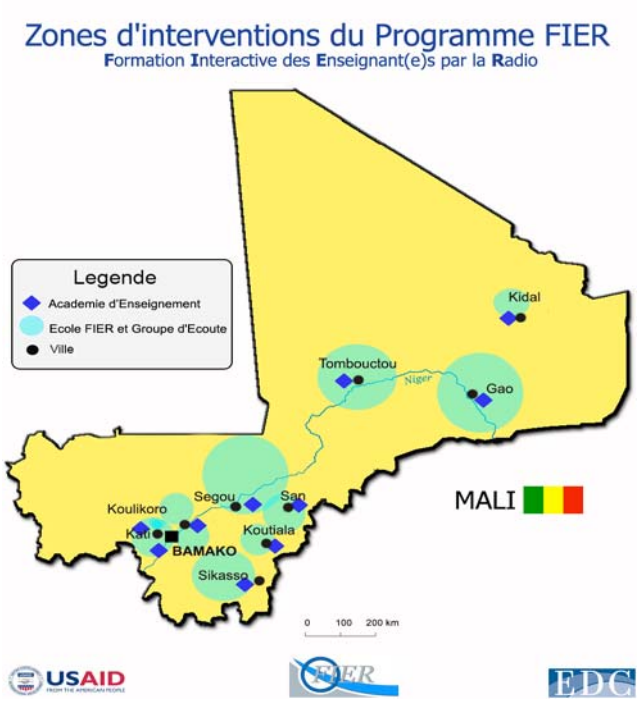
Ministère de l'Education
de l'Alphabétisation,
et des Langues Nationales

The Teacher Training via Radio Program

Formation Interactive des Enseignants par la Radio (FIER)



Final Report
May, 2010

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ABBREVIATIONS

ACDI: Agence Canadienne pour le Développement International/Canadian Development Agency

CNE: Centre National pour l'Education/ National Center for Education

CVF: Centre Virtuel de Formation des Maîtres/Virtual Training Center

FIER: Formation Interacive des Enseignants par la Radio/Teacher Training via Radio

IFM: Institut de Formation des Maitres/Teacher Training Institute

IR: Intermediate Result

PAMOEFE:

PRODEC: Programme Decennal en Education/10-year Plan in Education

TTvR: Teacher Training via Radio

USAID: United States Agency for International Development/Agence Americaine pour le Developpement International

VTC: Virtual Training Center

I) Introduction

In 1998, the Republic of Mali, in consultation with the donor community in education, developed its 10-year program for education reform, commonly known as the "PRODEC," to serve as the guiding document for all actors working in the country to expand and improve basic education. One of the most innovative programs of its type, PRODEC called for the establishment of a 9-year basic education cycle, for the institution of bilingual teaching (mother tongue to French) in all of Mali's primary schools, for the decentralization of education financing and teacher management, and for an overhaul of both pre-service and in-service training for the country's teachers. Donors and their dependent agencies were asked to align their work with the vision described in PRODEC, in the hopes of creating synergy among the multiple sector actors.

During the period from the mid-1990's to 2007, USAID aligned its assistance in several areas key to PRODEC's success: a) teacher training, b) curricular reform, c) parental participation in education, and d) deconcentration of educational decision-making and finances. US assistance to the sector focused on providing technical assistance to the ministry of education's implementing departments in these areas, rather than providing financing directly to the basket funding mechanisms that all other bi-lateral partners supported.

The ***Teacher Training via Radio (TTvR)*** project, funded from 2004 to 2008 for a total of $4,985,555.00, was a USAID initiative to introduce the use of radio and digital technologies in support of teacher training. As the 6th largest land mass in sub-Saharan Africa, and with populations sparsely spread throughout the Niger River delta and floodplain, Mali had been experiencing difficulty in bringing teachers together on a regular basis to provide pre-service or in-service professional development. Implemented by the Education Development Center, Inc. (EDC), (with participation from the Academy for Educational Development (AED) from 2004 to 2006), the TTvR program was designed as a pilot program to assist the ministry of education to determine what forms of radio-based training and what types of other technological interventions could be the most useful for training teachers without holding face-to-face training events. The program's main objectives were as follows:

- To build the capacity of ministry actors at the central and decentralized levels to create and use technology-based programming for teachers
- To create on-air teacher training broadcasts of various types
- To train teachers to use "virtual training centers" (VTCs) in the pre-service training institutes
- To evaluate the impact of these interventions with the ministry of education in order to assist the ministry to determine which interventions to support in the post 2008 period.

The TTvR program worked to meet these objectives in accordance with the USAID strategic framework. USAID/Mali's strategic framework retained, at the start of the TTvR, as its objective number 7: "The quality of basic education for boys and girls improves in target schools to increase learning outcomes." Specifically, the TTvR program responded to two of the intermediate results in the framework: IR 7.1, "Teachers have received adequate and appropriate training," and IR 7.2 "The system of teacher training is improved."

During the period when USAID transitioned to using an 18-month operational plan approach to program financing, planning, and monitoring, these two IRs were consolidated into a single IR: "Better performing teachers in grades one through six." All of TTvR's activities were structured in order to have a direct impact on the **quality** of teacher training delivered, and all of the program monitoring efforts were designed to measure whether or not any impact at the *teacher* level were being achieved. *TTvR did not budget for or conduct any evaluation or impact analysis related to student performance.*

This final report is organized in seven sections in order to report on the program's achievement of these objectives. After the introduction, a second section presents the program's work in in-service teacher training, which encompasses the creation of different forms of radio-based training for teacher training. The third section discusses the program's work in pre-service teacher training, which focused around installing virtual training centers in 4 of the country's pre-service training institutes and around creating supporting materials to assist teachers and students in those institutes to use them for pedagogical purposes. Each of these sections incorporates the final evaluation data for that branch of the program's work, as a means of summarizing what the final ministry evaluation of that element of program work determined about the technological inputs in that domain. Section four focuses on

monitoring and evaluation, including roadblocks encountered during program implementation and the solutions that the TTvR program team proposed. Section five focuses on ministerial cooperation and coordination, section six on lessons learned and section seven on presenting recommendations and conclusions based on all of the above. It is our hope that this final section will enhance the design of programs implemented by other contractors in the future.

II) In-Service Training

Although Mali's education sector reform documents (PRODEC, the loi d'orientation en education, etc.) had specifically stated that the country desired to use radio for teacher training, the TTvR program was the first USAID/ ministry of education program that sought to make teacher training via radio a reality. The TTvR program's activities in in-service training focused on training two different types of radio-scriptwriting teams: a) a team in Bamako (known as the national team) drawn from staff of the ministry of education at the Bamako level, and b) "regional" teams, made up of personnel from the district and regional offices of education in various zones around the country. The underlying premise of this technical design was that the national team would produce programming on core topics and content that all teachers and/or supervisors needed to master, while the regional teams would produce programs to address training needs in their particular regions.

The in-service training component of the program began in mid-2004, when EDC hosted a training event for 20 ministry staff in Kati on the basic components of writing for educational radio. The training topics at that event included:

- The steps in the process for producing an educational radio program
- Identifying appropriate content for radio from a standard curriculum
- Creating characters and storyline
- Conventions for scriptwriting
- Conducting pilot tests of material produced
- Finalizing programming and preparing various audiences to use it

From this training, a core team of 6 members of the ministry were selected to work on producing the programming that was to be used broadly across the country.

After technical discussions with the ministry and with USAID, it was determined that the national team would write two radio series: "Tam Tam pour les Encadreurs" (Tam Tam for Supervisors) and "Sur la Route de l'Ecole" (On the Road to School). While the Tam Tam for Supervisors series was designed for listening groups of adults (i.e. a group of adults that would listen to the programming together and work together based on its content), the "On the Road to School" series was designed as a series of model lessons for teachers to use in classrooms during school time with their students. Because key program interlocutors from the Malian ministry of education felt strongly that all the programs under TTvR should focus almost entirely on **teacher training** , the program teams stopped short of calling the "On the Road to School" series Interactive Radio Instruction (IRI); nonetheless, the series relied upon several well-known IRI techniques and functioned as an IRI lesson would in the classroom.

IIa. The Tam Tam for Supervisors Series

The Tam Tam for Supervisors series included 30 programs, covering topics from clinical supervision in the classroom to professional conduct as a supervisor to specialized topics such as environmental education. To create the programming, the teams relied upon various documents and training modules from the ministry of education, using this background material as "grist for the mill" in creating the scripts. The writers chose a format that included an introductory, fictitious scene on the topic of the day (i.e. two supervisors talking about what to do to help a teacher who could not properly formatively evaluate his/her students), an interview with an educational authority from the Malian system (i.e. a district office head or a representative of the central ministry offices), a song, an "information flash" that could provide updates on legal provisions or other topics of interest governing the education sector, and a question and answer session that would enable the listeners to test their mastery of the content covered in the program. The writing teams prepared a listeners' guide to accompany the programs that could help listening groups focus their discussions and learning around the program's content.

In August of 2005, the program trained 2 CPs from each of the country's 70 district offices, called CAPs, on the use of the supervisor radio programming. During this training, trainees had the opportunity to understand how the programming was structured and how it could be used in a group listening session. Trainees received a guide, and each CAP was requested to put in place a main facilitator whose job it would be to guide the listening sessions for the participants.

Thanks to a broadcast contract put in place with Mali's national radio station (the "Office de Radio et de Television Malienne, or ORTM), the broadcasts were aired once per week throughout the 2005-2006 school year. Listenership during the academic year was moderately enthusiastic. With "regularly" defined as listening to between 3 or 4 programs a month, program monitoring data indicated that between 40 and 50 percent of the supervisor listening groups were "regularly" following the program. Groups that had trouble following the programming cited difficulties such as: a) the high mobility of personnel in the CAPs which made it difficult for them to always meet together at a specific time to follow the programming, b) sudden changes in the broadcast schedule from the ORTM in Bamako, which made it impossible for listeners in CAPs to follow the programming according to the pre-determined schedule, c) the rapidity of the topics covered in the broadcasts, which slowed comprehension and made the information difficult to assimilate or to use.

Based on this feedback from the first broadcast year, the program changed its distribution strategy for the series in the 2006-2007 school year. During this year, copies of the entire "Tam Tam for Supervisors" series were put on cassette, and the entire series, along with a radio, was distributed to each district office in the country. Districts were provided with a feedback form that would allow them to report on their individual usage of the cassettes at a time that was most convenient to them. The form asked the districts to track: a) the number of times that a cassette was used in listening groups, b) the number of times a cassette was loaned to AE or CAP staff, c) the number of times a cassette was loaned to teachers, and d) the number of times the CAP of its own initiative broadcast the cassette.

In all districts that returned data (approximately 78%), the program found that the individual loans to CAP staff and teachers far outnumbered the number of times that the cassettes were either used by CAP staff in listening groups or were rebroadcast at the CAP's initiative on the radio. Of the total usage in all four categories, individual loans to CAP staff averaged 40%. This seemed to support the hypothesis that the best use for audio training material for supervisors and school directors would be to distribute the material pre-recorded, and to allow those audiences to use the material as they best saw fit. The table below indicates how many supervisors reported using the Tam Tam for Supervisors radio series, by year of the FIER program:

Table One: Usage of Tam Tam for Supervisors Programs, By Year

2005	2006	2007	2008
500	725	740	831

The final impact of both the broadcasting of the Tam Tam series and the distribution of the cassettes was gauged by Mali's ministry of education through their final evaluation of the TTvR program. In the course of this evaluation, 16 supervisors (2 directors of curriculum from the academy level, 5 district office directors, and 9 pedagogical counselors) that had participated in using the Tam Tam for Supervisors series were interviewed regarding both their impressions of the series and their mastery of the concepts that it presented. These interviews revealed that the "quasi-totality" of supervisors felt that the broadcasts had assisted them to conduct a useful review of important concepts and to harmonize their practices amongst themselves. On the knowledge test also delivered by the ministry of education, the pedagogical counselors that had been the most regular in their use and listenership were the ones who scored the highest (between 60 and 90%) on the items related to pedagogical supervision, pedagogical techniques, and professional behavior. As a result, although the report's authors did ***not*** recommend generalizing the use of the radio-based tools for the supervisor population, the ministry did conclude that the Tam Tam for Supervisors series had been a useful training tool for the supervisors that applied themselves regularly in its use.

IIb. The "On the Road to School" Series

The "On the Road to School" Series was designed by the national team to provide a model for Malian teachers of how to use techniques of active pedagogy in their instruction. The programs focused on demonstrating how several

teaching techniques recommended by the union of francophone ministers of education could, in fact, be organized to assist learning in a primary school classroom. These techniques included: pairwork, groupwork, brainstorming, and total physical response.

After much debate, the program team came to the conclusion that it would be best to design the model lessons for grades three and four, those being at that time the levels of the Malian system where all teaching was occurring uniquely in the French language. Mali's experiment with a new, bilingual curriculum had not at that time been expanded to grades three and four. Since broadcasting in multiple languages is financially quite challenging, the team opted to work at a grade level where a single language could be employed.

During the program's period of performance, the team produced 30 programs for grade three, each of which provided a model of how to use an active learning technique in French and a model of how to use an active learning technique in math, and 50 programs for grade four, all of which focused uniquely on guiding teachers through using active learning techniques in French. Programs included a physical activity, two segments where key active learning techniques were modeled, a song, and a game, all built around the above-mentioned teaching techniques and based on the Malian curriculum in use. Each program was tested in a classroom before being recorded in final version. The final versions were transmitted to the national radio station, which broadcast them between two and three times a week.

In order to facilitate the recording of the programs, the TTvR program installed a studio at the Division de l'Enseignement Normal (DEN), the teacher training division of the local ministry. The installation of the studio was one of the best examples of partnership throughout the program's four-year life; the ministry of education paid for the building, and the TTvR program paid for (at reduced cost to USAID) the equipment to place inside the building. Once the studio was installed, the program staff could use it to record without paying to rent studio space.

Construction of the FIER studio behind the DEN

For each series produced for the classrooms, a classroom guide was produced and distributed to teachers. Training to use the series was offered once in the beginning of every school year. Program staff asked that school directors regularly complete a summary sheet of their staff's participation in the program. In total, by CAP, the number of teachers participating in the use of broadcasts for classrooms

Program teams then monitored the use of the program through regular monitoring visits to the 34 CAPs in the program. The totals, by CAP, of schools who used the in-class, "On the Road to School" programs are included in the table below:

Table Two: Number of Schools in the FIER Pilot, By Academy

Regional Office (Academy)	District Office (CAP)	Number of Schools
BAMAKO	Banconi	11
	Djelibougou	3
	Hippodrome	8

	Lafiabougou	9
	Sebeninkoro	8
KATI	Baguineda	27
	Dioila	16
	Fana	4
	Kati	10
	Kalabancoro	11
KOULIKORO	Koulikoro	43
SEGOU	Segou	14
	Markala	9
SAN	San	26
	Tominian	12
KOUTIALA	Koutiala	16
	Mpessoba	17
SIKASSO	Koumantou	10
	Bougouni	19
	Kadiolo	13
	Niena	4
	Sikasso I	5
TOMBOUCTOU	Tombouctou	45
KIDAL	Kidal	14
GAO	Gao	61
TOTAL	(total)	415

In total, 1,662 teachers in grades 3 and 4 were using the programs in these 415 establishments during the final broadcast year (2007-2008). Through their work and participation, 116,342 children benefitted from exposure to quality instructional programming in French.

Listener feedback for the in-classroom programming was highly enthusiastic. Below are some excerpts from letters received at the program office:

Sibila, February 2, 2006: I followed with great pleasure the 10th broadcast of the "On the Road to School" series….I would like to ask the pedagogical counselor in charge of FIER to come and listen to a broadcast with me.

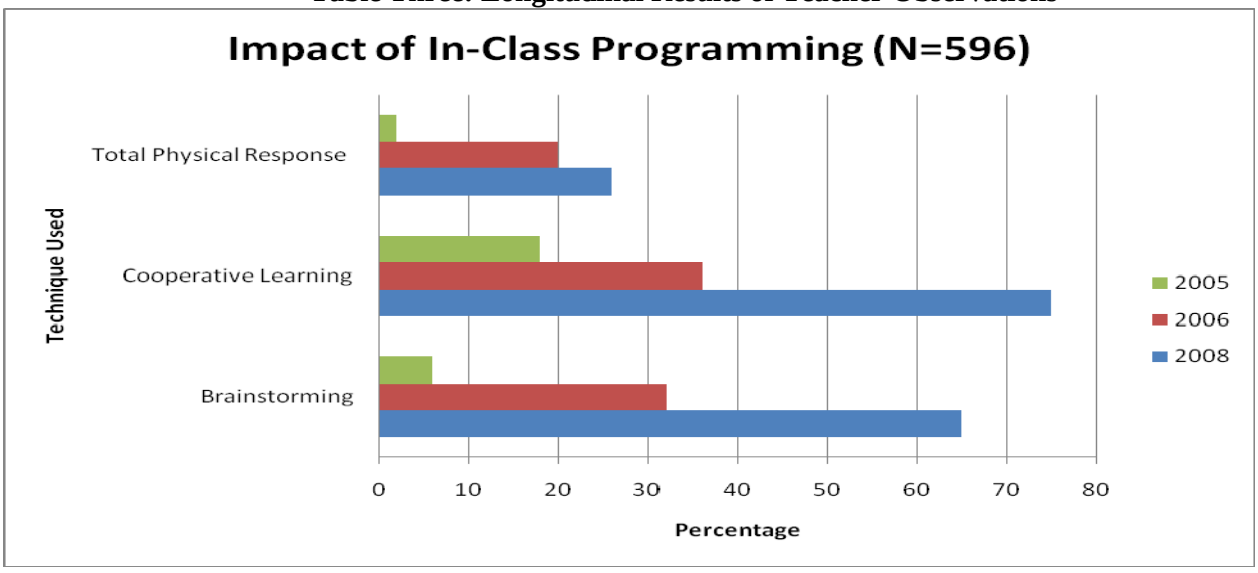
Kidal, February 15, 2006: The broadcast "On the Road to School" is very useful for our teachers. This broadcast helps our teachers in their daily professional practice. The broadcast also greatly interests the 3rd grade students and even other students that are able to listen "on the side." The broadcast also serves as a long-distance training mechanism for the IFM student teachers in their third year and also for the school directors.

Children in a Bamako Fourth Grade Classroom Compete to Answer Questions Posed on the Radio

In order to monitor program participation, the FIER program put in place a feedback system whereby, every month, the school directors from the program schools would fill out a tracking sheet listing how many programs had been followed and would return that sheet to their CAPs. Through this system, the small program staff in Bamako could monitor which regions were participating in the use of the programming, and could step in to remediate problems as needed in areas where participation seemed low.

In addition to monitoring participation, the program sought to measure impact on classroom performance by conducting classroom observations in a sample of supported schools (according to the performance monitoring plan, 30% of the schools in the program. These classroom observations sought to measure whether teachers could and did apply the instructional techniques modeled in the radio programming in other lessons throughout the course of the day. Even allowing for possible researcher bias (the research teams were composed of members of program staff and evaluation specialists from the ministry of education), the results over time in the observed sample demonstrate that increasingly higher percentages of teachers applied the techniques in each subsequent year. The table below summarizes these monitoring and evaluation results.

Table Three: Longitudinal Results of Teacher Observations



During the final, ministry-led evaluation of the FIER program, the researchers also found that the teachers reported a positive impact on their classroom practice thanks to listening to the FIER broadcasts. The report read as follows: "The teachers find that the "On the Road to School" broadcasts are pertinent. They report that the broadcasts

respond to their pedagogical preoccupations…According to certain of the teachers, the broadcasts have had the merit of serving as a solution to one of their major difficulties: never having been trained to do their job. They say that the broadcasts help them to work better with their students. Another benefit that they believe they have gained is that they themselves are acquiring greater training that is enabling them to be more professional in their teaching."

IIc. The Two Radio Series for Regional Broadcast

The two regional radio series were designed to enhance the capability of the academies and the CAPs in the field to produce programming that would take into account the training needs of the teachers in their areas. Two regional teams worked on the programming—one in the north composed of pedagogical counselors from the various CAPs of the region of Gao, and one in the center composed of pedagogical counselors from the various CAPs in the Sikasso and Segou regions. .

The northern team produced a series called "Les Enseignants à l'Ecoute", while the central team produced a series called "The Teachers' Mirror." The northern team produced 20 programs for broadcast in school year 2005-2006, 20 programs for broadcast in school year 2006-2007, and 20 programs for broadcast in school year 2007-2008. The central team, formed and trained after the northern teams, produced 20 programs for broadcast in 2006-2007, and 20 programs for broadcast in 2007-2008. In total, 110 30-minute programs for listening group formats at the school level were produced and broadcast during the life of the FIER cooperative agreement.

The content of these programs closely followed the modules available at the DEN for teacher training (all of which had been developed by a "sister" program, the Canadian PAMOEFE initiative). Teams read the available modules thoroughly and, based on previously conducted audience research, determined which modules the teachers could most benefit from following in radio format. Then they determined how many broadcasts would be required to treat the learning objectives and content from each of the modules. Based on this analysis, they determined how to allocate the total time available in the series to cover the desired content. An example of a scope and sequence for the "Teachers' Mirror" series is included below.

Table Four: Scope and Sequence : The Teachers' Mirror: Scholastic Year 2007-2008

1ere émission Les types d'écrits (Français Numéro Un : M-FRC-02-3G1)	2eme émission La production des écrits variés (Français Numéro Un : M-FRC-02-3G1)	3eme émission Types et formes des phrases (Français Numéro Un : M-FRC-02-3G1)	4eme émission Définition, types, et fonctions d'évaluation (C-EVA-01-3G2)	5eme émission Les critères d'évaluation (les instruments de mesure) (C-EVA-01-3G2)
6ème émission Management : Planification et Coordination (C-GEC-01-3G2)	7ème émission Management : L'organisation et évaluation (C-GEC-01-3G2)	8ème émission : Approche Genre (C-GEN-01-3G2)	9ème émission Approche Genre (C-GEN-01-3G2)	10ème émission Pédagogie des Grands Groupes Définition et Objectifs (C-PGG-01-3G2)
11ème émission Techniques d'animation : Les intergroupes	12ème émission Techniques d'animation : Scintillement	13ème émission Techniques d'animation : Le langage Gestuel	14ème émission Didactique des Sciences d'Observation	15ème émission Didactique de l'Histoire

(C-TPA-01-3G2)	(C-TPA-01-3G2)	(C-TPA-01-3G2)	(D-SOB-01-3G2)	(D-HIS-01-3G1)
16eme émission Didactique de la Géographie (D-GEO-01-3G1)	17ème émission Santé à l'Ecole (C-SAN-01-3G2)	18ème émission Santé à l'Ecole (C-SAN-01-3G2)	19ème émission Education environmentale (C-EDE-01-3G2)	20ème émission Education environmentale (C-EDE-01-3G2)

In contrast to the in-class programming, which was broadcast on national radio, the listening group programming was broadcast on individual, local FM stations, through contracts that FIER sponsored and that were co-signed by the DCAPs. This decentralization of the broadcasting contract meant that the DCAPs were able to adjust broadcasts to better suit the particularities of their regions (i.e. to take into account local holidays, and to arrive at a consensus about the day on which to broadcast with representatives from their region's schools). Schools organized their listening groups of teachers either one or two days per week after school, depending on the broadcast schedule agreed upon with the DCAPs. Listening group sessions included the 30 minutes of following the radio broadcast, and another 30 minutes of exchange about topics included in the programming, based on guiding questions included in the listeners' guides. Listening groups were requested to keep a running log of all their listening sessions, which provided a detailed "rapport d'ecoute" ("listenership report") for any visitors to the school site aiming to evaluate the regularity of teachers' participation in the listening group sessions. End-of-program data indicates that participation in listening group activities was as follows in the districts participating in the FIER program[1]:

Table Five: Participants in Regional Programming

District Offices	Series Followed	Radio Station for the Broadcasts	Schools Using Listening Groups	Total Men	Total Women	Total Teachers Trained
Ansongo	Teachers at the Ready	Soni FM	15	35	21	56
Gao	Teachers at the Ready	Radio Naata	61	110	65	175
Bourem	Teachers at the Ready	Radio Communautaire	15	55	21	76
Menaka	Teachers at the Ready	Radio Rurale	13	34	18	52
Goundam	Teachers at the Ready	Guimba	6	21	13	34
Nianfunke	Teachers at the Ready	Radio Rurale	13	21	15	36
Dire	Teachers at the Ready	Diiri	16	47	43	90
Kidal	Teachers at the Ready	Tisdass	14	45	16	61
Tessalit	Teachers at the Ready	Yaro	5	16	7	23
San	The Teachers' Mirror	Parana	30	30	25	55

[1] We note that these numbers reflect teachers officially trained to use the programming and supported with materials and monitoring visits. Less data is available on schools that self-selected into the use of the pilot programming, although we did receive anecdotal evidence of many such schools in existence during the execution of the program.

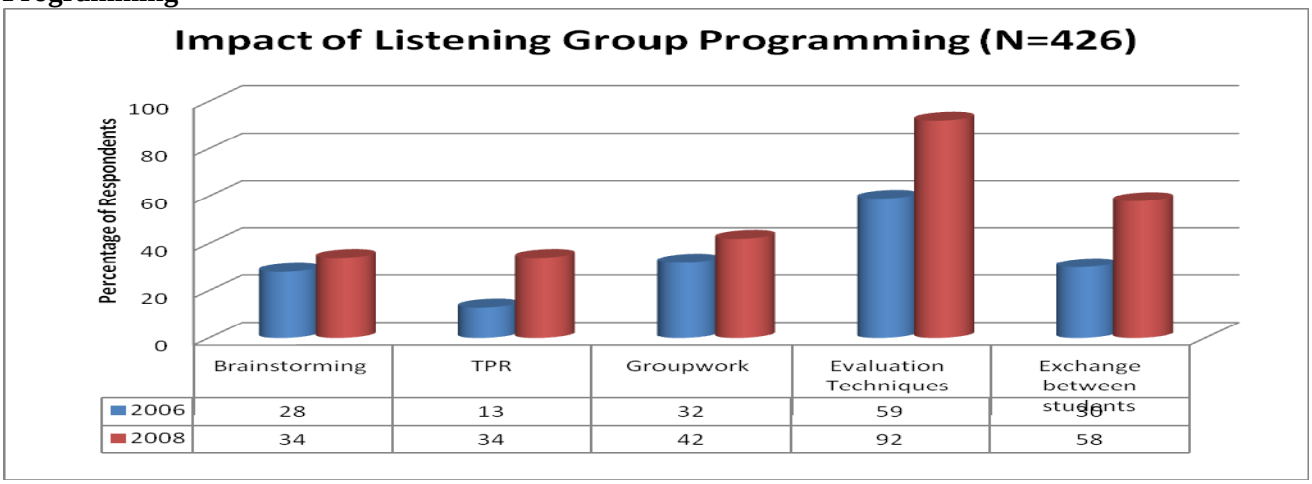
District Offices	Series Followed	Radio Station for the Broadcasts	Schools Using Listening Groups	Total Men	Total Women	Total Teachers Trained
Bla	The Teachers' Mirror	Bendougou	15	55	35	90
Tominian	The Teachers' Mirror	Parana	7	34	15	49
Sikasso I	The Teachers' Mirror	Bende	5	21	18	39
Bougouni	The Teachers' Mirror	Jamana	5	15	7	22
Kadiolo	The Teachers' Mirror	Yelen	5	23	5	28
Koumantou	The Teachers' Mirror	Dallan	5	19	10	29
Niena	The Teachers' Mirror	Radio Communautaire	5	15	10	25
Koutiala	The Teachers' Mirror	Jamana	5	24	18	42
Mpessoba	The Teachers' Mirror	Uyesu	5	16	12	28
Markala	The Teachers' Mirror	Jamana	15	30	25	55
Segou	The Teachers' Mirror	Sido	15	32	27	59
Total			**275**	**698**	**426**	**1124**

As was the case for the in-class programming, teachers reported that the listening group programming was of professional use to them. According to the end-of-program evaluation conducted by the ministry of education:

> *Teachers opined that the content of the broadcasts was pertinent and in relation to their professional preoccupations. In actuality, all of the listening groups visited affirmed that the broadcasts were useful in meeting their true needs in teacher training. This can be explained by the fact that the majority of teachers have never had access to any in-service training. All the groups also said that the content of the broadcasts was easy to understand, and had a clear relationship to their behavior in class. They reaffirmed that the themes retained in the series were useful in helping them to improve the quality of the instruction they provide.*

The program's final evaluation data, as compared to the mid-term evaluation in 2006, demonstrates that a sample of 426 teachers had made considerable progress in applying the techniques and approaches detailed in the listening group programs. The graph below summarizes change in the degree of application of these techniques on the part of the teachers involved in the listening group programming.

Table Six: Baseline and Final Results for Pedagogical Techniques Among Participants in Regional Programming



All in all, by the conclusion of the FIER program, nationwide participation in both types of radio training (listening group and in-class broadcasts) stabilized at 70%. The percentages of participation by region are provided in the table below as collected from the final round of monitoring sheets from the field in the spring of 2008. We note that "listenership" was defined as having missed two or fewer programs from any given series.

Table Seven: Percentage of Trainees By Region Participating in Radio Programming

No.	Region	Percentage of Participation
1	Bamako	60%
2	Kati	56%
3	Koulikoro	69%
4	Ségou	61%
5	San	86%
6	Koutiala	88%
7	Sikasso	72%
8	Tombouctou	81%
9	Gao	75%
10	Kidal[2]	60%

IId. Additional Regional Writing Teams

In addition to founding two regional writing teams using USAID financing, the FIER program also during the course of the final 2 years of the award supported interested regional education offices (academies) in sponsoring training for personnel from their region to assist them to become independent writing teams. In April of 2007, the FIER program gathered with all of the planning personnel from the various academies to examine how the program's activities might be incorporated into the planning processes at the local level. As a result of this workshop, all 15 of the academies included in their own action plans lines requesting budgetary resources for the creation of writing teams in their regions.

In the course of the 2007-2008 school year, three of those academies—Kayes, Mopti, and the left bank in Bamako--actually received the funding included in their action plans to train CPs and academy personnel to write listening

[2] Kidal is an academy that usually had very high rates of participation. However, civil unrest in that area during the 2007-2008 school year brought down the rate of participation for the academy as a whole.

group programming for the radio. Once the funding was received, each academy chose between 5 and 8 personnel from the academy and/or the surrounding CAPs to be trained in creating listening group programming. For each of these teams, the FIER program provided 3 weeks of initial training in writing for radio, assisting each team to design their series and to begin drafting masterplans and scripts. Although none of these additional writing teams has yet aired a program, on-going support to them is part of the design of the follow-on program, USAID/PHARE.

IIe. Incorporating Teacher Training via Radio Into the Strategic Plan for Teacher Training

One of the key successes of the FIER program was the incorporation of an objective for teacher training via radio in the strategic plan for in-service teacher training, co-authored by the Ministry of Basic Education, Literacy, and National Languages and the ACDI/PAMOEFE program. This strategic plan lays out the ministry's plans for in-service training for the period 2008-2012. Through a series of consultations with the ministry representatives and the consultants from ACDI/PAMOEFE supporting the development of this plan, the FIER staff were able to incorporate goals for teacher training via radio into this plan. According to these provisions, each academy will have its individual team for developing radio-based programming by the year 2012. The presence of teacher training via radio in this particular planning document will facilitate budgetary requests submitted from the ministry of education to the treasury of Mali during the 2008-2012 period on behalf of radio-based teacher training.

IIf. The FIER Directors' Kit

In the original design of the FIER cooperative agreement, EDC proposed to produce and pilot separate radio programming for school directors, as a means of determining whether such an intervention was a cost-effective use of distance education via radio. However, once the technical teams began to work closely with the ministry of education on the design of the various broadcast series, they realized that a separate series of broadcasts for school directors would not be a practical intervention. There is no one particular time of the work day when it is convenient for school directors to stop their other work and focus on listening to a radio broadcast. In addition, follow-up of listenership could prove considerably complicated, and evaluating whether there was any change in directors' professional behavior based on participation in the broadcasts would require 'shadowing' directors in their daily tasks at non-broadcast times, and would therefore be almost impossible. Clearly, a different intervention on behalf of school directors would be necessary in order to ensure that they, too, received professional support through FIER.

In consultation with the ministry of education and through negotiation with USAID, FIER staff then determined that the most useful item for school directors would be a kit that they could use both to deepen their own understanding of subjects critical to their occupation (i.e. self-guided learning), and to train the personnel of their respective schools on important topics. Once this determination had been made, the FIER staff developed a directors' kit consisting of six modules, each containing a printed guide and a cassette, intended to assist directors to master their teacher supervision and administrative duties. The modules focused on: a) the role of the director, b) pedagogical supervision of teachers, c) training teachers on site at the school, d) communicating with the PTA and community, d) completing administrative tasks and e) using testing results to inform instruction.

The directors' kit materials were developed with teams of trainers from the DNEB/DEN and were pilot tested in the fall of 2007 with a sample of 12 schools in the CAP of Bougouni. The pilot testing phase led to a series of revisions, which the teams completed during the early part of the 2008 calendar year. Simultaneously, the FIER staff prepared and submitted a dossier with the DNEB/DEN in search of joint financing for the training on the directors' kits. The hope when this dossier was submitted was to expand the beneficiary group for the training from the original 200 to 336 school directors (adding an additional 136 in the regions of Kayes and Mopti where the USAID financing at the time did not support any program work). When this financing became available, in May of 2008, the team in collaboration with the DNEB/DEN selected the schools to receive the training, organized the training teams, and dispatched them to the field to train the school directors chosen to receive the directors' kits.

Directors receiving training on the directors' kits

In total, 336 directors received training on the kits. During the training, participating directors were asked to fill in a pre- and post- test touching on the content of the six modules for the directors' kit. By comparing, per participant, the pre- and post- test scores on these tests, the FIER monitoring and evaluation team was able to evaluate the degree of learning that each director had achieved in the content of the brief (2 day) training course. In total, for the six modules, directors' net gain by region in mastery of the content of the kit was as follows:

Table Eight: Pre and Post-Test Scores for Trainings on Directors' Kits (N=336)

Region	Net Gain (Pre- and Post-Test)
Bamako	45%
Ségou	26%
San	33%
Sikasso	52%
Kayes	60%
Mopti	48%
Diré	67%
Tombouctou	72%
Gao	39%

The comparatively large net gain percentages indicate not only that the training was beneficial for the target group, but also underscore to what degree the topics in the directors' kit were not familiar ones for the group of directors selected.

III) Pre-Service Training

FIER's second technical area of focus was in introducing technologies to Mali's pre-service teacher training institutes, known as "instituts de formation des maîtres", or IFMs. Early on in the cooperative agreement, (in 2005), USAID modified the award to incorporate additional funding to support the creation of "virtual training centers" (or VTCs) in six of Mali's teacher training institutes. This number was later reduced to four institutes due to budget constraints on the part of USAID.

In collaboration with the ministry of education, the FIER program worked with four IFMs: Tominian, Nara, Tombouctou, and Niono from late 2005 through 2008 to establish and support these virtual training centers. In each IFM, the program staff conducted four main interventions:

a) Installation of student computer labs, complete with printers, computers, televisions, video cameras, and other hardware;

b) Training for a management committee in each institute to manage the material provided to the lab;
c) Training for student teachers in the use of the computers and machinery in the lab, and;
d) Training of members of the faculty to enable them to use the labs as spaces for increased learning about the art of teaching.

In addition, the FIER program devoted resources to attempting to succeed in incorporating the mention of technology in the new, official curriculum for the teacher training institutes. We address this in the final section relating to our work with the IFMs.

IIIa. Installation of the computer labs

None of the four teacher training institutes possessed sufficient amenities for computer use by the students at the outset of the FIER program. During the 2004 and 2005 school years, the program worked with the schools to identify *in what room* they would establish their computer labs. Then, the program issued a series of calls for bids from construction companies to refurbish and air condition those rooms. Eventually, each institute established a secure and climate-controlled room where the materials for the VTCs could be placed.

Program staff then proceeded to order computers, printers, fax machines, and other technological inputs and to install them at each of the four centers. Eventually, each IFM had a room including 20 desktop computers, a printer, a scanner, a television, and a video camera for use by the IFM community.

The Tombouctou CVF Space Prior to Installation

IIIb. Training for the Management Committees

Once a virtual training center had been installed in each target IFM, the FIER staff worked with the leadership of the IFM to select a management committee for the center. The management committee was comprised of a president, a treasurer, two to three volunteers ready to serve as site managers on a rotating basis to assist the center's to meet the demand for student services, and a student body representative. Each management committee was chaired by the director of the school.

Management committees for the four IFMs received annual trainings in: a) managing the centers, b) teaching other people in the centers how to use the computers, c) conducting computer maintenance, and d) using the audiovisual, internet, and other resource materials provided by FIER. The management committee's duties included conducting regular maintenance on the machines in the IFM, establishing a payment scale for services such as photocopying or printing, keeping the accounts of monies gained through those services, keeping records of who was using each virtual training center, and organizing particular events in the virtual training center to assist students to access the services they provided.

The Nara management committee in training

Management committees had the task of sending a monthly report to the FIER program to disclose the financial situation of their VTC and to indicate how many people had used the center in the course of the past month, and for what purposes. Throughout the life of the program, the most frequent reasons that students in the IFMs chose to use the CVFs were: a) photocopying, b) using Encarta, c) completing homework assignments, d) purchasing ID cards. The reason that using the internet does not figure as a most frequent activity in the VTCs is that only the VTC of Niono possessed an internet connection during the period of performance of the FIER program.

Quarterly financial reviews by the FIER staff indicated that all four of the centers, through the revenue acquired from photocopies, student ID cards, and internet access, were able to recover sufficient amounts in order to cover the costs of expenses such as printing supplies, batteries, equipment repair, and video camera cassettes. The cost of major repairs, however, could not be covered through the revenue gained from charging for these activities. This led the program team to the conclusion that the IFMs needed to participate with much greater regularity in the budgeting processes at the level of the teaching academies, at that the MEALN in general needs to make a greater effort to connect the IFMs to the opportunities available through AGETIC for increasing the internet connectivity throughout Mali's government offices.

We note that by the close of the FIER program, the cash balance in each center was positive (see chart below), further reinforcing the impression that the VTC model is one that can be sustained throughout the country.

Table Nine: End Balance of Accounts for FIER Virtual Training Centers

	Niono	**Tombouctou**	**Tominian**	**Nara**
Solde total	**133.617**	**133.075**	**931.455**	**554.115**

IIIc. Training for professors and student teachers in the use of computers

One of the main findings of FIER staff working with the virtual training centers was that the student teachers in the teacher training institutes had very little familiarity with computers. As a prerequisite to using them for coursework, students needed to learn how to complete simple word processing tasks on a computer, how to use the essential components of Microsoft office (Excel, Powerpoint, etc). and how to save, print, and transfer documents.

With the support of FIER's two technicians, each management committee organized a regular series of 2-week initiation trainings to assist student teachers to master using the computers. Any interested student teacher could attend, once, free of charge. These regular sessions continued in all FIER-supported IFMs throughout the life of the FIER program.

A comparison of data between FIER's baseline (2004) and mid-term (2006) report, drawn from interviews with 32 professors (including IFM directors), summarized in the table below, indicates the evolution in the degree of familiarity with basic computing on the part of IFM professors and student teachers thanks to the interventions of the program FIER.

Table Ten: Percentage of Professors and Student-Teachers Using Computer Technologies

	Baseline	Mid-Term Report
Professors using computers	7%	91%
Professors using the internet (in the VTCs or elsewhere)	2%	41%
Student teachers using computers	10%	72%
Student teachers using the internet (in the VTCs or elsewhere)	7%	41%

The popularity of these sessions led the ministry of education, in 2007, to request that FIER apply for ministry of education financing in order to train teachers from other IFMs not assisted by FIER to use technology. In the fall of spring of 2008, once the financing through the ministry of education became available, FIER staff traveled to the other 8 IFMs in the country to assist the staff of those IFMs to use the digital equipment they had available on site. This training proved highly popular with the participants, who guaranteed that it was unlike anything that they had previously experienced, and expressed the wish that they might have been offered such learning opportunities early on in their careers at the teacher training colleges.

Training for IFM staff in Kayes at the ministry's initiative

The FIER team’s observation during these training sessions was that, despite the availability of certain hardware in each pre-service training institute (even those NOT assisted by FIER), the staff of the institutes had very little experience using computers in the course of their daily professional activities. (In some sites, during the visits that FIER staff made to each institute to ensure the availability of the equipment and the relevant software, the computers distributed by the ministry of education were still in their original boxes!)

The ministry's final evaluation of the FIER pilot program, conducted with a sample drawn from all the IFMs in the country, confirmed this positive evolution in the target population's ability to complete simple computing tasks, even outside of the four IFMs supported by FIER. The table below shows 23 professors' self-reports of their computing ability before and with the support of the FIER program.

Table Eleven: Self-declared competencies of IFM professors related to using the computer (N=23)

Applications	Level of	Before the FIER Program	With the FIER Program

		Ability	Fréquence	Pourcentage	Fréquence	Pourcentage
Word Processing	Word	None	8	34,8%	4	17,4%
		Beginner	6	26,1%	2	8,7%
		Average	6	26,1%	5	21,7%
		Advanced	2	8,7%	8	34,8%
		Very Advanced	1	4,3%	4	17,4%
Tables and Calculations	Excel	None	14	60,9%	3	13,0%
		Beginner	5	21,7%	4	17,4%
		Average	3	13,0%	8	34,8%
		Advanced	1	4,3%	5	21,7%
		Very Advanced	0	0,0%	3	13,0%
	Lotus	None	23	100,0%	19	82,6%
		Beginner	0	0,0%	1	4,3%
		Average	0	0,0%	3	13,0%
		Advanced	0	0,0%	0	0,0%
		Very Advanced	0	0,0%	0	0,0%
Drawing/Design	Paint	None	16	69,6%	12	52,2%
		Beginner	6	26,1%	2	8,7%
		Average	1	4,3%	5	21,7%
		Advanced	0	0,0%	3	13,0%
		Very Advanced	0	0,0%	0	0,0%

These data led the ministry to conclude: "we therefore concede to the IFM professors this increase in their knowledge of ICTs, which in one way or another can be attributed to the program [FIER] that had the merit of putting at their disposition the necessary material and training (CNE report, p. 30).

IIId. Training for members of faculty in organizing the learning labs

In addition to initiating hundreds of student teachers and IFM faculty members to the basic functions of the computers in the lab, a key goal of the the FIER program was to trainings to IFM faculty related to use the VTCs for coursework, for themselves and their students. To this end, four major topics were the subject of program training activities for teachers in the four institutes:

a) The use of Encarta
b) The use of the VTC for instructional planning purposes
c) The use of the multimedia modules produced by the FIER program and
d) The use of the audiovisual material for micro-teaching

In early 2005, FIER staff installed “Encarta” on all the machines in the four IFMs; a training round was held to initiate all professors in the IFMs to the use of the Encarta materials. Encarta, due to its ease of use, quickly became a highly popular tool for the IFM professors and for their student-teachers as well.

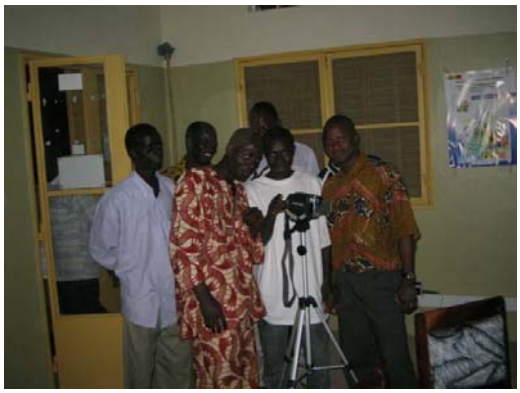
In 2006, the FIER staff with the help of an outside consultant developed a training course intended to help IFM professors analyze how best to use technology to support the instruction they seek to give in their IFM classes. The course sought to encourage teachers to participate in an eight-step process for the integration of technology in learning, as follows: 1) Describing the current situation, 2) describing the desired situation, 3) analyzing how to arrive at the desired situation, 4) specifying instructional objectives inclusive of technology, 5) specifying needed technological resources, 6) using those resources, 7) observing and evaluating the learning and reaction on the part of the students. Rough drafts that teachers produced for their own lessons using this methodology became the first reference materials for FIER's work with the CNE on integrating technology into the curriculum of instruction in the IFMs (see below).

Training for the IFM professors on the use of the VTCs for instructional planning purposes (Niono VTC)

Throughout 2006 and 2007, FIER staff worked to design a series of digital modules for the IFMs; these modules, based on the request of the ministry of education, focused on: active learning, lesson planning, documentary research, and student evaluation. The modules were interactive, inviting the user to respond to questions and test his/her knowledge throughout his/her reading of the modules. However, because only one of the four VTCs was connected to the internet, the modules were placed on CD-ROMs and distributed to each of the IFMs. This method of distribution ensured a much higher percentage of usage of the modules than a web-based application would have been able to provide. A snapshot of the front page of the "active pedagogy" module can be found below.

The front page of the FIER multi-media module on active pedagogy

In 2007 and 2008, FIER staff trained teachers in all four of the IFMs both on the use of these modules and on the techniques of microteaching.



IFM teachers learning to use microteaching techniques

For each pedagogical training conducted, FIER staff assessed trainee skills and learning through a pre- and post-test format. The table below summarizes the pre and post-test results for the FIER program's beneficiaries on questions related to instructional skills mastery and micro-teaching.

Table Twelve: Results of the Pre- and Post- Tests on Micro-Teaching (All 4 Teacher Training Institutes)

N°	**Theme**	**Pre test %**	**Post test %**
1	Knows the definition of a skill	17	41

2	Knows the profile of the skills desired for Malian teachers	7	51
3	Has already used audiovisual material in teaching	10	72
4	Has already designed audio-visual aids for classroom practices	0	0
5	Thinks that audio-visual aids can facilitate teaching	56	75
6	Had already used a camera for pedagogical purposes	2	68
7	Knows what micro-teaching is about	4	33
8	Believes that the technique of microteaching has a positive influence in the improvement of practices and in education.	13	69
9	Confuses the desired skills profiles with the current (former) skills profiles	14	13
10	Confuses skills and domains/disciplines	9	0

Cumulatively, in the course of FIER, the program touched 420 student teachers and IFM professors with these different training inputs. The ministry of education document's summary of findings related to gains of the IFM professors thanks to FIER can be translated as follows:

> *Above and beyond an initiation to using digital technologies, the FIER program sought to assist professors to deliver computer-assisted instruction (pédagogie numérique). Our research teams openly asked respondents, in addition to a basic understanding of how computers work, what else they had received from the FIER program. Professors' responses included: a) an understanding of micro-teaching, b) an understanding of how to manage a VTC, c) information about using the digital modules, and d) using audiovisual aids in the classroom. They all affirmed that their own classroom practices had really improved since their involvement with the FIER program. According to them, these capacities developed thanks to the FIER training they had received. Based on this information, we conclude that the program allowed IFM professors to understand the benefits of digital support to instruction and the impact that it could have on their teaching.*

IIIe. Support to the development of an IFM curriculum that integrates the use of technology

One of the primary obstacles to true pedagogical applications of technology in the teacher training institutes remains the lack of an agreed-upon, revised curriculum for pre-service instruction in Mali. Since 2005, FIER staff attended as regularly as possible the seminars organized by the ministry of education (now the ministry of basic education, alphabetization, and national languages) in support of the development of this curriculum.

In addition to participating in and seeking to influence the curricular development process, the FIER program sponsored in 2007 a series of reflections with actors from across the Ministry of Basic Education (the teacher training division, the division of primary education, and the national center for basic education) and with representatives of the ministry of communication and information technologies, to develop a document known as the "framework for the integration of technology in education." This document, which has been validated at the level of the national directorate for basic education, (but has yet to be officially shared with the cadre partenarial), lays out in detail the steps that different actors from several ministries need to take in order to ensure that technology is put to good use in Mali's pre-service training efforts. These roles and responsibilities for the primary actors were listed as follows:

Table Thirteen: Roles and Responsibilities in Integrating the Use of Technology into Pre-Service Education

Ministry	Responsibility
Ministry of Education (Cabinet Level)	• Develop and render operational sectoral policies related to technology • Put in place a coordination structure for technology related activities at the different levels of the education system
National Center for Education (CNE)	• Integrate technologies into the IFM Curriculum • Develop the guide for using the IFM curriculum (with focus on technology) • Oversee the testing and monitoring process for the IFM curriculum
National Directorate for Basic Education (DNEB)	• Provide training for administrative personnel and IFM professors on the use of technology • Supervise training activities • Put the curriculum developed under the CNE (with technology integrated therein) into practice
Teaching Academies (AE)	• Integrate technology-related activities into their planning processes • Ensure that training on technology does occur and provide follow-up to those activities s • Coordinate technology-related activities at the IFM level
Teacher Training Institutes (IFMs)	• Provide training for student teachers using the new curriculum that integrates the use of technology • Ensure that IFM teachers also receive on-going in-service training related to technology
Ministry of MCNT/AGETIC	• Develop the administration's intranet • Provide maintenance for the networks, equipment, and software • Provide equipment and technology-related materials to the IFMs • Train administrative personnel and IFM professors to use technology
MATCL/(Local Collectivities)	• Take the development of technologies into account in regional and local action plans (equipment, networks, operating costs, training, etc) • Support TICEs at the local level
Technical Partners/NGOs/Associations	• Ensure technical and financial follow-up to the process of integrating technology

The main action recommendations adopted by the various working groups that contributed to the framework document included:

- Putting in place a consultative mechanism between the key ministries, which are the MEN and the MCNT; gradually incorporate participation from the MATCL and the financial ministry;
- Supporting the process of the development of the sectoral plan for the integration of technology;
- Creating and making operational a structure for the coordination of technologies in education;
- Finalizing the curriculum for pre-service training, taking technologies into account;
- Prioritizing education in developing the use of technology;
- Harmonizing the equipment, software, and other technology-related resources in the IFMs;
- Expanding TICEs to other levels of teaching.

IV) Program Monitoring and Evaluation

During the course of the FIER program, the monitoring and evaluation framework shifted repeatedly. This made it a challenge to report and collect information in a longitudinal manner.

A first performance monitoring plan, drafted and agreed to by both USAID and the ministry of education in 2005, was subsequently revised when USAID/Mali shifted its own monitoring indicators in 2006. Shortly thereafter, with the advent of the foreign assistance framework and with the appearance of several indicators mandated as standard by the US Department of State "F" bureau, the monitoring and evaluation framework for the program was again revised such that it would *directly reflect* the new framework for USAID/Mali. A significant budget cut in mid 2006 negatively impacted Bamako staff member's ability to travel around the country, and resulted in a further down-sizing of the program monitoring and evaluation plan.

For school year 2006-2007 and school year 2007-2008, FIER tracked the following indicators:

- Percentage of teachers in target schools using child-centered pedagogical methods
- Number of pre-service teachers trained
- Number of in-service teachers trained
- Number of learners benefitting from instructional radio broadcasts
- Number of supervisors trained

Because there was another large contract in place during this time for support to the education sector, the FIER team was required to report data separately on schools where *only* the FIER team intervened and on schools where both USAID programs played a role. The table below indicates the final results, for each of these indicators, for all schools touched by the FIER program and for schools where *only* FIER (and not the other education contract active at the time) was present.

Table Fourteen: FIER Program Indicators Evolution Over Life-of-Program

Indicator	Baseline	All Schools (638)	"FIER only" schools (136)
Percentage of teachers in target schools using child-centered pedagogical methods	5%	93%	84%
Number of pre-service teachers trained (defined as students in training institutes and teachers in community schools)	0	596	420
Number of in-service teachers trained	0	2786	702
Number of learners benefitting from instructional radio broadcasts	0	116,342	32,389
Number of supervisors trained	0	N/A	831

In lieu of an outside commissioned monitoring report at the conclusion of the program, the ministry of education chose to finance its own monitoring and evaluation division to investigate the impact of the program. Their report, which recommended the generalization of the various inputs provided by the FIER program, stands as the final proof that the pilot program accomplished most, if not all, of its objectives during its four-year life span.

V) Collaboration with the Cooperating Ministry

Because the FIER program was a pilot program, collaboration with the cooperating ministry was of utmost importance in arriving at decisions about which technological applications should be taken to scale. The FIER team made sure to involve Mali's ministry of basic education, literacy, and national languages in all of its work, from the

development of the radio programs to the training in the country's IFMs. Key strategies for reaching out to the ministry of education included:

- Participating in the regular meetings of the thematic commission for basic education
- Organizing a special "consultative meeting for teacher training" at the ministry's teacher training division
- Holding regular planning sessions (including one retreat) with the ministry of education representatives
- Conducting regular supervision visits with ministry representatives
- Participating in planning sessions with the ministry of education to determine how resources available to the decentralized levels of the ministry might be put to use for distance education programs.

The ministry changed leadership during the course of FIER, and with the advent of a new government, information had to be shared with several new colleagues. In addition, the plethora of donors and programs operating in the Malian environment sometimes made it difficult to integrate activities within ministerial action plans or financing documents. Nonetheless, the FIER program achieved a level of collaboration with the ministry that enabled Mali, as a whole, to determine that the expansion of the use of technology system-wide would be in the best interest of the students and teachers throughout the country.

VI) Lessons Learned

The FIER program permitted both USAID, the implementing partners, and officials of the ministry of education to come to some important conclusions. These include realizing that:

- Radio programming is difficult for listening groups to use well outside of the classroom context; classroom-based radio should form the backbone of additional radio work in Mali;
- The IFMs are disconnected from the budgeting and planning processes in the ministry; their lack of funds and lack of a stable curriculum hamper their functionality as teacher preparation colleges
- The ORTM, Mali's national radio, does not have sufficient time available or coverage for carrying a national radio program; additional work in radio will have to be complemented by ministry efforts to establish a routine for radio broadcasting;
- The ministry's vision for reform, encapsulated in the PRODEC documents, has become diffuse as different actors have become involved in implementing it; it is difficult to know who is leading the reform at this point.

More general lessons learned related to functioning in the ministry context in Mali include:

- All plans for activities that are intended one day to be generalized need to be made with the support of the ministry of education;
- Questions related to per diem can significantly and negatively impact a program's ability to complete their scope of work;
- Teachers' ability to adjust to the introduction of technology is limited; training programs need to be frequent and comprehensive;
- Significant technical assistance related to the complexities of providing instruction to very young children might be of assistance to ministry personnel who in general have no experience working in the primary school classroom
- Parents are often not at all aware of the various aspects of the education reform under way in Mali; a broad campaign of information and significant attempts to connect parents with and to the educational process will be important in creating better outcomes in Mali's schools.

VII) Recommendations and Conclusion

Based on the lessons learned above, the following key recommendations are presented for USAID's consideration in future program design and implementation.

1. Establish a mechanism for clear and consistent communication between USAID and the MEALN specifically concerning questions of classroom quality and strategies for addressing them.
2. Assist the MEALN to generalize the use of IRI nationwide as a method for training teachers and improving student outcomes.
3. Support the continued integration of technology in the IFM curriculum and classroom practice.
4. Assist the MEALN with its student testing protocols and procedures to ensure accurate data on student learning and better explore the efficacy of project interventions.
5. Pursue the establishment of an educational radio channel for Mali.
6. Continue to provide capacity building to MEALN departments and individuals, particularly in areas of early childhood development, teacher professional development, monitoring and evaluation.

In conclusion, the FIER program was a program that achieved under the Education Development Center's leadership all of its major goals, and succeeded in having a positive impact on its target audience. A significant body of evidence, both quantitative and qualitative, indicates that the program had a positive impact on teachers' classroom practice and on IFM professor's use of technology for pedagogical purposes. There was no student testing nor was this a goal of the program.

While monitoring and evaluation efforts were hampered by the fact that the USAID reporting framework was modified during the course of the award, the program's data reports indicate that all major indicators both for USAID/Mali and for the Department of State were met by the end of the period of performance. The table below summarizes the major accomplishments of the FIER program by goal.

Table Fifteen: Goals and Major Successes of the FIER Program

Goal	Major Successes
To build the capacity of ministry actors at the central and decentralized levels to create and use technology-based programming for teachers	• Creation of a national-level scriptwriting team composed of ministry of education actors • Creation of two official regional teams supported by the program and composed of ministry actors • Training for three additional regional teams put in place by the ministry of education • Construction of a recording studio in partnership with the ministry of education
To create on-air teacher training broadcasts of various types	• Creation and broadcasting of 110 programs for listeners' groups of supervisors and teachers • Creation and broadcasting of 80 programs for grade three and four classrooms • Creation of a directors' kit including recorded material • Inclusion in Mali's strategic planning documents of the steps for continuing radio-based training and education
To train teachers to use “virtual training centers” (VTCs) in the pre-service training institutes	• Installation of four virtual training centers • Creation and training of a management committee for each center • Training for professors and student-teachers in basic computing skills • Training for professors and student teachers in using the centers for pedagogical purposes • Creation of supplementary digital material (the multimedia modules) for use in the centers • Expansion of training to all IFMs not formally part of the pilot program's mandate

Goal	Major Successes
To evaluate the impact of these interventions with the ministry of education in order to assist the ministry to determine which interventions to support in the post 2008 period.	• Validation of the ministry's evaluation of the FIER program in July, 2008

Based on these accomplishments, it may be concluded that the FIER program was faithful to its mandate and fulfilled USAID/s expectations to serve as the premier pilot program in radio and other technologies in primary schools in Mali.