

Date: November 16, 1992

**EVALUATION STUDY
OF INTERACTIVE RADIO INSTRUCTIONAL (IRI) MATERIALS
IN NWFP SCHOOLS**

Andrea B. Rugh

1 Problem

Educators, teachers, students and parents have complained that English instruction in government primary schools of NWFP is weak. They say that the available materials are difficult for teachers to use and for students to understand. Many teachers who are themselves weak in English fall back on rote memory work to simplify the task of instruction. The English they teach is poorly pronounced and poorly comprehended. Interactive radio instruction (IRI) has proved an effective means of teaching English in other countries. The Directorate of Primary Education has been asked to test whether this method can be satisfactorily adapted for use in NWFP schools.

2 Purpose

The main purpose of the study is to test whether English interactive radio materials can be adapted to the Pakistani context and provide an effective alternative to traditional methods of teaching English. The test was carried out in 11 classes in NWFP, using 5 IRI lessons.

The specific purposes of the study were:

- o to determine whether IRI materials (radio programs and teachers' instructions) could be adapted and used appropriately in a range of conditions found in NWFP schools;
- o to determine the kinds of long term formative evaluation techniques and instruments that would be required for continuous evaluation of the program;
- o to recommend modifications in the adaptations and support systems to help IRI materials meet their objectives in Pakistan;
- o to identify policy issues that need consideration before IRI can be disseminated on a larger scale.

The study assumes that IRI materials will provide an effective method for teaching English when used appropriately. "Used

appropriately" means that teachers will act according to the instructions in the teacher guides and students will respond as intended to directions contained in the radio programs. The study attempted to determine the "source of error"--whether in the training of teachers, the adaptation of the materials, or in technical problems related to the medium of radio, if the behavior of teachers or students was inappropriate.

Final evaluation of the appropriateness of program adaptations was made at the end of the trial period when teachers and students had had time to become accustomed to the patterns in the lesson.

3 Evaluation questions

The following are the general evaluation questions that were asked:

Do teachers behave in accordance with the directions from the radio voices and the notes in teachers' guides?

Do students respond accurately to the prompts of the radio program and the cues of their teachers?

Does the adapted IRI program appear to work equally well in varying schooling contexts?

A positive response to all these questions was to be taken as evidence of successful adaptation of the IRI materials to the Pakistani context. A negative response to any of the questions was to be taken as meaning that the program needs further adaptation.

4 Study design

4.1 Sample. The variables which were considered important in selecting a sample of classes were gender, urban/rural location, self-contained classes, and classes which sit together in multi-classes. A sample was selected with these characteristics in mind. There were 11 classes (in 8 schools) with the following characteristics:

School 1: girls' first class in an inner city setting
 girls' third class in an inner city setting
 School 2: girls' first class in suburban setting
 girls' third class in suburban setting
 School 3: boys', first class in suburban setting
 boys', third class in suburban setting
 School 4: girls' multi-class in rural area
 School 5: boys' single-class in rural area
 School 6: girls' multi-class in rural area
 School 7: boys' single-class in rural area
 School 8: boys' single-class in rural area

All the schools were selected from District Peshawar where

conditions across schools approximate the main conditions found in NWFP. Six schools ("intensive" schools) were paired, with one boys' and one girls' school in the same community (Schools 2 and 3, 4 and 5, and 6 and 7). School 1 was an inner city school for girls and School 8 was selected for special treatment--no observers until the last day.

4.2 Instruments. Three instruments were used:

Form 1: An observation proforma. One was filled out for each of the 5 test days in each class by trained observers. This instrument included a student engagement form that served as a proxy for student learning and interest in the materials.

Form 2: An interview form. One was filled out on the last day of the test period for each class by regular observers.

Form 3: An evaluation form. One was filled out on the last day of the test period for each class by independent observers.

4.3 Test procedures. The test of IRI materials was conducted on 5 days in each school and covered Lessons 1 to 5 of the Pakistan scripts (adapted from Kenyan scripts) and read by Pakistani voices.

4.3.1 Teacher training. Two teachers from each school were trained to use the IRI materials in a one day workshop. At the end of the workshop, teachers in Schools 1 and 2, where self-contained classes existed, were given specific instructions to test the materials separately in classes one and three.

Because the conditions varied so much in the other schools, it was difficult to limit the participation of children to a single class or to specify a class level for the lessons. English is now taught from Kachi through fifth class in every school and if the ultimate effort is to replace current books it will be important to determine which classes can best use the materials.

4.3.2 Observer training. Observers included teachers from private English medium schools who participated in an earlier IRI workshop to adapt the radio scripts to Pakistani classrooms. They were trained in a one-day workshop to use the evaluation proformas.

Independent observers consisted of staff members and IRI consultants, all of whom had backgrounds and experience relevant to radio learning. They were asked to prepare descriptive reports of what they observed each day in the classrooms, and on the last day a final evaluation form.

4.3.3 Testing days. For five days the radio lessons were presented to the classes--one lesson per day. Each lesson took approximately 28 minutes. Two observers were present in each of the intensive schools--one to fill in the proforma sections on

teacher behavior and the other on student behavior. Each school group was accompanied by an independent observer (Robin, John, Ms. Afridi, Ms. Magid, Pam, Mona, or Andrea). On the fifth day of testing after completing the final lesson, one observer in each school interviewed the teacher who conducted the radio lesson.

The treatment school was not observed, except on the final day of testing.

The observers returned to the IMDC building for debriefing on the first day and during an entire morning at the end of the test period.

ANNEX A

SUGGESTIONS FOR

TEACHER TRAINING IN IRI MATERIALS

At a minimum, teachers need to do the following in training:

Watch video of Pakistani program being used in the classroom

Practice the mechanics of tuning and starting the program.

Practice the instructions that proceed lessons

Learn the vocabulary and actions for the first few lessons

Listen to tapes and learn how to distinguish the times to remain silent, to repeat and to answer.

Learn the rhythm and timing for responses.

Learn generic skills for encouraging children, cuing them etc. without disturbing lesson.

Teachers should be told about observers/supervisors, and should know that they can ask them questions before and after the lesson.

ANNEX B

OBSERVER TRAINING IN EVALUATING IRI MATERIALS

In any future evaluation that uses a similar set of forms and procedures, observers can be trained in a one day workshop as follows:

With teachers:

Watch a video of Lesson 1 Pakistani program being used in the classroom

Watch the training of teachers in:

Use of the radio

Instructions that proceed lesson

Instructions for during and after the lesson

Watch teachers practice to note their difficulties

Learn vocabulary and actions for the first few lessons

Learn how to distinguish the times to remain silent, to repeat, to act and to answer.

Independent of the teachers they should learn how to:

Fill in the observation proforma (Form 1). They will learn to do this by first going over each question, and then observing the video again and filling in an observation form. Answers will be compared to see if all observers are seeing the same thing and marking their proformas correctly. Differences need to be discussed.

Fill in the interview proforma (Form 2). They will first go over all the questions to make sure they understand them and then they will break into pairs and interview each other.

Finally they will be given instructions that they must NOT GIVE ADVICE TO THE TEACHERS, INTERRUPT THE PROGRAM, OR TALK ABOUT THE SPECIFICS OF THE PROGRAM DURING THE LESSON--THEY MAY OFFER ADVICE BEFORE OR AFTER THE LESSONS. OBSERVATION MEANS SITTING QUIETLY IN AN UNOBTRUSIVE SPOT IN THE CLASSROOM.

EVALUATION REPORT
OF INTERACTIVE RADIO INSTRUCTIONAL (IRI) MATERIALS
IN NWFP SCHOOLS

Andrea B. Rugh

SOURCES FOR THE FINDINGS

The findings and recommendations below come from 4 sources: a) systematic observations of 5 IRI lessons in 11 classrooms by English speaking Pakistani private school teachers and government GCET trainers b) a two-hour debriefing session of the same observers c) descriptive reports by a number of specialist observers including those with a wide variety of specialist backgrounds relevant to IRI implementation and d) my own observations in all but one of the classes.

GENERAL FINDINGS

Children and teachers both seemed to enjoy the test lessons very much. When asked by the observers, they invariably responded that they liked to learn/teach English in this way. All but one teacher felt the lessons were better than those they had used before. Teachers reported that they felt the radio lessons were a good way for children to learn English. Overall, children showed a high level of engagement in the lessons as demonstrated in periodic counts of engagement by observers.

There was also concrete evidence that children learned with this method: most children answered informal questions posed by observers correctly showing they understood the lessons and the vocabulary. They could recall English words and attach mother-tongue equivalents to the words.

The lessons required that the children think rather than simply parrot responses. Several observers noted that children comprehended the lessons better than their teachers, responding appropriately to instructions much of the time without looking to them for cues, and sometimes even disregarding wrong cues. The lessons were therefore a positive educational experience over and above the language skills they taught.

Modifications will be required in every lesson, since much the same difficulties are found in all of them. Overall these modifications require making the lessons more systematic and teacher-independent and improving on the technical points described below and in a memo prepared by Pamela Brooke. The main problem that needs to be overcome is the teachers' lack of English competence. The teachers

selected for the test unintentionally had much higher schooling qualifications than are generally found among average primary teachers, yet still had difficulties with the language. The general form of the lessons and mode of presentation appear to work well in Pakistani classrooms and should be retained.

The responses of both teachers and students improved over the five lessons of the test.

SPECIFIC FINDINGS

The following observations were made during the test period:

Reception: Because the lessons were on tape, the radio could be turned to the right volume so all children could hear the lessons easily. Sometimes the observers rather than the teachers adjusted the radio, which may mean that the teachers need to be made conscious of the importance of tuning the radio so all children can hear it properly. Observers were not able to test whether reception was a problem, and therefore this may be a potential problem that needs to be kept in mind. Similarly the questions of electrical supply, the cost of batteries, and who should pay for them was not addressed.

Language: The diction and pronunciation of the radio voices was poor. This raises the question of whether any recognizably local accent will produce English of an acceptable international standard. It will be important to find speakers who speak clearly and avoid characteristic mistakes such as "vun" for "one," and "datz" for "that's." Animal sounds should be accepted English ones, such as "moo" for cow.

The arguments about which accent to use included the following:

Pakistani. For: Teachers understand a Pakistani-accented English best and all the teachers in the test stated a preference for that accent if the programs continues. A Pakistani accent does not raise issues of colonialism or "cultural imperialism" and therefore is less vulnerable to criticism than British or American accents. **Against:** People who learn this accent have difficulty understanding "international" brands of English. IRI is an opportunity to give the up-coming generations "good" English. Pakistani-accented English has regional variations that will make it more difficult to expand IRI to other provinces. The accent also has class characteristics that complicate its use.

British. For: It is a native accent, better understood by Pakistanis than American accents. **Against:** It raises political sensibilities. It has less universality in terms of technology and media.

American. For: It is a native accent that is becoming more

important internationally in technology, print and visual media. "It has an easier grammar than British." **Against:** Pakistani are not accustomed to this accent and it raises political sensibilities.

There is a strong educational argument for teaching a native accent, as would be the case if French or any other language were taught. Arab countries have spent large sums of money to import native speakers. A compromise might be to take a fully competent Pakistani English speaker who had the opportunity to become bilingual at an early stage.

Character names: No difficulty was raised with the female name "Bano." The male name Ali, however, was objected to on two grounds, that the pronunciation becomes incorrect when sung (two "Ls" become necessary when sung to two drawn-out beats), and that Ali is so associated with one Islamic sect that it may be objected to in some districts. The name Aslam was offered as an alternative.

Accompaniment: The music was lively and generally appropriate but at certain points it was so loud it obscured the voices, and during pauses where teachers were asked to speak in mother-tongue, it was so loud children could not hear the teacher's instructions. This apparently was a technical problem that can be corrected in the final product. For reasons of local sensibilities about music, efforts should be made to keep the tunes simple and geared mainly to conveying vocabulary (no rhythmic nonsense sounds or actions that respond to the music beyond imparting vocabulary meaning).

Gestures: The gestures which we recommended to teachers for cuing children to respond to radio instructions caused confusion until teachers ignored them and resorted to their own normal gestures. Some of the gestures already had established meanings (raising the hands meant for children to stand, not respond verbally) that contradicted the meanings intended for the cuing. If teachers are to be used extensively for cuing children in future programs, teachers should be allowed to develop their own gestures for: sing, silence, continue singing, stand, etc.

Class level: The lessons worked better with Class Three children than with Class One or Kachi children. The latter became restless after a short time, were highly dependent on teacher instructions, and frequently made wrong responses even when given the proper cues. Class Three children, on the other hand, comprehended the lessons well enough in some cases to compensate for poor teacher direction. The lessons, perhaps unintentionally, seemed aimed at the level of Class Three children. There was too much listening, too many new words and too many instructions for younger children; they enjoyed the lessons but had difficulty following them.

Written instructions for teachers: The printed instructions for the teachers contained a number of mistakes which made it difficult for

the observers to determine how well they might have prepared the teachers for cuing the students. Several observers felt that teachers, in any case, would not actually have read the instructions to prepare for lessons. An observer with experience in the field suggested that teachers would read the instructions if they helped him or her "save face" by assisting with the English.

Written instructions seem to be a necessary way to convey to a teacher what he or she must know about the lesson. Everyone agreed that instructions should be clear, concise and simply written in Urdu, and should appear in a consistent format that teachers can become familiar with. All new vocabulary should be translated into Urdu so teachers fully understand the English. Teachers need instructions in what they must do before, during and after the class.

Workbook activities if designed with mostly self-instruction can help reinforce lesson content without depending overly much on teachers.

Teacher difficulties. During the lessons, teachers were observed having difficulty with the following:

Cuing children to respond with the proper rhythm so they answered in the pauses meant for their responses. Without this, they drowned out the word that was being modelled.

Identifying specific word commands. Instead of singing, "Stand up, sit down," for example, teachers cued the children to do the action of standing up and sitting down. This meant the children did not learn the word "sing."

Understanding oral commands. Teachers had difficulty with the radio instructions "Say good morning teacher," "In your mother tongue, tell the children....," "put a line on" (some observers did not know what was required with this last instruction), and sound stories.

Teacher direction. Most teachers did not comprehend English enough to follow any but the simplest instructions. Almost all did not respond appropriately to requests to give instruction in the mother tongue. If they are to continue to be given instructions in English, the English must be extremely simple and accompanied by some other reinforcement like a tone that tells them when they should react.

Children's responses. Children sang songs enthusiastically even though (probably because of poor diction of the voices) they sometimes missed words like "it's time to get up and go." They may have to go through these songs more slowly the first few times.

They usually looked for teacher direction, but in a number of cases

they responded in ways contradictory to teacher instruction, often in more correct form than asked for by the teacher.

They caught on quickly to the idea that they needed to listen and then respond. As the lessons progressed they became better and better at doing this.

Children and observers sometimes had difficulty distinguishing goat sounds from sheep, etc.

Student engagement. In general the children were orderly and attentive during the lessons. However, there were variations in their engagement in the lesson. Where patterns could be discerned in the observers' proformas, student engagement was usually highest in the middle of the lesson and lowest at the beginning and ends. The beginning might be explained by the fact that a number of teachers made no effort to focus student attention before they turned on the radio and it took awhile to get children fully engaged in the lesson. The lower student engagement at the end may be a result of simple "attention fatigue" after a period of intense concentration.

Children also tended to be most highly engaged during the songs and when they were asked to do some activity such as stand up and sit down, clap hands and snap fingers, point at, and verbal responses. They became restless during dialogues of Bano and Ali, especially when these continued on without giving them a chance to respond. There tended to be more of these long dialogues in the beginning of the lessons which may also have contributed to lower attention at this time. Shorter modelling should help to solve this problem.

Workbook assignments. Class Three students could write numbers easily because of their previous experience with numbers and letters. If radio lessons are to be the only English course children receive, then there needs to be a more careful plan devised for teaching writing. Writing should proceed more slowly than in Lesson 5 where children were suddenly asked to write numbers from 1 to 10. Attention will have to be given to forming letters and numbers as well as to the direction of writing from left to right. One option might be to continue teaching younger children English alphabet and number writing while they listen to radio lessons for the proper pronunciation. Workbooks (notebooks) also seemed to work better with Class Three than One.

Vocabulary. Certain vocabulary words gave difficulty for a mix of reasons. They need to be reviewed for their appropriateness, especially when it is expected that certain objects will be available in the classroom for demonstration. Pencils and notebooks, for example, are not necessarily present in the classroom. Objects may be known by other English terms ("copies" instead of notebooks) that conflict with the radio usages. Some objects such as pencils are difficult to point at so that the whole

class can see. When they are held up, the meaning of "point at" is lost. Scripts reviewed with these points in mind should work better.

Observer presence. Someone raised the question of whether the teachers would have worked so hard at trying to understand the English and guide the class if observers had not been present. How would the lessons work without the presence or attention of a teacher? Can cues be made so simple that they lessons are virtually teacher-independent?

Teacher training. The training program which was given to the teachers before the test was not adequate. Teachers need actual practice in cuing "students" to follow lessons. Simply showing them a video of Lesson One and giving them a verbal presentation of points to follow is not enough. During the test, several teachers asked questions that showed they had not fully absorbed even the little training they received or were unclear about what they were to do. Questions such as the following were asked:

Can I push "pause" and translate the new words in Pashto?

Can I teach the new words before (or after) the class?

Can I play the tapes again for students to practice?

What do I do with the students' notebooks after they have copied from the blackboard?

A follow-up training for the teachers after a period of using the lessons would be ideal so teachers could raise any difficulties they faced. An alternative would be to anticipate questions in the teachers' guide or on a training program broadcast and answer them.

The teachers seemed to feel insecure facilitating a program they were hearing for the first time. Provision for screening the program before the lesson, as in a radio broadcast the night before would help.

It was suggested that training programs for teachers take two forms: a product-specific training that helped teachers become better facilitator, and a capacity-building training that helped teachers improve their English language capability. Both could be broadcast in the evening and some arrangement might be made for testing participating teachers and giving those who meet a specified standard, a certificate of English teaching competency, perhaps through AIOU.

CONCLUSIONS

Overall, although there were numerous problems in the details of the program lessons, teacher notes, and training, none of these

appear insurmountable if modifications are made that address the problems noted above.

Answers to evaluation questions:

Do teachers behave according to directions from the radio voices and the notes in teachers' guides?

By the end of the test period most teachers were responding correctly most of the time to the radio cues. The written instructions contained mistakes that made it difficult to determine whether they could be used effectively. None of the teachers reacted correctly to all the radio instructions, and there was a great deal of variation in teacher responses, from no reaction to instructions to incorrect reactions to appropriate responses. In the teachers' defense the cues and written instructions were not always clear, and some required a level of English that the teachers did not nor could not be expected to possess. Gestures recommended in training turned out to be gestures that teachers normally use with different meanings which caused some confusion at first.

Do students respond accurately to the prompts of the radio program and the cues of their teachers?

Students generally responded accurately to radio and teacher cues, with some exceptions. Most of their confusions had improved during the test period. Sometimes children responded correctly when teachers gestured incorrectly. Improvements can be made in the diction and pronunciation of words that children either heard incorrectly or imitated improperly from inadequate modelling. With better radio voices and teacher understanding of lesson instructions, most of the problems students experienced would be solved.

Does the adapted IRI program appear to work equally well in varying schooling contexts?

The IRI lessons worked better with the Class 3 children than with Class 1 children. Vocabulary was presented too quickly for Class 1 children, and the continuous rather rapid pace of the lessons made it difficult for small children to follow correctly even though they participated enthusiastically. Multi-classes will all invariably listen to programs because of their spatial proximity, but each group responds according to its own capacity to listen and respond. Again classes from two to five seemed to follow the lessons better than younger children. Large classes sometimes had difficulty hearing cues, when the noise of singing or clapping overpowered the radio voices. Some observers felt the girls listened and responded more accurately than the boys. Urban/rural differences were not marked except when they were associated with differences in class size.

RECOMMENDATIONS

Recommendation One: If IRI lessons and teacher notes are modified as detailed above, it seems likely that they can be successfully adopted in Pakistani primary schools. They should be introduced first in a small number of "laboratory" classes to confirm that their deficiencies have been corrected. Then they can be extended to an experimental group of 300 schools and finally to all schools.

Recommendation Two: If IRI lessons are to continue in much the same pattern as exists now, then they should be offered from Class Three on. The three IRI levels can be introduced to Classes Three, Four and Five consecutively after a period of adjustment. In multi-classes (which constitute the vast majority of NWFP schools) all the children might listen to the radio, but workbooks would only be offered to Classes Three through Five. By the time younger children reached Class 3, they should be very good at the listening/responding parts. A special program to teach basic reading and writing skills might be introduced in the early years. Head teachers would be given the discretion to use the arrangement that best fits their school, including possibly finding more radios and covering more classes. The only limitation would be in the classes for which workbooks were designed.

To ease into a regular schedule, the first three years might be as follows:

In the first year of the program introduce Level One workbooks in Classes 3, 4, and 5.

In the second year introduce Level One workbooks in Class 3, and Level Two workbooks in Class 4, and 5.

In the third year introduce Level One workbooks in Class 3, Level Two workbooks in Class 4, and Level Three workbooks in Class 5, and in each following year follow this same procedure.

(Other recommendations concerning training, implementation, and dissemination are found in a separate memo)