Professional Training for Tele-teacher of Distance Education

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Abstract

The authors developed a training course for tele-teachers of Distance Education. And, the course was provided to tele-teachers of a satellite Instructional Television project in Papua New Guinea. In the course development, to embody the recent curriculum reform and its concept of Students' Centered learning, the authors introduced aspects of pedagogical theory, characteristics of human cognition, communication skills, classroom management skills and presentation skills. Also, all the performances are intended to effect on a Systems Approach as well.

Required emphases for tele-teachers were illustrated as a table by comparison with BOU method.

1. Introduction

Moore, G.M. et al.(1996) compared the achievement of learners who was taught by Distance Education (DE) and those taught in face-to-face classes was a line of research going back more than 50 years. The usual finding in these comparison studies is that there are no significant differences between learning in the two different environments, regardless of the nature of the content, the educational level of the students, or the media involved. Then, power of communication technologies have been expected to solve educational problem of isolation in remote schools.

As one of DE methods, Instructional Television (ITV), is an effective DE delivery systems that easily

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can be integrated into the curriculum at full course.

Since most people have watched television, the medium is familiar. Quality visuals can be combined in a single format so that complex or abstract concepts can be illustrated through visual presentation. Thus, ITV is very effective for introducing, summarizing, and reviewing. Then, it can be used effectively as a tool for conceptualize subject matters (Gottschalk, T.H., 2003). In addition, ITV is an effective way to take students to new learning environments by making the impossible of remote schools possible into visual. Events in the studio can be captured and relayed as they happen to remote schools.

Hence, many considerable measures of tele-teachers' training must be taken to embody the effective content development, even if they have enough experiences of face to face classroom instruction. Lesson design for DE present unique characteristics and design elements that differ from traditional methods of instructional development.

Also, throughout our training, a Systems Approach (SA) was considered for enabling maximum quality of visual.

2. ITV-DE Project

Satellite Distance Education Pilot Project (From Sep. 2001)

   Implemented Agency: Department of Education (DOE), Papua New Guinea

   Headquarters: Education Media Center (of DOE)

   Objectives: Dissemination of reformed school curriculum by providing model (guide) lessons through ITV.

   Foreign Aid: JICA partnership project (NPO assistance)

   Affiliation: Private owned EM-TV provides free of charge time for education (5hours/day, 10:00-15:00), Brian Bell (private electrical appliance store) provides some TV to remote school

   Studio Classroom: Mediated classroom studios in 2 Public Secondary Schools, Two cameras and computer slides (with Power Point) settings, sub-control room at next door of a studio classroom

   Method: ITV: Shooting at a studio classroom and directly introduced to record at a sub-control room.

Target: In-service Teachers and Students (Secondary 7and 11th Grades)

ITV content: Science and Social Science (7th Grade), Mathematics and Geography (11th Grade)

Receiving Sites: 42 schools, 1520 students

Production team: tele-teacher, two camera technician, one director and content experts are assigned as a team. Tele-teacher designs and produces instructional materials which include Power Point slides.

Other management systems: Facilitators (teachers in remote schools), A monitoring and evaluation team, Management staffs
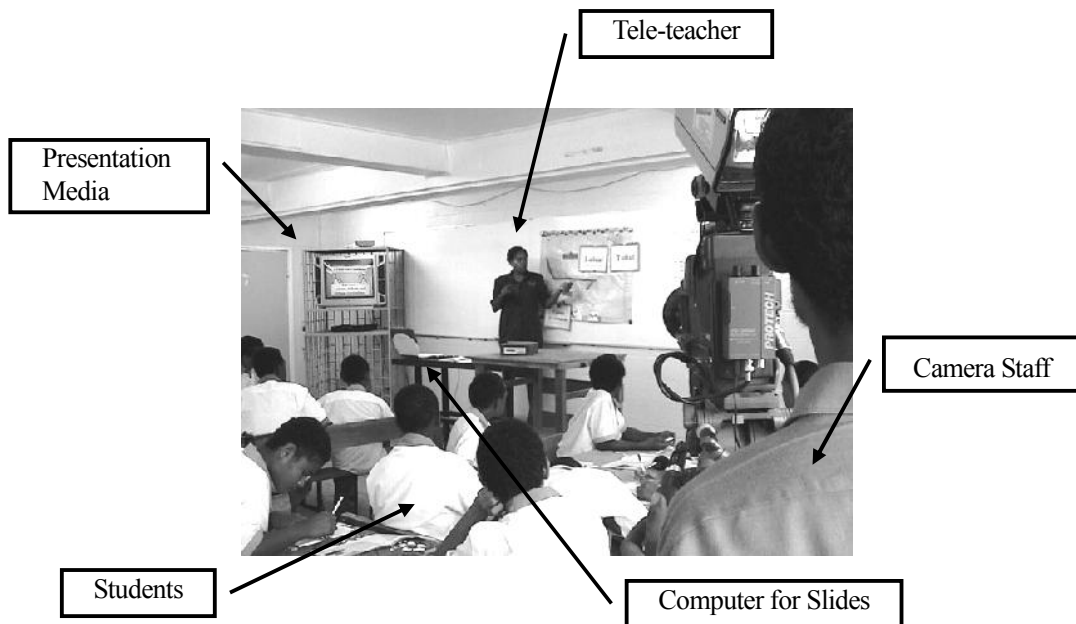
3. Country Report

Population of Papua New Guinea (PNG) is 5.2 million, whereas large total area is the sum of 600 islands to add up to 463,000 sq km. The country has only a few major roads, many areas being accessible only by air or boat. Mobilization of resources between headquarters and the provincial offices are often unreliable (Josephs, 1999). Attrition in provincial budget over the years has been the main cause for this.

On the other hand, PNG is noted for its cultural and linguistic variety. 715 indigenous languages are spoken, although Melanesian Pidgin English is widespread throughout the country. Therefore, in spite of little English spoken by 1%-2%, English is the language of education. PNG's Gini coefficient of 0.46 indicates a moderate to high degree of inequality of consumption expenditure across the

population (ADB, 2000).

Insufficient situation of human resource development of PNG could be seen even in international comparison with other indicator of poverty ("Water Poverty Index"). PNG is ranked within 147 Countries Coverage as 122 (value 10.3)(Peter Lawrence et al., 2003).

4. Emphases of Tele-teachers' Training Course

(Pictures presented are related statements in our developed training book)


Our training book have been designed for use in tele-teachers workshop led by DE specialist, and intended to make overt changes of their instructions to deep penetration level of revised curriculum. The most issue was to change instructional style from "teacher oriented" to "student oriented."

Wright, D.R.(1993) accounted strategies of in-service teachers by four transferable types. It begun with conventional **wisdom transfer** instruction, and initial academic wisdom was tried to move to student correctly where teachers could not be faulted for their presentation. Expertise is entirely external to classrooms. The next type is characterized by teacher's participation where each student can influence the structure. Expertise is entirely from within classrooms. This is called as "**teachers' center** model." Third stage have same recognition that both teachers and students need to meet and **explore a topic together**. Therefore, content expert; such as an academic, need to recognize that teachers have expertise in knowing and understanding the particular needs of students. This could have far more effect in classrooms than former two types. However, there were too few content experts that have sufficient interest, patience, experience to cover this way. Then, "**experts-and-mediators**" model of type four was introduced where experienced teacher must coordinate both types of expertise.

In this course, related pedagogical novel principles for in-service teachers' development were introduced and aimed to view into ITV.

<Student Centered>

Theoretical background of "student centered learning" and
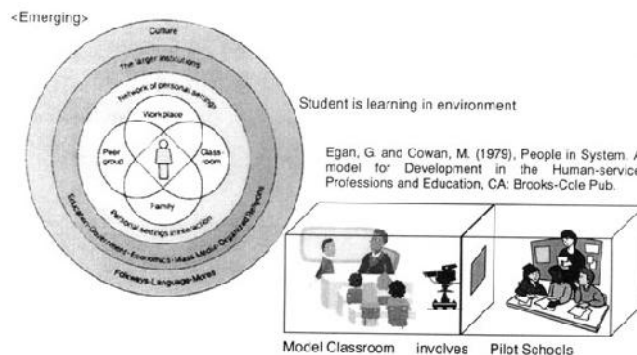
feasible ways to embody its concept into ITV were introduced.

<Conceptual Development>

Knowledge construction relies on active mental processing of perceptions. It results in understanding, which results from generative processing (Wittrock, M., 1974). Generative processing involves relating new information to prior knowledge in order to build more elaborate knowledge structures.

In PNG, knowledge is taught by English apart from a student's daily language. Consequently, teachers need to teach labels of events and objects with English definition. Continuous and repeated aloud of definitions is the regular instructional style and time consuming part.

> *Q: Why have you never use water buffalos in your fields? They could cultivate land, dig a waterway, dig a pond faster than a human, and also available for transportation with a carrier.*
>
> *A: Because water buffalos can not live in our climate.*
>
> *A: Because water buffalos can not alive with our fodder.*
>
> *R: I don't think so, because Indonesian uses a buffalos and their climate and vegetation is almost same as yours.*

<div align="right">(Reported in Yoshida, M., 2004)</div>

Lack of learning activities brought strengthened belief and inadequate trust into students. ITV should cover their lack of experience to apply learned knowledge to be structured into networked deep mesh of knowledge.

Tennyson & Cocchiarella (1986) suggest a model for concept teaching that has three stages:

(1) establishing a connection in memory between the concept to be learned and existing knowledge

(2) improving the formation of concepts in terms of relations

(3) facilitating the development of classification rules. This model acknowledges the declarative and procedural aspects of cognition.

Hence, concrete measure for providing chances to activate conceptual formulation of students and in-service teachers, we try to improve tele-teachers' presentation to more organized and structured.

<Instructional Design>
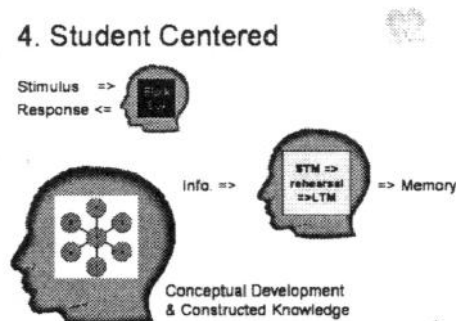
Tele-teachers need to be cognizant of how the details will be implemented in DE. This designing principles include: determining the individual goals and objectives,

◆ Graphic Organizer of Lesson Designing

Initial Idea

Course Outline

lead to

Intended Learning Outcomes

Intended Understandings

consist of

give coherence

Central Questions

Vee Diagram

Concept Map

depicted by

Conceptual Maps

revision of

lead to

Preconceptions

Student Concepts and Capabilities

consist of

depicted by

Intended Skills

Flowchart of Skills

lead to

revision of

Entry-level Skills

Lesson Flow

Posner, G.J. and Rudnitsky, A.N. (2001), Course Design. A Guide to Curriculum Development for Teachers, NY: Addison Wesley Longman

recognize the students' prerequisites, creating an environment for learning, reviewing, examining, and adopting instructional materials (Adapted from Boettcher & Conrad, 1999).

In our training course, authors provided not only methods for lesson planning, but also tools for designing underlining concept into subject matters (**Vee Diagrams**) and analyzing students' pre-acquired concepts (**Concept Mapping**).

<Discussion>

The differences between conventional **Group Learning** and emerging **Discussion** were introduced, and concrete methods of guided conversation to enable full process of problem solving were trained.
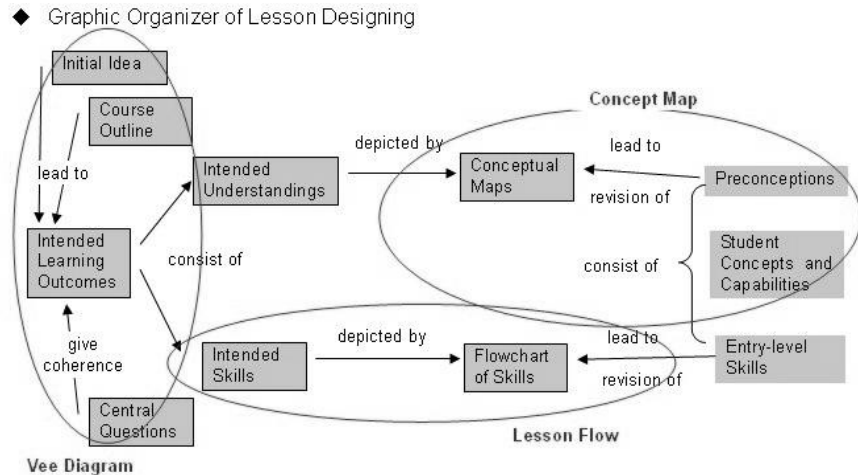
<Questioning>

Questioning skills that target on **Open Question**, and mechanism for developing cognitive high-order thinking of students are introduced.

require one of two choices. You can also offer more elaborate, content-related choices.

(Manzo, A.V. et al. (2001), Content Area Literacy, NY: John Willey & Sons, pp.154-155)

Teaching Activities

past   present   future

Student's PB (Problem Behavior)
Reward • • • ▶ Remedies
Re-learning of Student

<Classroom Management>

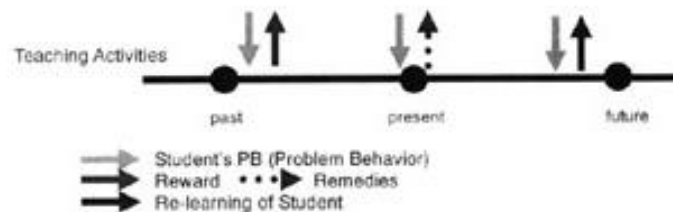Classroom activity is used for developing ITV content in PNG project. Therefore, managing misbehavior of students are often becoming problem. Teaching and counseling strategies for anticipating **non productive behavior** of a student was introducing. It also important to know students' psychological characteristics and measures as instructional skills.

<Team Development>

Team development way accelerates quality ITV production and SA. Team development includes hardheaded recognition of **technological and management knowledge** as well as frequent cooperative work with other ITV staff members. In addition, some parts of knowledge are consistent with training content for technical staffs.
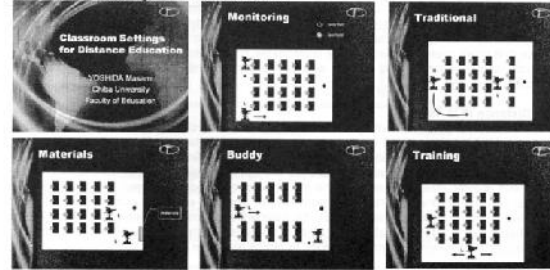
<Media Characteristics>

Tele-teachers must know some characteristics of TV technologies where their lessons are viewed. Since, many of learning or teaching materials for classroom use must be re-arranged to adapt **ITV environment**. Besides, characteristics of students' perception should be considered into material development. Related knowledge and skills are introduced.

5. Training Workbook

Training book; "Skill Standard for Tele-teachers" was developed. Contents of the book are listed below.

Skill Standard for Tele-teachers

1. Instructional Materials and Resources Session
1.1 Learner centered environment in DE and distinction from knowledge transmission
1.2 Factors which influence the choice of teaching materials and the ways in which these are designed
1.3 The layout planning
1.4 Aspect ratio and conversion

Task
1.5 Review your slides
1.6 Well known shots and modality
1.7 Preferred communication of students
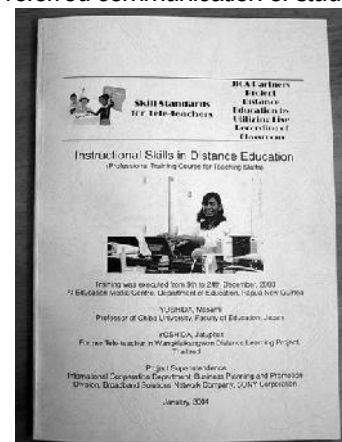
1.8 Recognize harmony between shot style and learning modes

2. Presentation Skills
  Session
    2.1 Standing position and effects
    2.2 Viewpoint and perception
    2.3 Eye contact
    2.4 Introduction
    2.5 Prerequisite of presentation
    2.6 Structure of presentation
    2.7 Presentation check list
  Task
    2.8 Vocal cues
    2.9 Standing position
    2.10 Design presentation

3. Communication
  Session
    3.1 Managing misbehavior of students
    3.2 The behavioral approach
    3.3 Effects of relearning by steps
    3.4 Proper spacing
    3.5 Difference of spacing in screen
    3.6 Classroom desk settings and communication styles
  Task
    3.7 Case study

4. Questioning Skills
  Session
    4.1 Classification of question
    4.2 Need to use variety of questionings
    4.3 The value of silence
    4.4 Using open question by steps
  Task
    4.5 Selecting question type
    4.6 Change your communication style by steps
    4.7 Communication control in Q/A
    4.8 Enhance students' thinking and deliberate answers

5. Group Learning
  Session
    5.1 13 types of group learning and limitation of each method
    5.2 Interrelationship of group learning types
    5.3 Leader ship issue
    5.4 Differences between group learning and discussion
  Task
    5.5 Designing group lesson

6. Developing Concept
  Session
    6.1 Concept map
    6.2 Conceptual Change Movement Theory
    6.3 Instructional design model
    6.4 Developing Prototype in a student concept
  Task
    6.5 Developing concept map
    6.6 Concept maps in projects

7. Discussion
  Session
    7.1 Developmental discussion
    7.2 Group learning to cooperative learning
  Task
    7.3 Factors to change from group learning to discussion

8. Lesson Plan
  Session
    8.1 Graphic organizer of lesson designing
    8.2 7 Basic types of headings in lesson flow
    8.3 Vee diagram
  Task
    8.4 Modify "Oh Deer" and design lesson flow

9. Practice 1
  Developing original presentation standards
  9.1 Course outline
  9.2 Consistency
  9.3 Summarization and focusing
  9.4 Attractive narration
  9.5 Target of student centered learning
  9.6 Using interactive tools
  9.7 Copyright cares
  9.8 Remarks for next lesson
  9.9 PNG standards

10. Practice 2
  Developing a check sheet
  10.1 7 items of a check sheet
  10.2 Ratings and comments
  10.3 Review records of your lessons

6. Reflection

Training curriculum usually rely on stress of the project to address new pedagogical era and style of SA of DE, and tele-teachers' training issues related to the priorities in development of ITV content. Accordingly, the relation between well-known guideline of tele-teachers' skills developed at BOU and our training are illustrated to view our strategies in a table 1 below.

Table 1: Comparison of Emphases with BOU

British Open University	*Skill Standard for Tele-teachers*
Good Structure The organization of the course and materials must be well defined and clear to the student; there the different parts of the course must be internal consistency. Students should at all times know what they are trying to learn, what is expected of them to achieve the learning, and when they have arrived at the goal.	1.2, 1.6, 1.8, 2.4, 2.5, 9.1, 9.2
Clear Objectives If a course has clear objectives, the task of the instructors in identifying suitable learning experiences becomes fairly easy; evaluation is easy also. Additionally, it increases the possibility that the right selection and application of technology will be implemented.	3.3, 9.1, 9.8
Small Units The content of the course and the way the materials are organized and presented should be broken down and presented in small units. These may correspond to a single instructional objective or learning activity.	1.2, 9.1
Planned Participation Opportunities for interaction, through student activities or exercises, are embedded throughout the course and materials.	3.6, 4.1, 4.4, 4.7, 5.1, 7.1, 7.3
Completeness The course materials or program must contain extensive commentary or examples like those that would be provided, often, extemporaneously in a traditional classroom setting.	6.3, 8.1
Repetition Important ideas should be repeated periodically (especially in summaries) to provide reinforcement and to compensate for distractions and memory limitations.	3.3, 6.3, 9.3
Synthesis Important ideas expressed in the materials or contributed by students should be woven together (especially in summaries).	1.3, 4.2
Stimulation Through the use of interesting formats, content, or guests, course materials need to capture and hold the attention of students.	1.3, 9.3
Variety Information should be presented in a number of different formats and different media to appeal to varying interests and backgrounds of the students.	4.2, 9.4, 9.6
Open-ended Assignments, examples, and problems should be open-ended so they allow the students to adapt the content to their own interests or situation.	4.7, 4.8
Feedback Students should receive regular feedback on their assignments or progress in the course.	3.2
Continuous Evaluation The effectiveness of the materials, media, and instructional methods should be routinely assessed using a variety of methods.	10.1, 10.2, 10.3
	Theoretical Recognition of Contemporary Education 1.1, 5.4, 6.2, 7.2 Recognize Cognitive Characteristics of Students 1.3, 1.7, 2.2, 3.2, 3.4, 4.3, 6.1, 6.6 Lesson Planning 6.3, 8.1, 8.2, 8.3, 8.4

	Enhance Conceptual Recognition of Students
	1.3, 4.2, 6.4, 8.3, 9.3, 9.5
	Presentation Skills
	2.1, 2.3, 2.5, 2.6, 2.7, 4.3, 4.6
	Questioning Skills
	4.1, 4.4, 4.5, 4.7, 4.8
	Group Activities
	4.7, 5.1, 5.2, 5.5, 7.1, 7.2
	Recognize Media Characteristics
	1.4, 3.5, 9.9
	Classroom Management
	3.1, 3.2, 3.3, 3.7, 5.3
	Team Development (Production)
	1.1, 3.5, 3.6
	Copyright
	9.7

It is clear that much of enhancement in pedagogical fundamental can be seen on our training course. Indeed, our ITV uses direct recording at classroom, and including teacher-student interactions as modeled communication.

7. Challenge

Actually our training course has been customized and includes many Open Questions. It requires careful management by a training specialist, and also need periodical revision for adapting changes of SA. Thus, effective DE begins with careful staff development and mature tele-teachers dedicated to developing a quality ITV. In other word, effective DE requires tele-teachers committed to spend time to plan and produce effective materials. As a result, much of evidence in effects to remote schools was clarified by monitoring researches.

> *Since the introduction of the project in 2001, there has been a lot of positive and negative comments in the early stages of the project. However, as the project continued into its first and second year, the schools began to realize that Distance Education Mode through TV has had a lot of impact on the students' learning. This not only helped the students but the teachers in pilot schools also benefited to new teaching strategies and approaches which they not only apply during the TV lessons but also to other lessons. Students have improved academically, and most importantly they were able to have access to some of the information they could not afford in the past. This helped minimize problems such as shortage of teachers and lack of materials in schools.*
> *(Leaflet of Project; Distance Education Utilizing Live Recording of Classroom Broadcast Pilot Project)*

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