

Title: Developing and Implementing a New Technical Teacher Training Program for Individualized Competency-Based Instruction in Honduras

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Introduction

In October of 1998 Hurricane Mitch devastated the Central American country of Honduras. As part of a global effort to help the Honduran people recover, the United States Agency for International Development (USAID) sponsored a project to help rebuild and improve the Honduran Technical Education System. In February of 2000 Oklahoma State University and DevTech Systems Incorporated of Miami, Florida and Washington D.C. won the contract to conduct this project. One element of this project was the development and implementation of a new technical teacher training program for competency-based individualized instruction. This paper describes the techniques utilized in the training of new technical education teachers to manage and implement an individualized competency-based approach in their classrooms and laboratories.

Designing the Program

In order to design a training program that was relevant and meaningful for the technical education teachers a training needs assessment survey was sent to all teachers in the 25 technical education centers participating in the program. This assessment asked the teachers to rate a list of teacher competencies related to individualized competency-based instruction on a likert-type scale with regard to their perceived need for training in each of the competencies. The teachers were also given the opportunity to write-in any competencies in which they needed training that were not included on the list. The results of the assessment provided a basis for the content from which the training designers could then proceed in developing the training program.

After the analysis of the data, the training program was designed to be implemented in three different training sessions during the calendar year 2001. Each of the three sessions addressed particular competencies and was conducted in 4 or 5 different locations nationwide each time. Training topics were:

Session One: Characteristics and Responsibilities of a Teacher; Facilitation and The Teacher as Facilitator; and Managing Competency-Based Instruction;

Session Two: Safety and Hygiene in Laboratories; Implementing and Utilization of Advisory Committees; and Utilization of Audio-Visual Aids; and

Session Three: Working with Students with Special Needs; Managing Production Projects; & Cognitive, Psychomotor and Affective Evaluation Techniques.

Additionally, since the teachers were being trained on how to implement an individualized competency-based approach to teaching, the decision was made to design the training utilizing that same approach. The training design incorporated an individualized competency-based instructional approach utilizing computers as the primary instructional tool. The decision to use computers was two-fold. First, the use of computers would ensure each teacher would learn on an individual basis. More importantly, the design team wanted to demonstrate to the teachers that the computer could be used as a tool for learning, not only a tool for the creation of written materials.

The integration of computers in Honduran schools is an important educational objective for the Ministry of Education. The acceptance and utilization of computers in the schools heavily depends on the teachers' positive personal experiences in using computers in a learning situation. The training designer's hoped that this training

experience would foster positive attitudes in teachers toward computer-based learning and demonstrate how computers assisted instruction impacts learning.

The learning content for each topic was placed in a PowerPoint file and supported with both individual and small group application learning activities culminating in a series of knowledge competency tests. In order to move from one topic to the next the teachers had to pass a written competency test with a minimum score of 90. A competency certificate was awarded to teachers who successfully completed each of the training sessions.

Challenges

Until recently, public education in Honduras was mandatory only up to the sixth grade. Because of extreme poverty and other issues the vast majority of Honduras did not continue their education past the sixth grade. This was also the case for the majority of the Technical Education teachers. These educators who were hired for their technical expertise in their particular fields generally have been formally educated only up to the sixth grade. Additionally, the proliferation of computers in the Honduran society and labor sector has been limited. Because of this situation the training designers anticipated that the vast majority of the teachers would have very low to no computer skills and would likely experience some “fear” of using a computer.

With these two challenges in mind, the designers kept the reading level of the content and printed resource materials to be learned at a sixth grade level. Additionally, an initial “How to navigate a PowerPoint presentation” activity was included as the initial part of the first training session. Attractive and supportive clip-art images and photographs were included in the presentation to make them visually stimulating. In the

printed materials provided for the teachers, a printed copy of each PowerPoint presentation was included to be used as a study guide and for reference material.

A third challenge was to incorporate active learning in the training design. Much has been written on the advantages and effectiveness of active learning versus passive learning. Thus, the training designers wanted to implement a learning process in which the teachers would have activities that promoted active mental engagement. To promote active learning, the following steps were followed:

- 1) after reading the material the teachers completed an individual application activity such as a set of true or false questions;
- 2) teachers then had to discuss their answers to the application activity with a training facilitator. This step provided the opportunity for the teachers to actively interact with a facilitator to clarify concepts or information they may not have initially understood and to verify learning;
- 3) after reading a case study as an application exercise, the teacher would first answer the questions posed based on the case study; and
- 4) then move to a small group discussion area to discuss their answers with their colleagues. This interactive activity provided the teachers with an opportunity to interact and learn from each other and internalize concepts . Since the teachers were learning at their own rate, the small groups were usually composed of different teachers each time they occurred. This technique allowed for teachers to interact and learn from different fellow teachers each time.

The fourth challenge was to provide a good “model” of facilitation for the teachers that they would in turn facilitate in their own learning environments. A facilitator training program was developed and provided for some of the DevTech personnel and technical education specialists from the Honduran technical education coordinating agency called CADERH. These educators were trained using the same training techniques utilized with the teachers. The designers felt that these professionals needed to experience what the participating teachers were going to experience and have the benefit of being facilitated in their own learning in order to then facilitate the teachers. This training was deemed a success as documented by very high facilitator ratings given by the teachers on the evaluations conducted at the end of each training session.

Results

Ninety-two (92) to seventy-eight (78) technical education teachers successfully completed each of the three training sessions. Based on the results of the session evaluations that were completed by teachers at the end of each session the conclusion was made that the training design and activities were perceived as being very effective. After each training session the teachers were asked to rate the “Process Utilized in the Training” on a three point scale of 3 – Excellent, 2 – Good, or 1 – Poor. At the end of the second training session almost 35% of the teachers rated the process as “Good” and 61% rated the process as “Excellent”. After the third training session almost 20% of the teachers rated the process as “Good” and 80% rated the process as “Excellent”. When asked to specifically rate the “Use of the Computer as a Learning Tool”, after the second session 20% rated the use of the computer as “Good” and almost 76% rated the computer

use as “Excellent”. At the end of the third training session only 14% of the teachers rated the use of the computer as “Good”, while almost 86% rated the computer use as “Excellent”.

After both the second and third training sessions, when asked “What activities did you enjoy the most?” their work in small groups was listed most frequently and using the computer to learn was mentioned many times. The data clearly showed that the combination of using the computer as the main learning tool and small group activities were the most valuable aspects of the training for the teachers. This training design was perceived as being very effective and helped the teacher reach a high level of learning as demonstrated by the 100% passing rate on the competency tests for each of the three sessions at all training sites and from their own comments on the evaluation forms. Even though approximately 80% to 90% of the teachers had never used a computer prior to this training, they quickly overcame their initial fear and their enjoyment for learning via interactions with the computer and in small groups grew with each training experience. All participants successfully passed the competency tests at the end of each session.

Follow-Up Research

Forty-five teachers who participated in the training responded to a Follow-Up Survey that explored the impact the training had made on their instruction. The most frequent responses related to:

- improved ability to address the psychological and social needs of the students;
- improved ability to create and manage a positive and safe learning environment;
- improved teacher-student interactions and relationships;
- improved self-confidence, classroom leadership and role modeling;

- improved instructional planning, preparation and use of resources;
- improved individual and small group facilitation and supervision abilities in a positive and dynamic manner;
- improved instructional delivery and time management ;
- improved teacher motivation, attitude, commitment and enthusiasm for teaching;
- greater empathy for students' personal situations and learning challenges;
- improved and more efficient management of the individualized competency-based instructional approach to learning;
- improved safety and hygiene practices in the classroom and laboratory;
- improved ability to meet the needs of students with special needs;
- improved ability to demonstrate technical skills;
- improved evaluation techniques;
- improved ability to teach desirable workplace values and attitudes;
- improved use of instructional media;
- improved integration of instruction and production activities; and
- improved relations with business and industry partners.

Regarding what perceived impact these changes had made on their students some of the most frequent responses were:

- improved student attitude, interest, motivation, attention and participation;
- improved student drive to improve and excel,
- improved student learning, performance and achievement;
- improved student self-esteem and confidence;
- improved positive attitudes toward instructors;

- improved student relationships with each other;
- improved student behavior & discipline;
- improved student safety behaviors;
- improved use of tools and equipment;
- improved responsibility for their own learning; and
- improved student attendance, less absenteeism.

Conclusion:

From the results of the training session evaluations and the training impact follow-up surveys, the training designers concluded that the use of an individualized competency-based approach utilizing computers as the primary learning mechanism for initial technical teacher training was successful. With each training session the teachers' enjoyment in using the computers combined with small group activities increased. The teachers' comments regarding the impact of the training on their teaching and on their students were very positive and the respondents described many improvements in their own pedagogical knowledge and instructional techniques and in the achievement, behaviors and attitudes of their students.

•Dr. Richard Shepperd from Texas A&M University at Corpus Christi and Ms. Ana Maria Munoz of DevTech Honduras collaborated with Dr. Martinez in the development of the Content, Learning Activities, Tests & PowerPoint Presentations for the training program.