

IMPROVING THE EFFICIENCY OF EDUCATIONAL SYSTEMS

Junior Secondary Education Improvement Project

BOTSWANA

**THE WORLD OF EDUCATIONAL INNOVATIONS
(Computer-based Educational Game)**

January 1989

IEES

Improving the
Efficiency of
Educational
Systems

Florida State University
Howard University
Institute for International Research
State University of New York at Albany

United States Agency for International Development
Bureau for Science and Technology
Office of Education
Contract No. DPE-5283-C-00-4013-00

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Bureau for Science and Technology
Office of Education
Contract No. DPE-5823-C-00-4013-00
Project No. 936-5823

PN-A.R-314

THE WORLD OF EDUCATIONAL INNOVATIONS.

by

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and

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30 January 1989

This document and the attached diskette constitute the deliverables for contract 89-1 with the Curriculum Development Unit under the auspices of the JSEIP grant agreement between the Government of Botswana and USAID. For the sake of clarity and completeness the document includes teaching material written by Vickie A. Sigman, a Florida State University Consultant, whose permission to use it is gratefully acknowledged.

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THE WORLD OF EDUCATIONAL INNOVATION

PLAYER'S GUIDE*

The World of Educational Innovation is a trainer-directed computer-based educational game developed by V. Sigman and J. M. Randal.

The game focuses on the processes involved in disseminating educational innovations. It is designed to simulate real-life situations.

The game consists of four parts.

1. The Introduction outlines the context in which the game is played.
2. Background Questions assess players' understanding of theoretical concepts upon which the game is based.
3. Playing the Game simulates the activities performed and difficulties encountered when attempting to disseminate educational innovations.
4. Concluding Questions facilitate the synthesis and evaluation of players' experience with the game and of the theory and practice on which it is based.

OBJECTIVE OF THE GAME

As a game-player, your objective is to secure adoption of an educational innovation by a given percent of headmasters and teachers within a pre-defined time-frame.

HOW TO PLAY THE GAME

CONTEXT

You will be working in a given School District. The School District has a total population of potential-users of the innovation of 100.

There are 10 schools in the District. Each school has one headmaster and approximately nine teachers. Headmaster's have different adopter tendencies.

* Prepared by Vickie A. Sigman, Florida State University Consultant, January 1989

GAME STRATEGIES AND CHOICES

There are two basic strategies you may pursue in securing adoption of the educational innovation. These are DATA COLLECTION and IMPLEMENTATION. Data collection provides you with information about the situation. Implementation lets you conduct activities.

An example of the computer screen that will ask you what you want to do is shown below.

SCREEN

Choose an action:

You have two basic strategies. Either do DATA COLLECTION (represented by a D) to get more information about the situation, or do IMPLEMENTATION (represented by an I) to carry-out an action.

Data Collection	(D)
Implementation.	(I)
Key to Headmaster's Influence.	(K)
Stop the Game.	(S)

Press D, I, K, or S then press enter (<--).

As you see in the above screen, you can also ask for a key to the Headmaster's influence or you can stop the game.

When playing the game, the computer will prompt you and ask you to choose among alternatives within the basic strategies of data collection and dissemination.

Your choices will cost you days!

The choices available to you within the strategies and their cost in days are shown below, in example screens.

SCREEN

Data Collection Choices (Cost In Days)

1. Staff meeting attendance. (5 days)
 2. FEEDBACK. (3 days)
 3. Workshop attendance. (5 days)
 4. Users displaying poster. (7 days)
 5. Users reading Thuto. (5 days)
 6. Learn about/identify Headmaster. (3 days).
 7. Contributions to "User Notes". (7 days).
 8. Continuous In-Service attendance. (5 days).
 9. Demonstration attendance. (5 days).
-

SCREEN

Implementation Choices (Cost in Days):

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Present at staff meeting.
(30 days) 2. Send User Notes.
(15 days) 3. Publish Thuto article.
(15 days) 4. Send Fact Sheet.
(10 days) 5. Conduct demonstration.
(40 days) 6. Hold continuous
in-service.
(10 days) | <ol style="list-style-type: none"> 7. Talk with Headmaster.
(15 days) 8. Conduct staff workshop.
(40 days) 9. Send Poster.
(20 days) 10. Talk with random teacher.
(5 days) 11. Establish Hotline. 12. Longer description of
choices. |
|--|---|

HOW THE GAME IS SCORED

The game is scored based on your selection of choices. Potential-users adopt the innovation based on your activities. Days required to carry-out activities are subtracted from the total days you are staying in the school district.

You can get a summary of your actions and the percent of potential-users who adopted the innovation based on your action. A summary table will come-up on your PC screen. An example of the table is show below.

SCREEN

Summary of Actions.

Goal of ___% of district 1

Action	Type	Sch	Cost	Days Left	Gain	Percent Adopted
1. Users reading Thuto	DC	All	5	175	0	0
2. Feedback	DC	All	3	172	0	0

Press the Space Bar to Continue

This table outlines:

Action: What choice you made.

Type: What type of action it was.
DC for data collection.
Imp for implementation.

Sch: What school number the action took place in.
All for all, other specific schools by number.

Cost: How many days your action cost you.

Days left: How many days you have left.

Gain: The percentage gain in adoption as a result of your action.

Percent Adopted: The cumulative percentage of adopters.

This example table shows scoring for two actions: (1) collecting data about Thuto readers and (2) collection through feedback.

CDU/JSEIP WORKSHOP ON DISSEMINATION OF EDUCATIONAL INNOVATIONS

BACKGROUND READINGS

Prepared by Vickie A. Sigman, Florida State University Consultant
January 1989

SOMETHING NEW ANYONE?

When was the last time you tried-out something new? It may have been a "new" kind of food. Or, maybe it was a "new" model of toothbrush. Or, it might have been a "new" approach to saving money or keeping fit. Whatever it was, you were dealing with an innovation.

INNOVATIONS

Innovations are things that people see as being "new". Whether or not they are really "new", does not matter. What matters is if they are viewed as new by the person who might use them.

Innovations can be objects. For example, for some people an electric pencil sharpener is an innovation.

Innovations can be ideas. For example, a syllabus could be an innovation.

Innovations can also be practices. Continuous assessment is an example of an innovation that is a practice.

YOUR EXPERIENCE

What has been your experience with innovation? Think about something new you have recently tried-out. How did you first learn about it? Did you hear about it on the radio? Did you see an advertisement on the television? Did a friend tell you about it? Do you remember what happened between the

time when you first learned about it and when you first used it?

If you cannot remember what happened, don't worry! People spend their lives studying such questions!

THE DIFFUSION/DISSEMINATION PROCESS

Researchers study how people learn about innovations. This is called the diffusion or dissemination process. In technical terms, diffusion is the process by which an innovation is communicated over time to members of a social system (Rogers, 1983). Dissemination is a similar process. In this reading, the two terms are used interchangeably.

THE ADOPTION PROCESS

Researchers who study the dissemination of innovations, also study the adoption process. The adoption process is sometimes referred to as the innovation-decision process.

The adoption process may be described as the stages people go through, as they decide to use or not use an innovation. People who use an innovation, are said to have "adopted" it.

STAGES IN THE ADOPTION PROCESS

The stages in the adoption process are:

1. Becoming aware of the innovation (AWARENESS STAGE).
2. Developing an interest in the innovation (INTEREST STAGE).
3. Mentally evaluating the innovation (EVALUATION STAGE).
4. Trying out the innovation (TRIAL STAGE).
5. Adopting, altering, or rejecting the innovation (ADOPTION STAGE).
6. Routinely using the innovation (INTEGRATION STAGE).

QUESTIONS FOR EDUCATORS

If people actually go through these stages, and research suggests they do, then interesting questions emerge. Can the process be speeded-up? Can people be helped to move through the process?

These questions are important to educators. For example, if you have been involved in developing a new syllabus in your area, you are probably interested in seeing that the new syllabus is used by teachers in schools. Knowledge of stages in the adoption process can be directly applied to your interest. You may well ask the critical question of HOW?

The following suggests guidelines for responding to the all important question of HOW.

GUIDELINES FOR EDUCATORS

Plan to offer opportunities so that people systematically move through the six stages in the adoption process.

Havelock (1973) gives ideas on potential hazards that will decrease the effectiveness of dissemination efforts.

Skipping steps (e.g., trial without evaluation or adoption without trial).

Changing the order of steps (e.g., trial before getting sufficient information to try).

Hurrying through the stages just to meet a schedule. (Most people need time to think things over before they make a change that will affect their lives in a significant way.)

Ignoring individual differences in adoption rates (e.g., assuming that everyone in the client system is aware of the innovation). (p.117).

DISSEMINATION METHODS

What types of opportunities might be planned and offered so that potential-users systematically move through the stages in the adoption process?

Again, research suggests answers. Studies have shown that certain types of dissemination methods are particularly effective during certain stages in the adoption process.

Three types of methods are involved. These are:

1. **MASS METHODS.** These include: radio, television, newspapers, brochures, banners and sign

boards, posters, etc. The message delivered through these methods reach a very large number of people.

2. **GROUP METHODS.** Examples of group methods are group meetings, workshops, demonstrations, conferences, seminars, retreats, etc. The messages delivered through these methods reach a specific group of people.
3. **INDIVIDUAL METHODS.** These include one-to-one visits and correspondence, telephone calls, individual consultations, etc. Here, the interaction is between individuals. The messages reach individual people.

METHODS AND STAGES

Certain methods are best used during certain stages of the adoption process. General recommendations for which method to use during which stage follow.

DURING THE AWARENESS STAGE: USE MASS METHODS

WHY?

In this stage, people are unaware of the innovation. Mass methods are used to reach a wide audience with general information about the innovation. In other words, mass methods are most effective in ensuring that a large number of people are exposed to the innovation.

DURING THE INTEREST STAGE: USE GROUP METHODS

WHY?

People tend to be information-seekers during this stage. They are interested in learning more about the innovation. Group methods are effective for providing further specific information to potential-users. Additionally, during this stage, people frequently seek information from their peers and from others whose opinions they value. Group methods facilitate this type of interaction.

During this stage, it is important to establish some type of two-way communication between sources of information about the innovation and potential-users. As information-seekers, potential-users ask their questions about the innovation answered.

The idea of establishing a "Hot line" is a good one, even though it is generally viewed as an individual type of communication.

DURING THE EVALUATION STAGE: USE GROUP METHODS

WHY?

Potential adopters are mentally evaluating the innovation during this stage. To help them evaluate, they need to know how the innovation can work in their own situation. Conducting group demonstrations helps them learn how the innovation can actually work in their situation. Demonstrations and other teaching methods can be directed toward individuals. But, it is recommended

they be done with groups as a matter of efficiency.

DURING THE TRIAL STAGE:
USE GROUP METHODS

WHY?

People are trying-out and experimenting with the innovation during this stage. They need further training and support to help them progress. Training can be done with individuals. The recommendation is to work with groups that more than one person receives training.

DURING THE ADOPTION STAGE:
USE INDIVIDUAL METHODS

WHY?

Adoption is not always an individual decision. However, individual persons are the actual users of innovations. Individuals who decide to adopt will continue to have questions, and perhaps problems, as they implement the innovation. Working one-on-one to answer and solve specific questions and problems is recommended at this stage.

DURING THE
INTEGRATION STAGE:
USE ALL THREE METHODS

WHY?

An innovation has not truly been adopted unless use of the innovation becomes routine (Havelock, 1973). Either in group or individual settings, reinforcing and encouraging the continued use of the innovation is important. Such methods as reminders in newslet-

ters (mass method), continuous in-service training (group method), and follow-up visits (individual method) provide reinforcement and support to users.

GUIDELINE FOR EDUCATORS

Where the objective is to facilitate the adoption of an innovation, the idea of the relationship between dissemination methods and stages in the adoption process, offers a guideline for planning a dissemination campaign.

The basic guideline is to plan for and utilize different dissemination methods at the appropriate times in order to facilitate the adoption of a given innovation.

This guideline is limited. It does not point to other important factors that influence the adoption of an innovation. For example, it does not address the critical issue of the appropriateness to potential-users of the innovation.

Other guidelines that may be helpful, emerge from an understanding of the concepts of opinion leadership and adopter categories. These concepts are examined in research on diffusion (Beal and Rogers, 1968; Havelock, 1973; Ryan, 1948; Rogers, 1983). A summary of these concepts follows.

OPINION LEADERSHIP

Simply, this is the idea that some members in a social system are generally able to influence the opinions and behaviors of others in their social system.

Opinion leaders may be open or closed to innovation. They may hold formal or informal power or both.

A key characteristic of opinion leaders is: they are communicators. They are connected to external sources of communication. They are linked to extensive interpersonal communication networks.

GUIDELINE FOR EDUCATORS

Applying the concept of opinion leadership to practical efforts, suggests the following guideline.

Identify and work with opinion leaders who support your innovation. If they are able to influence others, then they can help to facilitate the dissemination process by using their influence.

Rogers (1983) discusses several methods for identifying opinion leaders.

ADOPTER CATEGORIES

Given an innovation, for example a new textbook, it is highly unlikely that all potential-users (teachers) will adopt it at the same time.

Some teachers will move quickly to use it. Some will wait and see how it is being used by other teachers. Like it or not, a few teachers may be very slow to use it or perhaps, will not use it at all.

Research suggests that in a social system, people can be classified based on the time at which they begin to use an innovation. Time is the critical variable.

Adopter categories are grounded by time. They are based on the concept of innovativeness.

...Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than

other members of a system. ...The adoption of an innovation generally follows a normal bell-shaped curve when plotted over time on a frequency basis. (Rogers, 1983, pp. 242-243).

Based on a synthesis of Rogers (1983) and Havelock (1973), the five adopter categories are:

1. Innovators.

Innovators are the first to adopt. They are not well-integrated in their social system. They are often viewed by others as "outsiders". They may be seen as "odd-balls". They are risk-takers (meaning they are willing to take chances). They are not usually opinion leaders.

They represent a very small percent of members in a social system: between 2 and 3 percent.

2. Early Adopters.

Early adopters are well-respected and well-integrated members of the social system. They are leaders. Their opinions tend to be highly valued by other members. Others look to them for advice and information.

They make-up around 13-14% of members in a social system.

3. Early Majority.

They adopt innovations just before the average member of a social system. They are members "in good standing" in the social system. Yet, they do not tend to be leaders. Rather, they look to the early majority to see what they are doing and follow with deliberate willingness.

They represent about one-third of members in a social system.

4. Late Majority.

The late majority are very cautious adopters. They are highly influenced by their peers. They adopt AFTER the majority of the social system adopts. The innovation must be thoroughly proven and understood before they will adopt.

They represent about one-third of members in a social system.

5. Slow Adopters.

They are the last to adopt an innovation. They may not adopt at all. They may resist change. They tend to be unwilling to try new things.

Slow adopters represent around 15-16% of members in a social system.

WARNING!

Adopter categories are widely-used and commonly-known by diffusion researchers. The debate about adopter categories is extensive.

The debate centers on the classification when there may be rational reasons for non-adoption.

An overstated example illuminates the debate. Assume the innovation is a large tractor. Assume Mr. and Mrs. XYZ are farmers who farm less than one hectare. Are Mr. and Mrs. XYZ to be considered as "slow adopters" because they do not adopt the innovation? Answers to this fuel the debate. Issues such as the appropriateness of the innovation to potential-users emerge.

GUIDELINES FOR EDUCATORS

The above discussion of adopter categories offers some basic guidelines.

Obviously, some people will adopt an innovation before others. It may be important to carefully target dissemination efforts to insure that people other than the early majority adopt.

In some cases, dissemination strategies may be different depending on the target audience.

Early adopters tend to have a high degree of opinion leadership. Involve them in the dissemination campaign. Remember that others will tend to look to these leaders for guidance.

SUMMARY

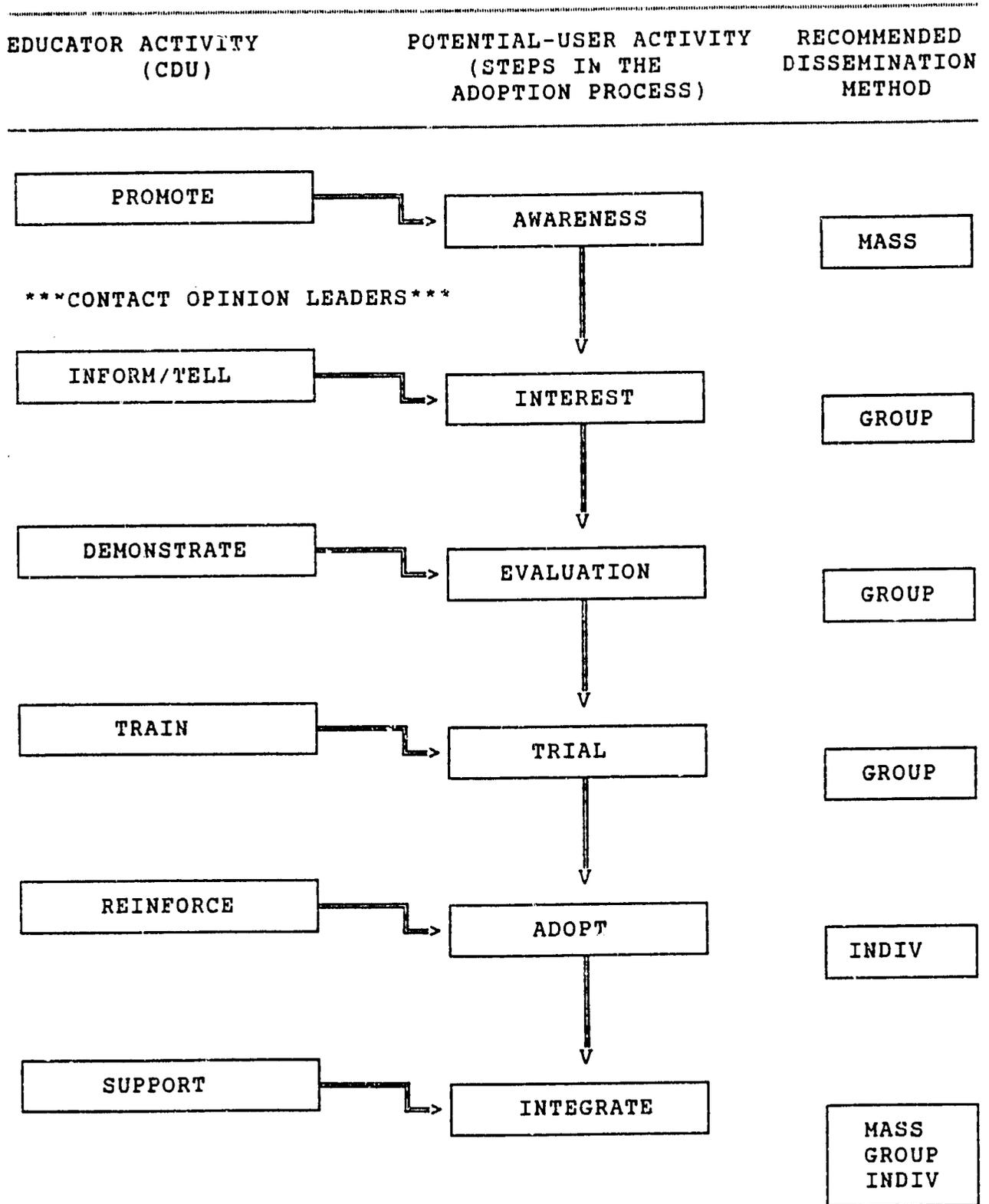
Figure 1 attached depicts general steps in a dissemination campaign. The diagram presents, at different steps:

- (1) what educators might do,
- (2) what potential-users hopefully do, and
- (3) which dissemination methods may be most effective.

References:

- Beal, G. & Rogers, E. (1960) The Adoption of Two Farm Practices in a Central Iowa Community. Report 26 Ames: Ag & Home Ec Exp Station
- Havelock, R.G. (1973) The Change Agents Guide to Innovation in Education. New Jersey: Ed Tech Pub
- Rogers, E. (1983) Diffusion of Innovations. 3rd Ed. NY:Free Press
- Ryan, B. (1948) "A Study in Technological Diffusion", IM Rural Sociology, 13:273-285.

Figure 1.*



THE WORLD OF EDUCATIONAL INNOVATIONS

Certain actions will require that you have previously collected data or conducted some implementation.

The following chart outlines prerequisite action for IMPLEMENTATION CHOICES.

CHOICE	PREREQUISITE	
Implementation Choice	Data Collection	Implementat
1. Present at staff meeting.	1 & 6	7
2. Send User Notes.	7	
3. Publish Thuto article.	5	
4. Send Fact Sheet.		
5. Conduct demonstration.	6 & 9	7
6. Hold continuous in-service.	6 & 8	7
7. Talk with Headmaster.	6	
8. Conduct staff workshop.	3 & 6	7
9. Send poster.	4	
10. Talk with random teacher.		
11. Provide Hotline.		

THE WORLD OF EDUCATIONAL INNOVATION

Sometimes it is difficult to determine which specific dissemination methods are which type of method. It may depend on their use.

For purposes of the game, the dissemination methods used in the game are categorized as follows.

1. MASS METHODS INCLUDE:

Article in Thuto, Sending Poster, Sending Fact Sheet,
Sending User-Notes.

2. GROUP METHODS INCLUDE:

Holding a Staff Meeting, Conducting a Demonstration, Presenting a
Workshop.

3. INDIVIDUAL METHODS INCLUDE:

Providing a HOTLINE, Talking with a Teacher,
Continuous In-Service.

HOW THE GAME IS SCORED.

The simplest action is to talk to a teacher at random. There are no prerequisites. The number of times one has talked to a teacher at random is incremented, the score appropriate to that number of times is selected, and is allocated to a school at random. If the attempt fails or is only partially successful because that school is completely or nearly converted, nine more random attempts are made. If they are not successful in distributing all the points, then schools are interrogated one at a time until all the points are assigned. If one talks to more than six teachers at random, the score appropriate to the sixth is used. Note that it is sensible to allocate a score of zero or one to this strategy.

Next come mass strategies without prerequisites (Fact Sheet and Hot Line). The number of times the one chosen has been used is incremented (up to the sixth time), and the game looks to see whether Thuto or Posters have been exercised. On the basis of these two criteria, a score is chosen and is "trickled down". This means that any conversions made are assigned first to schools with early adopting headmasters, then to early majority, and so on.

Mass strategies with prerequisites (Thuto, Poster), are first checked to see if the number of Thuto readers and poster hangers have been determined. If not, no days are docked, and no conversions are made. If so, the number of times used is incremented (up to six), and the score is trickled down.

Talking to a headmaster is a prerequisite for all the group strategies. A check is made to see if one has found out about the headmaster's adoption tendencies. If not, no time is docked, and no score is made. Otherwise the number of times the particular headmaster has been talked to is incremented (up to six) and a score is chosen on the basis of this count and his or her adoption tendencies. The score is then added to the school's conversions. If the school is already converted points are assigned at random. If this fails, they are forced into any schools not completely converted. (This is called "target schools then random"). Extra days are docked if one bothers the headmaster five times, and even more are docked if you bother him or her six times or more.

Group strategies (staff meeting, workshop, and demo), are checked for the headmaster prerequisite and the number of participants information prerequisite. Only one can be held at each school, and this is also checked. Time is not docked and no score is allocated if these criteria are not met. The number of conversions depend on whether or not Thuto or posters have been used and on the adoption tendencies of the headmaster. They are credited to the target school, then at random.

In-service training is similar to the group strategies, except that in some circumstances it is regarded as a strategy aimed at an individual for feedback and random events. Points are credited to the target school, then at random.

User Notes is the one integration strategy. The informational prerequisite is checked and the strategy is accepted or rejected. The usage is incremented (up to six). Each school is polled to see whether a group strategy or in-service has taken place there. If neither has taken place at a particular school, no score is made for that school. If a staff meeting, workshop, or demo has taken place then the school is credited with conversions. If in-service has taken place, then a different score is allocated to that school. For example if three schools had in-service, then each would receive a user notes score. Points are assigned randomly if any of the target schools are completely converted.

Random events "occur" before scoring. They may change the number of days it takes to do something, (even make it negative), or they may cause any subsequent score to be multiplied by a factor, or both. "Efforts partially effective" usually means that any conversions are multiplied by a half or three quarters. In order to avoid fractional conversions, scores are rounded to an integer. This is done by adding a random number between zero and unity to the score and taking the integer part of the result as the effective score. That is, fractional scores are rounded up or down by chance.

File: score.stx

INSTALLING THE GAME.

Make a directory to hold the game. Copy the contents to the directory. Move to the directory and invoke your version of BASICA as follows:

```
basica district
```

The message:

```
Loading Up.
```

will appear in the middle of a blank screen for a short while before the main menu appears. You can then begin to play.

The game uses data files, and expects to find them in its own directory. Therefore, you should either have a version of basic in the game's directory, or invoke one of the PATH mechanisms so that BASICA executes from the game's directory.

The distribution disk contains the following files:

DISTRICT.BAS

The game program.

MAKDIS1.BAS

A program that assembles scoring data, random events and a map (if there is one), into a form which DISTRICT.BAS can access rapidly. The scores, costs, and the map are laid out in DATA statements. The random events are read from the file EVT1.DTX. All of these are combined into the file DIS1.DAT which is read into arrays while the message "Thinking About District 1" is being displayed on the screen. You can make a second school district by copying MAKDIS1.BAS to MAKDIS2.BAS and altering the DATA statements inside MAKDIS2.BAS to reflect the new school district. You may even want to have a new set of random events by creating a file called EVT2.DTX and making it known to MAKDIS-2.BAS.

LOOKDIS.BAS

This program takes the file produced by MAKDIS1.BAS and displays it in a more-or-less comprehensible form. Invoke the program and then type the district number. A table of scores will appear on the printer. Neither the map nor the random events will be displayed.

DIS1.DAT

A file containing scores, costs, map (key to headmaster adoption tendencies), and random events in a form easily accessible to the game. See MAKDIS1. BAT.

PLAY.BAT

This is a standard BATch file which essentially contains the:

BASICA DISTRICT

command. You may modify it to make invoking the game easier so that people may start the game by just typing PLAY.

*.DTX

The remaining files are "DTX" or "DOS text files". They originally started life as Word Perfect files, but all the internal formatting codes have been removed. DOS text files in general, contain only visible characters, space characters, linefeed carriage return characters, and form feed characters although they may also contain other printer specific commands which are ignored by the game. These files contain screens that will be displayed by the game. Some of them also contain codes that tell the game what to do with the screen. The DOS text format was chosen because most word processing packages use it for "importing" or "exporting" documents to other packages or machines.

DES1.DTX

Contains a description of district 1. It should not be longer than about 20 lines.

INTR.DTX

Contains the introduction to the game. Screens are separated by a form feed (ASCII character 12). The "end of file mark" is equivalent to a form feed. When playing the game you can "back space" by pressing the "PgUp" key.

CONQ.DTX

Contains the concluding questions of the game. Format and function is the same as INTR.DTX.

CHOA.DTX

Contains the "Detailed Description of Implementation Choices" screens. Screens are separated by form feeds. Lines beginning with numbers are picked off to form the abbreviated "Implementation Choices" screen and the "Summary of Actions" actions.

CHOI.DTX

Contains the "Detailed Description of Data Collection Choices" screens. Format and function are the same as CHOA.DTX.

EVT1.DTX

Contains the random events for district 1. Because random events are an essential part of gaming this file is listed later in this document. There are ten possible random events for each of five kinds of implementation activity. The kind of activity is coded in commands that begin with a period in column 1 of the file as follows:

- .m Mass methods (Thuto, Poster, Fact Sheet, User Notes).
- .g Group methods (Staff Meeting, Demo., Workshop).
- .i Individual methods (Random Teacher, In-Service).
- .h Talking with Headmaster.
- .l Hotline.

In addition there are two other commands:

- .c Ignore this line. (Used for cosmetics).
- .s Convey effects of random event to the game.

The .s should be followed by one space, a positive or negative integer, a comma, and any number between zero and one. The integer gives the bonus or penalty in days, and the second number is multiplied by the score for the activity to give a reduced score that is actually credited to the player. See the listing for examples.

EXER.DTX

Contains the screens and answers for exercises in the game. The body of each screen is contained between commands that begin with a period in column one:

- .x Begin a screen (Clear the screen and print this line).
- .s End a screen that does not contain a question.
- .m End a screen that contains a multiple choice question.
- .n End a screen that contains a numeric question.

The end of file marker is an honorary .s command. The .m command is followed by one space then by all the letters (upper case and lower case), of the correct responses for the question for the screen. Optionally, these may be followed by a colon and then a message of less than a line that will be displayed on the screen if the correct answer is given. The .n command is followed by a space and then two numbers separated by a comma. The question must be posed so that if the numerical response is between the two numbers it is judged correct.

MISC.DTX

Contains miscellaneous lines of text that are used in game responses. Its purpose is to allow messages to be changed without the need of a programmer. It should be changed with great caution.

File: maint.stx

The World of Educational Innovation.

exer.dtx

BACKGROUND QUESTIONS
MULTIPLE CHOICE

Please answer the following questions.

To respond, type-in the letter of your answer at the bottom of the screen and then PRESS ENTER. (—). Your answer is displayed at the bottom of the screen.

1. An innovation is:

- (a) always beneficial and usually inexpensive.
- (b) an idea, practice, or object perceived as new.
- (c) a communication channel in an organization.
- (d) a type of shebeen.

.m bB

S

.x

To respond, type-in the letter of your answer at the bottom of the screen and then PRESS ENTER. (—). Your answer is displayed at the bottom of the screen.

2. Diffusion is:

- (a) the steps in a process whereby innovations are adopted.
- (b) mass media and group meetings to communicate new ideas.
- (c) a process by which innovation is communicated through a social system.
- (d) interpersonal communications within an organization.

.m cC

S

.x

To respond, type-in the letter of your answer at the bottom of the screen and then PRESS ENTER. (—). Your answer is shown at the bottom of the screen.

3. The adoption process (also referred to as the innovation-decision process) is:

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- (a) a process individuals or groups go through as they decide to adopt, alter, or reject an innovation.
- (b) comprised basically of these steps: awareness; interest; evaluation; trial; adoption, alteration, or rejection; and integration.
- (c) a process R. Havelock and E. Rogers, in particular, write about.
- (d) all of the above.

.m dD

S

S

.X

To respond, type-in the letter of your answer at the bottom of the screen and then PRESS ENTER. (—). Your answer appears at the bottom of the screen.

4. The concept of opinion leadership suggests that:

- (a) good leaders are highly opinionated and emphasize those opinions in their management approach.
- (b) people who have strong opinions are necessarily effective leaders because of their commitment to a point-of-view.
- (c) in a social system, some people's influence is greater than others. They are opinion leaders.
- (d) none of the above.

.m cC

S

.X

YOU ARE MAKING GREAT PROGRESS THROUGH THESE QUESTIONS!
NOW, LET'S REVIEW YOUR UNDERSTANDING OF DISSEMINATION METHODS
AND WHEN THEY ARE BEST USED DURING THE ADOPTION PROCESS.

The next set of questions will appear on several screens. To respond, type-in the letter of your response at the bottom of the screen and press enter (—).

There are three basic dissemination methods. These are:

MASS METHODS	(response letter = M)
GROUP METHODS	(response letter = G)
INDIVIDUAL METHODS	(response letter = I)

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1. During the AWARENESS STAGE, which method is most effective?
(M, G, or I?)

.m mM

s

s

.x

To respond, type-in the letter of your response at the bottom of the screen and press enter (—).

There are three basic dissemination methods. These are:

MASS METHODS (response letter = M)
 GROUP METHODS (response letter = G)
 INDIVIDUAL METHODS (response letter = I)

2. Which method is most effective, during the INTEREST STAGE?
(M, G, or I?)

.m gGiI:GROUP METHODS are preferred; INDIVIDUAL METHODS can be used.

s

.x

To respond, type-in the letter of your response at the bottom of the screen and press enter (—).

There are three basic dissemination methods. These are:

MASS METHODS (response letter = M)
 GROUP METHODS (response letter = G)
 INDIVIDUAL METHODS (response letter = I)

3. During the EVALUATION STAGE, which method is recommended?
(M, G, or I?)

.m gG

s

20

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s
.x

To respond, type-in the letter of your response at the bottom of the screen and press enter (↵).

There are three basic dissemination methods. These are:

MASS METHODS (response letter = M)
GROUP METHODS (response letter = G)
INDIVIDUAL METHODS (response letter = I)

4. During the TRIAL STAGE, which method is recommended?
(M, G, or I?)

.m gG

s
.x

To respond, type-in the letter of your response at the bottom of the screen and press enter (↵).

There are three basic dissemination methods. These are:

MASS METHODS (response letter = M)
GROUP METHODS (response letter = G)
INDIVIDUAL METHODS (response letter = I)

5. Which method is recommended for use during the ADOPTION STAGE?
(M, G, or I?)

.m iI

s
.x

To respond, type-in the letter of your response at the bottom of the screen and press enter (↵).

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There are three basic dissemination methods. These are:

MASS METHODS (response letter = M)
 GROUP METHODS (response letter = G)
 INDIVIDUAL METHODS (response letter = I)

6. At last, what is recommended during the INTEGRATION STAGE?
 (M, G, or I?)

.m mMcGiI:All methods are recommended during the INTEGRATION stage.

s
 .x

ADOPTER CATEGORIES

Because people will adopt a given innovation at different times, researchers have developed a way to categorize people by the time at which they adopt. Research suggests there are five categories of adopters. These are:

1. INNOVATORS
2. EARLY ADOPTERS
3. EARLY MAJORITY
4. LATE MAJORITY
5. SLOW ADOPTERS

The following screens will query you about the percentage of people in each adopter category. To answer, type in the number of your response and press enter (—).

1. What is the percentage of people in the INNOVATOR CATEGORY?

.n 2,3

s
 .x

ADOPTER CATEGORIES

2. The percentage of people in the EARLY ADOPTER category is?

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(Remember, to answer, type-in the number of your response at the bottom of the screen and press enter (—)).

.n 13,14

x
x
.x

ADOPTER CATEGORIES

3. The EARLY MAJORITY represent _____ percent of people?

(To respond, look for the cursor at the bottom of the screen, type-in the number of your answer and press enter (—)).

.n 30,35

s
.x

ADOPTER CATEGORIES

4. What is the percentage of people who are in the
LATE MAJORITY category?

(Respond by entering numbers and press enter (—)).

.n 30,35

x
x
.x

ADOPTER CATEGORIES

5. SLOW ADOPTERS? Are there many? What percentage do you think there are?

(Respond by typing-in your number answer and press enter (↵)).

.n 15,16

x
x
.x

You have successfully completed the background questions!

Thank you for your attention.

Have fun with the game!

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exe .dtx

A small, handwritten mark or signature in the bottom right corner of the page, consisting of a few connected strokes.

.c

MASS

.m

CHANCE EVENTS FOR IMPLEMENTATION STRATEGIES

.c

(THUTO, POSTER, FACT SHEET, USER NOTES)

Action completed as planned. (Note: to determine the specific outcome of your action, ask for feedback.)

.s 0,1

Members of Botswana Teachers Union see your material and actively support innovation. You gain 10 days.

.s 10,1

Material poorly printed. Outcome as planned, but it took an extra 5 days to correct error.

.s -5,1

Molepolole teachers see your material. They wonder what's going on. You must take 10 extra days to inform them.

.s -10,1

Action completed as planned. (Note: to determine the specific outcome of your action, ask for feedback.)

.s 0,1

Teacher independently alters material. Material not used as planned. Effort partially successful.

.s 0,0.75

Your efforts are to be announced on National Radio. Congratulations! You gain 5 days.

.s 5,1

Members of Headmaster's Association see your material and are delighted. You gain 5 days.

.s 5,1

Educational Officers see your material. They were not previously informed. You lose 10 days.

.s -10,1

The effort required to develop and distribute your material is considerable. You get sick and lose 5 days.

.s -5,1

.h CHANCE EVENTS UPON TALKING WITH A HEADMASTER:

Action completed as planned. (Note: to determine the specific outcome of your action, ask for feedback.)
.s 0,1

Innovation is perceived by headmaster as improvement to the instructional programme. You gain 10 days.
.s 10,1

You and headmaster follow the same soccer team. You gain 5 days.
.s 5,1

At the school, you mistakenly talk to a teacher before talking with the headmaster. You lose 5 days, but outcome as planned.
.s -5,1

Earlier visit with Permanent Secretary went well. His 'official' support is communicated to the headmaster. Gain 5 days.
.s 5,1

Your visit with the headmaster goes well because you admire the school garden. You gain 5 days.
.s 5,1

You fail to inform headmaster that you are coming, so you find the headmaster busy and irritable. Effort less effective.
.s 0,0.5

Action completed as planned. (Note: to determine the specific outcome of your action, ask for feedback.)
.s 0,1

You spill your tea over important notes on headmaster's desk. Effort partially effective.
.s 0,0.75

Community sends delegation to headmaster. They want to be involved in determining educational changes and their implications. You help headmaster involve community, but it takes an extra 20 days.
.s -20,1

27

.c

INDIVIDUAL

.i

CHANCE EVENTS FOR IMPLEMENTATION STRATEGIES

.c (INDIVIDUAL: TEACHER AT RANDOM, CONTINUOUS IN-SERVICE)

Local Board of Governors announces they support innovation.
Teacher you work with has heard about this. You gain 5 days.
.s 5,1

Teacher you were going to work with was ill on day of action.
You refocus, but effort only partially successful.
.s 0,0.75

Action completed as planned. (Note: to determine the specific
outcome of your action, ask for feedback.)
.s 0,1

Teacher you work with has heard of innovation from cousin's
aunt's daughter-in-law's friend. You unexpectedly gain 5 days.
.s 5,1

Not a good time. Teacher tells you that at Kgotla meeting ques-
tions about innovation were not answered. You must take 20 days
to interact with the community and local chief.
.s -20,1

Teacher you wanted to work with was attending a workshop. You
reschedule, but it takes an extra 5 days.
.s -5,1

Your cheery personality wins the day! Interaction with teacher
was great! Action exceeds your expectations. You gain 10 days.
.s 10,1

Action completed as planned. (Note: to determine the specific
outcome of your action, ask for feedback.)
.s 0,1

You have been busy and harried. Unfortunately you were unable to
spend enough time with the teacher. Effort partially effective.
.s 0,0.75

Action completed as planned. (Note: to determine the specific
outcome of your action, ask for feedback.)
.s 0,1

.l CHANCE EVENTS FOR IMPLEMENTATION STRATEGIES

.c HOTLINE

The idea of a HOTLINE is very well received. You gain 10 days.
.s 10,1

People appreciate getting their questions answered through the
HOTLINE. You gain 5 days.
.s 5,1

Attempts to get the HOTLINE organized, are more difficult than
you had expected. Effort partially successful.
.s 0,0.75

Action for Hotline completed as planned. (Note: to determine
the specific outcome of your action, ask for feedback.)
.s 0,1

The HOTLINE proves to be an excellent communication tool. You
gain 5 days.
.s 5,1

The HOTLINE is an incredible success. So much so that you must
take 20 days to respond to the questions teachers have asked.
.s -20,1

It takes longer than you expected to respond to teachers. Sorry.
You lose 5 days.
.s -5,1

Your action for the HOTLINE was completed as planned. (Note: to
determine the specific outcome of your action, ask for feedback.)
.s 0,1

There was a mix-up in communication about how the HOTLINE works.
Effort partially successful.
.s 0,0.75

Your action for the HOTLINE was completed as planned. (Note: to
determine the specific outcome of your action, ask for feedback.)
.s 0,1

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1490 NEXT I
1560 FOR I = 1 TO 10
1570   FOR J = 1 TO 4: INPUT #1, B(I,J): NEXT J
1600 NEXT I
1680 FOR I = 1 TO 9: INPUT #1, G(I): NEXT I
1690 FOR I = 1 TO 10 : INPUT #1,CS(I) : CA(I) = 0 : H(I) = 0 : NEXT I
1740 FOR I = 1 TO 6: U(I) = 0: NEXT I
1750 INPUT #1,MAPI
1760 IF MAPI = 0 THEN 1800
1770 FOR I = 1 TO MAPI
1780   INPUT #1,MS(I)
1790 NEXT I
1800 FOR I = 1 TO 5 : FOR J = 1 TO 10 : INPUT #1, RD(I,J) : NEXT J : NEXT I
1810 FOR I = 1 TO 5 : FOR J = 1 TO 10 : INPUT #1, RE(I,J) : NEXT J : NEXT I
1820 FOR I = 1 TO 5 : FOR J = 1 TO 10 : INPUT #1, RN(I,J) : NEXT J : NEXT I
1830 FOR I = 1 TO 5 : FOR J = 1 TO 10
1840   FOR K = 1 TO RN(I,J) : INPUT #1, RMS(I,J,K) : NEXT
1850 NEXT J : NEXT I
1920 CLOSE : I = FRE(0) 'tidy up storage
1930 T = 0
1940 PR = PRINTERS = "yes"
1950 FOR I = 1 TO 4 : FOR J = 1 TO 4 : TA(I,J) = 0 : NEXT J : NEXT I
1970 R9 = 370 'upper limit on stay in district
1980 B1$ = "Before you can initiate this strategy, "
1990 Y1$ = "you must determine "
2000 Z1$ = " (Type y for yes or n for no) :"
2010 REM *** INTRODUCTION ***
2030 CLS : LOCATE 2,35 : PRINT "District";VI : PRINT
2040 FS = DISKS + "des" + FNSTS(VI) + ".dtx"
2050 OPEN FS FOR INPUT AS #1
2060 IF EOF(1) THEN CLOSE #1 : GOTO 2075
2065 LINE INPUT #1, AS : PRINT "      ";AS
2070 GOTO 2060
2075 GOSUB 10270 : CLS
2080 LOCATE 5,7 : PRINT "Type in your answer then press enter";ENS
2085 IF NAS <> "" THEN 2108
2087 PRINT : PRINT
2090 LOCATE ,7: PRINT "What is your name?";
2100 FLAG = 1: LZ = 25: GOSUB 9930: FLAG = 0: LZ = 3
2102 IF CHS = ESS THEN BEEP : GOTO 2090
2104 NAS = ST$
2108 PRINT : PRINT
2110 LOCATE ,7: PRINT "How many days do you plan on staying with us. ";NAS;" ?"
;
2114 N1 = R9: N2 = 2
2116 GOSUB 11005
2118 IF CHS = ESS THEN 2090
2120 R = N0: Q = R
2130 PRINT : PRINT
2170 LOCATE ,7: PRINT "What percentage of intended-users must you convert?";
2190 N1 = 100
2200 GOSUB 11000
2210 IF CHS = ESS THEN LOCATE 13,7: PRINT FS;: GOTO 2110
2220 PG = N0
2230 LOCATE 17,7
2240 PRINT "Welcome to our school system, ";NAS;". "

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2242 GOSUB 10270
2244 IF CH$ = ESS THEN 2170
2250 E = 0: S = 0
3010 REM ***~driver ***
3020 IF (E > 0 AND E < 10) OR (S > 0 AND S < 12) THEN GOSUB 15000
3021 GOSUB 16300
3022 IF T >= PG THEN 9050
3030 IF R >= MIND THEN 3130
3040 IF R >= MINA THEN 3090
3060 BEEP : CLS : LOCATE 10,7 : PRINT "Unfortunately, ";NA$;"", you have run out
      of time."
3070 GOTO 9020
3090 CLS : LOCATE 10,7 : PRINT "You have only";R;" days remaining and therefore
      must limit"
3100 LOCATE 12,7 : PRINT "yourself to requesting information or must end your v
      isit."
3120 GOSUB 10270
3130 CLS
3135 LOCATE 1,60 : PRINT R;"days remaining."
3150 REM CLS
3160 LOCATE 2,5: PRINT "Choose an action:"
3165 LOCATE 4,7 : PRINT "You have two basic strategies.  Either do DATA COLLECT
      ION"
3170 LOCATE 5,7 : PRINT "(represented by a D) to get more information about the
      situation,"
3175 LOCATE 6,7 : PRINT "or do IMPLEMENTATION (represented by an I) to carry ou
      t an action."
3182 IF R < MINA THEN 3194
3185 LOCATE 9,10 : PRINT "Data Collection. (D)"
3188 IF R < MIND THEN 3194
3190 LOCATE 12,10 : PRINT "Implementation. (I)"
3194 IF MAPI = 0 THEN 3200
3195 LOCATE 15,10 : PRINT "Key to Headmasters' Influence. (K)"
3200 LOCATE 18,10 : PRINT "Stop the Game. (S)"
3202 LOCATE 21,5 : PRINT "Press ";
3204 IF R >= MINA THEN PRINT "D, ";
3206 IF R >= MIND THEN PRINT "I, ";
3208 IF MAPI > 0 THEN PRINT "K, ";
3210 PRINT "or S then press enter";ENS;
3220 GOSUB 9930 : IF CH$ = ESS THEN GOTO 30000
3230 CH$ = LEFTS(STS,1) : GOSUB 16000
3240 PRINT
3250 IF CH$ = "d" AND R >= MINA THEN 4020
3270 IF CH$ = "i" AND R >= MIND THEN 5020
3290 IF CH$ = "s" THEN CLS : GOTO 9020
3300 IF CH$ = "k" THEN 3330
3310 GOSUB 10940
3320 GOTO 3220
3330 CLS ' *** map goes here ***
3340 IF MAPI = 0 THEN LOCATE 10,1 : PRINT "Sorry, key not currently available."
      : GOTO 3392
3350 FOR I = 1 TO MAPI
3360   PRINT I$(I)
3370 NEXT I
3392 GOSUB 10270
3394 IF CH$ = ESS THEN 3330

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3396 GOTO 3020
4010 REM *** information requests ***
4020 CLS : Z$ = " days)."
4040 LOCATE 1,20: PRINT "Data Collection Choices (Cost in Days).
4050 FOR I = 1 TO 9
4060   LOCATE 2*I + 1,5
4080   PRINT TPS(I);" (" ;FNSTS(A(FNSE(I),1));Z$ ELSE PRINT
4090 NEXT
4100 LOCATE 21,5 : PRINT "10. Longer Descriptions of Choices."
4130 LOCATE 23,5 : PRINT "Type the number of your request and press enter";EN:
4150 N1 = 10 : GOSUB 11000
4160 IF CH$ = ESS GOTO 3020
4170 EE = N0: S = 0: LEADER = 0
4172 IF EE = 10 THEN FS = DISKS + "choi.dtx" : E = EE : GOSUB 32700 : GOTO 40:
4180 IF EE > 0 AND EE < 10 THEN 4310
4190 GOSUB 10940
4200 GOTO 4130
4300 REM *** make sure days available >= cost of choice ***
4310 E = FNSE(EE) : IF A(E,1) <= R THEN 4350
4315 CLS
4320 LOCATE 10,7 : PRINT "Your request ";FNSTS(EE);" requires ";FNSTS(A(E,1))
4330 LOCATE 12,7 : PRINT "and you only have ";R;FNDSS(R);" remaining."
4340 GOSUB 10270 : GOTO 4130
4350 R = R - A(E,1)
4360 A(E,2) = 1
4380 CLS : LOCATE 10,1 : ON VAL(MIDS("111112113",E,1)) GOTO 4540,4390,4680
4390 LOCATE 10,7 : PRINT "Which school would you like to study to discover the
      identity"
4395 LOCATE 12,7 : PRINT "and influence of the headmaster?"
4400 LOCATE 14,7 : PRINT "Enter the school number and press enter";ENS;
4410 N1 = 10
4412 GOSUB 11000
4414 IF CH$ = ESS THEN BEEP: GOTO 4390
4416 C = N0 : LEADER = C
4420 B(C,1) = 1
4430 PRINT
4440 LOCATE ,7 : PRINT "The headmaster of school number ";FNSTS(C);
4450 PRINT " has ";FNCLS(B(C,3));" tendencies."
4520 GOSUB 10270 : GOTO 3020
4540 PRINT "      "; G(E); HTS(E)
4670 GOSUB 10270 : GOTO 3020
4680 GOSUB 15000 : GOSUB 15100 : GOTO 3020
5010 REM *** diffusion strategies ***
5020 CLS : Z$ = " days)."
5030 LOCATE 1,20 : PRINT "Implementation Choices (Cost in Days):"
5130 J = 2 : K = 3
5140 FOR I = 1 TO 11
5150   LOCATE K,J : PRINT TPS(16 + I - 1)
5160   LOCATE K + 1,J + 6 : PRINT "(" ;FNSTS(D(FNSS(I),1));Z$
5170   IF I = 6 THEN J = 40 : K = 3 ELSE K = K + 3
5180 NEXT
5190 LOCATE K,J
5200 PRINT "12. Longer description of choices"
5205 PRINT : PRINT
5210 PRINT " Enter the number of your request and press enter";ENS;
5220 N1 = 12 : GOSUB 11000

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5230 IF CH$ = ESS THEN 3020
5240 SS = NO : E = 0
5250 IF SS = 12 THEN FS = DISKS + "choa.dtx" : S = SS : GOSUB 32700 : GOTO 5020
5260 IF SS < 1 OR SS > 11 THEN THEN GOSUB 10940 : GOTO 5210
5265 S = FNSS(SS)
5270 IF D(S,1) <= R THEN 5340
5290 CLS : LOCATE 10,7 : BEEP : PRINT "Implementation choice ";FNSTS(SS);" requ
      ires "; FNSTS(D(S,1));" days"
5293 LOCATE 11,7 : PRINT "and you only have ";FNSTS(R);" ";FNDSS(R);" remainin
      g."
5296 GOTO 3120
5330 REM *** diffusion strategy 1 ***
5340 CLS : LOCATE 8,1 : D1 = 0 : A1 = 0 : E1 = 1
5350 ON VAL(MIDS("11221111312",S,1)) GOTO 6080,6150,5360
5360 IF A(6,2) = 1 THEN 5400
5370 LOCATE ,7 : PRINT B1$; Y1$
5380 LOCATE ,7 : PRINT "the headmaster of the school you want to work with."
5390 GOSUB 10270 : GOTO 3020
5400 LOCATE 10,7 : PRINT "Enter the school number of the headmaster you want to
      talk with"
5405 LOCATE 12,7 : PRINT "and press enter.";ENS;
5410 N1 = 10
5420 GOSUB 11000
5422 IF CH$ = ESS THEN BEEP: GOTO 5400
5424 C = NO : LEADER = C
5430 IF B(C,1) = 1 THEN 5480
5440 PRINT
5450 LOCATE ,7 : PRINT "You have not identified a headmaster, therefore you can
      not use"
5460 LOCATE ,7 : PRINT "him or her for this implementation strategy."
5470 GOSUB 10270 : GOTO 3020
5480 PRINT
5490 D1 = D(9,1)
5500 E1 = 1
5520 IF B(C,4) = 6 THEN 6020
5530 B(C,4) = B(C,4) + 1
5550 IF B(C,4) = 5 THEN 5970
5560 A1 = V(B(C,3),B(C,4))
5570 CLS
5950 GOTO 7720
5960 REM *** fifth talk with headmaster ***
5970 LOCATE ,7 : PRINT "Your constant talking annoys headmaster. You lose 5 da
      ys."
5990 D1 = D1 + 5
6000 GOTO 6050
6010 REM *** sixth (and greater) talk with headmaster ***
6020 LOCATE ,7 : PRINT "The headmaster bans you from the school."
6030 LOCATE ,7 : PRINT "Putting things right loses you 20 days."
6040 D1 = D1 + 20
6050 A1 = V(B(C,3),B(C,4))
6060 GOTO 7730
6080 REM *** diffusion strategy 2 ***
6090 I1 = VAL(MIDS("12004358070",S,1))
6100 IF A(I1,2) = 1 THEN 6150
6110 PRINT
6120 LOCATE ,7 : PRINT MTS(9)

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6130 LOCATE ,7 : PRINT MTS(10);MTS(10 + S)
6140 GOSUB 10270 : GOTO 3020
6150 D1 = D(S,1) : D(S,2) = 1
6155 ON VAL(MIDS("11112223121",S,1)) GOTO 6160,6620,7630
6160 I = VAL("&H" + MIDS("67AC0008005",S,1))
6170 ON VAL(MIDS("11221112111",S,1)) GOTO 6190,6180
6180 IF D(1,2) > 0 OR D(2,2) > 0 THEN I = I + 1
6190 GOSUB 8020 : A1 = V(I,V0) : GOTO 7720
6200 REM *** check precedence for group ***
6210 ON VAL(MIDS("11112221121",S,1)) GOTO 7720,6620
6620 REM *** diffusion strategy 7 ***
6630 IF A(6,2) < 1 THEN 6650
6640 IF A(VAL(MIDS("00004350070",S,1)),2) = 1 THEN 6700
6650 PRINT
6660 LOCATE ,7 : PRINT B1S; "y-u must talk to the headmaster"
6670 LOCATE ,7 : PRINT "of a school and learn the percentage of teachers who wi
ll attend"
6680 LOCATE ,7 : PRINT "a";FNGAS(S);
6690 GOSUB 10270 : GOTO 3020
6700 PRINT
6710 LOCATE ,7 : PRINT "At which school do you want to hold the ";FNGAS(S);"?"
6720 LOCATE ,7 : PRINT "Enter the school number and press enter":ENS;
6730 N1 = 10
6732 GOSUB 11000
6734 IF CHS = ESS THEN BEEP : LOCATE 8,1 : GOTO 6700
6740 C = N0 : LEADER = C : IF B(C,1) = 1 THEN 6790
6750 PRINT
6760 LOCATE ,7 : PRINT "You must first talk to the headmaster of this school."
6770 LOCATE ,7 : PRINT "and determine his or her attitude towards innovation."
6780 GOSUB 10270 : GOTO 3020
6790 IF B(C,4) >= 1 THEN 6840
6800 PRINT
6810 LOCATE ,7 : PRINT "You must first talk to the headmaster of this school."
6830 GOSUB 10270 : GOTO 3020
6840 Q% = B(C,2) : IF (Q% AND FNRK%(S)) = 0 THEN 6890
6850 PRINT
6860 LOCATE ,7 : PRINT "Only one ";FNGAS(S);" can be he held at each school."
6870 LOCATE ,7 : PRINT "You have already held a ";FNGAS(S);" at this school."
6880 GOSUB 10270 : GOTO 3020
6890 D1 = D(S,1)
6900 Q% = B(C,2) : Q% = Q% OR FNRK%(S) : B(C,2) = Q%
6910 FOR I = 1 TO 2
6920   IF D(I,2) = 1 THEN 6960
6930 NEXT I
6940 A1 = F(B(C,3),1)
6950 GOTO 7720
6960 A1 = F(B(C,3),2)
7030 GOTO 7720
7510 REM *** chance events for all strategies ***
7515 CLS : LOCATE 8,1
7520 I1 = VAL(MIDS("11152221433",S,1))
7550 I2 = FNRNX(10)
7560 FOR I3 = 1 TO RN(I1,I2)
7570   PRINT "      "; RMS(I1,I2,I3)
7580 NEXT I3
7590 D1 = D1 - RD(I1,I2)

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7600 E1 = RE(I1,I2)
7620 RETURN
7630 REM *** score user notes ***
7640 GOSUB 8020
7650 FOR I = 1 TO 10
7660   IF B(I,2) > 0 THEN H(I) = V(12,V0)
7670   IF B(I,2) > 15 THEN H(I) = V(13,V0)
7680 NEXT
7720 GOSUB 7510
7730 'GOSUB 8010
7740 GOSUB 8100
7750 GOSUB 10270 : GOTO 3020
8010 REM *** increment # of uses and set index into u() ***
8020 V0 = U(S) + 1
8030 U(S) = V0
8040 IF V0 <= 6 THEN 8060
8050 V0 = 6
8060 RETURN
8100 IF S = 8 THEN 8200
8105 AD = INT(E1*A1 + RND)
8110 T = T + AD : R = R - D1
8130 ON VAL(MIDS("11112223223",S,1)) GOSUB 16100,16400,16450
8140 RETURN
8200 REM *** user notes target school then random ***
8210 FOR I = 1 TO 10
8220   IF H(I) = 0 THEN GOTO 8260
8230   AD = INT(E1*H(I) + RND)
8240   T = T + AD
8250   GOSUB 16400
8260 NEXT
8270 R = R - D1
8280 RETURN
9010 REM *** end of program ***
9020 LOCATE 12,7 : PRINT "You have stopped with ";FNSTS(R);" ";FNDSS(R);
9030 PRINT " remaining and ";FNSTS(INT(T + .5));" percent adoption."
9035 GOSUB 10270
9040 GOTO 9100
9050 CLS : LOCATE 6,7
9060 PRINT "Congratulations. ";NAS;". ";FNSTS(INT(T + .5));" percent of potenti
al users"
9070 LOCATE 7,7 : PRINT "in district ";FNSTS(VI);" have adopted the new curricu
lum."
9075 GOSUB 10270
9076 GOSUB 15440
9077 IF R <= 0 THEN 9090
9078 LOCATE 12,7
9080 PRINT "You have ";FNSTS(R);" ";FNDSS(R);" remaining to relax and enjoy the
tropical heat."
9090 IF VI < VX - 1 THEN LOCATE 18,1 : PRINT "Why not visit district ";FNSTS(VI
+1);"?"
9095 CHS = "y" : GOTO 9105
9100 GOSUB 15440
9105 IF CHS = "y" THEN GOSUB 10270
9110 CLS : LOCATE 10,29 : PRINT "Returning to the menu"
9120 GOTO 30000
9925 REM *** <CR> INPUT ***

```