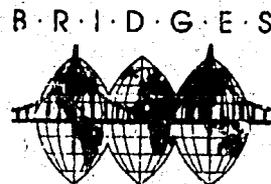


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THE  
HARVARD  
INSTITUTE FOR  
INTERNATIONAL  
DEVELOPMENT

**Internal Efficiency**

**Trainer's Manual**



# **INTERNAL EFFICIENCY**

## **Trainer's Manual**

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The Basic Research and Implementation in Developing Education Systems Project (BRIDGES) is directed by the Harvard Institute for International Development and the Harvard Graduate School of Education with the Office of Education, Bureau for Science and Technology, United States Agency for International Development.

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# **GUIDELINES AND INSTRUCTIONS**

## **Preparation by the Trainer**

1. Recommended reading: Bruce Fuller, "Raising School Quality in Developing Countries: What Investments Boost Learning?" Discussion Paper, World Bank, 1985.
2. Read the Trainer's Manual and look at slides, Overheads and Participant's Manual.
3. Instructions from the Trainer's Manual may be put on note cards to facilitate the presentations.

## **Materials needed:**

Trainer's Manual  
Participant's Manuals  
Overhead Projector  
Overhead transparencies  
Overhead pens and blank transparencies  
Notecards for script  
Blackboard and chalk

## **Optional materials:**

Computers  
SHARE software

# GENERAL OUTLINE

## **PART I: WHY SHOULD WE FOCUS ON INTERNAL EFFICIENCY?**

- A. What is Internal Efficiency in an Education System?
- B. Balancing Quantity and Quality
- C. Allocating Resources

## **PART II: HOW IS INTERNAL EFFICIENCY USED TO EVALUATE AN EDUCATIONAL SYSTEM?**

- A. Effects of Repetition on Student Flow
- B. Effects of Rate of Flow on Educational System
- C. Impact of an Inefficient Educational System on Society

## **PART III: WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY?**

## **PART IV: WHAT ARE THE POSSIBLE STRATEGIES THAT CAN HELP IMPROVE INTERNAL EFFICIENCY?**

- A. Improving the Quality of Teaching and Learning
- B. Choosing Effective and Efficient Interventions
- C. Case Study of Honduras
  - 1. Profile of System
  - 2. Factors that May Contribute to Repetition in Honduras
  - 3. Group Activity: Internal Efficiency Interventions

## **GOAL AND OBJECTIVES**

### **Goal:**

To make policymakers and managers more aware of the importance of reducing repetition rates and increasing the flow of students through school in a cost-effective way.

### **Objectives:**

1. To define Internal Efficiency.
2. To show the importance of making an educational system more internally efficient.
3. To show how repetition affects the student flow through an educational system.
4. To illustrate how issues of quantity and quality must be considered when resources are allocated.
5. To increase understanding of the ways an inefficient educational system affects society.
6. To increase awareness of the factors that affect student flow.
7. To increase awareness of the considerations policymakers must make when choosing interventions to improve quality, increase flow, and reduce repetition (Cost and Conditions).

## **PART I: WHY SHOULD WE FOCUS ON INTERNAL EFFICIENCY?**

**Introduction** (10 to 15 minutes)

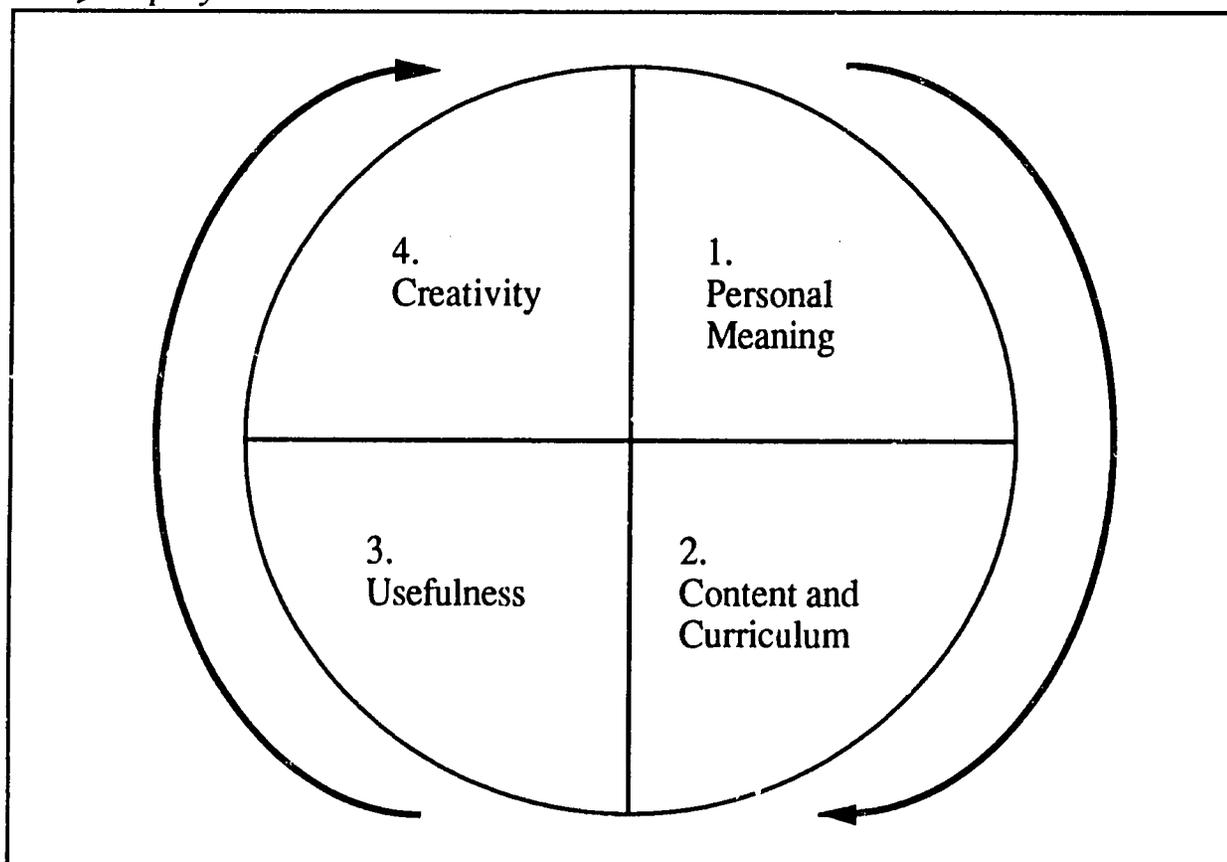
### **Note to Trainer**

The Trainer first introduces her/himself and then gives a brief introduction to the BRIDGES Project and the module, using the information given in the background section. The Trainer then asks participants to introduce themselves.

### **Text for Trainer**

The learner-focused model that has been used in the development of the BRIDGES modules is a systematic cycle that is described in the following diagram:

—> *Display Overhead 1*



## **Why Should We Focus on Internal Efficiency? (cont.)**

### **Text for Trainer**

Each step has a different emphasis for both participants and trainers. The four quarters work to form a complete learning cycle.

- 1.) The first quarter emphasizes how the material at hand relates to the participant's life.
- 2.) The second quarter addresses the content and curriculum, and the importance of an integrated approach.
- 3.) The third quarter emphasizes the usefulness of the material both inside and outside of the setting; in other words, it emphasizes the transferability of learning.
- 4.) The fourth quarter involves the use of creativity on the part of the participant to adapt what has been learned in unique ways.  
(B. McCarthy, 1990)

All educational systems throughout the world are faced with the dilemma of making policy choices, particularly pertaining to issues of access and quality. These choices are especially difficult in developing nations, where resources are often scarce and the tension between issues of quality and quantity is especially sharp.

There is evidence from research that the total resources available to expand quantity and improve quality can be increased significantly through improvements in the efficiency of the educational system -- that is, without increasing total spending. Improvement in the efficiency of an educational system increases the use of resources that are already available to expand quantity and improve quality.

In this module we will see that a major symptom of inefficiency of an educational system is repetition, which occurs when the education system decides that a child has not been adequately prepared for the next grade. Research shows that high dropout rates are also a problem. For example, in low-income developing nations only 60% of students complete primary education (UNESCO, "Trends and Projections of Enrollment by Level of Education and by Age: 1960-2000." Paris; Office of Statistics, 1983).

## **Why Should We Focus on Internal Efficiency? (cont.)**

### **Note to Trainer**

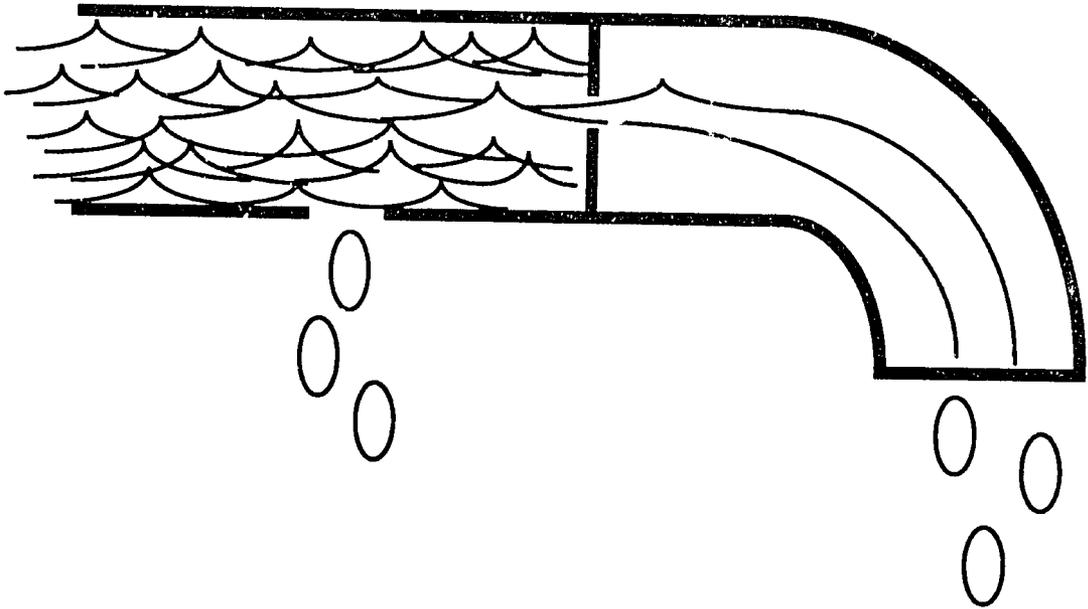
Display *Overhead 2* and read text aloud. Direct participants to turn to Page 6 of their Participant's Manual where they will find *Overhead 2*.

### **Text for Trainer**

Think of the education system as a pipe through which students flow. If we reduce the diameter of the pipe, fewer students can flow through it, cutting down on the flow of students to the higher grades. The backup of students already in the pipe means that fewer children are able to enter the pipe at its mouth. High repetition rates reduce the capacity of the system to admit new students. Also, the likelihood of a student dropping out increases.

—>Display Overhead 2

# INEFFICIENT EDUCATIONAL SYSTEM



## **A. What is Internal Efficiency in Education Systems?**

(10 minutes)

### **Note to Trainer**

Ask participants to open their Participant's Manual to Page 7.

### **Text for Trainer**

Internal Efficiency is a term we use to describe the interplay among policies, objectives and the allocation of resources. Internal Efficiency provides a measure of how effectively a school system allocates its resources to achieve its objectives.

Any discussion of Internal Efficiency involves consideration of educational "inputs" and "outputs." **Outputs** are the objectives or desired outcomes of the educational system; **Inputs** are the resources made available to achieve these objectives.

When policymakers make decisions about what resources and interventions to invest in, they need to consider how they can get the most return for their investment. In other words, which inputs will help achieve the desired outputs with the least cost.

First, let us consider what the goals of an educational system might be. These goals will vary from country to country. One country may stress higher literacy rates, while another may seek to increase the number of students in rural areas.

Using *Worksheet 1* on Page 7 of your Participant's Manual, please list five goals your nation may have for its educational system.

## A. What is Internal Efficiency in Education Systems? (cont.)

—>Worksheet 1

<b>GOALS</b>	
1.	
2.	
3.	
4.	
5.	

### **Note to Trainer**

Allow five minutes for writing and then ask participants to name goals. Write the participants' goals on a blank transparency. You have already suggested two possible goals -- higher literacy rates and increasing the number of students in rural areas.

If the participants appear to be struggling with this exercise, other possible suggestions could be:

1. More student participation
2. Higher graduation rate
3. Acquisition of critical thinking skills

You will use this transparency, with participants' contributions, in the next section.

## B. Balancing Quantity and Quality

### Text for Trainer

Since Internal Efficiency is measured in relation to the goals of education, judgments about efficiency will depend on how an educational system's performance is defined and measured.

Most educational goals fall into two categories:

—> *Display Overhead 3 and read aloud.*

### **QUANTITY**

- to maximize the proportion of eligible children who attend and complete school

### **QUALITY**

- to maximize the quality of the teaching and learning in the schools

## **B. Balancing Quantity and Quality (cont.)**

### **Note to Trainer**

Place overhead of participants' goals (*Worksheet 1*) back on the projector. You will now ask the participants how the goals they have listed fall into the **Quantity** and **Quality** categories, and write their contributions under the appropriate categories on *Overhead 3*.

### **Text for Trainer**

Your next task is to review the goals that you have listed for your countries and determine if they should be included under the **Quantity** or **Quality** categories in *Overhead 3*. For example, the goal of improved literacy rates would be listed under **Quality**, while the goal of more students in rural areas would be listed under **Quantity**.

### **Note to Trainer**

Other possible examples to be added as suggestions if the participants struggle with this exercise would be:

#### **Quantity**

- more access for females
- more graduates

#### **Quality**

- more critical thinking skills
- more effective classroom management

## C. Allocating Resources

(15 minutes)

### Text for Trainer

**Quality and Quantity** goals can be at odds when programs compete for funding. If resources are fixed, then an increase in spending to increase enrollments (for example: buildings, equipment, and materials) will mean that fewer resources are available to sustain the quality of education.

—> *Display Overhead 4 and read aloud.*

Efficiency increases  
when educators are able  
to achieve objectives  
without increasing costs.

### Text for Trainer

For instance, in a case where enrollments have increased, resources may not be available to hire more teachers. Policy options in this case may include increasing class size and encouraging more reliance on collaborative or individualized learning strategies.

## C. Allocating Resources (cont.)

### Note to Trainer

This next exercise provides an opportunity for the participants to consider the issue of Internal Efficiency and its effect on school budgets. The participants will be asked to work in groups.

### Text for Trainer

Now, let us explore how shifting spending priorities can help achieve objectives within a fixed budget. We will do this exercise in groups.

{Ask Participants to form groups. Ideally, there will be five groups of four people. Depending on the number of participants, try to approximate that grouping.}

On Page 10 of your Participant's Manual, you are given a "Challenge" involving a sample budget of \$10,000 and some issues to consider. This challenge and the issues to consider are contained in *Overhead 5*.

—>Display *Overhead 5* and read aloud.

### Challenge:

Given the following sample budget, determine, in your groups, how you would reallocate the \$10,000 to achieve five of the quality goals and also accommodate increased enrollments.

### Issues to Consider:

As you make choices, discuss with your group:

1. How allocating more to each chosen resource can help achieve your goals.
2. The consequences of shifting money away from certain resources and how you would balance the effect.

## C. Allocating Resources (cont.)

### Text for Trainer

Now that we've formed our groups, follow the guidelines on *Overhead 5*. Please use *Worksheet 2* on Page 11 of your Participant's Manual to record your group's decisions.

—>Display Worksheet 2

Resource	Current Budget	Proposed Budget	Consequences
Teacher salaries	\$5,000	_____	
Pre-service training	\$1,000	_____	
In-service training	\$250	_____	
Management	\$500	_____	
Physical Plant - construction - desks, chairs	\$1,250 \$250	_____ _____	
Texts	\$1,250	_____	
Instructional materials	\$500	_____	
<b>TOTAL:</b>	<b>\$10,000</b>	<b>\$10,000</b>	

## **C. Allocating Resources (cont.)**

### **Text for Trainer**

I will be available to answer any questions you may have during this activity. Please choose a spokesperson to report back to the whole group. The spokesperson from each group will explain the reasoning behind the group's budget shifts, and the possible consequences of deficits in other areas

### **Note to Trainer**

Allow each group about 10 minutes to complete this exercise. Then, have a spokesperson from each group explain the reasoning behind their budget shift, and the possible consequences of deficits in other areas. The whole exercise should take approximately 15 minutes.

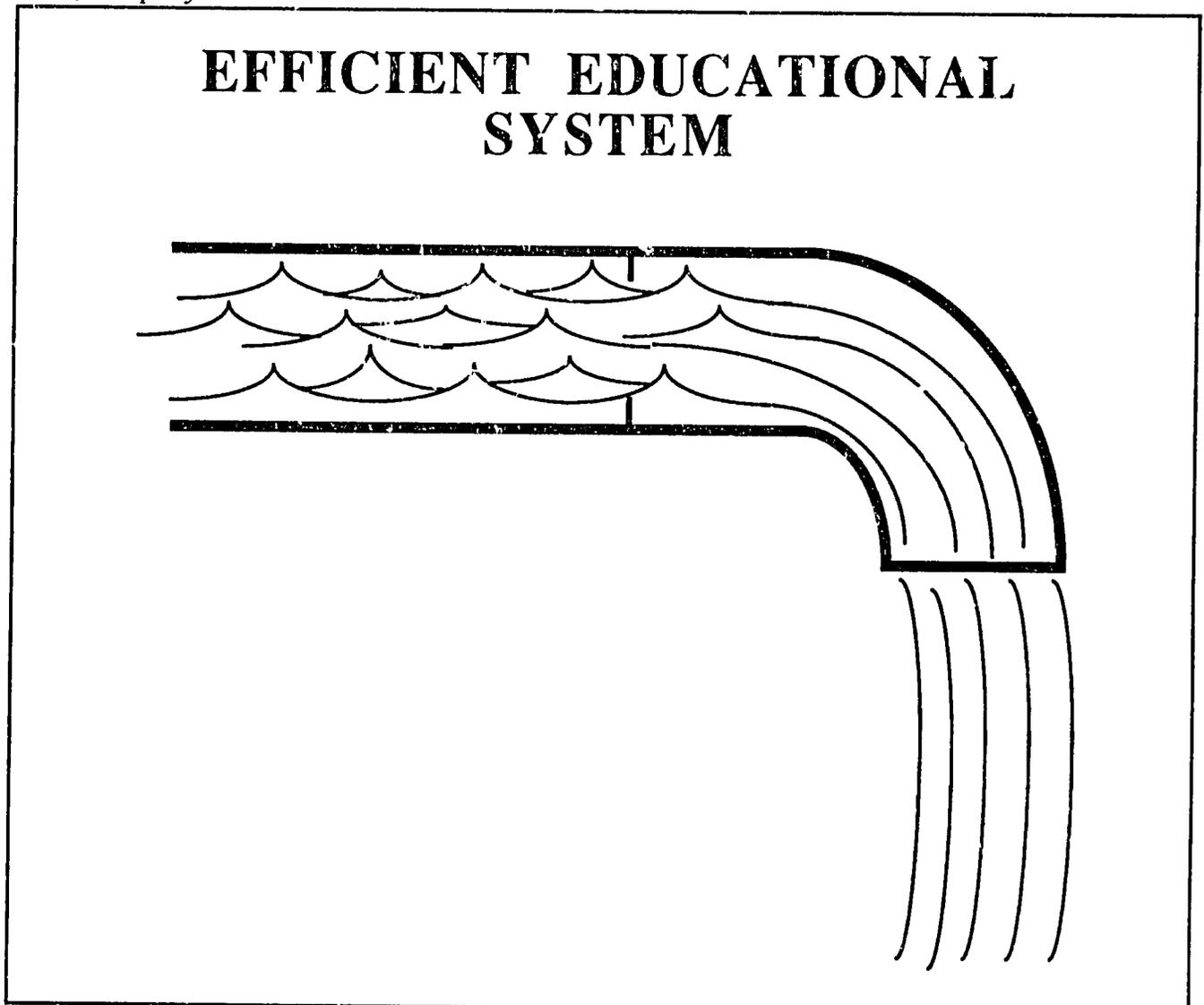
**Total Time for Part I - 60 minutes**

## **PART II: HOW IS INTERNAL EFFICIENCY USED TO EVALUATE AN EDUCATIONAL SYSTEM?**

### **Text for Trainer**

In this part of the module we will discuss how reduction in repetition rates through improvements in quality can lead to Internal Efficiency, meaning increased student flow through the system at minimum cost. *Overhead 6* represents an educational system where the students "flow through" in an efficient way, as water flows through an unclogged pipe.

—>Display Overhead 6



## HOW IS INTERNAL EFFICIENCY USED TO EVALUATE AN EDUCATIONAL SYSTEM? (cont.)

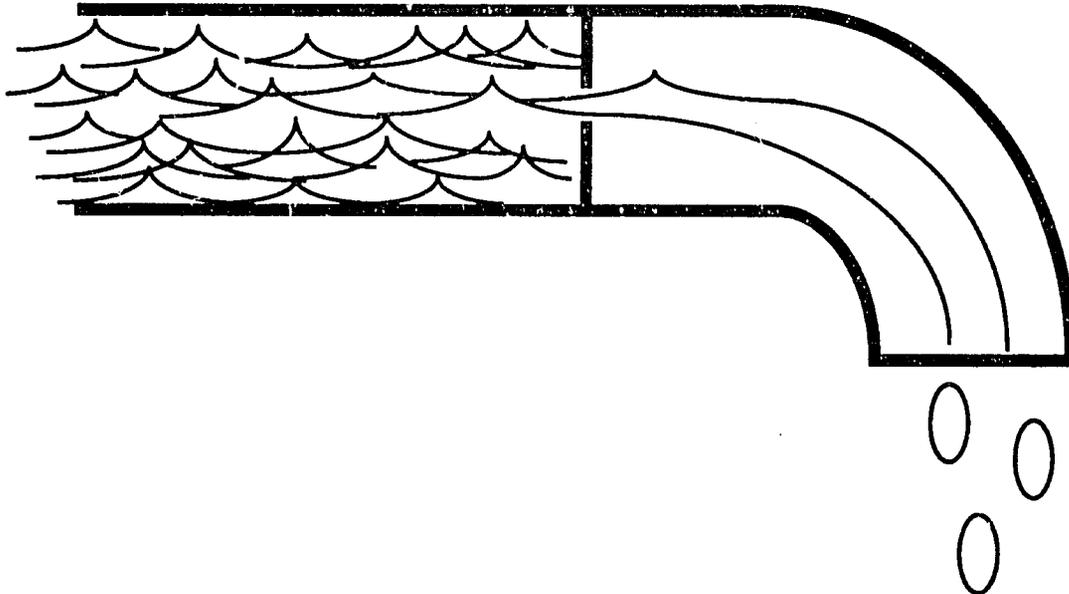
### Text for Trainer

We will demonstrate that **student repetition** is the major cause of the backup of students in the educational system. Repetition is an indicator of **inefficiency**, but is not in itself the cause of that inefficiency.

This constricted pipe illustrates how a system gets clogged when repetition limits the intake of new students and reduces the pool of primary school graduates.

—>Display Overhead 7

### INEFFICIENT EDUCATIONAL SYSTEM



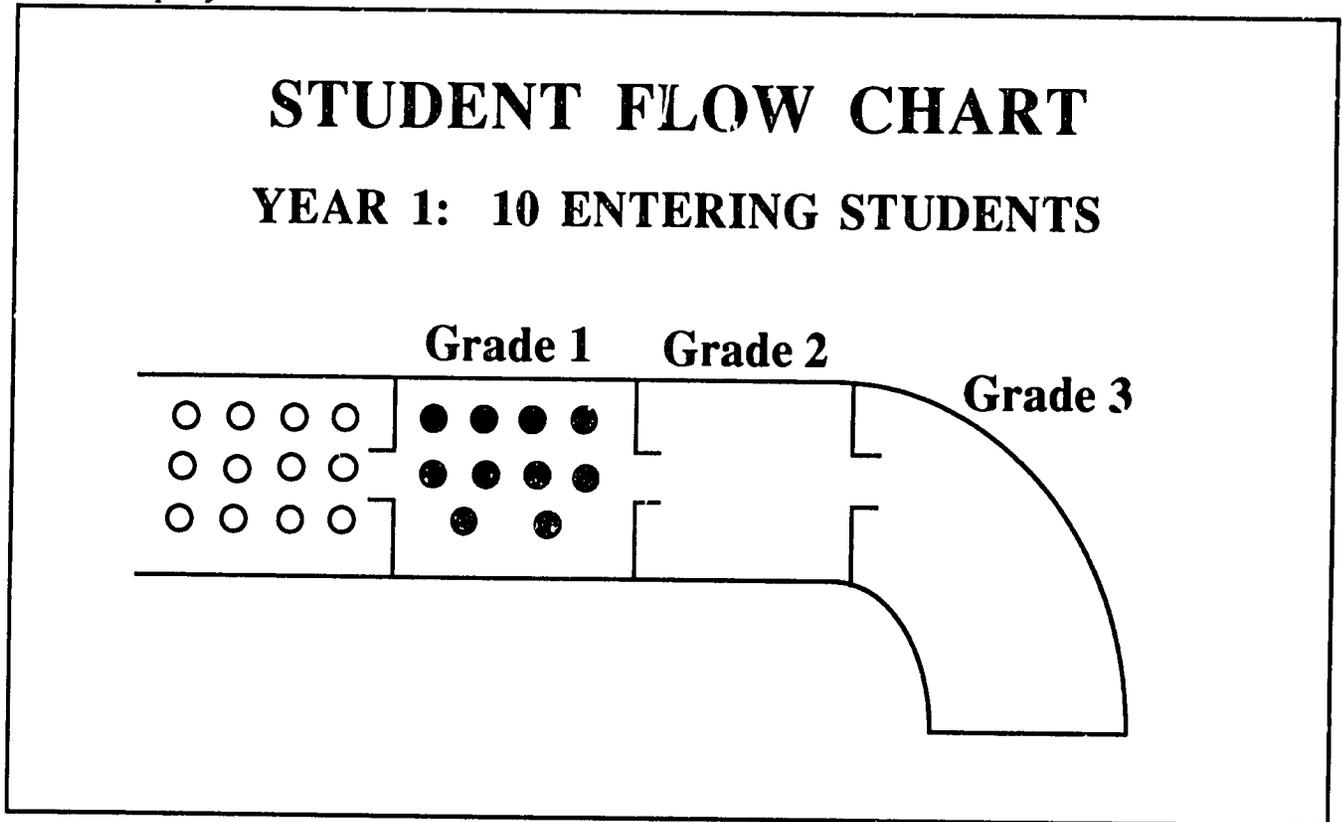
## A. Effects of Repetition on Student Flow

(10 minutes)

### Text for Trainer

First, let's look at how the system backup begins. Let's imagine an educational system of three grades.

—>Display Overhead 8



### Text for Trainer

In Year 1, the first group of 10 students, represented by the black dots, enters first grade.

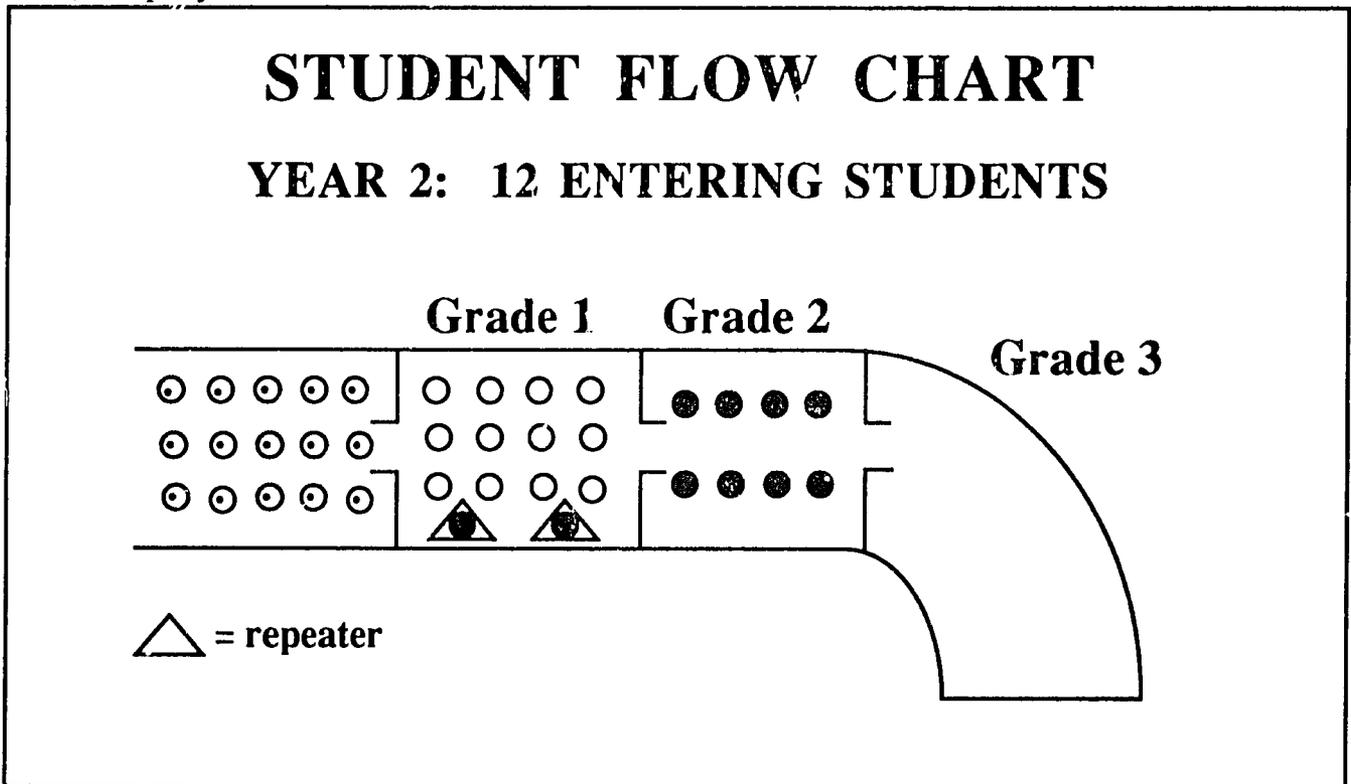
With population growth and increased access policies, we can expect 12 students waiting to enter first grade next year. These waiting students will be the second-year cohort, and are represented by white dots.

### Note to Trainer

Allow time for participants to ask questions about the overheads.

## A. Effects of Repetition on Student Flow (cont.)

—>Display Overhead 9



### Text for Trainer

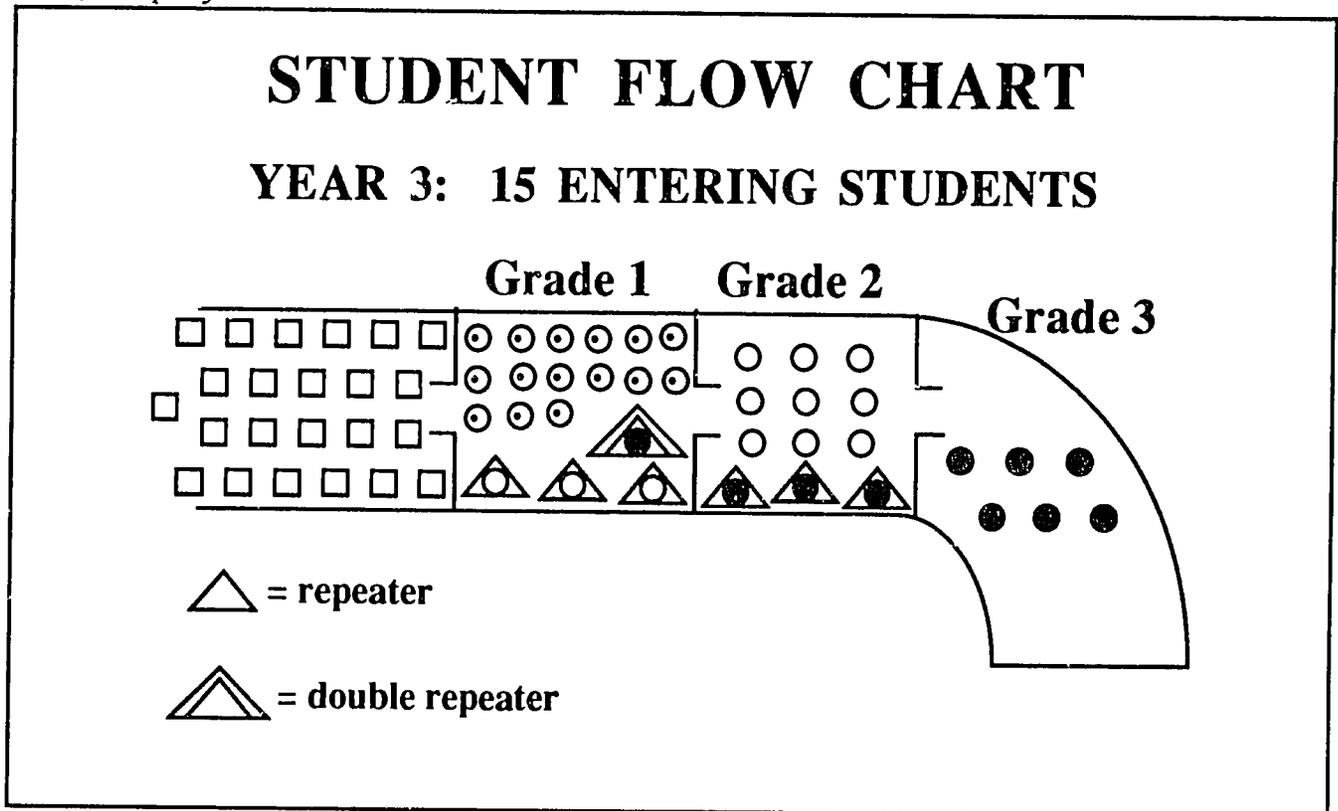
In Year 2, of the first group of 10 students, eight have been promoted to Grade 2, and two have been retained to repeat Grade 1. These two are represented by the black dots inside triangles.

Meanwhile, the second-year group of 12 students have entered Grade 1.

Again, with increased access and population growth, there are more children waiting to enter next year. This third-year group is represented by 15 white dots with a small black dot inside.

## A. Effects of Repetition on Student Flow (cont.)

—>Display Overhead 10



### Text for Trainer

Let us now move ahead to Year 3. Of the first group of 10 students, six have been promoted to Grade 3, and two have been retained in Grade 2. One of the first cohort repeaters of Grade 1 has been promoted to Grade 2, and the other retained in Grade 1 for a third year [represented by a double triangle with a black dot].

Nine of the second-year group have been promoted to Grade 2, and three have been retained in Grade 1. These are represented by triangles with white dots.

There are now 15 students beginning their first year in Grade 1 [represented by white circles with large black dots in the center], and 23 students waiting who will be ready to enter Grade 1 next year [represented by a small square].

### Note to Trainer

Pause to make sure the participants have followed the progression of the students. Note that you may ask a participant to explain *Overhead 10* to the group for further clarity.

## **A. Effects of Repetition on Student Flow (cont.)**

### **Text for Trainer**

Now, what does this progression of students tell us about the Internal Efficiency of this school system?

As we begin the third year of education, only six of the 10 students who entered the system in Year 1 are on schedule to graduate on time. Of the 12 who entered in Year 2, only nine are on schedule.

Our school now has only six students in Grade 3. There are 12 students in Grade 2, and 19 in Grade 1 -- including one student who is beginning a third year as a first grader. As you can see in *Overhead 10*, the pipe is beginning to be quite clogged.

This high rate of repetition in first grade is not uncommon in developing countries. Honduras, for example, has a first grade promotion rate of only 50%, as only half of entering first graders continue on to second grade.

## **B. Effects of Rate of Flow on the Educational System** (15 minutes)

### **Text for Trainer**

Let's look at the effects repetition is having on the system after these three years.

—>Display *Overhead 11*, but do **not** read aloud

### **EFFECTS OF INEFFICIENCY**

1. Limited access for future groups of students.
2. Reduced supply of students for next level of education and for labor market.
3. Less efficient utilization of resources (more money spent per child).
4. Strain on quality of education in the system.

### **Note to Trainer**

Keep *Overhead 11* on display during the following Text for Trainer. Solicit one or two comments from participants after reading aloud each of the following four statements, which are included on Page 18 of the Participant's Manual:

## **B. Effects of Rate of Flow on the Educational System (cont.)**

### **Text for Trainer**

Please turn to Page 18 of your Participant's Manual and follow along as I read.

The rate of flow of students through the system has an affect on the following:

1. **Limited access for future students.** -- If there are limited facilities and/or teachers, a reduction in the flow of students once enrolled reduces the space available for new students.

*{Pause for comments}*

2. **Reduced supply of persons for the next level of the education system or for the labor market.** -- Given a constant number of students entering the system, a reduced flow through repetition reduces the number of graduates.

*{Pause for comments}*

## **B. Effects of Rate of Flow on the Educational System (cont.)**

### **Text for Trainer**

- 3. Less efficient utilization of resources --** Repetition increases the amount of effort and money the system must put out for a student to complete a year or cycle.

In countries with high repetition rates, such as Honduras, the average number of years of instruction necessary to produce a graduate can be as high as 10 or more years for a Grade 6 program. If each year of instruction costs, say, \$100, then each graduate requires \$1,000 instead of \$600. It also means that for every 600 students graduated now, it would be possible to graduate 1,000 students if the system were 100% efficient.

*{Pause for comments}*

- 4. Strain on quality of education --** The quality of teaching and learning can be adversely affected when there are far too many students per teacher, less space and materials, and when teachers are not properly prepared to deal with changes. Many developing nations that have increased access have been unable to accommodate for this expansion in their budgets. This has reduced the availability of funds for the improvement of quality.

*{Pause for comments}*

Can you think of other effects repetition is having on the system after these three years?

### **Note to Trainer**

Field two or three comments from participants before moving on to the next section.

## C. Impact of an Inefficient Educational System on Society

### Text for Trainer

Please turn to Page 19 of your Participant's Manual. I am going to ask you to rejoin your groups in a minute to brainstorm and create two lists of communities in society. One of the communities will be external, that is, an element of society **outside** the educational system. Examples of external communities are the higher education system or the business community.

We will call the other community internal. Examples of internal communities are students and their parents.

Both communities are affected by repetition and an inefficient system.

—>Display Overhead 12

### COMMUNITIES INFLUENCED BY AN INEFFICIENT EDUCATIONAL SYSTEM

#### EXTERNAL

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#### INTERNAL

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## C. Impact of an Inefficient Educational System on Society (cont.)

### Note to Trainer

Allow three to four minutes for groups to brainstorm and create two lists of communities in society, external and internal. Ask the participants to contribute items for the list and write them on *Overhead 12* under the two columns. Ask the participants to elaborate on how each is influenced by an inefficient school system.

Some examples participants might come up with:

#### External

labor market  
production  
economy  
development  
higher education  
available resources

#### Internal

students  
parents  
prospective students  
teachers

### Text for Trainer

As you can see, **Internal Efficiency** in schools also influences how society functions. This is known as the **External Efficiency** of the system. You can see how important it is to understand more about the factors that contribute to reduced student flow and low achievement, a main cause of repetition.

## **PART III: WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY?**

### **Text for Trainer**

Student flow is central to keeping a school system internally efficient. As we have seen, repetition is the major cause of reduced student flow. Some of the socio-economic and system factors that affect repetition and student flow are:

—>Display Overhead 13 and read aloud.

### **FACTORS AFFECTING INTERNAL EFFICIENCY**

1. Central educational policies of promotion or retention.
2. Limited space and access to higher grades
3. Low demand for schooling
4. Low achievement

### **Text for Trainer**

These are just some of the factors affecting Internal Efficiency. As I review each factor, please consider the situation in your own country and identify the advantages or disadvantages of various measures.

Let's look at "Centralized educational policies of promotion or retention." What are some examples of centralized educational policies of promotion or retention in your own country? What are the advantages and disadvantages of each?

## WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY? (cont.)

### Note to Trainer

After reading the following Text for Trainer, discuss the factors in light of the participants' varied contexts. Allow five minutes of discussion before moving on.

### Text for Trainer

#### 1. Centralized educational policies of promotion or retention.

In many countries, rates of intake, promotion or retention are often set by policies from the central administration. Some countries specify that teachers may fail a fixed percentage of their students. In some systems, the teachers in the lower grades must pass all their students. Egypt, for example, specifies that all children in First, Third, and Fifth grades should be promoted to the next grade. Teachers are not allowed to fail students in those grades.

*{What do you think are the advantages and disadvantages of this measure?}*

Individual teachers' promotion criteria can also affect student flow. For example, research in Honduras (McGinn, 1991) reveals that the teachers' assessment of students is influenced by teacher expectations -- not mainly based on test scores -- and by assumptions about students' future academic attainment. This same research also found links between teacher expectation and judgment and characteristics of students and their families.

## WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY? (cont.)

### **Text for Trainer**

Let's look at another factor.

#### **2. Limited space and access to higher grades**

In some developing nations, the lack of space at higher levels contributes to dropout. In other countries, such as Burundi and Kenya, a national examination selects a small fraction of students to be admitted into secondary school. Many of the students whose exam scores are below admission standards repeat the last grade of primary, hoping to improve their scores.

*{Ask participants for the advantages and disadvantages of this measure.}*

What happens when your country faces situations of limited space and access to higher education?

*{Trainer should accept comments from three participants.}*

One effect of these policies, such as the exam policy in Burundi and Kenya, is to raise overall costs to the government, and to reduce space available for the next class of students seeking to enter the last grade.

## **WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY? (cont.)**

### **Text for Trainer**

Let's look at a third factor.

### **3. Low demand for schooling**

At times there may be a low demand for schooling. Does this ever happen in your country? Based on experiences in your country, what are some probable causes for this low demand for schooling?

### **Note to Trainer**

Write participants' responses on a blank transparency. For the sake of time, accept no more than three responses. Point out how participants' responses reflect various economic, social and cultural factors. If the brainstorm does not generate enough examples, the following text can be read:

### **Text for Trainer (Optional)**

Students stop attending school when returns perceived by students or their families are less than perceived costs. The costs may be economic or socio-cultural.

Economic costs include the direct cost incurred because of school fees, cost of materials, books, clothing, and transportation. They also include opportunity costs (for example, income or services forgone while the child is in school) that are important considerations in whether or not parents allow their children to remain in school.

When girls and boys approach the age of puberty, or the age of employment, they are more likely to leave school, especially if their academic record is weak. Parents may view their children's contribution at home (as caregivers for siblings, for instance) as more valuable than completing primary school.

Dropout rates are often associated with gender of the students because of family or ethnic attitudes. Distance also contributes to the low demand of schooling in rural areas; research shows, for example, that dropout rates increase sharply when children have to walk more than 1.5 miles to school.

## **WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY? (cont.)**

### **Text for Trainer**

Let's look at a fourth factor.

#### **4. Low achievement**

Low achievement is a major contributor to repetition and dropout. Research indicates that a major factor linked with dropping out is failure to be promoted to the next grade. Students who fail are seen by their families as lacking the ability to benefit from further schooling. They may be withdrawn to avoid further spending or to help increase household income.

Most dropouts in primary school occur after a child has repeated more than one grade.

Low achievement and failure can occur because of many factors that take place in the classroom. Policymakers need to focus on how classroom factors affect the quality of learning and teaching in order to understand the conditions that contribute to repetition and dropout -- the major cloggers of student flow.

The following exercise will give you a basis for making decisions to improve Internal Efficiency. The challenge is to improve the quality of teaching and learning in school and thereby reduce repetition and dropout, making the system more internally efficient.

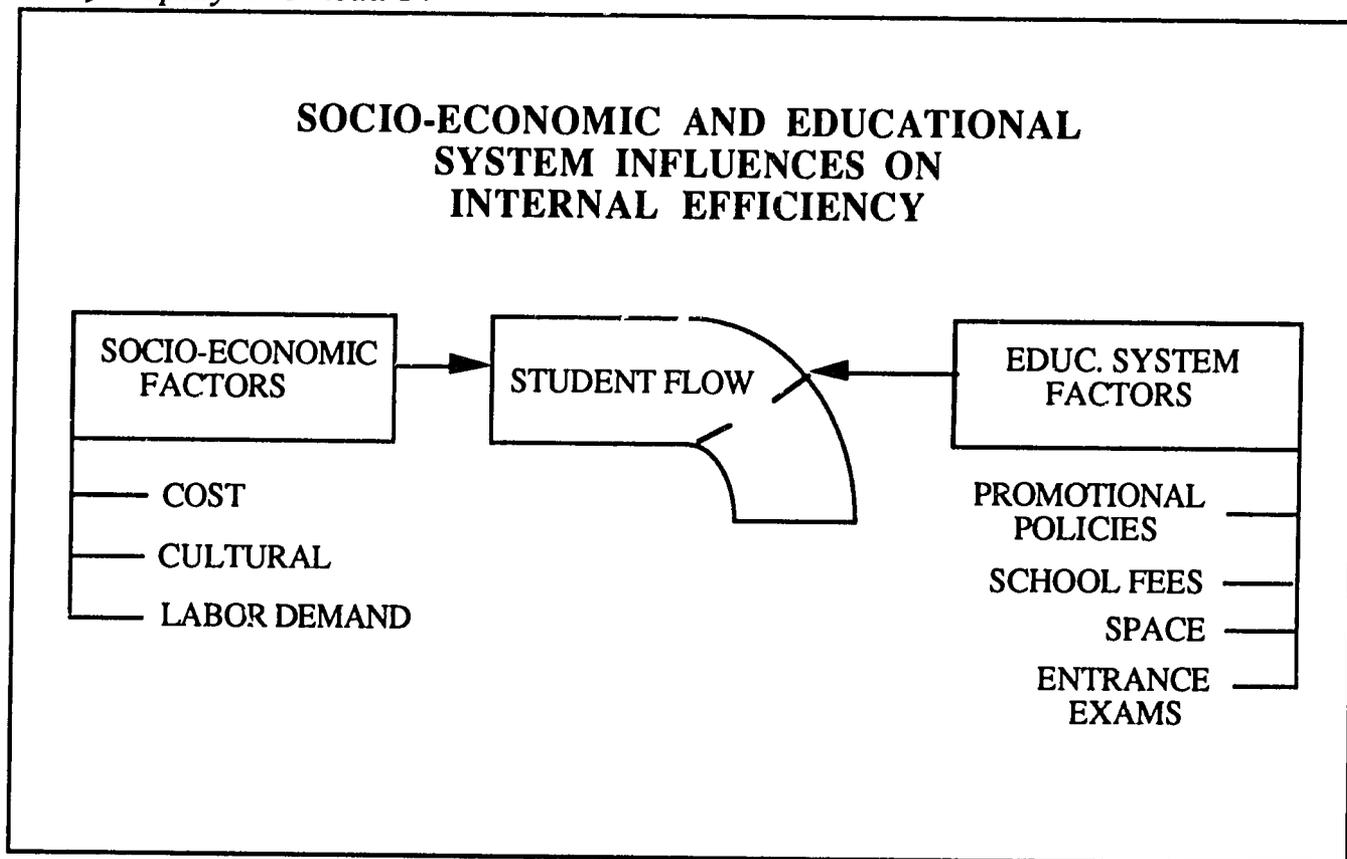
# WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY? (cont.)

## Text for Trainer

In your Participant's Manuals on Page 22, you will find *Overhead 14* diagramming the socio-economic and educational system factors influencing student flow.

I would like to explain this diagram. First, as you can see, both socio-economic and educational system factors affect student flow. Can I ask a participant to explain socio-economic factors? Could a second person explain educational system factors?

—>Display Overhead 14

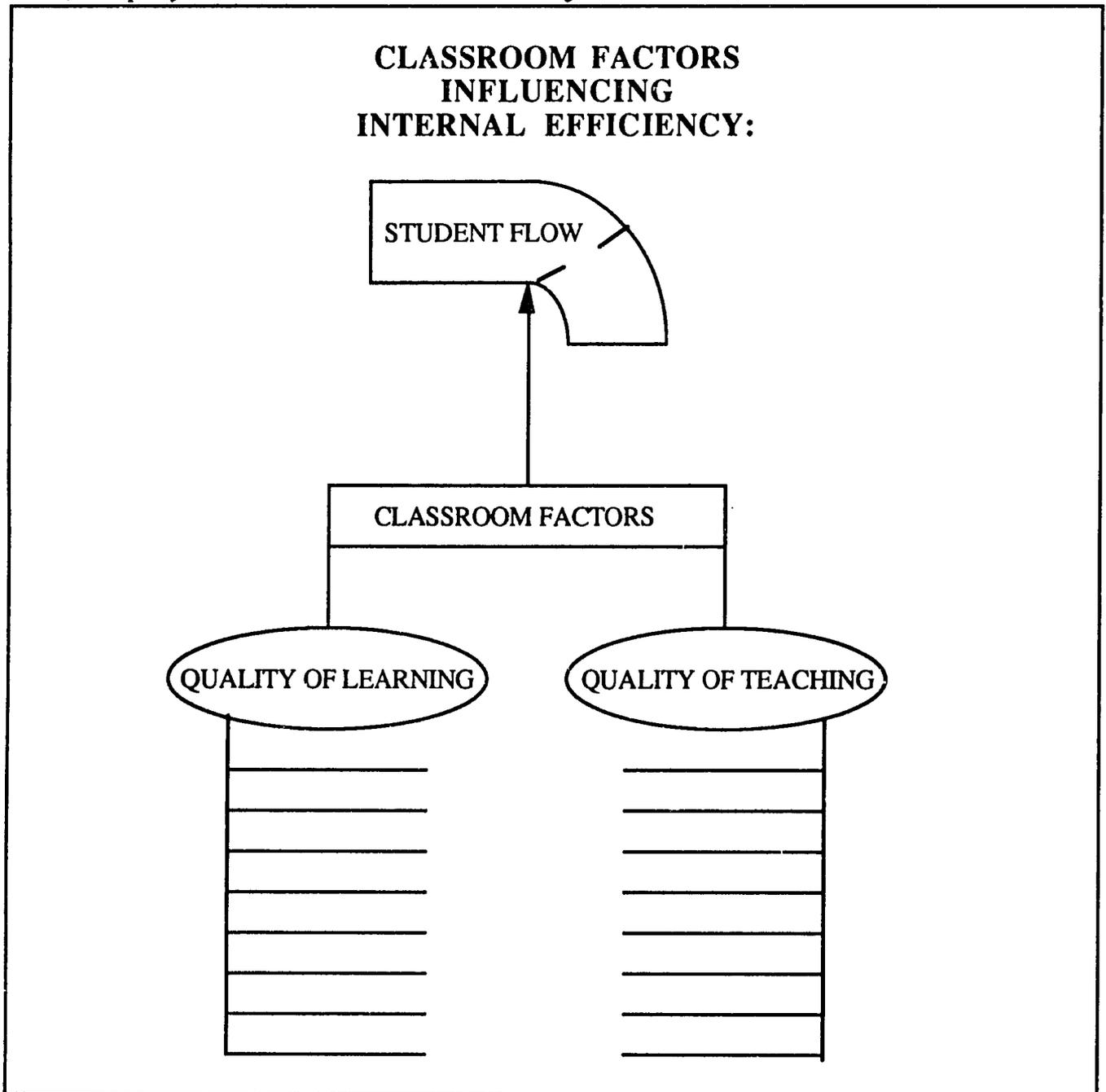


# WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY? (cont.)

## Note to Trainer

Direct participants to reconvene into the groups established for the earlier budget exercise.

—> *Display Overhead 15 and read Text for Trainer aloud.*



## WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY? (cont.)

### **Text for Trainer**

Now look at *Overhead 15*, found on Page 23 of the Participant's Manual. Here is where your groups will organize your ideas. Working in your groups, please brainstorm conditions and factors that you think may diminish the quality of learning, and those factors that you feel contribute to a lower quality of teaching [point to the appropriate columns on *Overhead 15*]. For example, student health may affect learning, and teacher management skills may affect teaching quality.

### **Note to Trainer**

Allow the participants five minutes for brainstorming in their groups. Have the groups share and discuss their factors as you write them on *Overhead 15*.

### **Text for Trainer**

The factors you have contributed are some of the issues that need to be addressed by interventions in order for repetition and dropout to diminish and student flow to increase.

## **PART IV: WHAT ARE THE POSSIBLE STRATEGIES THAT CAN HELP IMPROVE INTERNAL EFFICIENCY?**

### **Text for Trainer**

Schools are designed to provide all children with a basic level of intellectual ability. This is achieved by meeting the set curriculum objectives. Most failures in school are more the result of the school's failure to adequately implement the curriculum, rather than the result of some deficiency in the student or in the student's family. The most effective response to problems of low achievement, repetition and dropout is, therefore, to improve the quality of the curriculum and its implementation. In many cases this can be done without large increases in resources so that the result is increased efficiency.

### **A. Improving the Quality of Teaching and Learning**

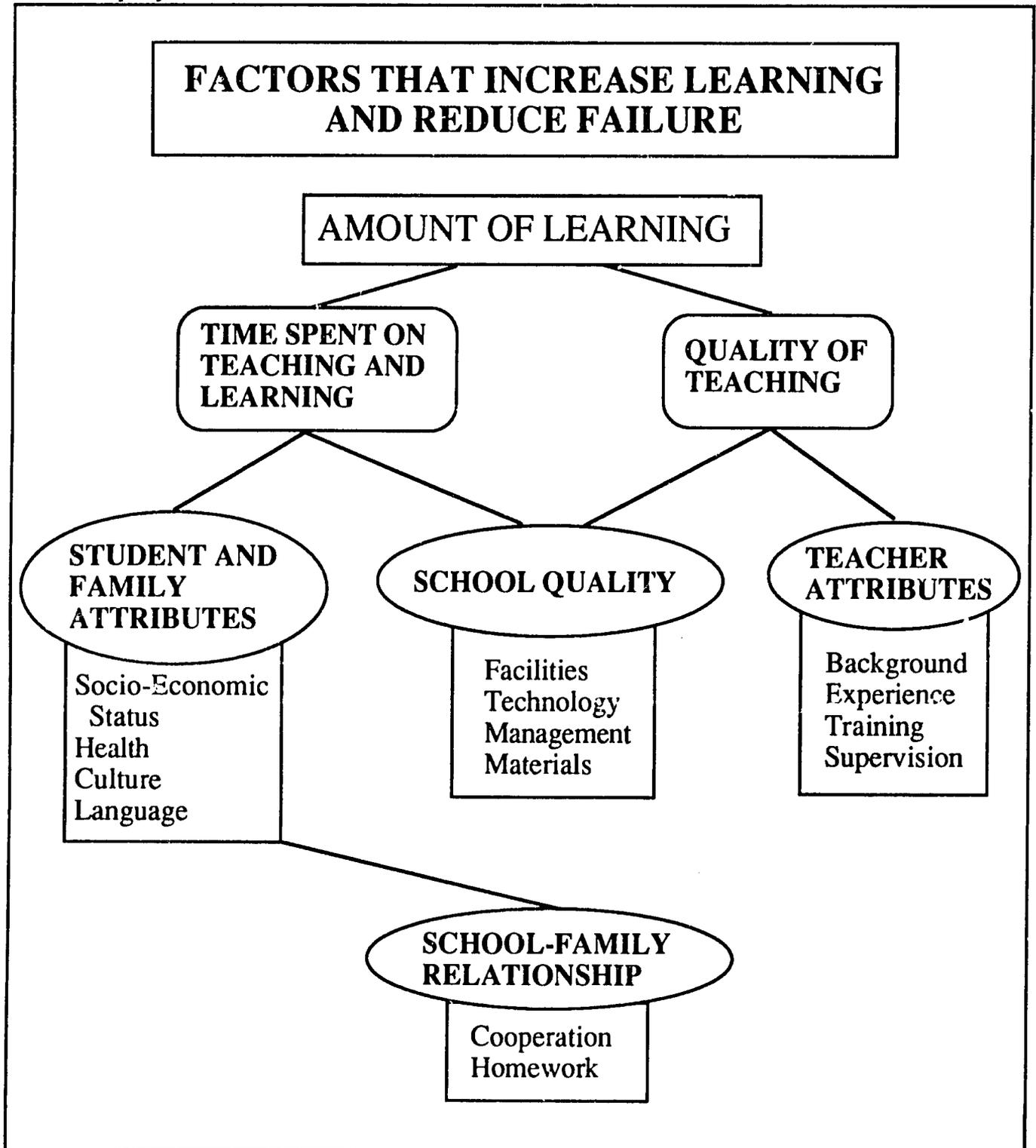
#### **Text for Trainer**

Schools are most effective when:

1. Teachers spend their time teaching the curriculum; and
2. Students spend their time trying to learn the curriculum.

## A. Improving the Quality of Teaching and Learning (cont.)

—>Display Overhead 16



## **A. Improving the Quality of Teaching and Learning (cont.)**

### **Text for Trainer**

The quality of teaching depends principally on:

- 1) Teacher characteristics such as instructional and management skills and knowledge of subject.
- 2) System characteristics such as supervision of teachers, physical facilities, and availability of quality instructional materials.

**{As you speak, bring in some of the examples participants have come up with in the previous exercise using Overhead 15.}**

The quality of learning is affected by:

- 1) Student attributes such as health, socio-economic status, and preparation.
- 2) Time available to spend on the task of learning. This time can be increased by activities outside the school. Assignment of homework, use of texts, and enlistment of family support all help to increase the time spent on learning outside of school.

## **B. Choosing Effective and Efficient Interventions**

### **Text for Trainer**

In order for the strategies you propose to contribute to Internal Efficiency, it is important that you not only look for measures that would increase the quality of teaching and learning, but also the most cost-effective means to achieve this goal.

First, an analysis of the existing conditions in your school system should determine the choices of interventions.

For example, in studies of communities where low socio-economic status affects students' nutrition, cost-effective measures to improve learning included nutritional supplements given to students in combination with either tutoring or one year of preschool. Research comparing control groups with children receiving these interventions noted the experimental group achieved increased cognitive and behavioral development, and were promoted more and dropped out less than the control group.

Careful consideration needs to be given to the conditions that must exist for an intervention to be most effective. For instance, some research suggests that inefficient teacher behavior results from a lack of adequate materials, and that textbook availability increases achievement and effective teaching. However, the effectiveness of the materials is contingent on the teacher's skills and attitude about using them. (Arara; Hemal; Schiefelbein and Sepulveda; and Psacharopoulos and Woodhall). Therefore, simply making quality materials available will not directly increase the quality of teaching and learning.

Distance learning methods such as radio instruction have also increased attendance and completion rates at relatively low cost.

**Previous Page Blank**

## **B. Choosing Effective and Efficient Interventions (cont.)**

[Overheads 17 through 21 are attached to the back of the Trainer's Manual.]

—>Display Overhead 17



### **Text for Trainer**

This chart indicates the benefits of some interventions, the conditions under which they worked best, and their relative cost.

### **Note to Trainer**

Ask participants to brainstorm responses to the following question:

- Which conditions will each intervention most effectively address?

## **B. Choosing Effective and Efficient Interventions (cont.)**

—> *Display Overhead 18*

### **Text for Trainer**

Let's look at 'Instructional Strategy' interventions. Which conditions will instructional strategies address?

### **Note to Trainer**

Brainstorm responses with participants. Allow participants to explain their choices. As conditions are suggested by participants, draw a line from Instructional Strategy to the appropriate condition listed. Interventions listed under Instructional Strategy might, for example, work best for addressing conditions of "Non-relevant Curriculum," "Remoteness," or "High Pupil-Teacher Ratio."

Trainer should encourage participants to explore each connection further. For example, you might ask "What types of teacher training would benefit when 'Remoteness' is an issue?" One response may be in-service training in rural areas where there is a lack of trained teachers.

## **B. Choosing Effective and Efficient Interventions (cont.)**

### **Note to Trainer**

Continue this dialogue using *Overheads 19, 20 and 21*. Encourage participants to cite examples from their own country.

—>*Display Overhead 19*

—>*Display Overhead 20*

—>*Display Overhead 21*

**IMPORTANT:** Before proceeding to the Case Study of Honduras, please read all Notes to Trainer and Overheads to become familiar with both activity options.

## C. Case Study of Honduras

### 1. Profile of System

#### Text for Trainer

Now you will have an opportunity to design your own intervention package to help make a school system more internally efficient. The country we will focus on is Honduras.

—>Display Overhead 22 and read aloud.

### PROFILE OF THE EDUCATIONAL SYSTEM OF HONDURAS

The educational system in Honduras is predominantly public and the primary school represents six years of schooling. Overall primary enrollment has been growing at 4.6% per year -- roughly 30,000 new students each year.

#### Student Population

<b>Rural</b>	<b>Urban</b>
62.2%	30.8%

**Average number of years to produce 6th grade graduate**  
10.3 years

**Enrollment Increase**  
4.6% per year

**Completion Rate**  
45.6%

#### 1st Grade

**Repetition Rate**  
30%

**Dropout Rate**  
4%

**Promotion Rate**  
61%

## C. Case Study of Honduras (cont.)

### 2. Factors that May Contribute to Repetition in Honduras

#### Text for Trainer

We have previously said that inefficiency of an educational system is caused by repetition, which occurs when the education system decides that a child has not been adequately prepared for the next grade. A study conducted by a research team from the BRIDGES Project found that the official statistics published by the Ministries of Education in six Central American countries tended to underestimate student repetition rates. Now we will consider the factors that may contribute to repetition rates in Honduras.

—>Display Overhead 23

### FACTORS THAT MAY CONTRIBUTE TO REPETITION IN HONDURAS

#### Parents cause repetition by:

- Allowing absenteeism
- Not participating in school activities

#### Teachers cause repetition by:

- Being inexperienced
- Having limited training
- Not allowing all students to participate
- Evaluating students with bias
- Not using peers to help teach

#### Supervisors cause repetition by:

- Not supervising teachers
- Not providing materials
- Imposing unfair punishment
- Not offering strategies for repeaters

## **C. Case Study of Honduras (cont.)**

### **3. Group Activity: Internal Efficiency Interventions**

#### **Note to Trainer**

Direct the participants to form small groups (of three or four, depending on the total number of participants). Leave *Overhead 23* on the screen. (This is also included in the Participant's Manual on Page 30.) Two options are presented for this activity. One involves the use of SHARE software. If you choose to use SHARE, be sure to run a test of SHARE software and have computers set up prior to presenting the case study.

You will need to choose between the following:

#### Option 1

If you have access to a computer that will run SHARE software, then participants may wish to conduct a SHARE search for interventions.

#### Option 2

If a computer is not available, then participants will write the type of intervention recommended, how it will address each condition listed on the overhead, and what the relative costs and benefits would be. This will be written on *Chart 1* on Page 31 of the Participant's Manual.

## C. Case Study of Honduras (cont.)

### Text for Trainer

In your groups, discuss what interventions might address the conditions listed on *Overhead 23* in a cost-effective way.

—>Chart 1

INTERVENTION	CONDITION	COST	BENEFITS

### Note to Trainer

Allow 10-15 minutes for small groups to complete their charts. Then ask participants to share and discuss their decisions. The following questions might be used to prompt discussion:

- Why did you choose specific interventions?
- What ideas guided decisions?
- What made decisions more difficult?

# CONCLUSION

## Text for Trainer

To summarize our work in this module, let's look at our outline again.

—> *Overhead 24*

### GENERAL OUTLINE

**PART I: WHY SHOULD WE FOCUS ON INTERNAL EFFICIENCY?**

- A. What is Internal Efficiency in an Education System
- B. Balancing Quantity and Quality
- C. Allocating Resources

**PART II: HOW IS INTERNAL EFFICIENCY USED TO EVALUATE AN EDUCATIONAL SYSTEM?**

- A. Effects of Repetition on Student Flow
- B. Effects of Rate of Flow on Educational System
- C. Impact of an Inefficient Educational System on Society

**PART III: WHAT ARE THE FACTORS AFFECTING INTERNAL EFFICIENCY?**

**PART IV: WHAT ARE THE POSSIBLE STRATEGIES THAT CAN HELP IMPROVE INTERNAL EFFICIENCY?**

- A. Improving the Quality of Teaching and Learning
- B. Choosing Effective and Efficient Interventions
- C. Case Study of Honduras

## **CONCLUSION (cont.)**

### **Text for Trainer**

We first asked, "What is Internal Efficiency in an educational system?" and concluded that it requires balancing Quantity and Quality without additional resource allocation.

Next we looked at how Internal Efficiency is used to evaluate an educational system. We focused on:

- a) the effects of repetition on student flow;
- b) the effects of rate of flow on an educational system;
- c) the impact of an inefficient educational system on society.

Finally we analyzed what the factors are that affect Internal Efficiency and worked in groups to use our knowledge to brainstorm.

Thank you for your participation. I will be available for any further questions. Please fill out the evaluation form found on Page 32 of your Participant's Manuals before you leave.

## MODULE EVALUATION

Please take a few minutes to complete this simple evaluation at the end of the module presentation. Responses will remain anonymous and you may hand in your completed assessment to any member of the HIID team.

MODULE NAME:

Name (OPTIONAL): \_\_\_\_\_

Institutional Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_ City/Town: \_\_\_\_\_

**PLEASE RATE THE MODULE ON A SCALE OF 1 (lowest) TO 5 (highest)**

	1	2	3	4	5
CONTENT	1	2	3	4	5
STYLE OF PRESENTATION (LAYOUT/DESIGN)	1	2	3	4	5
CLARITY OF CONTENT PRESENTED	1	2	3	4	5
RELEVANCE TO TEACHERS AND SCHOOL ADMINISTRATORS	1	2	3	4	5
RELEVANT TO POLICY MAKERS AND PLANNERS	1	2	3	4	5
USEFULNESS TO YOUR PROFESSIONAL NEEDS	1	2	3	4	5
OVERALL (GENERAL EVALUATION OF THE MODULE)	1	2	3	4	5

Use the space below to write a short paragraph suggesting how best to improve the format and presentation of the current module.

Please comment on the strengths of the module that you noted during the presentation.

# GLOSSARY

## **Administration (School System)**

Those individuals charged with the performance of executive duties for the school system on a nationwide basis.

## **Administration (School Building)**

Those individuals assigned to the leadership position within a single school building. The job description generally relates to the execution of curriculum, personnel and public affairs objectives as distinguished from policymaking assignments.

## **BRIDGES**

Basic Research and Implementation in Developing Educational Systems, a project sponsored by Harvard Institute for International Development.

## **Budget**

A statement of financial position of an administration for a definite period of time based on estimates of expenditures during the period and proposals for the financing.

## **Centralized Decision making**

A school system philosophy in which most decisions tend to be made by the central governing agency for the system on a nationwide basis.

## **Curriculum**

The unified set of courses offered by an educational institution or one of its branches.

## **Decentralized Decision making**

An educational philosophy in which more decisions tend to be made individually by local school systems employing self-governance techniques rather than by the national educational ministry.

## **Decision Making Process**

The methods employed by a school system in reaching determinations on given topics.

## **GLOSSARY (cont.)**

### **Dropout Prevention Program**

An attempt, through a variety of activities, to persuade students to recognize the importance of staying in school.

### **Equity**

An attempt to arrive at a fair conclusion that will have a positive educational outcome on the most students possible.

### **Evaluation Process**

The method by which any aspect of an educational system is assessed as to its relative value.

### **Evaluators (External)**

Implies using judges from outside the given school system to make the appraisal.

### **Evaluators (Internal)**

Implies using assessors from within the given school system to make a judgment.

### **Goals**

Those educational aims and objectives that a school system creates for itself both on a building and system level.

### **Implementation**

The actual putting into practice of a projected school reform.

### **Implementors**

Those groups or individuals within a school system charged with the responsibility or obligation of guiding a reform into movement.

### **Improvement**

The act or process of taking a given educational situation and creating changes to make a positive impact.

### **Input**

To elicit information on a given educational question from individuals affected by that subject.

## **GLOSSARY (cont.)**

### **In-Service**

Additional and ongoing training designed for school staff members to enhance and improve their skills.

### **Leadership (Administrative)**

The capacity to guide others toward a projected educational outcome.

### **Management (School)**

The act or art of directing a school through leadership and organization.

### **Output**

The outcome that is produced in a school reform attempt through collective effort.

### **Policymaker (School)**

Those individuals or groups charged with the authority to set general guidelines, goals, and objectives for the school system.

### **Programs**

A plan or system under which an action may be taken toward a goal.

### **Reform (School)**

An attempt to make changes within a school system that will have a positive impact in creating an improved learning, working, or fiscal environment.

### **School System**

The umbrella organization that holds the responsibility and policymaking obligation for all schools within its control.

### **Teacher Training**

The educational program designed to fulfill national proficiency requirements and produce effective, efficient, dedicated teachers.

# Request Format Sheet

Your Name: \_\_\_\_\_ Title: \_\_\_\_\_

Institutional Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_ City/Town: \_\_\_\_\_

**Please circle those modules that you are interested in for your country/organization.**

## **Part 1: Issues in Education: Tools for Planning**

Module 1: The HIID Training Modules: An Introduction

Module 2: EPICS: Investing in Basic Education for Development

Module 3: OPES: Setting Goals and Policies

Module 4: Understanding Access, Equity and Gender in Education

## **Part 2: Research Informs Policymakers**

Module 5: Issues in Teaching: Training and Implementation

Module 6: Internal Efficiency

Module 7: School Quality and Learning Outcomes

Module 8: The Well-Managed School System

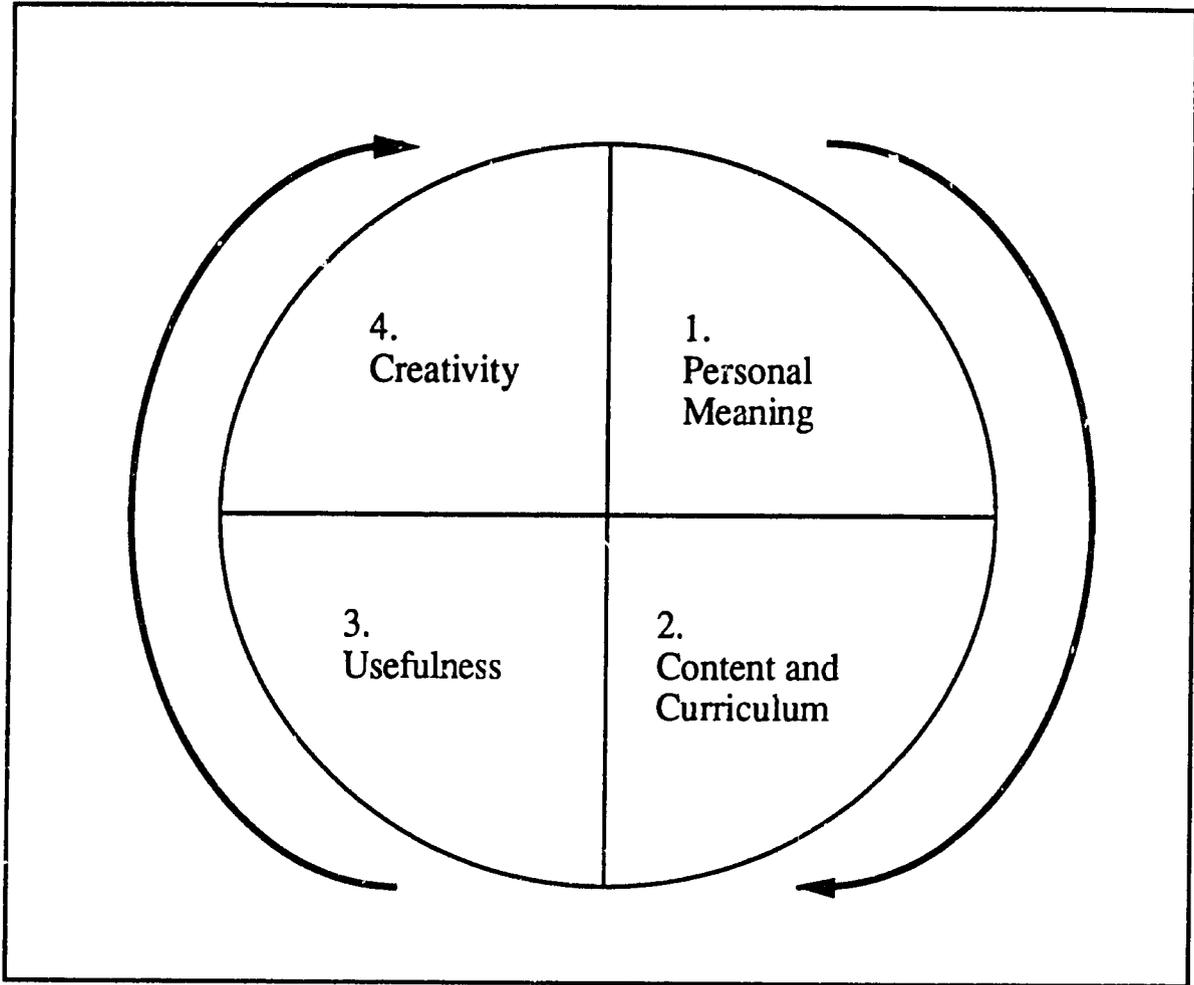
\* \* \* \*

**Please indicate whether or not you would be interested in a consultation regarding the training programs with members of the HIID staff.**

**Yes**

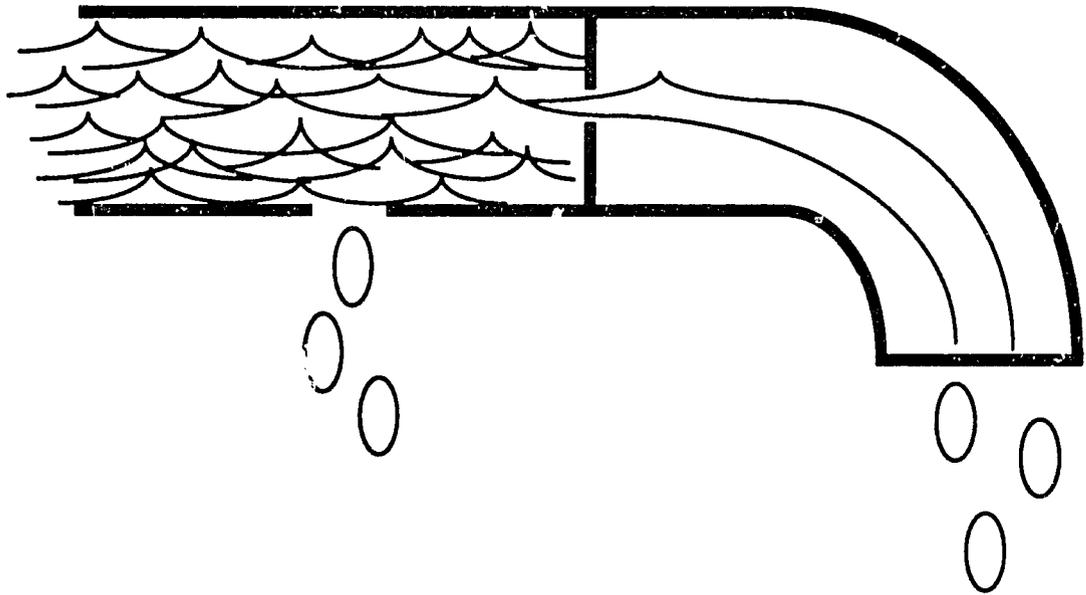
**No**

—>Overhead 1



—>Overhead 2

# INEFFICIENT EDUCATIONAL SYSTEM



# GOALS

1.

2.

3.

4.

5.

—> *Overhead 3*

## **QUANTITY**

- to maximize the proportion of eligible children who attend and complete school

## **QUALITY**

- to maximize the quality of the teaching and learning in the schools

—> *Overhead 4*

Efficiency increases  
when educators are able  
to achieve objectives  
without increasing costs.

—> *Overhead 5*

### **Challenge:**

Given the following sample budget, determine, in your groups, how you would reallocate the \$10,000 to achieve five of the quality goals and also accommodate increased enrollments.

### **Issues to Consider:**

As you make choices, discuss with your group:

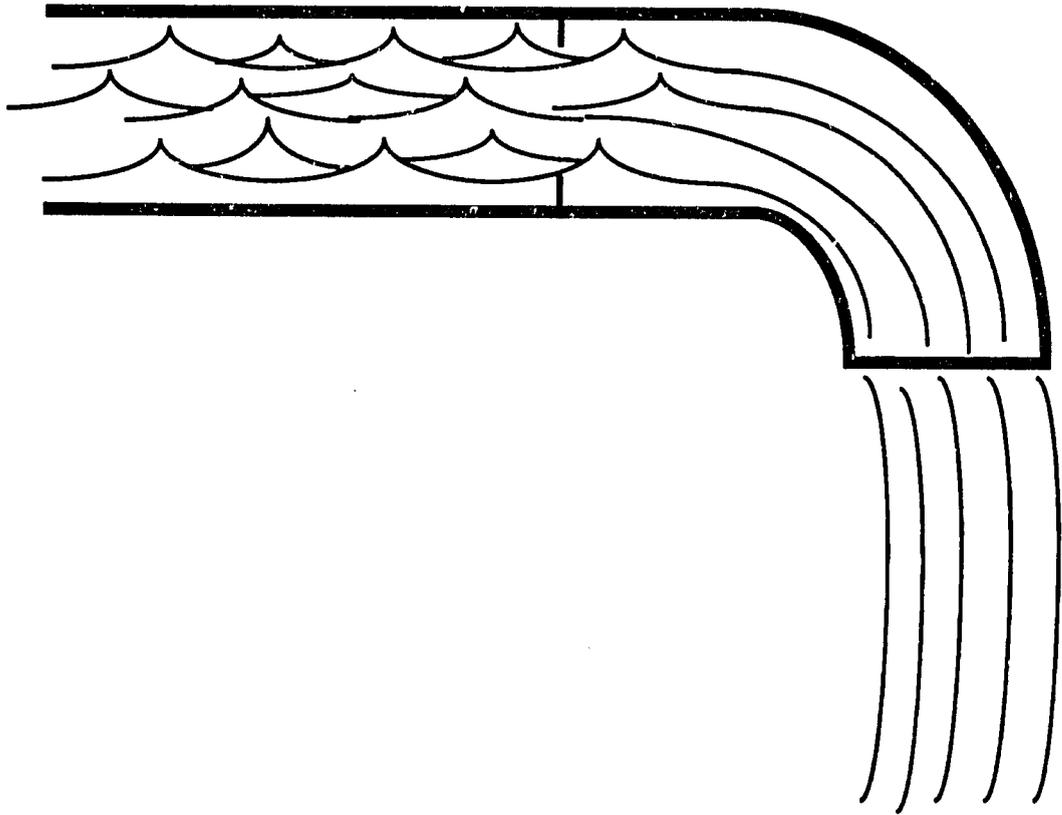
1. How allocating more to each chosen resource can help achieve your goals.
2. The consequences of shifting money away from certain resources and how you would balance the effect.

—>Worksheet 2

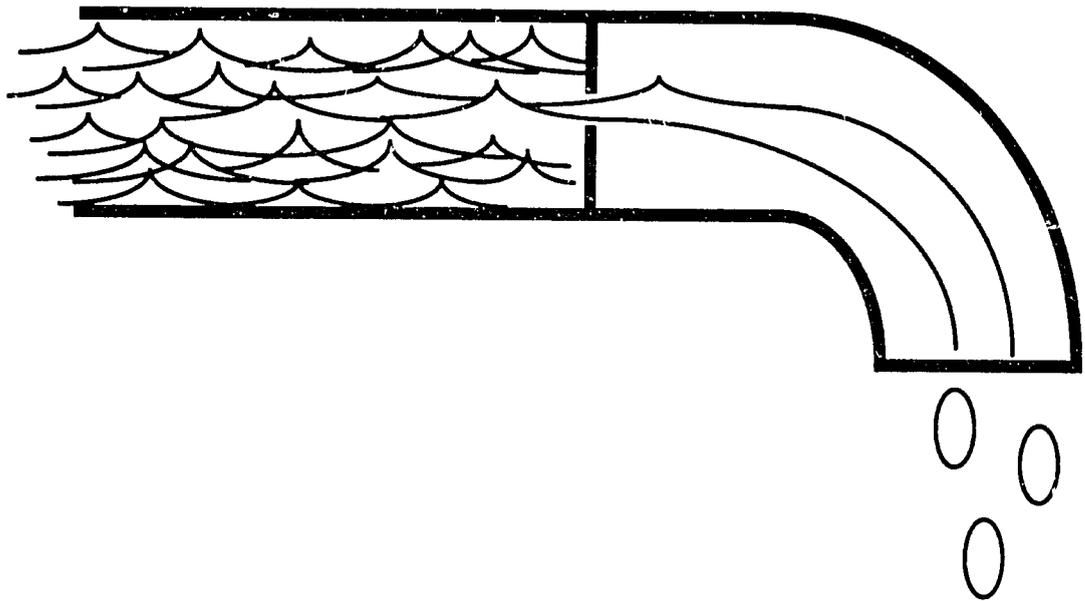
Resource	Current Budget	Proposed Budget	Consequences
Teacher salaries	\$5,000	_____	
Pre-service training	\$1,000	_____	
In-service training	\$250	_____	
Management	\$500	_____	
Physical Plant - construction	\$1,250	_____	
- desks, chairs	\$250	_____	
Texts	\$1,250	_____	
Instructional materials	\$500	_____	
<b>TOTAL:</b>	\$10,000	\$10,000	

—>Overhead 6

# EFFICIENT EDUCATIONAL SYSTEM

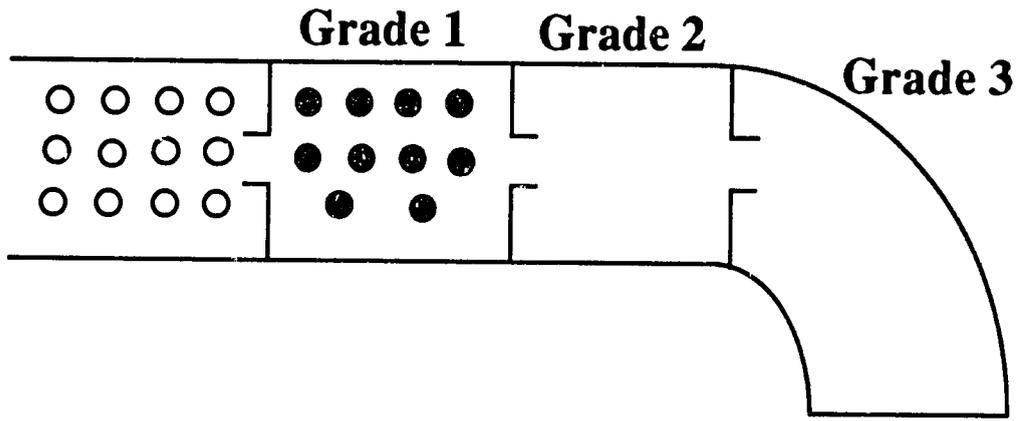


# INEFFICIENT EDUCATIONAL SYSTEM



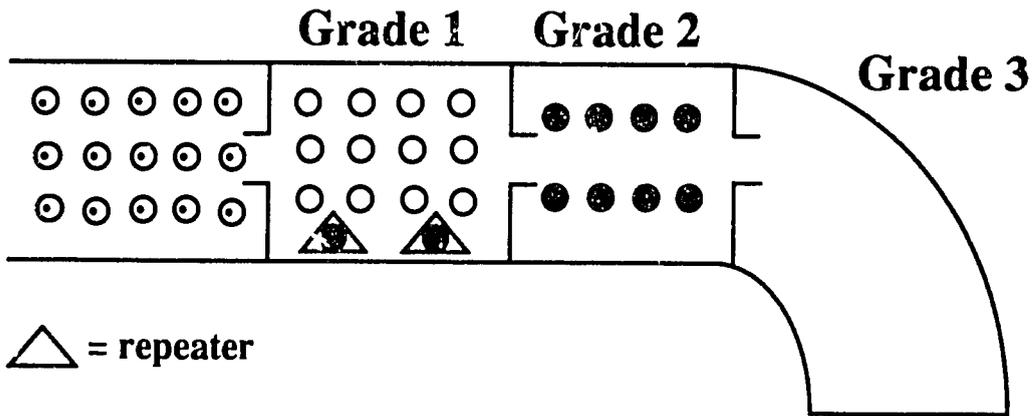
# STUDENT FLOW CHART

YEAR 1: 10 ENTERING STUDENTS



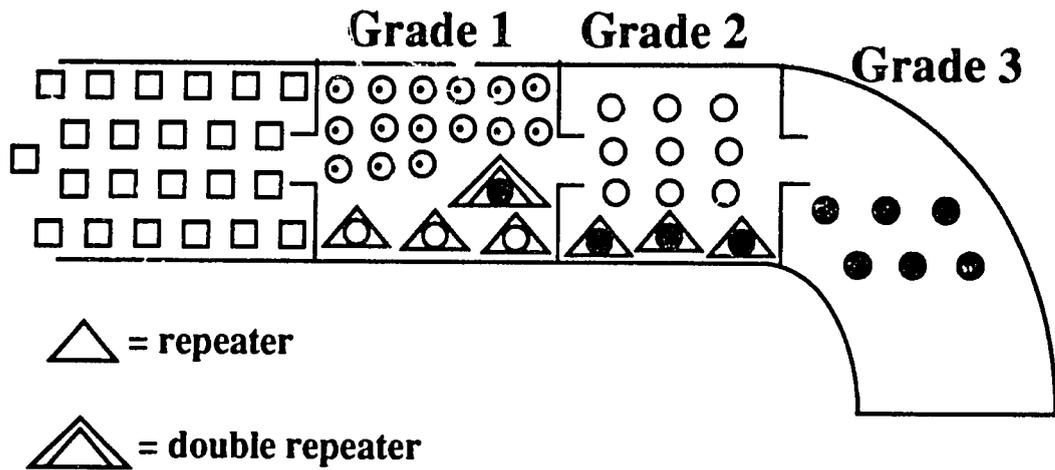
# STUDENT FLOW CHART

YEAR 2: 12 ENTERING STUDENTS



# STUDENT FLOW CHART

YEAR 3: 15 ENTERING STUDENTS



## **EFFECTS OF INEFFICIENCY**

1. Limited access for future groups of students.
2. Reduced supply of students for next level of education and for labor market.
3. Less efficient utilization of resources (more money spent per child).
4. Stress on quality of education in the system.

**COMMUNITIES INFLUENCED BY AN  
INEFFICIENT EDUCATIONAL SYSTEM**

**EXTERNAL**

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**INTERNAL**

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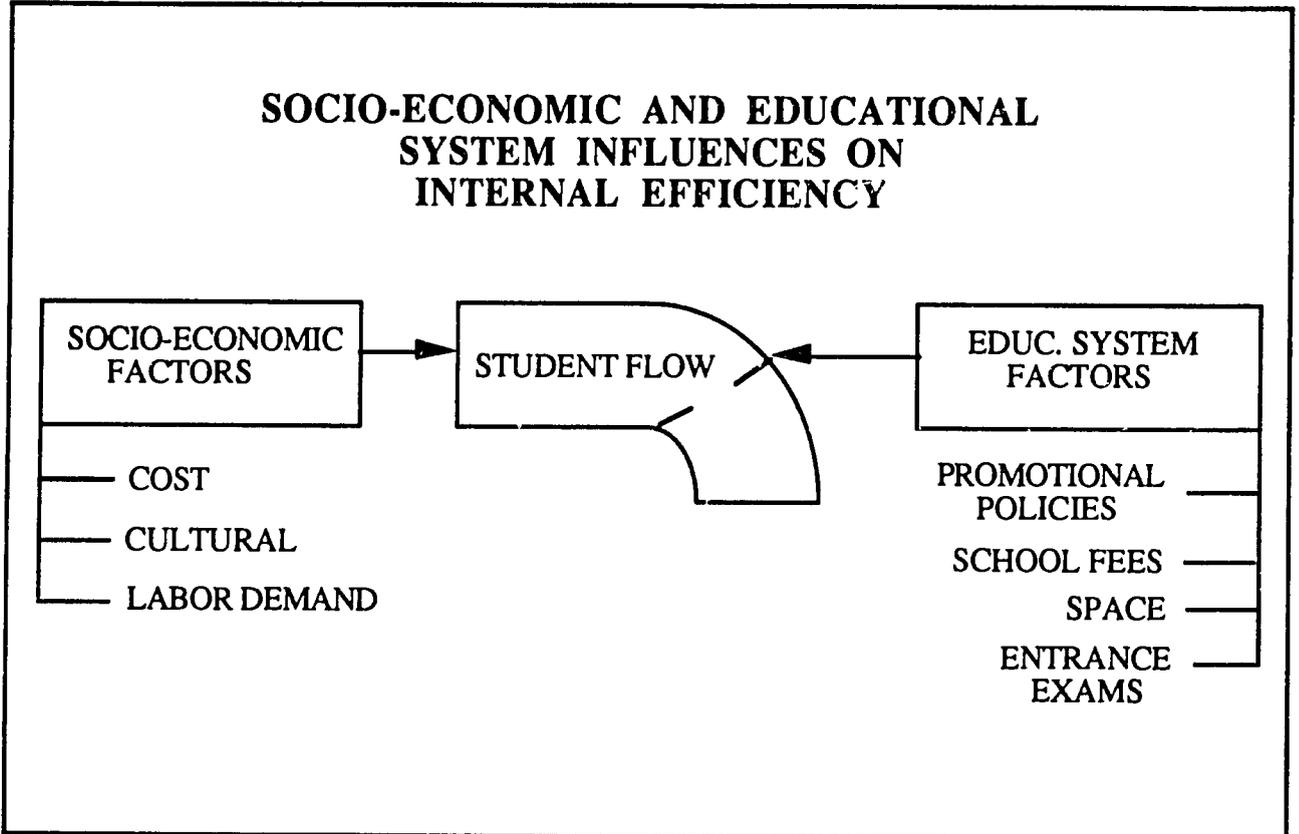
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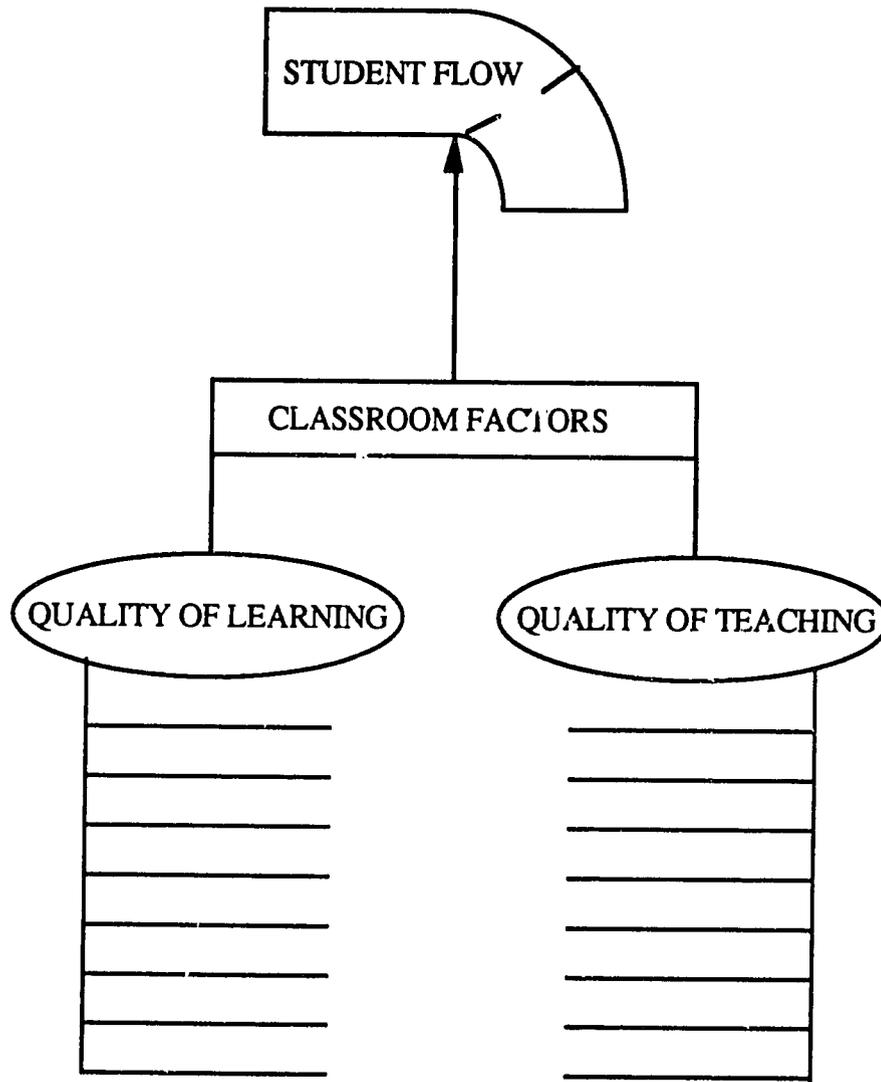
## **FACTORS AFFECTING INTERNAL EFFICIENCY**

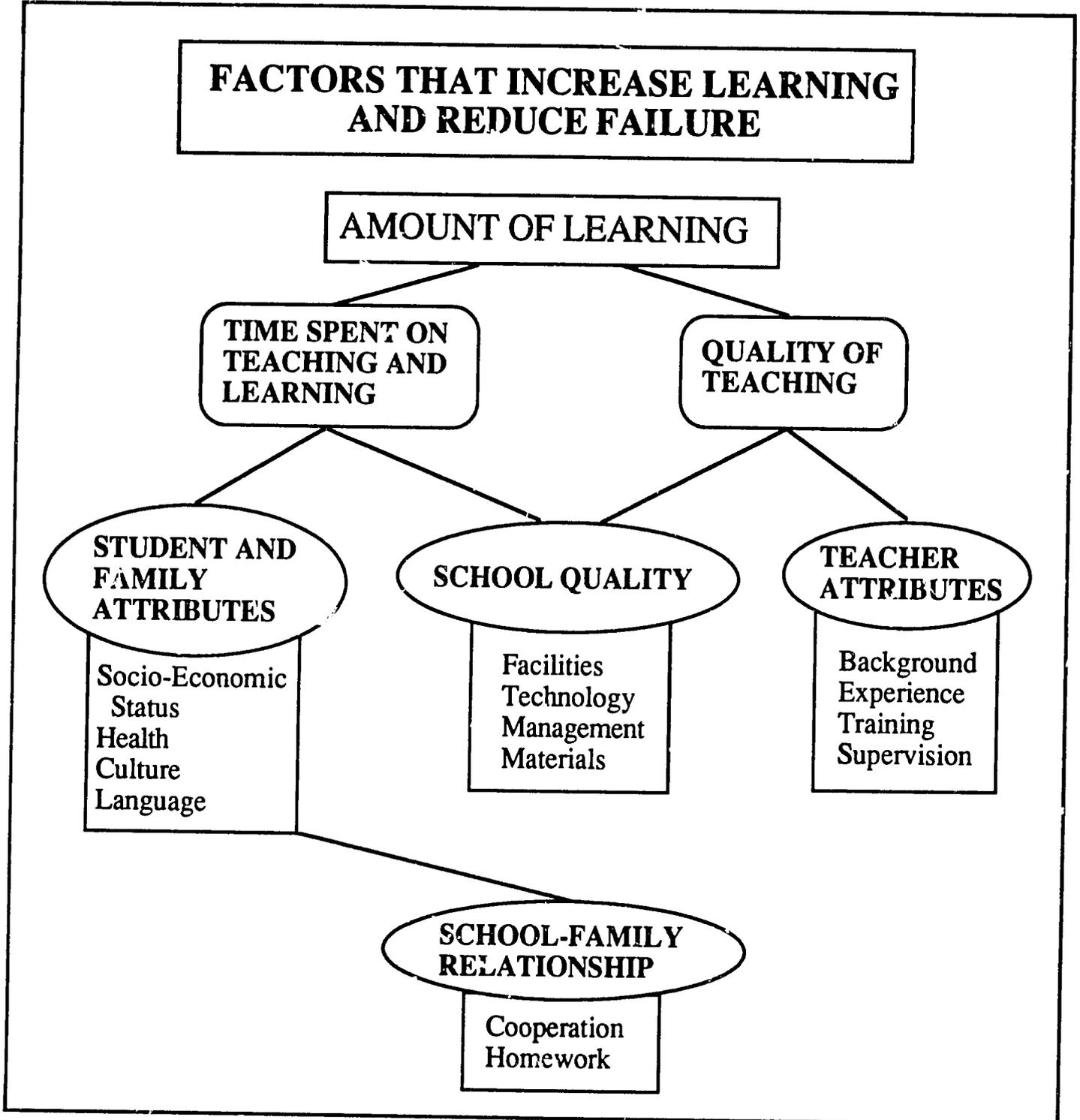
1. Central educational policies of promotion or retention
2. Limited space and access to higher grades
3. Low demand for schooling
4. Low achievement

→ Overhead 14



**CLASSROOM FACTORS  
INFLUENCING  
INTERNAL EFFICIENCY:**





**OVERHEAD 1 /**

**Instructional Strategy**

Bilingual Instruction	○ → □
Teacher Training	□ → ◇
Relevant Curriculum Development	□

**School Structure**

Community Development	○ → □
Schedule Adaptation	○
Multiple Shifts	○
Multigrades	□
Non-Formal Education: Apprenticeships After-Hours Agriculture Skills	○ → □

**Material**

Construction or Expansion	◇
Transportation	□ → ◇
Texts Increase & Revision	○
Technology	◇

**Educational Policy**

Anti-discrimination laws	□ → ◇
Pre-schools	◇
School-lunch program	◇
Female teacher hiring/incentives	□
Incentives to rural areas	○
Fee Waiver or Reduction	○

COST: Low = ○ Moderate = □ High = ◇ Dependent on Budget = ○

Low Pupil-Teacher Ratio

High Pupil-Teacher Ratio

Child Labor: Seasonal Agriculture

Child Labor: Urban/Industrial

Child Labor: Home Demands on Girls

Discriminatory Practices that result in low female, minority and poor enrollment, e.g. segregation

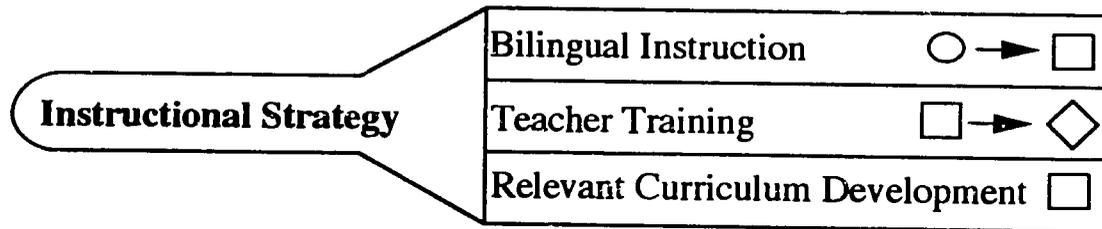
Cultural Practices affecting birth order and female expectations

Non-relevant Curriculum

Remoteness

Malnourishment

# OVERHEAD 18



Low Pupil-Teacher Ratio

High Pupil-Teacher Ratio

Child Labor: Seasonal Agriculture

Child Labor: Urban/Industrial

Child Labor: Home Demands on Girls

Discriminatory Practices that result in low female, minority and poor enrollment, e.g. segregation

Cultural Practices affecting birth order and female expectations

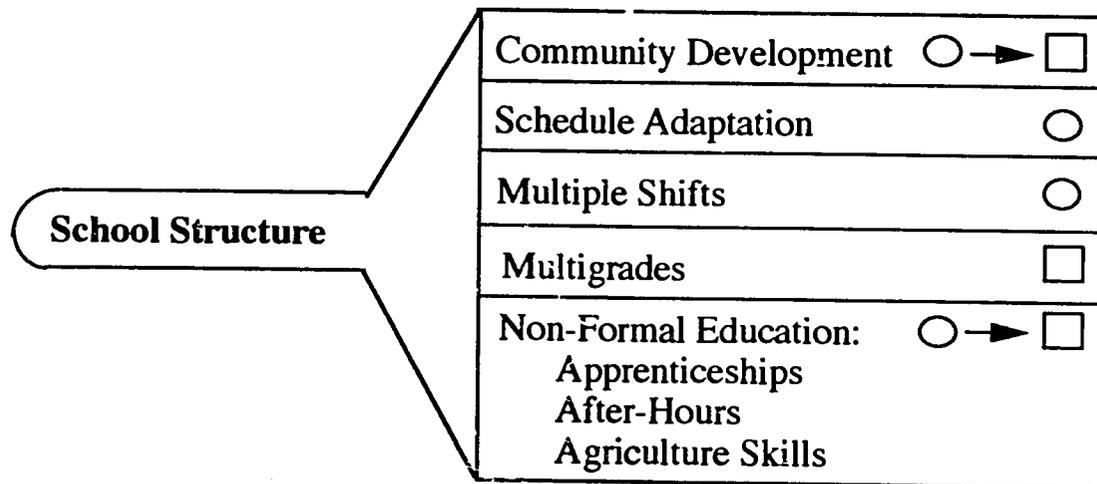
Non-relevant Curriculum

Remoteness

Malnourishment

COST: Low = ○ Moderate = □ High = ◇ Dependent on Budget = ○

# OVERHEAD 19



Low Pupil-Teacher Ratio

High Pupil-Teacher Ratio

Child Labor: Seasonal Agriculture

Child Labor: Urban/Industrial

Child Labor: Home Demands on Girls

Discriminatory Practices that result in low female, minority and poor enrollment, e.g. segregation

Cultural Practices affecting birth order and female expectations

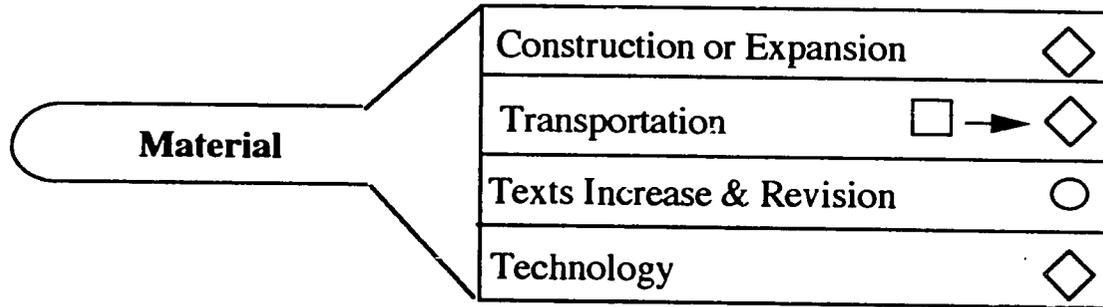
Non-relevant Curriculum

Remoteness

Malnourishment

COST: Low = ○ Moderate = □ High = ◇ Dependent on Budget = ○

# OVERHEAD 20



Low Pupil-Teacher Ratio

High Pupil-Teacher Ratio

Child Labor: Seasonal Agriculture

Child Labor: Urban/Industrial

Child Labor: Home Demands on Girls

Discriminatory Practices that result in low female, minority and poor enrollment, e.g. segregation

Cultural Practices affecting birth order and female expectations

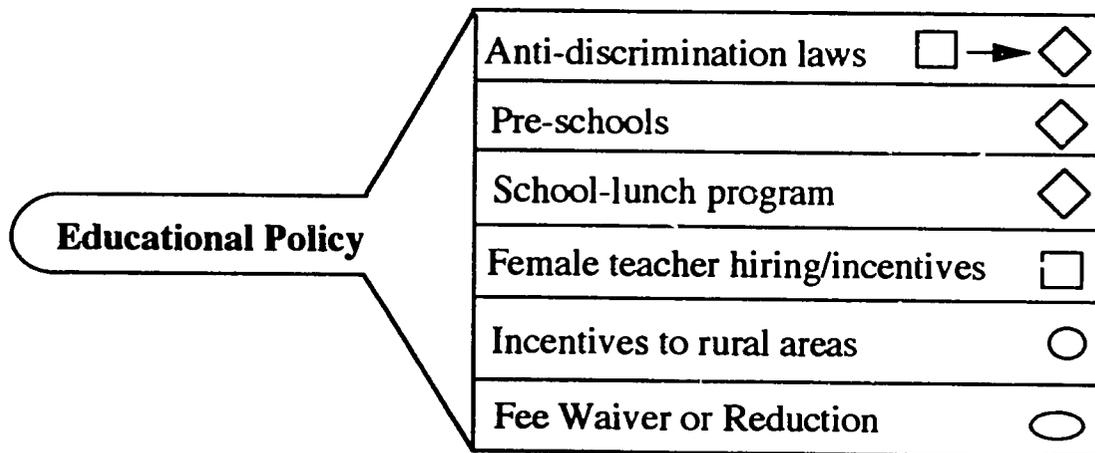
Non-relevant Curriculum

Remoteness

Malnourishment

COST: Low = ○ Moderate = □ High = ◇ Dependent on Budget = ○

# OVERHEAD 21



Low Pupil-Teacher Ratio

High Pupil-Teacher Ratio

Child Labor: Seasonal Agriculture

Child Labor: Urban/Industrial

Child Labor: Home Demands on Girls

Discriminatory Practices that result in low female, minority and poor enrollment, e.g. segregation

Cultural Practices affecting birth order and female expectations

Non-relevant Curriculum

Remoteness

Malnourishment

COST: Low =  Moderate =  High =  Dependent on Budget =

## PROFILE OF THE EDUCATIONAL SYSTEM OF HONDURAS

The educational system in Honduras is predominantly public and the primary school represents six years of schooling. Overall primary enrollment has been growing at 4.6% per year -- roughly 30,000 new students each year.

### Student Population

<b>Rural</b>	<b>Urban</b>
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**Average number of years to produce 6th grade graduate**  
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**Enrollment Increase**  
4.6% per year

**Completion Rate**  
45.6%

### 1st Grade

**Repetition Rate**  
30%

**Dropout Rate**  
4%

**Promotion Rate**  
61%

51

## **FACTORS THAT MAY CONTRIBUTE TO REPETITION IN HONDURAS**

### **Parents cause repetition by:**

- Allowing  
absenteeism
- Not participating  
in school activities

### **Teachers cause repetition by:**

- Inexperience
- Having limited  
training
- Not allowing all  
students to  
participate
- Evaluating students  
with bias
- Not using peers  
to help teach

### **Supervisors cause repetition by:**

- Not supervising  
teachers
- Not providing  
materials
- Imposing unfair  
punishment
- Not offering  
strategies for  
repeaters

→ *Chart 1*

<b>INTERVENTION</b>	<b>CONDITION</b>	<b>COST</b>	<b>BENEFITS</b>

## **GENERAL OUTLINE**

- PART I: WHY SHOULD WE FOCUS ON INTERNAL EFFICIENCY?**
- A. What is Internal Efficiency in an Education System
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- A. Improving the Quality of Teaching and Learning
  - B. Choosing Effective and Efficient Interventions
  - C. Case Study of Honduras