Computer-mediated Communication and Education:

An Exploration of How Whitehead, Dewey, and Freire Might Respond to the Educational Challenges and Opportunities of the Internet

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May 6, 1999

It is midnight, and the public high school in Springfield is silent and dark. A mile or two away, one of its students, call him Aaron, is seated in a dimly lit room facing the electronic glow of a computer monitor. Words, letter by letter, form themselves upon the screen. A young woman in Thailand, or someone who claims to be such, is describing the view of Bangkok from her office window. It is tomorrow there, early afternoon, and as Aaron glances out at the blackness beyond his bedroom window he tries to imagine that strange, distant city awash in sunlight.

In a nearby room his younger sister, call her Beth, is sleeping. She is a student at Springfield Middle School, and on the floor beside her bed is the soft hulk of her bookbag, which holds, among other things, the homework she did earlier on the World Wide Web. Not having a computer of her own, as Aaron does, Beth uses the computer downstairs that is referred to as the "family computer." In fact, the family has three computers, but only one of them is available to all family members. Beth had a science assignment that required her to gather information and pictures about endangered animal species in South America. At one time a student in Beth's situation would have had difficulty finding enough information. Tonight, Beth had the opposite problem. Her search turned up so much information that she had difficulty sorting through it to find what would best meet her needs.

In the room next to Beth's is the youngest member of the family. Call him Craig. Craig is in the fifth grade at Oakview, one of Springfield's three elementary schools. Since it is only three blocks away, Craig walks to school, and he often plays in the school playground after school and on weekends. Craig uses the family computer primarily to play games, and he uses the Internet to learn more about those games and to obtain

various enhancements and modifications for them, including "cheats." Cheats are bits of code that give a player certain advantages in a game, such as "unlimited lives."

The Springfield School District is charged with providing an appropriate education for these three young people, as well as the many hundreds of others who attend Springfield schools. As indicated by these three vignettes, profound changes are taking place that have significant implications for what an appropriate education is. As the city of Springfield, and the world in which it is situated, changes, the education that prepares students to live in that city and that world must change accordingly. Furthermore, if new ways of learning have come into being, they have expanded the horizons of the possible and need to be taken into account by those who plan and implement the school curriculum.

Alfred North Whitehead recognized that changes in society necessitate corresponding changes in education, stating that "(a)ny serious fundamental change in the intellectual outlook of human society must necessarily be followed by an educational revolution" (Whitehead, 1929-1967, p.77). According to Whitehead, "There is no such thing as a successful system of education in a vacuum, that is to say, a system which is divorced from immediate contact with the existing intellectual atmosphere" (Whitehead, 1929-1967, p.77).

The question that arises is whether the changes illustrated in the vignettes, the changes being brought about by computer-mediated communication, constitute the sort of "fundamental change" to which Whitehead refers. In his essay, "The Place of Classics in Education," Whitehead himself provides two examples of the sorts of societal change he considers significant.

> Within the last hundred years, a developed science has wedded itself to a developed technology and a new epoch has opened.
>
> Similarly about a thousand years before Christ the first great literary epoch commenced when the art of writing was finally popularised. (Whitehead, 1929-1967, p. 73)

The first example indicates that technology is one of the factors that can contribute to fundamental change, and the second example posits the dissemination of a new mode of communication as the cause of such change.

With the rapid growth of the Internet, technology is disseminating a new mode of communication. This seems to be just the sort of societal change that could, according to Whitehead, demand an educational transformation. What is not immediately clear is whether or not the spread of computer-mediated communication has brought about the change in "intellectual outlook" to which Whitehead refers. In this regard, two distinct aspects of computer-mediated communication need to be examined. First, there is the increase in connection. Simply put, many more people are in contact with many more other people. Second, there is the change in the mode of connection itself, the question of whether this computer-mediated, networked word involves a change analogous to the change from oral to written communication.

While this second aspect, the nature of the communication itself and what implications that may have for who we are and how we learn, has the more profound and far-reaching implications, attempting to establish whether or not computer-mediated communication involves a fundamental change similar to the change from speaking to writing is beyond the scope of this essay. I will focus, therefore, on the first aspect, the

simple increase in connection, and will argue that this aspect alone has substantial educational import.

Let us return for a moment to the opening vignette, in which Aaron is engaged in computer-mediated "chat" with a partner in Thailand. It seems clear that Aaron's understanding of his place in the world, and of the world itself, is affected by being engaged in this computer-mediated conversation with someone in a vastly different culture on the other side of the globe. It could be argued that this one conversation in itself does not constitute anything especially new or significant, that a student like Aaron could have had a similar experience some time ago with a long-distance phone call. Though there is some truth to this objection, it must be noted that this theoretical long-distance phone call in the past was most likely to remain just that—possible in theory, but not put into practice. There would have been difficulties in finding someone to call, obtaining the correct number, and dealing with the high costs of such a call. While there are some initial costs involved in obtaining the equipment and the service to be connected to the Internet today, once these basics are in place international conversations like Aaron's are simple and inexpensive. Furthermore, something truly new has come into being with the easy and immediate opportunity to engage in many similar conversations in a variety of locations all over the world with people who were total strangers before the conversation began. Never before could a young man like Aaron sit in the privacy of his room in his family home in a small Midwestern city in the United States and in the space of an hour seek out and find conversation partners in such places as Italy, Japan, and Australia.

Through these conversations, Aaron can learn about distant places and their people, and he can become acquainted with a variety of perspectives on the world. The effect all of this has on Aaron changes who he is as a student, and thus has a corresponding effect on the school charged with providing an appropriate education for him. Whitehead recognizes the importance of taking account of who the student is and the "actual environment" in which that student exists.

> But for all your stimulation and guidance the creative impulse towards growth comes from within, and is intensely characteristic of the individual. Education is the guidance of the individual towards a comprehension of the art of life: and by the art of life I mean the most complete achievement of varied activity expressing the potentialities of that living creature in the face of its actual environment. (Whitehead, 1929-1967, p. 39)

The "actual environment" now includes the network of computer-mediated communication which makes possible, among a multitude of things, Aaron's global chat sessions.

In addition to transforming the world, and thus the students, and thereby creating a changed reality to which the school needs to respond, these communication technologies also open up new possibilities for the curriculum of the school itself. Contact and communication with other people all over the world can become a part of the learning students are engaged in at school. According to Whitehead, "There is only one subject matter for education, and that is Life in all its manifestations" (Whitehead, 1929-1967, pp. 6-7). This worldwide electronic conversation, both in possibility and actuality, is now a part of life, and for that reason alone it becomes, following the above, part of the

subject matter of the school. Furthermore, this conversation can be utilized in the service of the already existing subject matter. Obvious applications come immediately to mind in the study of different cultures in geography or in obtaining different perspectives on current events, but this is surely just the tip of the iceberg in terms of the network's potential. Whitehead says that "education should begin in research and end in research" (Whitehead, 1929-1967, p. 37). Much of that research can now be undertaken via computer-mediated communication, and this alone has substantial import for education. Even more significant, however, is that these electronic networks bring into being new topics for research, and, more fundamentally, new possibilities for what research itself can be.

One form that research can take is communication with a person or persons who have knowledge about the topic one is researching. While this kind of research was possible before the advent of computer-mediated communication, the opportunities for pursuing it have increased dramatically. In addition, new structures by which this research communication can take place have been created, bringing into being not just more opportunities for the same sort of communication, but new and different sorts of communication as well. To illustrate, let us examine the second vignette, in which Beth's research assignment for a science class was discussed.

Beth had searched the World Wide Web to find out about endangered animal species and had run into difficulty sorting through the abundance of information that was available. If she were able to talk to someone who was an expert in the field, that expert might be able to help her sort through all the information and find those things most relevant to her needs. This sort of research would have been possible before the advent

of computer-mediated communication by conducting an interview in person or over the telephone, or by writing a letter. Now, however, there are many more opportunities to engage in this sort of communication. The widespread use of email, for example, coupled with the vast number of experts in various fields who make their email addresses available on the World Wide Web, makes it much more likely that Beth could actually find someone for such an interview and be able to conduct it.

In addition, the new structures of communication mentioned above have made possible novel ways in which Beth's research could take place. One of these new communications structures is the electronic bulletin board. The electronic bulletin board is a form of computer-mediated communication known as asynchronous many-to-many communication. Asynchronous refers to the fact that people do not have to be connected at the same time; someone posts a message, which is then available for reading at any time thereafter. Many-to-many refers to the fact that each message is available to be read by all the participants in the discussion. Beth and several other students with a common research interest could participate in such a bulletin board discussion along with a few experts in the field located at various places around the globe. This is one example of how the nature and possibilities of research, and therefore education, can be transformed by new structures and opportunities for communication.

John Dewey saw the central importance of communication to education, stating that "education consists primarily in transmission through communication" (Dewey, 1916-1997, p. 9). If the Springfield School District were able to hire Dewey as a consultant to help them deal with the challenge of reshaping their educational practice in

response to the technological changes in communication that are taking place, what might he have to say to them?

In the first place, it seems clear that Dewey would embrace these technological changes and encourage the school district to do the same. Dewey saw new developments in science and technology as one of the vital components of humankind's continual growth and development.

> Science taking effect in human activity has broken down physical barriers which formerly separated men; it has immensely widened the area of intercourse. It has brought about interdependence of interests on an enormous scale. It has brought with it an established conviction of the possibility of the control of nature in the interests of mankind and thus has led men to look to the future, instead of the past. The coincidence of the ideal of progress with the advance of science is not a mere coincidence. (Dewey, 1916-1997, pp. 224-225)

Furthermore, Dewey recognized the special importance for human advancement inherent in new communications media.

> Every step from savagery to civilization is dependent upon the invention of media which enlarge the range of purely immediate experience and give it deepened as well as wider meaning by connecting it with things which can only be signified or symbolized. (Dewey, 1916-1997, p. 232)

Dewey also understood the essence of communication to be in the quality of the communication itself, and would not be put off by the physical distances involved in these new technologies.

> Persons do not become a society by living in physical proximity, any more than a man ceases to be socially influenced by being so many feet or miles removed from others. A book or a letter may institute a more intimate association between human beings separated thousands of miles from each other than exists between dwellers under the same roof. (Dewey, 1916-1997, pp. 4-5)

More important than Dewey's likely acceptance of, and even enthusiasm for, these new communication technologies would be what Dewey would have to say to the school district about how they should make use of them. First, I believe, Dewey would want the educative significance of social interaction itself to be recognized.

> Not only is social life identical with communication, but all communication (and hence all genuine social life) is educative. To be a recipient of a communication is to have an enlarged and changed experience. (Dewey, 1916-1997, p. 5)

If we look again at the three vignettes, only Beth's use of computer-mediated communication is directly related to school, though the educators of Springfield would probably see the merit of Aaron's international chatting as well. Craig's use of the Internet to learn about his computer games and find "cheats" for them, however, would likely be viewed as irrelevant to his education, or even as being detrimental. Dewey would probably encourage the educators of Springfield to find out what Craig was actually doing on the Internet, the sorts of activities in which he was engaged. They might discover, for instance, that part of Craig's search for information about games involved him in bulletin board discussions with fellow enthusiasts, social interactions in a

shared quest for knowledge that would, according to Dewey, have clear educational value.

The recognition of educational value in Craig's social interaction on the Internet would be only the beginning, however, of the sort of change in thinking that Dewey would be likely to advocate. An imagined dialogue between Craig's fifth grade teacher and Dewey, the consultant, will illustrate the nature and extent of the transformation Dewey might attempt to bring about. The words of Dewey in the dialogue are invented, but they are based on my understanding of Dewey's philosophy and meant to be subject to support or refutation by reference to Dewey's work, especially, but not limited to, his *Democracy and Education* (Dewey, 1916-1997).

Teacher: Craig understands how to use the Internet very well. I just wish I could interest him in using it for something related to his schoolwork.

Dewey: Have you considered relating his schoolwork to what it is that interests him?

Teacher: As far as I can tell, the only things that interest him are computer games.

Dewey: I would suggest using those computer games as a starting point. Have you taken a look at the games?

Teacher: To be honest, no. I've just assumed they were basically a waste of time. I've thought that in school, at least, we could keep him away from them.

Dewey: Trying to make a clear separation between his life in school and the rest of his life isn't a very good idea in any event, and probably doomed to fail. He is the same person in school and away. He has the same interests, the same inclinations, the same abilities. As for the games themselves, it seems to me it would be better to take a

more scientific, experimental approach, and investigate the games before coming to any conclusions about them.

Teacher: But how could I relate computer games to schoolwork?

Dewey: We couldn't know that without taking a look at the games first. However, if Craig is an intelligent boy, as you say, there must be something in those games to hold his interest. Didn't you tell me earlier that he gets onto the Internet to get information about the games from other players?

Teacher: Yes. He's told me a little about it. They exchange ideas about strategies for winning the games and things like that. There seems to be an amazing amount of discussion going on.

Dewey: Well, if the games are complex enough to require strategies that can fuel that much discussion, then there must be quite a bit to them indeed. I would begin by having Craig show you some of the games and explain them to you. Be sure to pay attention to Craig as well as to the games. You will want to understand not only what is going on in the games, but also what it is in the games that catches and holds his interest, and how it does so.

As indicated in the dialogue above, it seems likely that Dewey's approach to the educational use of new communication technologies would be consistent with his approach to education in general. Central to Dewey's educational philosophy is the idea that the starting point for any thinking about what should be done in the school must be the individual student one intends to educate.

> An educational aim must be founded upon the intrinsic activities and needs (including original instincts and acquired habits) of the given individual to be

> educated. . . . In general, there is a disposition to take considerations which are dear to the hearts of adults and set them up as ends irrespective of the capacities of those educated. There is also an inclination to propound aims which are so uniform as to neglect the specific powers and requirements of an individual, forgetting that all learning is something which happens to an individual at a given place and time. (Dewey, 1916-1997, pp. 107-108)

In addition, each learning activity must be interesting and valuable in itself. It cannot derive its value from some goal in the distant future.

> And such abstractness means remoteness, and throws us back, once more, upon teaching and learning as mere means of getting ready for an end disconnected from the means. That education is literally and all the time its own reward means that no alleged study or discipline is educative unless it is worth while in its own immediate having. (Dewey, 1916-1997, p. 109)

Dewey also asserted the importance of students being actively engaged in order to learn.

> He learns in consequence of his direct activities. The better methods of teaching a child, say, to read, follow the same road. They do not fix his attention on the fact that he has to learn something and so make his attitude self-conscious and constrained. They engage his activities, and in the process of engagement he learns: the same is true of the more successful methods in dealing with number or whatever. (Dewey, 1916-1997, p. 169)

Beth's "problem" of having too much information to sort through might be seen as a valuable aspect of her assignment because she had to become actively engaged with the information that was available in order to find what she needed.

In order to bring together the various points made above and provide a more coherent and complete picture of how Dewey might respond to the advent of new communication technologies, I would like to once again imagine Dewey speaking as a consultant, this time addressing a meeting of teachers and administrators of the Springfield School District. As before, the words attributed to Dewey are invented, but they are based on the quotations above as well as on my general understanding of his philosophy, and are meant to be subject to support or refutation by reference to any of the above quotes, as well as to the rest of Dewey's work, especially, but not limited to, his *Democracy and Education* (Dewey, 1916-1997).

Dewey: I would like, once again, to express my appreciation to the Springfield School District for the trust and confidence it has placed in me, and for giving me the opportunity to be of some service. I would also like to commend all of you for recognizing in these new technological developments an opportunity to examine your educational practice and seek to improve it. This attitude of openness and exploration is one of your most vital assets as a school district.

As has no doubt become clear to you by now, I have no intention of making any recommendations about what you should be doing in general for all of your students. It is my hope that we have begun a process which will assist the teachers in your district in formulating appropriate and effective educational aims for each of the students with whom they work. As part of that process, I would like to discuss three individual students

in your district whom I have had the pleasure to get to know and suggest some ways in which their use of these new communication technologies might best be utilized for their education. My intention is not so much that these specific suggestions be used, though some of them, of course, could be, but rather to illustrate a procedure for determining individual educational aims.

The first student I want to discuss (I will refer to him as Aaron.) is a student at your high school. When I spoke with Aaron, I found that he enjoys using the Internet late at night to engage in "chat" sessions with various people located all over the world. I also discovered that Aaron likes to talk about the people with whom he has become acquainted in this way and the things he has learned from them. Aaron's lively interest in these conversations provides a fruitful starting point for the construction of his curriculum.

Let us say, just for an example, that I wanted Aaron to learn something about the different ways that women were viewed in Japan, Germany, England, and the United States. I might first discuss the issue with him to see what he thought, and to be sure that it had some intrinsic interest for him. If there were other countries and other questions that he wanted to find out about as well, they could be added. Together, we would construct a list of questions that he could ask his various conversation partners, and his assignment for the week might be to engage in chat with two or three people in each of the countries and get their responses to the questions. Given his existing interest in and enjoyment of these conversations, he would probably work very hard at his assignment, though it would not feel like work. He might also be motivated to read some articles or

books on the topic to see how his own discoveries compared to what has been published on the topic.

The second student I had the pleasure to meet (I will refer to her as Beth.) attends the Springfield Middle School. One of the things that Beth talked to me about was an assignment she had done for her science class using the World Wide Web. Two things about the assignment bothered Beth. The first was that she was doing research on endangered animal species, which she had heard a lot about and, at the present time at least, found "boring." Her second complaint was that she had found too much information and that it was hard for her to sort through it to get what she needed.

After talking with Beth, and finding out several other topics related to science which she did not think of as "boring," I met with Beth's science teacher. I discovered that the primary goal of the lesson was to learn about doing research on the World Wide Web and that any number of topics, including some of the ones in which Beth had expressed interest, would have been acceptable. The teacher had made the common mistake of assuming that every student was interested in topics that were generally popular. He was distressed to learn that at least one student had been bored by the topic she was researching, and he plans to incorporate student choice of topic into this and similar lessons in the future.

As for Beth's second complaint, the overabundance of information, it became clear to both Beth and me as we discussed the issue that this problem was related to the first. When Beth is really interested in a topic she is exploring on the Web, she sees an excess of information as exciting and challenging. Not only that, but she often makes a number of unexpected and fascinating discoveries related to the topic in the process of

sifting through all the data. The key to solving both problems, it turns out, is for Beth to have a genuine interest in the topic she is researching.

The third, and final, student I want to discuss this evening (I will refer to him as Craig) is a fifth grader at one of your elementary schools. Craig is already quite adept at using the Internet to find information he wants and to interact with others with whom he has interests in common. At the present time, virtually all of this Internet activity is connected with various games that Craig enjoys playing on the computer.

When I first met with Craig's teacher, she was concerned that she could not interest him in using the Internet for work related to school. I encouraged her to think instead about how she might relate schoolwork to those things that already interested Craig. I met with her again after she had had the opportunity to find out more about the games Craig plays. It turns out that the games are quite complex and involved, and this teacher has already found ways to connect mathematics, social studies, language arts, and art activities to the games. In addition, she is helping Craig work on a report on one of the games that he will present to the class, helping him to gain greater sophistication in the research skills he had begun to develop on his own.

I hope that the stories of these three students have provided you with some ideas for engaging in a similar process with each of the students who attend your schools. It will be, as I hope I have made clear, a continually ongoing process. Education, like life itself, is never finished.

While I have been here in Springfield, the Internet has been the focus of much of our discussion. Indeed, it was primarily because of the Internet, and your desire to understand its implications for your educational practice, that you invited me here to

work with you. In the course of our work, I believe we have all come to have a better understanding of the Internet, and that we have begun a process of integrating the Internet fully and effectively into the ongoing work of the Springfield School District. Tonight I would like to leave you with an idea that will perhaps take your thinking about the Internet a step further.

I encourage you to look at the Internet itself as a model for education. The Internet is never the same from one moment to the next, but is constantly growing and developing as a result of the conscious activity of human beings to be in communication with each other. Its shape and direction are determined by the interests of all of those participating, and there is no point at which it will come to completion and be static.

I leave you to continue the analogy on your own. Thank you again for inviting me to come to Springfield and share for a brief time in the very important work you do every day on behalf of all of your students and the entire community.

If we imagine the Springfield School District acting upon Dewey's ideas, we would expect to see increased communication between teachers and students. Teachers would strive to learn more about what the students were interested in and would shape the educational program in response to those interests. We would not expect to see, however, any fundamental change in the roles of teachers and students within the schools. It appears likely that teachers would remain teachers, with all of the authority the role implies, and that students would remain under the authority of the teachers. While Dewey views both education and the larger life of the society as unfinished and in process, he seems content to leave the fundamental structure of relationships within education and society intact.

It could be argued that a more fundamental transformation of relationships is implied in Dewey, but if so, it would have to be painstakingly drawn out, and is, in any case, not one of Dewey's explicit, central concerns. To explore how new communication technologies might be utilized to work toward a more profound transformation in the Springfield schools, and of the larger society of which they are a part, we turn to the thought of Paulo Freire.

Like Dewey, Freire sees reality as an ongoing process (Freire, 1970-1998, p. 56). What distinguishes Freire is that he makes the transformation of that reality a central concern of his work.

> If humankind produce social reality (which in the "inversion of the praxis" turns back upon them and conditions them), then transforming that reality is an historical task, a task for humanity. (Freire, 1970-1998, p. 33)
>
> Liberation is a praxis: the action and reflection of men and women upon their world to transform it. (Freire, 1970-1998, p. 10)
>
> For the truly humanistic educator and the authentic revolutionary, the object of action is the reality to be transformed by them together with other people—not other men and women themselves. (Freire, 1970-1998, p. 75)

If Freire were able to become involved in the Springfield School District's efforts to make use of new communication technologies, the school district itself would likely become the focus of Freire's work.

Freire's first concern might be to guard against the new technology being utilized as an instrument of oppression, for he recognized that the potential for both good and evil was inherent in such advances.

> The inhumanity of oppressors and revolutionary humanism both make use of science. But science and technology at the service of the former are used to reduced the oppressed to the status of "things"; at the service of the latter, they are used to promote humanization. (Freire, 1970-1998, p. 114)

Freire would be particularly interested, I think, in the sorts of technology that have been under discussion here, because they are involved with communication, which is extremely important in Freire's thought.

> The dialogue which is radically necessary to revolution corresponds to another radical need: that of women and men as beings who cannot be truly human apart from communication, for they are essentially communicative creatures. To impede communication is to reduce men to the status of "things"—and this is a job for oppressors, not for revolutionaries. (Freire, 1970-1998, p. 109)

Freire is concerned with much more than whether communication merely takes place, however. He is concerned about the nature of the communication and the relationships that exist among those who are in communication. Communication, according to Freire, should be used for dialogue, a term which has a particular and pivotal meaning in Freire's philosophy. Freire defines his concept of dialogue in part by attempting to make clear what dialogue is *not*.

> . . . this dialogue cannot be reduced to the act of one person's "depositing" ideas in another, nor can it become a simple exchange of ideas to be "consumed" by the discussants. Nor yet is it a hostile, polemical argument between those who are committed to neither naming the world, nor to the search for truth, but rather to the imposition of their own truth. . . . it must not be a situation where some name

> on behalf of others. . . . it must not serve as a crafty instrument for the domination of one person by another. (Freire, 1970-1998, p.70)

For Freire, dialogue is intimately related to the kind of relationship that exists between people. Moreover, the act of dialogue transforms relationships, profoundly changing who people are with one another.

> Through dialogue, the teacher-of-the-students and the students-of-the-teacher cease to exist and a new term emerges: teacher-student with students-teachers. The teacher is no longer merely the-one-who-teaches, but one who is himself taught in dialogue with the students, who in turn while being taught also teach. They become jointly responsible for a process in which all grow. (Freire, 1970-1998, p. 61)

It seems likely that Freire's first effort as a consultant for the Springfield School District would be to establish dialogue between teachers and students. (There might well be other groups of people whose roles Freire would want to transform via dialogue also, such as administrators and teachers, and parents and students.) This dialogue would go beyond an effort by the teachers to discover student interests in order to connect the curriculum to those interests; the curriculum itself would be transformed in response to what students wanted to know (Freire, 1970-1998, p. 74, p. 90). Thus, to take Aaron's interest in global chat on the Internet as an example, it would not be simply a matter of tying the existing goals of the social studies curriculum to this chat, but rather the nature and content of the social studies curriculum itself would be changed. New curriculum goals would be decided by Aaron and his teacher together, with his teacher seeking to learn from Aaron as well as to teach.

It is important to point out that although Freire advocates a mutual change in the roles of teachers and students, this does not imply that teachers simply go along with whatever it is that students want (Freire, 1970-1998, p. 159). Indeed, to continue with the case of Aaron, it seems clear that Freire would want Aaron's teacher to build upon Aaron's interest in international chat sessions to guide Aaron toward some sort of productive action. Freire's dialogue is not mere talk, but is directly connected with effecting change in the world (Freire, 1970-1998, p. 68, p. 156).

To illustrate the sort of changes that might be brought about if Freire's philosophy were put into practice, I would like to close as I began, with three vignettes. There is a clear emphasis on the "might," of course. Even if the Springfield School District actually existed, and if Freire actually did some work there, we could not say in advance what would occur. To do so would be contrary to Freire's philosophy itself, for we cannot determine for others what it is that they will want to do. Nonetheless, we can imagine some of the possibilities. We will revisit Aaron, Beth, and Craig some time after Freire is supposed to have worked with the Springfield schools and succeeded in facilitating some transformation there. The scenes are meant to illustrate my understanding of Freire's thought and the sort of changes it might bring about if put into practice. While all of what follows is meant to reflect Freire's philosophy as expressed in his *Pedagogy of the Oppressed* (Freire, 1970-1998), certain direct references to that work are cited.

It is midnight once again in Springfield, but tonight there are a few lights on at the public high school. Aaron, along with three other students, is in one of the school's computer labs working on a project. Aaron has been entrusted with keys to the school for this purpose (Freire, 1970-1998, p. 42, p. 72). These four students meet here once every

couple of weeks to converse and exchange information via the Internet with a similar group of four students in Osaka, Japan. The students maintain contact at other times individually, but they have found it useful to have this regular meeting time as a group. Aaron and his classmates don't mind the late hour, and 9:00 a.m. works well for the foursome in Japan.

All of these students are involved in an ongoing project to try to influence the economic development policies of their respective governments, both within their own borders and around the world. Together with other high school students in a number of countries, they are learning a great deal about economics, politics, geography, history, mathematics, and a host of other subjects while they are engaged in a continual effort to bring about a more just economic order (Freire, 1970-1998, p. 60, p. 148). The original idea for the project began with a concern that Aaron felt and expressed to one of his teachers. His teacher then worked with him to develop a way to act on his concern (Freire, 1970-1998, p. 74, p. 105).

Beth is at home sleeping, but she will have a very busy day tomorrow. Her science class at school has been learning about global warming, and it is Beth's task tomorrow to locate and contact experts who have opinions on various sides of the issue. The goal is to obtain statements from those experts in the near future—preferably a brief, videotaped speech—that can be presented to her classmates, who will then critique what the experts have to say (Freire, 1970-1998, p. 103). After hearing from the experts, Beth's class will attempt to reach consensus about what, if anything, should be done. If they decide that some action should be taken, their next step will be to figure out what role they can play to help bring that action about.

In the room next to Beth's, her brother Craig is also asleep, a stack of notes and drawings on the floor near his bed. These papers are from a meeting Craig attended this evening at his school. The school is going to be getting a new computer lab, and Craig is a member of the committee that is charged with submitting a proposal for the lab's design. His work on the committee has meant less time playing computer games, but Craig hasn't been spending as much time on those games lately anyway. Craig's teacher, as part of her ongoing dialogue with him, helped Craig come to two important realizations. The first was that he really felt better if he spent a greater portion of his time engaged in activities that benefited others, and the second was that the same planning and strategy he enjoyed in his game playing could be put to use in those activities (Freire, 1970-1998, p. 103). Craig still plays games on the computer now and then for fun, but he seems to get more of a thrill out of making things happen in the real world.

References

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