Case Study

Morocco

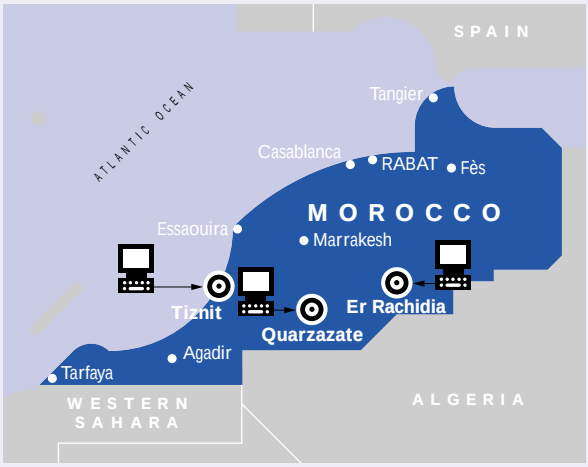
Modernizing Teacher Training

Houcine Haichour
Houcine Haichour was Technical Advisor to CATT-PILOTE, Rabat, Morocco.

Over the last couple of years, teacher training colleges in developing countries have begun investing in information and communication technologies (ICTs) as a means for improving pre- and in-service teacher training. While research documenting the nature and impact of these initiatives in many regions of the world is increasingly available, little is known about the use of ICTs in teacher training settings in any of the countries of the Middle East and North Africa (MENA) region.

This paper is designed to help fill that gap. A case study of a USAID-funded educational technology intervention, the Computer-Assisted Teacher Training (CATT) project sought to harness the power of ICTs to accompany the government of Morocco's efforts to improve the quality of public education in the most impoverished rural areas of the country.

According to an external evaluation, CATT was an exemplary activity able to meet the high expectations of its different partners (Dahbi, 2001). With its innovative design, participatory mechanisms, and the quality of outputs it managed to deliver, CATT demonstrated that an activity designed in a bottom-up, participatory manner can achieve significant development results. This is the story of how a small project with a short implementation time and modest budget, in a country with scarce resources, achieved those results.


SPAIN
ATLANTIC OCEAN
Tangier
Casablanca
RABAT
Fès
MOROCCO
Essaouira
Marrakesh
Tiznit
Quarzazate
Er Rachidia
Agadir
Tarfaya
WESTERN SAHARA
ALGERIA

Morocco: Country context

Morocco is a country of striking social disparities. Though classified as a middle income country, with a population approaching 30 million and a per capita income of only $1,250 in 1999, its poverty indicators are closer to those of low income than comparable middle income countries. Poverty in Morocco cuts across the rural-urban and gender divides, with rural women the most affected segment of the population.

In the 1990s, 19 per cent of the total Moroccan population lived on less than one dollar per day, while another 45 per cent was vulnerable to poverty during periods of drought. The incidence of poverty among the rural population is particularly acute: in 1998-99 more than one fourth of the population living in the rural areas was poor, compared to one tenth in urban areas. In 2000, only 42 per cent of the population in rural areas had access to safe water, and only 45 per cent of villages had electricity. In 1997, maternal mortality was 307 per 100, 000 births in rural areas compared to 125 in towns and cities.

Despite significant spending on education (6% of GDP), both quality and coverage remain weak. Illiteracy in the country is very high (52 percent), especially among rural women. Seventy-five per cent of rural girls aged 15-24 are illiterate compared to 23 percent in urban areas. Similarly, although school enrollment is increasing, 2.5 million children, a majority of them rural girls, still do not attend school. Quality is also an issue as evidenced by poor retention rates at schools: 25 per cent of children drop out before 5th grade, and only 10 per cent make it to the 11th grade.

Priorities of the New King

To address these serious social challenges, Morocco embarked on a process of unprecedented political, economic, and social reforms. These reforms gained momentum with the ascension to the throne in July 1999 of a new king, Mohammed VI, after the death of his father Hassan II. The new king projected the image of a modest monarch close to the people, which has earned him the title of "the king of the poor." Over the last three years, the Monarch has adopted policies to reduce poverty and made gender awareness, access to technology, participation, and governance, development priorities. In addition, the King has emphasized the role of civil society and NGOs as necessary partners in the development process. In light of these political openings, Morocco also has witnessed the rise of the media as a powerful component of the democratization process.

The Education Decade

Mohammed VI declared the ten-year period 1999-2009 to be "the education decade," adopting The Education Charter as the key document guiding the country's initiatives in the education sector during this decade. Formulated by the Royal Commission for Education (COSEF), the charter proposes a set of initiatives to overhaul the educational system, including leveraging the power of information and communication technologies (ICTs) to improve teaching, learning, networking, access to information, and professional development programs in the rural areas of the country.

Guided by the Charter, the Moroccan Ministry of Education developed twelve quality improvement plans including one focused primarily on the roll-out of educational technology. Under Plan 2008: *Un Center-Multimedia-Internet,* all schools would receive computers and connectivity within eight years. The priorities in the first year included the teacher training institutions for primary and secondary education and primary schools of significant size.

Encouraging the Ministry of Education's ICT initiatives is a successful liberalization and privatization policy in the telecommunication sector. The policy triggered a major reduction in communication prices, which led, among other things, to the mushrooming of cyber cafés even in the very smallest towns in the country. Although the number of telephone lines (116 per 1000) and personal computers (21.1 per 1000 people) continues to be low, it is evident that the number of people accessing the Internet through the numerous cyber cafés is high.

USAID Supports Educational Reforms

To accompany Morocco's efforts to improve the quality of education, USAID launched the Computer-Assisted Teacher Training (CATT) Project in 1999.[1] Part of USAID/Morocco's response to the Presidential Internet for Economic Development Initiative (IED), the pilot project initially targeted teacher training colleges *(Centre de Formation d'Instituteurs et d'Instituteurices,* or CFIs) in seven provinces where girls' enrollment is low and retention rates are below the national average. The provinces included Errachidia, Al-Hoceima, Essaouira, Ouarzazate, Sidi Kacem, Taroudant, and Tiznit.

The project's primary objectives were the following:

- Equipping the CFIs with the necessary hardware

http://www.ibtikar.ac.ma

Technical staff

(6 PCs) and software;
- Creating a network of seven CFIs via the Internet;
- Training 70 CFI instructors and 490 student teachers on ICT educational applications; and
- Developing a community web site devoted to pedagogical innovation and experimentation among educators.

By the end of the project, CATT had met all its objectives. It managed to create high quality multimedia centers in the teacher training colleges, develop an integrated technology curriculum, design seven training modules to implement the curriculum, training over 1500 participants (Dahbi, 2001), and develop *Ibtikar* (Arabic for "innovation"), a web site dedicated to pedagogical issues in the country. Above all, the project created a dynamic learning environment that fosters collaboration (Dahbi, 2001, p.26) and critical inquiry (Coupe and Haichour, 2002).

Virtually all the project's stakeholders viewed CATT as a success, including the Moroccan Ministry of Education, which has generalized some of the project's materials and approach to other training institutions in the country.

Learning from Morocco

A number of factors contributed to CATT's success. The following sections discuss the design elements and implementation approaches that worked, as well as the key lessons learned from applying educational technology in a student-centered, low-tech environment.

Participation is Key to Appropriation

CATT was demand-driven. Through participatory mechanisms set up at both the central ministry and the local teacher training college level, CATT was able to respond flexibly to the different needs of its partners. As stakeholders became more involved in the project and familiar with its potential and constraints, they were able to orient it in the direction that best fit their goals for the project. This proved to be essential for the project's ultimate acceptance at both levels.

At the beginning, the general belief among CATT's stakeholders was that educational technology was about equipment. One of the CATT team's primary tasks was to enrich this technology-centered vision by incorporating into it explicit pedagogical and professional development concerns. Requesting the participation of all stakeholders in the process of designing and implementing the project resulted in the creation of two committees: *Commité de Pilotage* and *Commité Pedagogique*. The role of the project team was to provide these committees with information related to educational technology, which it achieved through a variety of means, including
- summarizing relevant educational literature;
- presenting cases of good practice;
- providing information on the implications of the different connectivity options;
- raising issues of certification, maintenance, and sustainability;

- providing input on the design of educational technology needs assessments; and
- presenting frameworks for the integration of educational technology in limited infrastructure environments.

Through these "consciousness-raising" exercises, CATT was able to empower its partners by filling critical knowledge gaps. As CATT's partners grew more knowledgeable about the different facets of educational technology, they were able to orient the project in the direction that best fit their needs. The function of the project was simply to respond to these needs.

Periodic meetings of CATT stakeholders prompted important debates about both CATT and the official educational technology program underway nationwide. Gradually, a consensus started to emerge among all the stakeholders that an integrated vision of educational technology, which included technical, organizational, pedagogic, and professional development components, should provide the basis for the ministry's efforts to generalize the use of ICTs throughout the country.

At the local level, CATT encouraged the formation of informal committees that included instructors, student teachers, and administrators. These committees managed the multimedia centers and provided staff with feedback about issues affecting the project. Knowledgeable about the local realities in their schools, the committees were able to adapt and direct the program to meet their needs. Their engagement in this manner also enabled the local stakeholders to develop a sense of ownership of the project and a commitment to its success.

Without the participation of all stakeholders in the design and implementation of the project, it could not have achieved its widespread success. Engaging stakeholders at all levels ensured their support, their ideas and insights, and their personal stake in the activity. It also helped to solve the inevitable problems that arose during the course of implementation. Participation was key to appropriation.

Power, Gender, and Role Swapping

Given the alarming disparities in the educational opportunities offered to men and women in rural Morocco, specific accommodations were necessary to ensure that women benefited from the CATT project. At the outset, project staff requested that all the core training teams include female instructors and female teacher trainees. Through the online educational technology placement test, project managers were able to monitor the number of females participating in the training in each college. In the early days of the project, more than one third of the project participants were women, and the percentage increased even more as the project reached its second year.

The presence of women on the *"Ibtikar"* team triggered some important disturbances in the power relationships in the teacher training colleges. In some colleges, competent female students assumed the role of lead trainers, whose audience included their own male teachers. In a generally male-dominated teacher centered context, the "ascension" of female students to this position represented a radical shift from the traditions prevalent in these rural areas of the country. According to a male teacher in Ouarzazate, this swapping of roles between female students and their male teachers made him acknowledge the value of his own students' knowledge and rethink his teacher-centered practices in the classroom. Indeed, throughout CATT's lifetime, "disturbances" of this type proved more important for introducing pedagogical changes from teacher-centered pedagogy to a learner-centered pedagogy than any explicit teaching about it.

In some teacher training colleges, women not only proved to be excellent technology trainers, but also excellent managers. In many of these centers, women served as catalysts for the major changes taking place in the institutions. Though they operated in an environment that is generally hostile to women, most were able to turn their multimedia centers into community centers, where both students and members of the community learn. In a country where teacher training colleges have been divorced from the concerns of the community, for women to take the lead on this issue represents an event worthy of headline news.

In some teacher training colleges, women have appropriated the technology to display their own artistic achievements. In Ouarzazate, Nezha Boufki and Karima N'Gadi, two student teachers are using their school web site as a "cyber gallery" to display their own paintings. In a town where galleries are non-existent and where the women artists are invisible, the Web is offering these student teachers a new space for asserting themselves and, hopefully, gaining financial rewards in the future.

Zaina Amagour, a student teacher (second from left)

Box 1 Profile: Latifa Amlal

Latifa Amlal is a young trainee in the teacher training college in Ouarzazate. Like most of the female student teachers in the region, Latifa comes from a conservative family. During her years at a technical high school, she acquired relatively advanced computer skills, which earned her the respect of her teachers and peers alike. Accordingly, she was selected to be a core member of the Ibtikar team when she joined the college in Ouarzazate. For the first time in her life, she was invited to participate in a training workshop in the remote city of Rabat. Her presence as a full member of the core Ibtikar team, on a par with her own teachers, was a source of pride for the shy, young student. In a very short period of time, Latifa was able to train over 50 students and teachers in the college. Moreover, through CATT, she was able to combine the pedagogical training she was receiving in the college with her computer skills to assert herself as an excellent teacher.

Box 2 Profile: Zaina Amagour

Zaina Amagour is a young Berber woman from the small, conservative town of Tiznit, located in the south of Morocco. When she was recruited by the project to serve as a full-time technology advisor, Zaina had no management experience; nor had she served as a technology trainer for large audiences. After a quick acculturation process in the teacher training college, Zaina was able to negotiate the power relationships with the experienced administrative and teaching staff at the college. Thanks to her strong personality and excellent communication skills, she quickly asserted herself as a valuable resource person. Zaina participated actively in running the multimedia center: she was able to set up flexible schedules for the students and teachers, accommodate the CATT project to the local realities, design and develop a web site for the college, and train scores of students and teachers. On her own initiative, Zaina led an information campaign in her community about the services of her multimedia center. She succeeded in convincing the pharmacists in her town of the importance of signing up for the technology training classes she was offering. As a result, non-teaching members of the community were able to use the teacher training college, for the first time, for professional development purposes.

Student Teachers as Technology Champions

One of the major factors contributing to CATT's success was that it tapped into the competencies of all its stakeholders, including the very young student body in the teacher training colleges. Despite an official discourse that emphasizes the role of the youth in development, the official pedagogical interventions in these teacher training colleges generally had focused on the instructors. CATT adopted a different approach. At the outset, project staff requested the inclusion of student teachers in all the core training teams in all the training colleges. The goal was to demonstrate to the Ministry of Education that the teacher trainees are valuable assets, who could help expedite the introduction of technology in remote regions—without the need for costly computer training firms. In a country with limited financial resources, this option could prove to be highly cost effective. Moreover, by encouraging students to be members of the core teams, the project also hoped to nurture a new culture in the colleges that values students' competencies and skills.

Box 3 Profile: Said El Haj

Said El Haj is a bright student teacher in the college in Taroudant, a small town in southern Morocco. He represents a generation of young Moroccans who have been exposed to the modern information and communication technologies of cellular phones and satellite television since an early age. When the first privately owned cyber café opened up in his small town, Said was one of the first to visit. His intellectual curiosity led him to embark on an online learning journey through which he was able to master programming languages, web publishing tools, databases, and other hardware and software programs.

When Said joined the training workshop, he served more as a trainer than a trainee. He mastered the CATT curriculum and approach quickly and organized many training workshops for his teachers and peers, which won him the respect of all. In his spare time, Said also developed a program to catalog electronically books in the college library.

Upon graduation, Said was not appointed to a remote area in the countryside to teach. Instead, in recognition of his extraordinary talents, the college appointed him to head the multimedia center in which he had performed so well as a student.

The experience proved very rewarding. Not only were the students able to adopt the CATT framework very quickly and share it with hundreds of others in the teacher training colleges, but they also were able to position themselves as valuable resources that even the most conservative training institutions cannot ignore.

CATT Speaks Arabic

In Morocco, technology-related trainings have always been conducted in a foreign language, typically French. Accordingly, Arabic-only users generally have been excluded from such trainings. In the primary education sector, which uses Standard Arabic as the language of instruction, the choice of French in technology-related trainings leads to the exclusion of a high number of potential participants. It also introduces a layer of complexity to the educational technology agenda: teachers are trained in French, but, because the educational system is "Arabized," they have to teach their own students in Arabic.

To avoid all these complexities, and to include as many beneficiaries as possible, CATT selected Arabic as the language of instruction. The project team developed project-specific modules in Standard Arabic, localized some of its online communication tools, and provided training in Median Moroccan Arabic (a mixture of the standard Arabic, colloquial Arabic, and French).

The choice of Arabic as the language of instruction proved highly effective. Many of the Arabic-only beneficiaries felt empowered because their ability to master the tool was not hindered by their language. They also felt they were participating dynamically in the construction of an educational discourse in their own language.

The Moroccan Ministry of Education has adopted the CATT training modules and approved them for use in training institutions throughout the country.

The Challenge of Authoring Arabic Ed Tech Materials In-House

The decision to adopt Arabic as the language of instruction immediately brought to the surface a number of serious challenges, the most important of which was the lack of quality educational technology materials in Arabic that the project could appropriate. Because the field is so new, very few published educational technology materials could be found in the country. Instead, the project team attempted to fill this gap by designing and authoring its own materials in-house. The decision received strong backing from all the beneficiaries, but especially from the project partners at the Ministry level, who were in the process of rolling out their country-wide educational technology project but lacked sound Arabic educational technology materials for training.

Box 4 Profile: Lhassan Sassioui

Lhassan Sassioui is an instructor in the teacher training college in Sidi Kacem, a small town in western Morocco. A very competent Arabic language instructor and researcher, Lhassan has published many articles in the national newspapers on issues relating to the teaching of Arabic.

When Lhassan joined the project, he had little experience using computers and was extremely happy to discover that both the training sessions and the accompanying modules were in Arabic. After participating in a web publishing workshop, Lhassan immediately saw a niche for himself on the World Wide Web and began publishing his Arabic articles online. The new medium has given him access to a readership that may extend through the entire Arabic speaking world—-and also has freed him from the complex process of publishing in national newspapers.

In a relatively short period of time, Lhassan became one of the project's energetic Arabic educational technology champions. His positive experience in harnessing information and communication technology in his native language also has also motivated other students and teachers with similar interests to join the program.

Were it not for the selection of Arabic as the language of instruction, hundreds of other beneficiaries might have been excluded from the program.

For this challenging undertaking to succeed, three considerations were paramount. First, the beneficiaries themselves had to be involved in the process of developing the materials by providing feedback about draft versions, helping to coin new educational technology terms, and testing the draft versions with their own students. Without the participation of the beneficiaries in this process, the effectiveness of the materials could not be realized. Second, the materials had to be written in very simple language, using paraphrasing strategies, for example, to present otherwise arcane terms and to "popularize" the educational technology discourse. The project broke with a general practice among authors of Arabic educational materials that tend to use pedantic language and a didactic approach when presenting scientific information to a learning audience. Third, the design of the materials had to be based on a model that the teachers themselves could appropriate to produce learning materials for their own purposes. To achieve these objectives, the project team adopted a task-based framework for the design of its materials.

All beneficiaries expressed enthusiastic acceptance of the draft and final versions of the materials, and project partners—including the external evaluator—praised the structure, subject matter, and language used. At the end of the project, the Ministry of Education adopted the modules for use throughout the country, requesting 1,000 copies to get started.

The lesson from this experience is important. The Moroccan Ministry of Education has an army of talented educators who could be involved in generalizing educational technology in the country. Indeed their input to the development of educational technology materials is invaluable. To mobilize this teaching force, the ministry needs to put in place a system of incentives to encourage hard work and shift its working style from a top-down to a more bottom-up participatory style.

Learning From Others — The Value of Study Tours

An important lesson emerging from the CATT experience is that exposing policy makers and education managers to other countries' experiences

Box 5 Profile: Haji Ahmed Bouneaamani

Hajj Ahmed Bouneaamani is the director of the Sidi Kacem teacher training college. When the CATT project began, he was just three years from retirement. Hajj Bouneaamani had witnessed his center undergoing many changes over the years, but none as important as those triggered by the introduction of educational technology. His first experience with it occurred during the US study tour during the summer of 2000. Armed with a video camera, Hajj Bouneaamani video-taped all the details of his study tour, including the "non-hierarchical "sitting arrangements he observed in many of the U.S schools.

Upon returning to Morocco, Hajj Bouneaamani shared his tape with his staff and students. He also enthusiastically prefaced each educational technology workshop organized in his school with a short introduction in which he emphasized the importance of educational technology for development. On many occasions, the director would sit through the whole workshop with the core team in the same "non-hierarchical"seating arrangement he had observed in the U.S. His enthusiasm for the project also led him to participate in the online debates and offer valuable input to questions relating to educational technology applications.

Hajj Bouneaamani's belief in the value of educational technology prompted him to make some courageous decisions. For example, he decided, against the prevailing regulations, to extend the working hours of his multimedia center so that it would be open during lunch time, late at night, and on Saturday afternoons. As a result, hundreds of additional students benefited from the CATT training program. He also opened the multimedia center for site visits from the local high school teachers and students so they could get first-hand experience with technology. Hajj Bouneaamani's study tour in the U.S proved to be a transformational experience indeed!

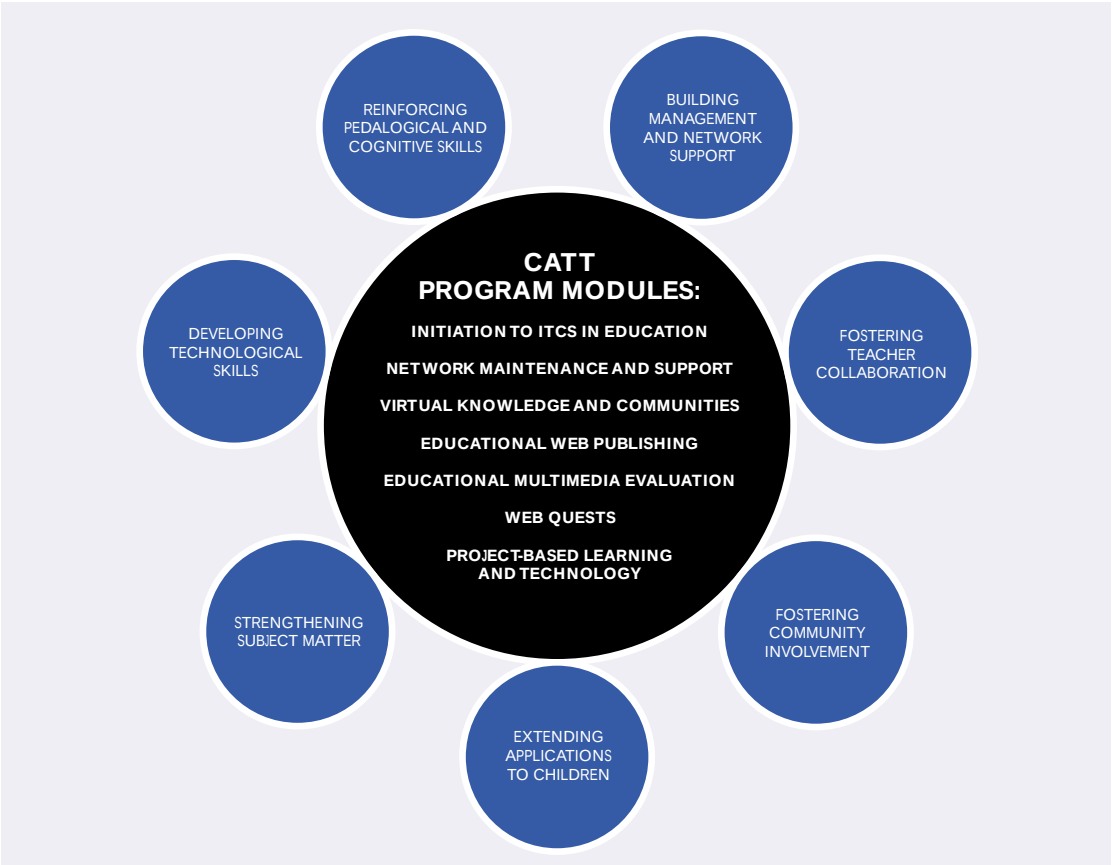
in educational technology can prove extremely valuable. In the summer of 2000, USAID and the Morocco Education for Girls Project provided CATT with funding for a study tour to the United States for the directors of coordination, rural education, training, curricula and planning, as well as for seven directors of the participating teacher training colleges. This provided CATT the opportunity to develop an introductory program covering education technology issues in the United States. In addition to meeting with senior consultants who provided general overviews, CATT participants joined junior consultants who enabled hands-on introductions to technology and practitioners working in education technology at public and private institutions who had experience developing and managing educational technology programs at the county and school level.

The visit influenced the project in several important ways. In addition to deepening trust with the project management, it also enriched the stakeholders' vision of educational technology. At the central ministry level, the trip triggered heated debate about the need to develop a comprehensive approach to educational technology, including planning, professional development, pedagogy, and decentralization, etc. At the local level, the training college directors developed a feel for learner-centered education, multi-cultural education, and the constructivist use of technology from the perspectives of the U.S. administrators, teachers, and students. The experience was transforming for many directors. In fact, upon returning to Morocco the directors worked actively to create the conditions for launching the project in their schools, vying to get them connected to the Internet. Thanks to the study tour, many directors were motivated to make some bold decisions, such as extending the working hours of the multimedia centers to accommodate the high demand on technologies. In a country where, traditionally, change is slow and difficult, the directors' willingness to challenge the central Ministry's mandates represents a courageous undertaking indeed.

Fusion of Pedagogy and Technology

CATT demonstrated that the development of technology skills and pedagogical approaches need not

Figure 1 **National Education Charter**



be perceived as separate processes. In fact, in a country where pedagogic reforms have been extremely difficult and costly to realize, technology served to create an enabling environment for demonstrating key components of the reforms. Throughout the project, pedagogy played a prominent role in the process of introducing different ICT tools.

The CATT team designed and developed an original educational technology curriculum that was well aligned with the National Education Charter, recommending, among other things, employing a learner-centered pedagogy, involving the community in education, improving subject matter competencies, and developing life-long learning skills.

The CATT program consists of seven major modules:

- Initiation to ICTs in education;
- Network maintenance and support;
- Virtual knowledge networks;
- Educational web publishing;
- Educational multimedia evaluation;
- Web Quests; and
- Project-based learning and technology.

Each of these modules wove together multiple objectives representing the major recommendations of the National Education Charter.

The framework offered multiple lenses for embedding educational technology into the general context of the classroom, the community, and the country. During each workshop, students were challenged to think about how ICTs could support different aspects of educational reforms, such as community involvement and decentralization, the importance of knowledge sharing and collaboration with colleagues, how different ICT tools could help strengthen subject matter competence, ways in which technology could be used with small children, and the importance of sound instructional design. With respect to pedagogy, the workshops encouraged the participants to think about constructivism, to which they had already been introduced in the past, and how it could be enhanced by technology.

The exercise proved highly effective because it helped link the new information introduced in each workshop to the students' background knowledge. It also helped shift discussion from an emphasis on technology to pedagogical approaches, applications, implications, and reform.

As the participants' technical competencies improved by the second year, so did their critical skills in other dimensions, such as their ability to link the tools to pedagogy, understanding the role of the community in particular instructional designs, and the importance of collaboration and sharing.

The final module of the training program represented the culminating experience of the students' multidimensional training. In this module, participants were introduced to project-based designs and challenged to use the different type of skills they developed in previous workshops to design and implement their own projects.

The uniqueness of CATT was that never, during any training workshop, was technology divorced from pedagogical and societal linkages. This enabled all participants—including the technologically challenged—to work on familiar ground. It also enabled them to embrace not just the CATT project but the whole educational reform agenda.

Isn't Educational Technology About CD-ROMs?

When CATT was launched, there was a general perception among some of the stakeholders that the project would end when it had put all the necessary equipment in place, provided some basic training on productivity tools, and purchased for all the teacher training colleges enough copies of off-the-shelf educational computer applications, such as CD-ROMs. In fact, this also was the general expectation for the Education Charter's Plan 2008, too. As a result, many multimedia production companies, lured by the market, started approaching the Moroccan Ministry of Education for the production of educational software to cure all the ills of the educational system.

CATT embraced a different approach. While the project team recognized the value of well-designed educational CD-ROMs, they were concerned about narrowing the educational technology options. Would they suit the local realities of the teacher training colleges, the language of instruction, the objectives of the curriculum, the learning style of the learners, and the financial resources of the ministry? The team also was unclear about how this approach could contribute to building local capacity in educational technology. Nor did the team understand how it could be aligned with the

recommendations of the Education Charter, which stressed the need to leverage ICTs to improve teaching, learning, networking, access to information, and professional development programs in rural areas of the country.

CATT offered to work with its partners to develop an educational technology program that was user-based, cost efficient, innovative, and responsive to the Education Charter's recommendations. Among other things, CATT offered to work with teachers to design innovative learning experiences, provide flexible models for the use of digital information in the classroom, create and support knowledge networks among all the teachers, nurture critical inquiry, and incorporate a gender awareness into the design and development of the training program.

When CATT staff presented the approach during the first workshop, it created a great deal of enthusiasm among the participants. Many saw the link between the Education Charter and CATT to have valuable potential for improving educational practices in their teacher training colleges. Perhaps it was this perception of the link between the pilot project and wider educational reforms that motivated the participants to embrace the project so enthusiastically, even when connectivity was delayed and all they had to work with were software programs.

In fact, though delays in the online connections were unplanned, unexpected benefits may have accrued from introducing participants to the Internet slowly, after they had mastered programs such as Word, Access, and PowerPoint. For the most part, participants' experience with computers prior to CATT had been limited if not nonexistent. Moving slowly from one software program to another, gaining in familiarity and confidence with a variety of "productivity tools," participants may have been better prepared "psychologically" for the online experience.

Nevertheless, when the first teacher training college, in Sidi Kacem, was connected to the Internet, the participants' enthusiasm for the project grew even greater, surpassed only by the excitement generated when all the centers were connected to a virtual network and the participants were able to communicate together.

When the project team demonstrated to the officials of the Moroccan Ministry of Education how the distant teacher training colleges were using ICTs to communicate among themselves—through chat rooms and bulletin boards, for example—their reaction was highly positive. The question on the table was no longer CD-ROMs versus capacity building through instructional design and communication, but how the CATT project could be extended for more years so that all Morocco could benefit from it!

Looking Ahead

In August 2000, an event of great relevance to the future of education in Morocco occurred. Catching many observers by surprise, King Mohammed VI, in his capacity as the supreme religious authority in the country, decided to open mosques to provide literacy classes to the population. The King announced that male and female teachers would be hired from the pool of unemployed university graduates and that the government would supply the necessary manuals, schoolbooks and other equipment to implement the program. The King's initiative was highly significant, showing his intention to mobilize whatever resources were available, including mosques, to overcome one of the serious challenges facing the country. Mosques are community institutions. Traditionally, they have been associated with religious practices, but they need not be limited to this function. They could be used as well as mechanisms for disseminating education and lifelong learning opportunities in the community.

While this innovation is not directly related to the CATT project, it is yet more evidence of the commitment to educational reform underway in Morocco. The success of the CATT project also demonstrates a buy-in at the highest levels of the country to both widespread reform and ICT expansion. Morocco has all the ingredients for leveraging the power of ICTs for development: a sound ICT policy, a competitive telecommunication market, a generally positive political environment, and a strong backing from the King. It is hoped that the CATT experience will help the decentralization process move quickly so that the full potential of ICTs for education and development may be realized.

Bibliography

Coupe, J., and **Haichour, E.** (2002). Rethinking Technology Pathways: Morocco's CATT-PILOTE Teacher Training Project. Techknologia, v.16. Available Online

Dahbi, M. (2001). Evaluation Report of CATT. Unpublished Document

Footnotes

[1] The Morocco activity is part of a seven-year Indefinite Quantities Contract (No. HNE-I-00-96-00018-00) of the US Agency for International Development (USAID). It was funded by the USAID Bureau of Economic Growth, Agriculture, and Trade (EGAT) and Office of Energy and Information Technology (EIT), and other USAID Bureaus, offices, and missions. It was operated by the Academy for Educational Development.