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## **The Rhetoric and Reality of Aid: Promoting Educational Technology in Egypt**

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## **Abstract**

This paper examines a U.S. foreign aid project to promote use of new technologies in Egyptian education. Though the project sought to improve teaching and learning, an examination of implementation indicates how goals of Westernization ended up taking precedence. These included a focus on bringing Egyptian educators to the U.S. and on showcasing U.S. hardware and software. This underlying emphasis on Westernization weakened the project's potential contribution to educational improvement. However, grassroots Egyptian teachers educators found ways to assert their own voices in the project through small-scale and locally-appropriate uses of technology.

## **The Rhetoric and Reality of Aid: Promoting Educational Technology in Egypt**

The contradiction between the rhetoric of educational technology campaigns and the actual ways that new technologies are used in the classroom has been an important theme in educational research over the last two decades. Critics have made three specific points in this regard. The first assertion is that new technologies are aggressively promoted by corporate leaders and government officials under the claim that they will transform education to better prepare learners and nations to compete in a technologically-competitive world (Cuban, 1986; 2001; Robins & Webster, 1989; Selwyn, 2002; Selwyn & Gorard, 2002; Stoll, 1995; 1999).

A second point is that, in spite of the lofty rhetoric behind educational technology, its actual use in the classroom is either marginal (Cuban, 1986; 1993; 2001), contrary to sound educational practice (Healy, 1999; Stoll, 1999), or divisive (i.e., promoting unequal educational results by class or ethnicity, see, for example, Warschauer, 2000; Wenglinsky, 1998)

A third claim is that this contradiction between rhetoric and reality is framed by the imperatives of today's capitalist society, which do not necessarily determine educational practices, but do shape the discourses and relationships of schooling and of the use of technologies in schools (Apple & Jungck, 1998; Bigum, 1998; Bryson & de Castell, 1998a, 1998b).

This body of critical research and analysis has been carried almost exclusively on instructional technology in wealthy countries, and naturally so, since these were the first to implement educational uses of computers on a large scale. More recently, though, developing countries have shown great interest in integrating new technologies in

instruction (Osin, 1998). And in developing nations, the rhetoric behind educational technology may be even loftier, as technology holds the allure not only of improving education and economic competitiveness, but also of allowing a nation to leapfrog to modernity (Warschauer, 2003a). The contexts shaping educational technology use in developing countries can be quite complex, as they reflect not only domestic discourses but also that of powerful donor nations, whose economic aid programs often help shape educational and economic reform.

From 1998-2001, I gathered data on a large U.S.-funded educational technology program in Egypt. I have reported on other aspects of program previously, analyzing issues related to inequality (Warschauer, 2003b), human development (Warschauer, 2002), and educational reform (Warschauer, 2003a). In this paper, I will examine how political, economic, and social goals, as influenced by the constellation of social and class forces in both the U.S. and Egypt, shaped the funding and implementation of the aid project and gave rise to collusion and struggle between the donor agency, recipient agencies, and grassroots educators. The study thus falls within the realm of prior analytical studies on technology in education (e.g., Selwyn & Gorard, 2002) as well as works critically examining foreign aid projects (e.g., Hancock, 1989)

## **Theory and Method**

The study draws on critical approaches to research on infusion of information and communication technologies (Warschauer, 1998). A critical theory of technology (Feenberg, 1991) distinguishes itself from both *determinist* approaches (which view technology as of necessity having a positive or negative impact) and *instrumental* approaches (which view technology as a valueless tool which can be deployed toward

any end).<sup>1</sup> Both determinist and instrumental approaches are seen as downplaying the embeddedness of social, political, economic, and culture factors in technologies, which shape (but do not determine) how technologies are deployed. In a critical approach, technology is viewed as a site of struggle, and investigations of technology implementation seek to uncover underlying power relations that shape how technology is used, similarly, for example, to how critical literacy studies seek to uncover the underlying power relations framing literacy practices (Street, 1984, 1993).

The overall research methodology is that of an interpretive qualitative study. Sources of data for the study include (a) participation-observation in efforts to plan, implement, and evaluate technology-based interventions in Egyptian schools and inservice and pre-service teacher education programs, including attendance at meetings of Ministry of Education bodies, international donor and implementation agencies, and Egyptian non-governmental organizations, attendance at and participation in in-service and pre-service teacher training programs, and participation in online discussion forums of Egyptian educators related to technology use in education; (b) professional visits to 25 Egyptian primary, preparatory (i.e., middle), and secondary schools located in rural and urban areas throughout the country and to colleges of education in 10 Egyptian universities; (c) individual and focus group interviews with Ministry of Education (MOE) officials, business leaders, school teachers, university faculty, and representatives of non-governmental organizations, parents, and students; and (d) analysis of print and electronic documents and reports issued by the Egyptian government and MOE, donor agencies, and non-governmental bodies related to technology in education.

Data was analyzed in an iterative fashion to search for overall patterns. Triangulation was used to confirm that patterns were supported by various types of data. Efforts were made to seek out disconfirming examples. Finally, results were discussed with Egyptian educators to confirm that interpretations were consistent with their own understandings of events.

### **A U.S. Aid Project**

For the last quarter century, Egypt, together with Israel, has been the largest recipient of U.S. foreign aid (see discussion in Weinbaum, 1986). In recent years, U.S. strategies to bring Egypt into the Western camp have focused on promoting the country's export-oriented development (Korayem, 1997). This has involved trying to reshape Egypt's work force so that it is better able to participate in a U.S.-dominated global economy. Three key elements of this effort have been educational improvement, the promotion of English language teaching, and the diffusion of educational technology (Warschauer, 2002). The Government of Egypt has welcomed aid projects in these areas, since they match that government's own priorities (Bahaa El Din, 1997; Ministry of Education, 1999).

The donor program discussed in this paper, the Integrated English Language Program-II (IELP-II)<sup>2</sup>, was located at the intersection of these three areas (educational improvement, English language teaching, and educational technology). IELP-II has run from 1997-2004 with \$52 million in funding from the U.S. Agency for International Development (USAID), making it one of the larger donor-funded educational programs in the world. The goals of IELP-II are to work in partnership with the Egyptian Ministry of Education and Ministry of Higher Education to improve English language teaching,

promote better pre-service and inservice preparation and professional development of educators, and assist in the integration of instructional technology into teaching and teacher training. The underlying rationale of IELP-II, though, is primarily economic rather than educational; the program originated in the section of USAID that supports economic reform in Egypt, and its major long-term goal is to better prepare the Egyptian workforce for participation in an export-oriented economy (see discussion in IELP-II, 2000).

IELP's objectives and activities in the area of educational technology were ambitious, and can be roughly divided into two areas: (1) helping to train teachers in the use of technology and (2) helping to train teachers via the use of technology. The former included creating a large professional development program in the use of computers and the Internet in education, and establishing model computer-assisted language learning laboratories within both the Ministry of Education and a university college of education. The latter included conducting a national teacher-training program in English language teaching methodology via interactive videoconferencing. This work was carried out by a team of 9 full-time U.S. and Egyptian staff and several dozen part-time consultants, within the IELP-II office (which itself employed 40 full-time staff and scores of consultants).

IELP-II's principal bilateral partner was the Egyptian Ministry of Education (MOE). The MOE is one of the largest governmental ministries in Egypt, encompassing more than 30,000 primary and secondary schools and all levels of administration and support staff. By many accounts, it is also one of the ministries in most need of reform. Egyptian education is characterized by large class sizes; poorly trained teachers with low

wages and status; and a centralized, test-driven curriculum focusing on rote memorization of unimportant material (Jarrar & Massialas, 1992; Tawila, Lloyd, Bensch, & Wassef, 2000). As a result, children who drop out of elementary school in Egypt have higher earnings than those whose ultimate degree is a high school diploma (Bartsch, 1995).

Like many educational authorities around the world (cf. Selwyn, 2002; Warschauer, 1999), the Ministry has seized on technology as a way to better prepare the workforce for a competitive economy. The Ministry of Education initiated a national plan for the technologization of education in 1994. A special unit within the Ministry, called the Technology Development Center (TDC), was formed shortly thereafter to coordinate the MOE's effort to infuse technology into schools. The goals of this plan and center were to transform Egyptian schooling to improve the nation's economic competitiveness. The TDC explained its mission thusly (Technology Development Center, 1997):

The whole world is undergoing an overwhelming technological revolution in information, electronics, computers, and communication. This revolution will widen the gap between the developed and underdeveloped countries. Those who master science and technology and manage information will survive, those who do not will perish, at least economically. Egypt must race against time so that it can jump on the wagon of the elite of the developed world before it is too late (p. 79).

The Ministry believed this could be accomplished by using new technologies to transform teaching and learning. As the Minister of Education explained (Bahaa El Din, 1997),

This emphasis [on technology] will have a transformative effect on education....The information explosion has changed education from a mode of memorization of a certain amount of knowledge to one in which students are expected to research and apply the knowledge they acquire to various life situations. Education will change from one that focuses on memorization to one that focuses on research, analysis, identification of relationships in the data, and potential application.

Based on these ambitious goals, the Ministry especially welcomed IELP-II's educational technology programs, both because these programs would inject needed funds into technology efforts and also because they would lend the air of U.S. expertise and legitimacy.

Similarly, from USAID's point of view, educational technology was a critical component of the broader IELP-II project. IELP-II was by far the largest U.S.-funded education program in Egypt. By emphasizing technology within it, USAID hoped to help modernize Egyptian schooling while also laying the groundwork for smoother integration of Egypt into a technology-dominated international economy.

## **Results Achieved**

Lofty goals and rhetoric can play a positive role, for example by focusing national attention on an important issue and signaling a commitment to reform and change. And the IELP-II project, and specifically its work on educational technology, did bring about some positive results, particularly through helping develop a network of educators with expertise in use of technology and with a commitment to continue working to reform education with uses of new technology (Warschauer, 2002).

Nevertheless, the project had little impact on achieving institutional reform within the main partner institutions, either the Ministry of Education or the Egyptian colleges of education. By the end of the project, no set of schools or colleges (or, indeed, any individual school or college) was supporting educational use of computers in any systematic way, with the partial exception of one particular college where an expensive computer laboratory had been installed (see discussion below). Rather, initiatives in the use of educational technology were in the hands of individual teachers and their professional associations. Instructors who actually tried to make use of computers in the classroom generally faced serious obstacles and, often, resistance.

Analysis of the IELP-II's main educational technology programs indicated a common underlying pattern that contributed to this result. In each program, an emphasis on Westernization and showcase technology took precedence over actual educational improvement and reform. To illustrate this, I will discuss each of the three main educational technology projects: (a) Computers in English Language Teaching, (b) Model Computer Laboratories, and (c) Interactive Videoconferencing.

### **Computers in English Language Teaching**

The centerpiece IELP-II program in education technology was called Computers in English Language Teaching (CELT). Its goal was, through professional development, to help develop a cadre of English language educators in Egypt with sufficient expertise in educational technology to provide sustainable, ongoing professional leadership in this area beyond the limited duration of IELP-II. This was to be accomplished through intensive training of a few hundred educators, who would then be involved in passing on their training and expertise to teachers in their schools, universities, and districts. Several

million dollars was spent on the CELT program, mostly for U.S.-based training. Though the program did contribute to the development of a network of educators with experience and knowledge of educational technology (Warschauer, 2002), the participants' ability to put into practice what they learned was limited.

One of the flaws with the program was that most of the money was earmarked to be used for training in the U.S. This U.S.-based training consisted of 3-4 weeks of instruction in a specially developed program at a U.S. university. These training sessions cost upwards of \$5000 per participant, and thus made use of funds that could have been spent to train much larger numbers of teachers, for longer periods of time, in Egypt. In addition, by bringing teachers outside of their local environment, and training them in institutions with very different levels and uses of technology than they were used to, these U.S.-based programs contradicted one of the most important tenets of inservice training, which is that it should be based as nearly as possible to teachers' own schools and contexts. The Egyptian teachers who traveled to the U.S. on these programs often complained strongly that what they learned was of little relevance to their needs. For example, at a summation meeting in October 1999, following a summer training in the U.S., the returnees unanimously commented that the U.S. trainers knew little about Egyptian conditions and that the software they were exposed to in the U.S. was not available at their institutions in Egypt.

Both the U.S. and Egyptian aid partners had strong motivations for promotion of U.S.-based training programs. In discussions, USAID staff emphasized the value of familiarizing Egyptians with the U.S. way of life as a way of building political and economic ties for the future. They also commented on the political difficulty of getting

aid funding passed in Congress, and the value of economic returns to institutions in Congressional districts (e.g., by providing lucrative contracts to U.S. universities to conduct training) in easing the continued passage of aid funding. It also arose in a number of meetings that the Egyptian Ministry of Education was insistent on including U.S.-based training as a major part of the IELP-II program. Several Egyptian educators told me that the Ministry has long fought a battle with Egyptian fundamentalists for influence in the educational system, and thus has a similar goal of exposing its teachers to the West. In addition, educators told me that the Minister of Education and his key aides increase their influence and control in the Ministry via tight control of resources and privileges that they can distribute to others. For Egyptian educators, the opportunity to travel abroad for training is a highly desirable privilege. Control of these coveted training opportunities helps extend the power of the Minister and his aides. Thus, concentration of training resources on U.S.-based programs, rather than on Egypt-based programs that could have been more valuable and cost-effective, served the interests of both U.S. and Egyptian decision-makers.

Unfortunately, when teachers returned to Egypt from these sessions, they were often discouraged by the Ministry or their local school administrators from putting what they learned into practice. Participants were denied promise release time to train other teachers or to further work on plans to integrate technology into the curriculum. In some cases, computer laboratories were locked and teachers were prevented access. Teachers on email lists frequently discussed these problems, pointing out how technology gatekeepers kept them from even using computers (Warschauer, 2003a). My own visits to schools indicated that multimedia computer laboratories were seldom used at most

locations due to restrictive policies. These kinds of difficulties were so pronounced that they were features in the local press; one article wrote that

Primary School teacher Hasnaa el-Hefnawi is enraged by the decision to introduce the computer science curriculum...The ministry has repeatedly tooted its own horn about how many computers it has supplied to schools. “Doesn’t the minister realize that these computers are kept in school warehouses like antiques or used merely for decoration” she mused (PCs and Teachers, 2000, p. 2)

These kinds of problems are of course not unique to Egypt. In many countries, including the U.S. (Cuban, 1993, 2001; Hodas, 1993), conservative inertia within schools and the broader educational system can hinder the effective use of new technologies. The point is not that these problems could have been completely avoided, but rather than funding priorities—emphasizing expensive but unhelpful training in the U.S. rather than Egypt-based training that could have been closer to the actual school environment and experiences—failed to help the situation. IELP-II training programs in Egypt cost less than 10% per participant of the U.S.-based programs. Conducting more training in Egypt rather than the U.S. would have allowed larger number of participants, including groups from the same school or region, and also could have facilitated incorporation of administrators, and other staff, in the training. This would likely have contributed to better follow-up in terms of actual technology use in schools.

### **Model Computer Laboratories**

A second example is found in a project referred to as Model Computer Laboratories. IELP-II had sub-contracted with USAID to install two model computer laboratories for ongoing teacher training. One of the laboratories was to be installed in

the Ministry of Education for inservice training of school teachers; the second laboratory was to be installed in a college of education for pre-service training of future teachers.

According to IELP-II and USAID plans, these were to be state-of-the-art laboratories with 25 to 50 high-end computers each and with peripherals such as printers, video projector, and scanners and with the most advanced (and therefore expensive) commercial U.S. software. When questions were raised in IELP-II meetings about the appropriateness of such an expensive set-up as a model, in a country where no public schools could afford such software, project directors insisted that a state-of-the-art laboratory was essential, since it would be a showcase project for the Middle East (and indeed, the launching of the lab at the Ministry is highlighted on the USAID Website; United States Agency for International Development, 2002)

The effort to install the laboratories was prolonged and unproductive. First, the resources offered were so out of proportion to what currently existed in Egyptian educational institutions that the very possibility of the laboratories set off infighting within the Egyptian ministry and college as to who would control the labs and their resources. It thus took more than a year of negotiations just to agree on the appropriate recipients. In addition, in order to ensure sustainability, IELP-II and USAID insisted that the Egyptian institutions be able to handle all ongoing costs (other than computer repair, which was covered by purchase contract), including those for lab administration, technical support, maintaining of local area network, and Internet access.

This seemingly reasonable proposal ignored the fact that the total cost of ownership of computer systems is far greater than the initial expenditure of purchase prices (Warschauer, 2003c) and that Egyptian governmental educational institutions

lacked the resources to cover such costs. IELP-II's demand that these costs be assumed locally, and in support of a narrow sub-sets of teachers (i.e., English language educators), served to further the infighting within Egyptian institutions. The Ministry of Education, for example, had difficulty justify devoting large amounts of resources to maintain a state-of-the-art computer laboratory for training English teachers, when funds for providing technology training to teachers in other subject areas were almost non-existent.

As a result of these difficulties, the installation of the laboratories was continually delayed. In the case of the college of education laboratory, the purchased computers sat locked in the IELP-II headquarters for a full year as negotiations continued, thereby losing some one-third of their value to depreciation before the laboratory was even installed in October 2001. After the laboratory was installed, equipment was soon damaged due to predictable power surges, and other management problems kept it closed during scheduled hours. Meanwhile, the Ministry of Education laboratory was finally installed in December 2002, more than three years behind schedule and late enough in the aid project that IELP-II would have relatively little time to support effective use of the laboratory.

Since the installation of the two laboratories finally occurred outside the time period of this particular study, I cannot report on their eventual impact. However, the use of U.S. commercial software in the laboratories, which is not affordable in Egypt, suggests that there may be limitations in their effectiveness as models. A number of Egyptian educators interviewed regarding the project expressed the wish that the funds for the laboratories could have been more disbursed, with smaller and more easily

maintained laboratories set up in multiple institutions selected for their demonstrated commitment to promoting effective and appropriate use of new technologies.

### **Interactive Videoconferencing**

The third major educational technology initiative of IELP-II was a one-week videoconference training program in English teaching methodology for Egyptian teachers. This training program was carried out in 27 videoconference halls belonging to the Ministry of Education and located across the country. Each hall included a multipoint communications system (i.e., any hall could initiate audio-video communications with all the others) as well as an auditorium of 100 or more seats. An average of 40 Egyptian teachers participated at each site, for a total of approximately 1000 trainees per weeklong session, with instruction delivered by university professors from the Ministry of Education building in Cairo.

During the initial videoconference workshop, it quickly became clear that the technology was not appropriate for the purpose. The sound quality was relatively poor, and much else of the communicative content was lost over the audio-visual system, as compared, for example, to what could have been communicated in a face-to-face context (see discussion of face-to-face vs. distance-communication in Warschauer, 2003c). Many of the Egyptian English teachers, who tend to have limited or moderate English language skills, had difficulty following the videoconference presentations. The only way to make the training work at all was to involve 2-3 facilitators at each of the 27 sites, who could help lead discussions and make sure that content was communicated. That being the case, and since the facilitators were themselves trained English-language teacher supervisors in the Ministry of Education, it may well have been more effective to

bypass the videoconference system altogether and simply hold a series of locally based trainings. However, the use of the videoconference system was specified in the USAID contract to IELP-II, and the videoconferences thus had to go on if IELP-II was to receive its allocated funding. This was also in the interest of the Ministry of Education, since the videoconference system had important showcase value for the Ministry; it represented one of the more advanced videoconference systems in education in the region and was frequently touted by Ministry officials in the press.

The IELP-II staff and Egyptian educators involved in the program used the resources to the best of their ability, and the program did improve year-by-year (Warschauer, 2002), even though it may not have represented the most effective or appropriate use of resources. The program was further hindered, though, by additional demands placed during the second year. At that time, Egyptian officials in the Ministry of Education exerted strong pressure that a live U.S.-Egypt videoconference be included within the program. In this manner, educators from a U.S. university would be allowed to address the Egyptian participants directly from an overseas connection. The international connection for the videoconference, however, would cost some \$30,000, a good deal more than the cost of flying the three U.S. educators to Egypt and allowing them to meet with Egyptian teachers in person (including both travel costs and consultant fees). At the same time, technical and sound difficulties were predictable, and the sheer time and effort involved in organizing the international videoconference would detract from the broader training goals. For all these reasons, the educators involved in managing the videoconference program (IELP-II staff and consultants, including both Americans and Egyptians) argued strongly against including the overseas session.

However, they were overruled by top IELP-II and Ministry officials, both of whom insisted it go on. In the end, the session included little educational content and was severely hampered by technical difficulties, but it did serve the U.S.-Egyptian goal of highlighting international links, and was later featured in reports by both the Ministry and IELP-II.

In summary, the three main IELP-II projects all were marked by an emphasis on Westernization, through bringing Egyptian teachers to the U.S., showcasing U.S. technology in Egypt, or building technology-enhanced communication between Egyptian and American institutions. In a broader sense, the devotion of such considerable resources exclusively to the teaching of English, while ignoring the broader subjects taught in Egyptian schools and universities, is further evidence of the central element of Westernization in the project. It is of course not surprising that the U.S. would seek to use its aid to strengthen its ties and influence, as that is an implicit or explicit goal of donor countries' aid projects throughout the world. The larger concern is when the focus on building of ties and influence becomes so predominate that it detracts from the educational value of the projects involved, as appeared to be the case in the programs described above.

### **Grassroots Efforts**

Finally, it is worth discussing the efforts that Egyptian grassroots educators took to try to assert their own perspective into these programs. This took two forms. First, they put forward their own needs interests within the IELP-II programs as best they could, for example, by speaking out frequently on the need for training content to match their own local circumstances.

Secondly, they developed their own educational technology initiatives outside the control of either IELP-II or the Ministry of Education. These tended to involve relatively simple uses of new technologies that could be used in teacher-controlled ways. For example, a group of Egyptian teachers who had participated in IELP-II training began their own e-mail list to discuss issues related to technology and English language teaching. Teachers used the list to air their frustrations with the constraints they face in using new technologies, or in other educational matters, and discuss possible solutions. Educators also use this list to discuss political events in the region and how they could best be introduced in the classroom. These discussions often take on a decidedly anti-Western tone, with participants sharply critiquing U.S. policy while analyzing how teachers and students can use new technologies to investigate on their own what is occurring in the region.

In addition, teachers organize a technology fair called the “Electronic Oasis” at the annual English teachers conference, where most of the presentations focus on the basic needs of Egyptian students and teachers, such as how to get a free e-mail account, how to make use of the Web, or how to teach in the one-computer classroom. For example, at the December 2003 conference, a total of 56 presentations, each 45 minutes in length, were made at the Electronic Oasis, on topics such as “Using Clipart in Making Handouts,” “Creating EZ Materials Using Internet Search Engines,” and “Experiencing WebCT.”

Though the e-mail list and Electronic Oasis are supported by individuals within IELP-II and the Ministry of Education, they were never part of the contractual agreement between the two partners, nor did they receive (or require) the types of funding or

institutional support that the earlier-mentioned programs received. And, in some cases, they took place against opposition; for example, many teachers were forbidden leave of absence from their schools to present at or attend the Electronic Oasis. Through efforts such as these, teachers who were previously active in IELP-II programs, such as the Computers in English Language Teaching training program, try to assert their influence over the future of educational technology in Egypt.

The tension between grassroots teachers and bureaucratic decision-makers took on an important gender element as well, with most of the bureaucrats involved being male, and the teachers being disproportionately female. This corresponds to male-female power differentials that often shape the design and use of educational technology in other contexts (see, for example, Apple & Jungck, 1998; Bryson & de Castell, 1998a). In this particular project, this tension was most strongly noted in the plans for the college of education computer lab, in which overriding power in the lab would be placed in the hands of a single male administrator even though all 13 faculty members in the relevant department were female. These female faculty mobilized their energies to try to promote their own perspectives, including by starting their own e-mail list to discuss their ideas for the laboratory.

Of course it should not be concluded that all USAID and Ministry of Education staff were “bad” and all grassroots teachers were “good.” For example, both the first e-mail list mentioned above and the Electronic Oasis were originally suggested by an American working for IELP-II. And similarly, there were certainly grassroots teachers that at one time or another enthusiastically portrayed initiatives that turned out to be more focused on show than on substance. However, the broader point still remains: the two

main aid partners tended to support initiatives focusing on Westernization, while the teachers involved worked for more local control of appropriate technologies.

Similarly, I am not suggesting that Westernization is inimical to educational reform. Egypt certainly has much to learn from countries in the West as well as from those in the East and the South. However, Westernization is not a substitute for educational or social reform. And indeed, in many ways Egypt has more to learn from other developing or recently-developed countries--where the socio-economic challenges are more similar to their own—than it does from the U.S., which faces a very different set of challenges. Unfortunately, though, due to USAID policy constraints, no funding was allowed to send Egyptian educators to countries other than the U.S. For example, on one occasion an IELP-II staff member requested that project funding be used to send an Egyptian administrator, who would be director of the computer laboratory at the college of education, to visit a very successful educational computer laboratory at a university in a nearby Arab country. The request was denied since USAID funds could only be used for external trips to the U.S., not to other countries.

## **Conclusion**

In *Critical Theory of Technology*, Feenberg (1991) argues that technology is not a thing in the ordinary sense of the word, but rather an ambivalent process of development suspended between possibilities. This ambivalence, asserts Feenberg, is “distinguished from neutrality by the role it assigns in the design, not merely the use, of technical systems” (p. 14). Feenberg argues that the degradation of labor, education, and the environment is rooted not in technology per se but in the antidemocratic values that too often permeate technological development.

Feenberg's concepts provide a useful lens for examining this donor-funded educational technology program in Egypt. The non-neutrality of technology is witnessed not so much by the end uses, but rather in the design of the technical systems for technological training and delivery. U.S.-based training, showcase computer laboratories, and international videoconferences all exemplified a design based on Westernization rather than on democratic participation.

However, while a particular technical design shapes the outcome of technology use, it does not determine it, hence the ambivalence referred to above. Technology is not a destiny, but "a social battlefield...on which civilizational alternatives are debated and decided" (Feenberg, 1991, p. 14). In this battlefield, the starting points of a new democratic path are to be found "among the subordinated elements of the existing technical systems" (p. 15).

In this particular case, the "subordinated elements" included both neglected actors—specifically, the Egyptian classroom teachers, whose voices are too seldom considered in designing aid projects--as well as the simple but subordinated communication tools such as e-mail discussion lists. As we have seen, these actors attempted to make use of these tools to work for a more democratic alternative.

The long-term impact of the aid project described in this paper is not yet known. However, the formative years of the program featured both a Westernization-based design promoted by U.S. and Egyptian bureaucrats as well as bottoms-up initiatives supported by Egyptian teachers. This is yet another exemplification of how differential power relations, by class, nationality, language, and gender, are central both to the design

of educational technology projects and to the struggle to make these projects more democratic.

## Notes

<sup>1</sup> Determinist approaches are alternatively referred to as substantive approaches or autonomous approaches (see, for example, the work of Ellul, 1980 or ). Instrumental approaches are alternatively referred to as neutralist approaches and are often backed by technologists; see discussion in Shallis (1984).

<sup>2</sup> An earlier incarnation, the Integration English Language Program-I, was implemented from 1984-1996.

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