of interest based on this new information. The extent to which and how students respond to new systems of education and learning is largely unknown and contingent on a range of complex conditions. Fortunately, there are always multiple voices that can undermine universal discourses of “gloom or doom” or of “utopia.” The challenge for action then is how to promote the articulation of multiple voices that can challenge the various totalizing perspectives.

The Question of Reform

This section is concerned with the question of reform, specifically in reference to Management Information Systems [MIS] education, as seen from the perspective of student autonomy. MIS is a field that is directly affected by the issues raised in the paper, as it is concerned with both the practice and theory of how ICTs are used by both faculty and students in the delivery and receipt of educational process. The use of the technologies both as a means and an end of education raise a number of practical questions:

1. What is the model of the student that the program is seeking to develop? (of apprentice, scholar, or learner) and what is the corresponding role of technology to support different models?
2. What is the appropriate mix of theory and practical work in teaching MIS? For example, what amount of time should be spent on learning about the theoretical aspects of project work as compared to actually doing it in a real organizational setting?
3. What is the appropriate mix of face-to-face and IT mediated interaction between teachers and students? And also amongst students?
4. What percentage of classes should be taught by industry professionals as compared to university professors?
5. Should teaching be done using one particular tool or a mix of various technologies? For example, while teaching databases, should only Oracle (which may have been donated by the vendor, for example) be used or should different database programs (for example, Oracle, Ingress, and Access) be taught?
6. At what level should university faculty interact with corporate interests – for deciding tools for teaching, for defining curriculum content, or for specifying teaching and evaluation methods?
7. What technology mix should be used in the classroom and for enabling student-teacher communication?

8. What should be the appropriate size of a classroom?
9. What percentage of budgets should be allocated for enabling technology use as compared to providing human support?

In Table 2 earlier, the key features in the conceptualization of autonomy were presented: relational; communicative; knowing and doing; community needs as the starting point; consideration of both first and second order choices; the design potential; and, the empirical and normative components of autonomy. The answers to each of these questions asked above have implications on student autonomy in different ways and to different degrees. For example, questions concerning the mix of theory and practice or support budgets have implications on the **knowing versus doing** aspects of autonomy. The question of percentage of classes taught by university staff or industry professionals or the model of student sought relate to the **normative** autonomy a student possesses. Aspects of class size, ICTs used, etc, relate directly to the **relational** and **communicative** aspects of autonomy – the kind of community the student is a member of, the processes of community building that are in play, and the kind and quality of communicative processes.

Habermas [1984] emphasizes that understanding the implications on autonomy needs to consider the validity claims of **truth**, **legitimacy** and **authenticity** of communicative processes, and not only on the ability of students to use new ICTs. For example, in an ICT-focused learning environment, do students find that being taught by industry professionals is an **authentic** experience? Do they see the dominance of corporate interests to be **legitimate**? Does a large focus either on the theory or practical part of project management help them to achieve what they believe to be the **truth**? Students engage in communicative acts with other members of their community drawing upon these validity claims to give meaning to their experiences, and the perceived lack of ability to do so creates a threat to their autonomy.

Drawing upon the conceptual line of argument presented above, I discuss five approaches to the question of reform. These suggestions are related to some of the suggestions made by Habermas concerning potential response. Table 4 summarizes this relationship between responses and the ideas of Habermas.

Table 4. Suggestions for reform and their Habermasian basis	
Practical suggestions for MIS reform	Relation to the Habermasian response
Making student voices more visible to administrators making decisions around the use of ICTs.	<ul style="list-style-type: none"> • Removing the disjuncture between communicative and administrative power. • Strengthening the role of communicative power. • Developing students as responsible actors
Rethinking the role of the teacher.	<ul style="list-style-type: none"> • Allowing for the continuation of historically existing valid knowledge. • Finding the blend between the continuity and discontinuity of our educational traditions. • Developing stronger inter-subjective understanding between students and teachers

<p>Examining content of education with respect to its relevance to address practical concerns</p>	<ul style="list-style-type: none"> • Strengthening the linkage between theory and praxis. • Widening the notion of rationality from an instrumental one to also include communicative. • Developing deeper understanding about the validity claims of speech.
<p>Encouraging the culture of reflective discourses</p>	<ul style="list-style-type: none"> • Developing greater inter-subjective understanding about the redefined validity claims around truth, legitimation and authenticity. • Enhancing and drawing upon the learning potential of modernity. • Guarding against the colonization of the life-world.
<p>Enabling community building, and design implications.</p>	<ul style="list-style-type: none"> • Supporting processes of social integration. • Allowing for the strengthening of communicative rationality, and redressing the systemic power of instrumental rationality. • Stabilization of group solidarity.

Making Student Voices more visible

According to Habermas [1984], two key forces can be seen to influence the question of MIS education reform. The first concerns communicative power based on the quest for mutual understanding and is dependent on interpersonal recognition and respect. The second force relates to administrative power that seeks to establish efficiency and rationality and derives its potency from the strength [or lack] of communicative power. Administrative and communicative power plays out in a “two-track” model of the “organized public” [consisting of formal educational institutions, accreditation agencies, governmental educational authorities, and university administrators] alongside an “unorganized public” [consisting of students, faculty, teachers, and student associations]. Fraser [1993] distinguishes the unorganized sphere as the “weak” public and the organized sphere as the “strong” public engaged in both opinion formation and decision making, and implementing new initiatives. Communicative power is different in the two spheres -- formal and bureaucratic in the case of the strong public and anarchic and unorganized in the other case.

In a complex modern day university, the Senate body of the university can be viewed as the “strong public” responsible for decisions on technology initiatives and budget allocations. The formal structures of the senate place time constraints that force decision making agents to spend less time on developing a sensibility for new problem situations than on justifying the choice of problems and deciding between competing solutions [Habermas 1996]. Reform includes the processes by which the unorganized public draws upon its “communicative power” to raise concerns to the “administrative power” of the organized public. The instrumental logic of the Senate conflicts with the logic of communicative rationality that is ultimately based on mutual recognition and respect. The organized public is faced with the paradox that it requires administrative power that on the face seems incompatible with communicative power that makes democratic deliberations possible in the first place. Communicative power helps to maintain the balance with administrative power in the context of policy formulation and its

implementation. Attaining the blend between administrative and communicative power lies at the heart of reform.

Effective reform requires a fruitful cooperation between the communicative and administrative spheres to service the plurality of networks that comprise the educational system. Forming these cooperative networks may not be insurmountable, as educational policy is fundamentally concerned with the issue of “moral fairness” and guided by the criteria of being universal. Moral fairness is guided by pragmatic attempts to obtain practical compromises that give appropriate weight to different interests. For Habermas [1984], who is concerned with the procedural conditions of deliberation, the question of fairness is fundamental to the process of compromise. To enable the establishment of fair conditions, Habermas [1984] writes of the need to identify the junctures of communicative and administrative powers and the mechanisms by which disjuncture can be eliminated.

Disjunctures can be eliminated by first identifying at what points students experience disjuncture, and second by involving students in the processes through which these disjunctures are addressed. The student voices thus need to be made more visible in the context of identification of issues and of approaches to address them. In the context of MIS education, student voices need to be made more visible in the discussion and debate between the Dean, and faculty academic councils [the “organized public”] and the student and teacher representatives [the “unorganized public”] on various issues relating to what technologies should be deployed, what and which kind of corporations alliances should be formed, class size, and the acceptable technical content of the curriculum.

The ability to engage in such communication will positively affect student autonomy. The power of ICTs also can be usefully drawn upon for the purpose of making student voices more visible. For example, Wiley and Edwards [2002] describe the notion of self-organizing communities that can be facilitated through the use of ICTs. Such an approach has the potential to deal with the asymmetries of administrative and communicative powers that are inherent in the context of decision making around ICT and education in university settings.

Rethinking the Role of the Teacher

Often, a premise of technology-enabled education is that students can use technology to learn independently of the traditional structures associated with classrooms and teachers. The relational perspective of autonomy cautions us to the contrasting view that the objective of technology should not be to minimize socialization between students and teachers. Instead, the agenda for reform should seek to radically reconsider the student-teacher-technology relationship and how it can be cultivated differently so as to also preserve student autonomy. This can be attempted by supporting openness, experimentation, critical reflection, integration of theory and practice, and the adoption of a case-by-case approach. Feenberg [1999] similarly believes that there is a need to develop teachers with stronger capabilities to deal with the complex current changes in education, and particularly with the confidence to deal with technology.

The starting point of deploying ICTs in educational systems should be consideration of the processes through which a sense of community is fostered and shared. Paradoxically, the capabilities of technologies to facilitate remote education can best be

cultivated through the abilities of teachers to be attentive to student needs. So, rather than trying to eliminate the teacher, and uncritically disseminate standard courses globally based on efficiency criteria, the aim should be to radically rethink the student-teacher-technology relationship based on an understanding of the positive aspects of traditional structures and how that relationship is best integrated with new demands arising from technologies, educational needs, and the imperatives of globalization and corporatization.

The Relevance of Educational Content to address Practical Concerns

Habermas and other pragmatists who provide the conceptual bases for the arguments presented in the paper are deeply concerned with the question of how educational content links to solve everyday practical student problems. The link [or not] between theory and practice is a crucial aspect of student autonomy. Based on the arguments presented by Benhabib [1992] and Braaten [1995] earlier, the starting point of the process of creating the educational environment and defining the content should be the needs of the community and not the desire to maximize communication simply because technological capabilities make it possible. The technological choice provided can be seen to only represent a first-order choice, which needs to be further examined using the criteria of a second-order autonomy.

Understanding community needs requires a different perspective that is socially and culturally grounded and sensitive to feelings of empathy, sympathy, and emotions. Understanding community needs requires an analysis of how existing traditions are situated in the everyday reality of practices, and how citizens mobilize various resources to solve practical problems. ICTs, and the communicative capabilities they provide, need to be considered with respect to how they relate to these practical concerns. Another important consideration: not only is **knowing** [about the problem] important, but the educational content should be geared toward providing the capability of **doing**, or the ability of the student to solve the problems. For example, a student should not only understand the theoretical aspects of how networks function, but should also have some working capability to fix network problems [especially in situations where it is not easy to find a support person, for example the reality of a developing country context].

The potential of students to reaffirm autonomy is developed by strengthening the link between the IT-mediated educational experience and everyday reality. This is the crux of Habermas' [1973] project of trying to link theory with practice in a manner that allows for a critical renewal of educational traditions.

Encouraging the culture of reflective discourse

Ulrich Beck's [1992] "reflexive modernization" thesis resonates with Habermas's [1984] ideas, as he adopts a hopeful tone in arguing that for societies to evolve, modernization should be reflective. Drawing from Beck's argument of the "risk society," I suggest the philosophical approach of "reflexive education" as a basis for the reform of MIS education. Contemporary educational processes reflect characteristics of Beck's "risk society" in that reforms cannot take place by advocating negation and a nostalgic yearning for the past, but by actively and reflexively engaging with the present. Beck's point of departure from Habermas is that such reflexivity is not located in some kind of ideal speech situation, but in an ongoing and changing relationship between social

structures and human agents. Beck would argue that agents need to confront everyday risks at the political and social levels and free themselves from structural constraints. It is through this active engagement that individuals shape the modernization process in spheres of the individual, work, and politics.

The process of reflexive education can benefit from Borgmann's [1984] notion of a "deictic discourse" as a concrete approach to reform. **Deictic** comes from the Greek word **deiknynai**, meaning to show, to point out, to bring to light, and can address others by inviting them to see for themselves. Such a discourse is directed toward matters of ultimate concern in a strong sense of concrete or tangible embodiment. The aim of this discourse is not to attain scientific cogency but to reflect enthusiasm [which provides a sense of testimony] and sympathy [to provide the sense of appeal] with respect to the issue of concern. Without trying to cajole and threaten, a deictic discourse aims to provide concrete and compelling examples of issues of concern and invite other members of the community to reflect on them.

The deictic discourse serves as a powerful device to provide substance and experience to processes of reflexive education. This discourse needs to be sensitively developed and cultivated by concerned people, including students, teachers, administrators, and policy makers. The aim of such a discourse is to debate "the nature of an ICT-mediated educational experience and its role in addressing everyday practical concerns." ICTs can be used to develop and disseminate these deictic discourses and enlarge the number of people who can participate in such deliberations. In the process of using these technologies, users themselves reflect on the value of these tools for meeting their educational ends.

In the context of MIS education, a vehicle for deictic discourse can be provided through the vehicle of IS journals that are regularly read by IS academics.² Especially relevant could be electronic journals like those of the Association of Information Systems, *CAIS* and *JAIS*, that provide online access to articles. Through the AIS mailing list, experiences that different individuals and institutions have had with respect to the use of technology in their respective MIS programs can form the basis of developing a deictic discourse and provide substance and experience to the processes of reflexive education. These experiences can provide the basis for developing perspectives and policies around the nature and level of technology that is considered appropriate, and for making future educational experiences more interesting and meaningful.

Community Building and Design Implications

Design choices play a key role in the design of learning environments, and the kind of community-building processes they support. A focus on design choices emphasizes the role of human agency in mediating the education-autonomy relationship. In the earlier discussion, I described both the strengths and weaknesses of ICT-based and traditional educational settings with respect to community building. I pointed out that while ICTs may provide more powerful ways of interactive broadcasting, colocated settings are superior with respect to providing community members with access and knowledge about each other. However, design can improve various processes of community

² See www.robinson.gsu.edu/facultyresearch/journals/index.html for a sample list of journals considered relevant and important for both academic and pedagogical research by the CIS department of the Georgia State University, Atlanta, USA.

building such as those concerned with access and knowledge sharing. The following guidelines provided by Palloff and Pratt [1999] are useful in developing design implications for creating and building an online community of learners:

- Clearly define the purpose of the group.
- Create a distinctive gathering place for the group.
- Promote effective leadership from within.
- Define norms and a clear course of conduct.
- Allow for a range of member roles.
- Allow for and facilitate subgroups.
- Allow members to resolve their own disputes (p.24).

The design element emphasized by authors like Palloff and Pratt cautions against adoption of totalizing views of either utopia or nostalgia, and instead encourages a “basket-by-basket” approach in examining the role of ICT in education. Poorly designed environments using superior ICTs can in many cases be ineffective as compared to a simple setting of chalk and board if not supported by effective social processes and community building. A basis for judging design can be found in how the environment shifts the existing validity basis of speech [using the criteria of truth, legitimacy, and authenticity] and demands a different basis. While there are no simple answers, a guiding philosophical principle could be Habermas’ [1994] notion of critically renewing our education traditions such that the history is not dismissed but is effectively integrated with future processes of change.

Conclusions

This paper makes the following contributions to the research and practice relating to ICTs and education, with specific implications for MIS studies. First, the paper emphasizes the importance of considering student autonomy in the debates around the relationship of ICT and education. Second, the paper proposes a conceptual model of autonomy drawing upon some important ideas of Habermas and pragmatist thinking. Third, it identifies some systemic threats on educational processes arising from globalization and corporatization. Fourth, the Habermasian response to these threats is outlined, and these ideas help to understand the nature of student response. Finally, some specific approaches to examine the question of reform of MIS education are considered drawing upon the conceptual ideas of autonomy presented earlier. Calls for future research are embedded in the discussion, but it is clear that the community is in need of greater understanding in nearly all aspects of how ICTs can be effectively integrated into educational processes. Scholars who specialize in pedagogical research need to focus their attention on these critical issues.

The paper raises a number of important implications for both research and practice around the use of ICTs in education. Some of these implications are described below:

- How can the notion of student autonomy be incorporated into evaluation frameworks around ICT-enabled MIS education?
- What specific mechanisms can be adopted to make student voices more visible and powerful in university debates around ICTs and MIS education?

- How can the responsibilities of the corporations, administrators, faculty and students be more clearly demarcated and accepted by the concerned groups?
- What forms of education and training should be given to teachers so that the relationship between students and teachers are meaningfully redefined?
- How can the practical content of education be enhanced by appropriate use of new ICTs?
- How can a community of learners be developed in multi-cultural environments where notions of autonomy are differently understood?

These implications conclude the paper on a hopeful note, one which acknowledges the potential that new ICTs provide while simultaneously cautions against the threats which ICTs bring with them. A broader view of this issue is that the nature and trajectory of the implications for autonomy remain largely unknown and indeterminate, and an acknowledgement of that can help us to critically renew our educational traditions without being dogmatic in either direction.

A limitation of this paper has been the explicit focus on student autonomy, which ignores the challenges, for example, to autonomy experienced by faculty because of the widespread use of ICTs. However, I felt that considering the issue of faculty autonomy was too broad a subject to include in this paper.

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About the Author

Sundeep Sahay is a Professor in the Department of Informatics at the University of Oslo. Prior to Oslo, Sundeep has held research and teaching positions in Universities of Cambridge, UK, Salford, UK, and Alberta, Canada. He is interested in a wide range of issues relating to information systems, including their implications for societies, developing countries, and processes of globalization. He has an ongoing interest in the sociology and philosophy of information systems, and this paper published in the JAIS is a reflection of this interest.

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