

Computerization & Socialization

Shivani Grover, Satwinder Kaur

Assistant Professor (Computer Science), Swift Technical Campus, Rajpura

Assistant Professor (History), Swift Technical Campus, Rajpura

Abstract

Through socialization, individuals acquire the information and techniques needed to function in society, while society maintains its culture and social structure from generation to generation. Socialization teaches people their roles and places them in a social class. It provides them with norms of behavior, values to live by, and beliefs to explain how and why they "fit" in a society. It is impossible to predict the future of educational institutions with any accuracy. But it seems fairly clear that computers will not solve their problems. A gradual improvement in educational software should make computer aided instruction a more useful educational tool than it is at present. The capacity of computer networks to support communication at a distance may be used to replace many teachers, through the development of centralized electronic instruction that resembles television studios more than traditional classrooms. Or computer-aided instruction may be used by students for information and practice and by teachers in their interactions with students. The outcome is not a technological issue. It depends on how we understand education and its purposes.

Keywords : Information, educational, computer, socialization, computerization, electronic

1. Introduction

Is using a computer sometimes, literally, a pain in the neck? Do your eyes have trouble focusing

on the screen? Does your upper arm ache from repeated strain on your mouse finger's tendon? I know mine do as I write this sentence. Physical stress is one of the physiological problems with the video display terminal operation. Ignoring my own advice to you in this chapter, I've been sitting here for five hours.

Are computers fun? Are they convenient? Does using one make you feel competent and in control? These are some of the psychological satisfactions of a "user friendly" tool. At the moment, my answers are no, yes, and yes.

But how friendly can a computer be, when "friend" is a social relationship? Are you talking more to computers and less to people? Or are you using the computer as a way to communicate, perhaps the way I'm talking to you via the World Wide Web. These are some of the social issues of ergonomics, the study of the human/technology interface. Most computer ergonomic research is micro-level. It studies the physiology and psychology of the immediate connection between computers and people.

2. Technology and Human Needs.

The effects of the computer on the individual are often considered a technical question involving user-friendly interfaces between the person and the machine. Human factors research (as ergonomics is also called) is a relatively new field that looks at the match between the machine and the human being as a biological organism. Cognitive factors of perception and

learning are also taken into account in order to create interfaces that accommodate the user. A "good" interface is user- friendly; it meets human needs. But to understand the human/computer interaction we must consider what it is that human beings need.

3. The Physiology of the Human-Computer Interaction.

Use of a computer is a physical activity involving hands, eyes, ears, and body. The goals of improving the health and safety of computer users are usually compatible with the goal of higher productivity. This is because the factors causing physical stress or damage also tend to make people less productive.

- **Physical Stress**

Muscular and skeletal stress is frequently reported by computer users. Like any other job requiring long periods of sitting at attention, using a terminal can be uncomfortable. With properly designed furniture, much of this stress can be alleviated. Figure 4-2 (not yet scanned) shows the design parameters for an ergonomic workstation. The chair height prevents leg strain; the keyboard is at a height to prevent tension buildup in the back of the neck caused by holding the arms at an awkward position. Wrist rests, advocated by some designers, have been found by researchers to be unnecessary or even a hindrance to someone constantly using the keyboard.

- **Computers for the Disabled**

Although most micro ergonomics research focuses on the industrial applications of computer technology, another important area which studies the match between humans and machines is bio-engineering. There the focus is on medical procedures, artificial limbs, and adaptive technologies for the blind, deaf, or physically impaired. In the functionalist model of the human/computer interface, computer aids for the disabled are a clear example of meeting

the most basic sort of human need. From a critical perspective, these would be viewed as contributing new products to the market for medical commodities and as making disabled people better able to do productive work. Another issue is that of the status of disabled persons in society. The medical model of a disabled person as having a physical problem that should be corrected by changing that person ignores the solution of changing the society (and its technologies) to accommodate a physically diverse population.

- **Children's Ideas and Adult Attitudes**

Computer users report a range of attitudes, from excitement and satisfaction, to fear or boredom. "Computer phobia", the fear of using computers, is a rational response to some individual experiences with computer use. Attitude differences with regard to age and sex have been found, and some observers suggest that an obsessive fascination with the computer is a new form of neurotic behavior. From studies of children relating to computers, some researchers have predicted that the computer will radically change our views of ourselves and our world.

- **Computer Phobia and Self-Esteem**

"Computer phobia" is a popular term for an irrational fear of using the computer. To a psychologist, phobia is more than fear. For instance, my reluctance to go to the dentist is rational if I am afraid of the pain of having my teeth drilled; it is a phobia if the very thought of seeing a dentist makes me tremble, and I can't make myself drive down the street his office is on. From a sociological viewpoint, computer phobia is often a case of "blaming the victim" (Ryan, 1971). This occurs when any possible problems with hardware reliability, software design, user interface, documentation, and real threats to the user's economic status and self-esteem are ignored. Instead, the reluctant user is blamed for being irrational. In the popular "Dilbert" cartoon series, the computer is often

depicted as a hostile object threatening human control over situations and interactions. But the solution to "computer phobia" is not to focus on the irrationality of the reluctant user, but to analyze the basis of his or her fears.

A person's experience of interaction with a computer can affect self-esteem in positive ways, for example, a person can be proud of being a good programmer. Computers can also contribute to self-actualization, for example through the satisfaction a programmer gets from making a program LINK COMPUTERS AND SELF-ESTEEM IN CARTOONS work. Or computer experience can have a negative effect on self-worth if the experience makes a person feel incompetent or unfulfilled. For example, people who feel competent and skillful because they are expert typists may feel less satisfied when first learning to use a word processor. Initially, they will be less able to apply their skills to turning out high-quality finished text.

If a person is highly skilled and performs well within an existing organization, new equipment may render his or skills obsolete. This is a threat to job status, and to individual pride and satisfaction. It can also raise real barriers to the successful implementation of computer technology in organizations (Warner, 1984). If the computer is introduced in ways that allow people to preserve their positions and enhance their skills, less "phobia" will result.

4. Positive Impacts

- **Computer-Aided Socialization**

Through socialization, individuals acquire the information and techniques needed to function in society, while society maintains its culture and social structure from generation to generation. Socialization teaches people their roles and places them in a social class. It provides them with norms of behavior, values to live by, and beliefs to explain how and why they "fit" in a society. The family and the school are the two most important socializing institutions; for within them, children are introduced to the

intricacies of their culture. For older children and for adults, social networks and economic institutions are important agents of socialization, providing opportunities to learn new social roles and behaviors. Experiences in the workplace, as Adam Smith pointed out in 1776, are how "the understandings of the greater part of men are necessarily formed."

Social change limits the effectiveness of socializing institutions; when society changes, the preparation people have received through socialization may be irrelevant. Because schools and families prepare individuals for occupational roles and teach them to understand their culture, an institutional "crisis" can occur during periods of rapid change. From a functionalist perspective, such a crisis poses a challenge to the adaptive capacity of an institution, as it is forced to reorganize to accommodate to a changing environment. Today, both the family and the school are widely believed to be in crisis.

- **Home Computers and Family Change**

The availability of inexpensive personal computers is expanding the potential, begun by the introduction of the telephone, for people to shop, obtain information, transact business, and communicate with others without ever leaving the home. Whether this will mainly reduce the amount of time spent on travel and errands, or will have a major impact on social relationships is still unclear. We have only begun to study computers in the home. To some observers, home computers represent a new form of social integration, reconnecting the separation of work and personal life that occurred during the Industrial Revolution. Alvin Toffler (1980:194-207) and Joseph Deken (1981:340-343) argue that personal computers will make work at home more common, giving us "electronic cottages". They predict that "telecommuting" instead of driving to work will strengthen the bonds of family and community, provide employees with greater control over their work, and be beneficial

to the environment by reducing gasoline consumption and air pollution.

Despite the speculations of observers, it is not yet clear if the home computer will reintegrate family and economic institutions. Many owners have not yet decided what to do with their computers; others oppose the idea that more activity should take place in the home at all (Bombeck, 1982). The home computer may integrate telephones, stereos, cameras, and televisions into home entertainment centers, rather than integrate work and family life. Even if home computers do put work and family life in the same place, it is highly unlikely that large corporations will distribute their considerable economic power to new home-based industries. Those who view the electronic cottage as a return to the good old days before the Industrial Revolution when families were economic units and divorce rates were low, have an idealized view of traditional families and of modern economies.

- **The Not-So-Traditional Family**

A culture's assumptions that its own particular social arrangements are human universals are especially strong when it comes to families. Less than one fifth of U.S. households are of the "traditional" form of working husband, housewife, and children. And the "tradition" was a radical concept during the Industrial Revolution. We often imagine families of other cultures, or our own past, as having many children, many generations living together, early marriage, and infrequent divorce. This was hardly universal. High death rates and low life expectancy made multiple generation households rare even in cultures which valued them. High infant mortality, occasional infanticide, and restrictions on marriage kept families smaller than would otherwise be expected from their high birth rates. During one period of English history, when land and other resources needed to set up a new family were scarce, the average woman didn't marry until she was 28 years old. In rural Indonesia, divorce rates have been higher than our own.

Pre-industrial families of Western Europe and non-industrial families in other regions of the world were (and still are) remarkably varied in structure. Families of multiple husbands are occasionally found; multiple wives are more common. By one anthropological estimate, 80% of the world's cultures have a non-monogamous ideal family form. First cousin marriages are forbidden in some places but the ideal form of marriage in others. Even socially approved brother-sister marriage has been found among the ancient Egyptian upper class and the Hawaiian royalty. If we look to biological examples as evidence of a "natural" family structure, we find among primates the tamarinds, where one female breed with a group of males, and the males take an active part in caring for her young.

- **Computers and the Changing Schools**

The ideal function of education in an industrial democracy is to provide equal opportunity for all to develop their talents and prepare for occupational success. For society, the school's function is to develop its human resources and place people in appropriate jobs and roles. In the words of Horace Mann, a leader in developing public education during the American Industrial Revolution:

Education is not only a moral renovator and a multiplier of intellectual power, but also the most prolific parent of material riches. It is not only the most honest and honorable, but the surest means of amassing property

(1842). Critics of this view argue that education has another, less obvious function for society. They believe that a major function of education is to maintain the existing stratification system by convincing unsuccessful individuals that they have "failed". If there are more talented individuals than there are high-status job opportunities, then those who do not find rewarding jobs might see their position in society as a social, rather than a personal problem. From this perspective, one purpose of

education is to convince individuals to accept the status quo as a "given" and to define their success or failure in personal terms. Education in this way serves as an agent of social control, teaching students to conform to existing social structures. From either perspective, educational institutions experience a crisis when other social institutions are going through a period of rapid change.

- **The Future of Education**

It is impossible to predict the future of educational institutions with any accuracy. But it seems fairly clear that computers will not solve their problems. A gradual improvement in educational software should make computer aided instruction a more useful educational tool than it is at present. The capacity of computer networks to support communication at a distance may be used to replace many teachers, through the development of centralized electronic instruction that resembles television studios more than traditional classrooms (McDonnell, 1984; Turner, 1984). Or computer-aided instruction may be used by students for information and practice and by teachers in their interactions with students. The outcome is not a technological issue. It depends on how we understand education and its purposes. As private sector education expands, bring the cultural transmission of knowledge more into the marketplace, we will have to make some political choices about how much we want education and socialization to remain public processes.

- **Video Games as Socializing Agents**

Children learn about social expectations through play, and can often be found "practicing" for adult roles. Video games, which may appear as simply another expensive fad, are seen by some analysts as part of a new pattern of life. Many parents and communities are concerned about the time and money their children spend on machines, often voicing fears of an association between video arcades and drugs or crime. One

of my favorite cartoons is of a video game called "Gimme Your Quarter". In the country of Malaysia arcade video games have been banned altogether on the grounds that the money spent on them interferes with the nutrition of poor children, provides an immoral influence conducive to theft and violence, and represents a cultural intrusion (Video Games Under Fire, 1982). Like the controversy over TV violence, the question of computer games' impact on children continues.

- **Social Factors: The Computer Impact on Human/human Interactions**

Does your family have a computer? Were they used in your schools? Do you play with them? If so, what have you're learned from using computers? How have they changed your social relationships? The study of social factors in computing looks beyond the immediate connection between person and machine to the consequences for the social institutions in which the technology is used. The effect of the computer in these institutions depends on more than the interface between individual and machine. It depends on the way computers are linked together into communications networks, and how computer-based communication alters social interaction among people.

The family and the school are the two most important socializing institutions. Within them, children are introduced to the intricacies of their culture. For older children and for adults, social networks and economic institutions are important agents of socialization, providing opportunities to learn new social roles and behaviors. As the commercial production of information expands, some of the socializing functions of family and school have been taken over by leisure activities and mass entertainment. In place of public interactions among communities of people, we often find private interactions between people and machines. But in the social interactions among people using computer networks, we find new

evidence of social integration and community formation.

5. Negative Impacts.

- **Social Interaction among Computer Users.**

For some philosophers, the dilemma of modern humanity has been the development of instrumental rationality in science, technology, and business at the expense of the human need for meaning, continuity and belonging derived from direct, face-to-face interaction with one's particular group. The advantage of the rationalization of culture has been the development of universalistic social relationships. We are able to form larger communities and treat strangers with less suspicion. The disadvantages have been individual isolation, reification of social relationships, and a weakening of shared norms and values. Computer-based communication shows evidence of being a continuation of the trend towards universalism in social interaction. It also offers some new possibilities for enhancing social integration in organizations and communities.

- **Loss of Face to Face Contact**

Loss of face-to-face communication is reported in many studies of computerized homes and offices. About 20% of the secretaries surveyed by the Diebold Group (1984) reported less face-to-face contact with their peers. 22% of the managers and professionals also reported a decrease in face-to-face contact. A study of women working with computers in their homes found social contact between them and their friends to be reduced, although interaction with their children and spouses increased (McClintock, 1984). Even when face-to-face contact is replaced by more contact via telephone and electronic message, the quality of interaction changes. In other words, people report that talking through a computer network is "just not the same" as face-to-face.

Consider, for example, the difference between a proposal of marriage by computer mail and a proposal in person. Even when two users of an electronic bulletin board fell in love via network, the marriage proposal was made face-to-face ("Love, Computer Style", 1983). The emotional overtones of social interaction are expressed through gestures, tone of voice, and even through smell (with chemicals called pheromones). Just as the telephone removed vision and physical presence from human conversations (giving us in return the ability to communicate over vast distances), so most computer message systems remove the perception of sound and sight from interaction.

- **Multimedia Interfaces and Emotional Communication.**

Multimedia interfaces that let you hear the person you are exchanging information with and let you see them on television offer us the possibility of adding emotional communication to computer networks. This could restore some of the social control that now appears to be missing from computer conversations. But this technological innovation will not necessarily strengthen our perception that we are speaking to another human being. What is most important in face-to-face contact is our ability to imagine ourselves in the presence of another self. Because this is an emotional response to another person, the addition of non-verbal elements to computer messages can make it easier to perceive another's humanity. However, if our emotional response to someone's accent, color, sex or status makes it more difficult to imagine them as like ourselves, the quality of our interaction will not be improved by multimedia interfaces. Multimedia interfaces will certainly increase the distance over which we can present ourselves to others; but they will not automatically supply us with the cultural value that we should communicate with them.

- **Computer-Aided Conversation and the Problem of Trust**

In a collection of essays on communication and social evolution, Jurgen Habermas (1979) points out that communication involves claims on the part of participants about:

- The nature of external reality;
- The internal reality of the speaker's intentions; and
- The shared reality of the social norms governing conversation.

In conversation we evaluate the truth of what is being said, the motives of the speaker, and the social appropriateness of the communication. We can predict that the use of computer-mediated conversation will increase our attention to validity claims about the world-- in other words, claims that the messages are "true". As it becomes more difficult for us to tell who is speaking, we may have difficulty in evaluating the intentions of the speaker. We may expand our willingness to trust the unseen stranger whose words we read, or we may place our trust in the computer itself as provider of messages. In the latter case, we may think of ourselves as engaged in conversation with an anonymous network, and lose sight of the humans whose programs and messages we are using.

- **Community Interfaces**

Our traditional concept of a community has a geographical base, with people in regular face-to-face contact with one another. Yet widely scattered people have maintained their social ties through letters, phone calls, and periodic gatherings. My family of several dozen aunts, uncles and cousins has an annual reunion; the

professional community of American sociologists gathers at the end of every summer to go through the ritual of delivering papers and talking to colleagues.

One kind of computer network that facilitates solidarity within groups is the electronic bulletin board. Community bulletin boards like Berkeley, California's Community Memory Project, are experiments in social integration and democratic participation. Terminals in public places provide access for individuals who do not have computer terminals at home or work. Commercial information utilities like the Source or CompuServe offer bulletin board services to a variety of special interest groups (Glossbrenner, 1984). Churches and informal religious groups -- from born-again Christians to mystic pagans -- hold study classes, communicate with parishioners, and exchange information over computer networks ("Churches Move into the Computer Age," 1984).

But computer based social networks, like other communities, can generate conflict between groups. From the Aryan National Liberty Net, identified by the FBI as sponsored by a right-wing terrorist group believed responsible for several murders, you can get a list of America's enemies (New York Times, February 15, 1985:11). Hacker bulletin boards are the target of U.S. software and credit companies, who blame them for promoting credit-card fraud and software piracy (Newsweek, April 15, 1985:17). In their enthusiasm to do away with software pirates, some companies have suggested outlawing all non-commercial bulletin boards. In their defense, many of the bulletin board operators point out that they are encouraging free speech and social interaction, not theft.