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FRF_PTPF_01_0295

COMPUTER EDUCATION: INCREASING THE CREDIBILITY OF PUBLIC SCHOOLS IN NORTHEASTERN BRAZIL

Elian de C. Machado*

Abstract

Public education in Brazil has long been neglected. Public programs are ill-managed and enroll the unprepared children of the poor. A computer education experience for the schools proved that the value of public education can be recovered so long as schools are given better resources and conditions.

Context

Brazil is a Third World country where several contrasts spring up to any observer especially from other societies. Brazil's environment exhibits a mixture of wealth and poverty, high and ancient technology, modernity and primitiveness, among other major contrasts. It is in education, however, where the deepest contrasts seem to lie. Private expensive schools prepare the children of the upper classes to assume elite occupations while unreliable and discredited public schools prepare lower-class children for the chief "hard-work" low-paid positions of society. Public policies encourage the dissemination of profit-making schools and leave the public sector abandoned and discredited. Children from private schools have guaranteed easy access to advanced technologies in their homes and schools, whereas other children in public schools do not possess the very minimum to be educated. Public schools look filthy, are ill-managed and frequently paralyzed by teachers' strikes. The state and its policies make public schools undesirable and unreliable to parents, the community, and unwanted by children.

Theoretical Background

Freire (Ref 2) pointed out that oppressed groups need education to reach dominant classes and achieve emancipation. Social and cultural deprivation can be fought through increased political consciousness and participation. Bettelheim (Ref 1) and Papert (Ref 4) established that learning will be improved in environments that respect children's intelligence, natural curiosity and inner desire for learning. While Bettelheim said students need meaningful materials for learning, Papert proposed the design of environments free from the discomforts caused by fear of erring.

The study was also based on the diffused assumption that computers and new technologies will redefine the shape of societies, as will be associated with prestigious occupations. Societies that can appropriate knowledge about making and using these crafts will become wealthier, more efficient and powerful (Naisbitt, Ref 3; Schaff, Ref 5; Toffler, Ref 6).

* Elian de Castro Machado is Adjunct Professor of Computer Science and of the Masters Program in Education at the Federal University of Ceara, Brazil. He also Coordinates the State's Computer Education and Research Programs.

Study Purpose

The context and ideas generated an investigation designed to evaluate the impacts of computers on disadvantaged groups in an underdeveloped situation. The questions investigated were: how can the computer influence the lives of public school students? What perceptions would emerge in the situation? How would the computer affect and concern authorities, parents and administrators? Which activities and materials needed to be designed to fulfill theoretical requirements? The experiment took place in Fortaleza (2 million people located in Northeast Brazil), a city typical of Brazilian underdevelopment. The research groups were chosen from 11 of the city's 29 public secondary schools.

Procedures

Two microcomputer laboratories were installed to serve children of public schools. One was located at the university in the computer science department and another placed in a public high school. The university's site accommodated 80 teenagers from a nearby community school while the school program enrolled 200 teenagers coming from 10 schools. Class sessions involved 20 students, one computer per student, 2 teachers each class, with sessions divided into 2-hour intervals twice a week.

The program was designed to encourage student initiative and self-expression; a warm friendly relationship with teachers was cultivated; tolerance and patience were adopted. Activities focused on individual projects, through a process of negotiation of themes with teachers and group. Peer collaboration was encouraged and frequently led to growing interaction. Besides DOS, a text processor and a LOGO interpreter were used. A small class library was set up containing technical, mathematics and literary books, with free access and use by all. Activities involved knowledge of computer use and operation, integration of lab activities with written composition and verbal expression and programming with mathematics.

To arrive at the findings, researchers used participant and action research procedures. Facts were gathered through informal and formal group and individual conversations, and by analyzing participation as assessed through interest, attendance, motivation, and achievement.

Outcomes

A major outcome of the study was the improved perception of participants about the value public schools ought to have. Participants demonstrated an increased belief in public programs as expressed verbally in class and shown through their disgust with their original schools and their satisfaction with the computer education program. Parents insisted on sending their children to the program even though the cost of transportation pressed on their income. Several public school teachers and other children have expressed their interest in joining the program, have taken initiative to bring a new lab to their schools, and revealed a concern with learning about computers.

Students stated they would like to see their schools follow the program's model. The responsibility, freedom and high expectations provided by the

environment generated responsible choices and positive attitudes towards learning. Students who had failed before or had a negative perception of school were able to achieve successfully in the program. Children who wrote poorly before completed extensive written projects, and low mathematics achievers could program the computer creatively. These factors resulted in an improved self-steem observed in individuals and groups. For many the re-establishment of self-confidence elicited a changed perception of learning, school, and one's own capacity to succeed in an unfair system.

Students said that many parents did not believe in their ability to work and progress with computers. Several students came to the program believing that computers were smart and belonged to smart people only. After participating in the program a feeling of pride and accomplishment aroused and parents are recovering confidence in the future of their children. Some children said that the lab was the only public program they knew to "really work" in the city.

Conclusions

The computer is perceived as a symbol of what is most modern, advanced, and costly in today's society. It is also the ultimate and best of what society can offer to their citizens. By knowing these facts, elites in Brazil try to seize new technologies, especially computers, as a way of perpetuating their condition. Middle and upper class parents send their children to computer courses or press schools to make such programs available. The language which evolves as a result of learning and dominating computers and new technologies can reinforce the existing gap between rich and poor.

Children of public schools have long been neglected by state authorities as have their schools. A conflict aroused when "the cream" of society, represented by computers, was given to students of public schools. Brazilian education teaches empty rhetoric and emphasizes memorization as a way of disguising problems and to keep the unequal situation unchanged.

The computer education program provided opportunity to "arm" forgotten children with the same means used by the elite. Children who were considered incapable, incompetent, or often less intelligent, proved they only need a fair chance to overcome disadvantage. Policies that neglect schools have stolen the right of children to believe in the future. This situation of lost horizons and hopelessness can be changed as indicated in this research. Very little needs to be done to recover trust and to restore the credibility of public education in Brazil.

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