ABSTRACT
        An inservice course on mainstreaming is provided to
314 teachers in 31 sites in Appalachia via satellite. In addition to
media portions, the course consists of printed ancillary materials
and practicum activities. Films show exemplary mainstreaming programs
and teachers implementing techniques taught in the course. Content
focuses on strategies for individualizing instruction and on attitude
change. The course is evaluated in terms of attainment of affective
and cognitive objectives, reactions to content, format and structure,
and technical success. The course will be adapted for dissemination
based on evaluation findings. (Author/SBH)

An Inservice Course on Mainstreaming:
An Innovative Media Approach

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Abstract

This paper will describe the development and delivery via satellite of an inservice course on mainstreaming to 314 participants at 31 sites in Appalachia. The course consists of media portions delivered via satellite, printed ancillary materials and practicum activities. Films show exemplary mainstreaming programs and teachers implementing techniques taught in the course. Content focuses on strategies for individualizing instruction and attitude change. The course is evaluated in terms of attainment of affective and cognitive objectives, reactions to content, format, and structure, and technical success. The course will be adapted for dissemination based on evaluation findings.

An Inservice Course on Mainstreaming:

An Innovative Media Approach[1]

The passage of P.L. 94-142 represented a victory for the handicapped by requiring the public school system to respond to the needs of handicapped children. However, this victory was only a first step in this process. School systems are now faced with the more difficult task of implementation. In order for implementation to proceed most effectively, in-service training of teachers with little knowledge of handicapped children is required. The importance of in-service training was recognized in P.L. 94-142 by a provision dictating that states develop and implement a comprehensive system of personnel development. This need for massive in-service training has presented a tremendous problem to state and local departments of education.

Inservice training for teachers in techniques for dealing with the handicapped child was identified as a priority need in the Appalachian region in a needs assessment completed by the Appalachian Educational Satellite Program (AESP) in 1976. The rural nature of much of Appalachia and the economic conditions in these areas hinder many school systems in providing cost-effective in-service training for their teachers.

Given the urgent need for training in order to meet the provisions of P.L. 94-142, a satellite delivery system which could train large numbers of teachers in the field appeared to be the most promising instructional strategy. Thus, the AESP joined with Project PUSH of Keyser, West Virginia to develop

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a course, "Teaching the Young Handicapped Child: An Overview." This course would be delivered by the AESP dilivery system to sites within Appalachia.

The Appalachian Education Satellite Program (AESP) is a regional organization funded by the National Institute of Education (NIE) under the auspices of the Appalachian Regional Commission (ARC) to deliver educational programs via satellite to remote sites in Appalachia. The AESP has been designing and delivering educational courses and workshops to sites in Applachia since 1974. Many of offerings have been in-service training courses in particular instructional techniques or subject areas, e.g., diagnostic and prescriptive reading, career education.

Project PUSH was originally a First Chance Project funded by the Bureau of Education for the Handicapped (BEH) and has worked to establish programs for preschool handicapped children in communities throughout West Virginia. Since 1975, Project PUSH has been involved in outreach activities providing technical assistance to regional programs and training teachers and adminis- trative personnel in techniques for working with handicapped children through workshops and institutes.

Course Format. All AESP courses consist of two basic components: programming, which is delivered by satellite, and printed ancillary materials. Each of these components are viewed as essential parts of the course content; they are designed to complement each other rather than to stand alone.

The media portions of the course "Teaching the Young Handicapped Child" includes three types of programming: film-video mix units, prepared media units, and interactive seminars. The film-video mix programs are original filming produced by AESP/PUSH in cooperation with WWVU-TV of West Virginia University during the process of course development. These programs consist of segments filmed at selected mainstreaming programs in Appalachia and are

interspersed with video·narration by a host/instructor. This format is a basic component of AESP courses, and serves to demonstrate the actual implementation of techniques taught in the course.

The prepared media format centers around the introduction, viewing, and discussion of previously existing films. The film is introduced and discussed by a panel of content specialists.

The interactive seminars make use of the satellite capability for live interaction to simulate normal classroom communication, including reviewing content, answering questions and exposing participants to experts in the field. Seminars follow a cluster of related topics in the syllabus. A panel of content experts and the host/instructor then answer questions. teletyped in by participants during the seminar.

The print or ancillary materials for each unit consist of pre-program readings, written exercises, group discussions, and practicium assignments. Group discussions are conducted on-site and are supervised by an AESP site monitor. These ancillary materials provide the participant with the necessary background and follow-up for the filmed portions of the unit. The activities and practicum exercises enable participants to integrate and internalize the concepts and provide the instructor with written feedback on, student progress.

Course Development

Selection of basic topics for the course was based upon several factors: (1) the results of the AESP needs assessment, (2) the PUSH educational model, (3) the legislative requirements of P.L. 94-142, and (4) reviews by content experts. The AESP needs assessment had identified the following priority areas for inservice training in special education and early childhood education: identifying the exceptional child; parent involvement; development of language

and verbal skills; behavior management and social development. The need for training in language and speech stimulation activities was further evidenced by the large number of requests Project PUSH had received from Head Start and other education agencies for training in this area. These topics were viewed as primary areas for content development.

The PUSH educational model which had been developed and tested in demonstration projects provided the foundation for the teaching techniques and activities taught in the course. The PUSH educational model is built upon the concept of an individualized program for each child. Children with handicaps are identified and assessed for their developmental level; behavioral objectives are then constructed, and task analyzed for sequential, learning. Active parent involvement is an integral part of the PUSH model.

Finally, it was agreed that the course should include a strong affective component directly addressing the attitudes of teachers toward handicapped children. This conclusion was based upon reviews of relevant literature indicating that teachers were fearful or uncertain of dealing with the handicapped child in the regular classroom. Using filmed examples of teachers working with handicapped children and demonstrating that the needs of handicapped children were, in many ways, very similar to the needs of non-handicapped children was one method by which this issue was addressed.

These factors then determined the basic units of the course. (A copy of the course syllabus and a summary of each unit is attached.) Objectives for each unit were developed, and a search was made for existing, quality media which would meet the outlined objectives. These films would then be used in the prepared media units. In those areas in which exemplary media were not identified, scenarios were then drafted for those objectives which would be addressed in the filmed portions of the units.

Two external reviews were conducted during the course development process to provide feedback for revision to course developers. The first external review took place following the development of unit objectives. The second external review occurred upon completion of the scenarios and outlines of ancillary materials. Content was revised based upon feedback from each of these reviews. External reviewers were of two types. A small group of external review- ers were expert in the subject matter and directed their attention to the con- sistency and accuracy of content as well as effective methods of instruction. A second, larger group of external reviewers were selected by AESP site directors. These individuals consisted of members of state departments of education, regular classroom and special education teachers, administrators, and parents of handi- capped children. These reviewers reacted to the course content in terms of the training needs of teachers in their region. Reviewers responded to the content on standardized instruments; written comments were encouraged. This process was designed to allow course content to be shaped to meet the needs of various communities in Appalachia, while at the same time maintaining control over quality of the content through feedback from content experts.

At this stage of content development, sites in Appalachia were screened for locations for filming. This process began by requesting recommendations from AESP field personnel, external reviewers, and other educators in Appalachia for schools which contained exemplary mainstreaming programs. Recommendations were received and descriptions of these programs were obtained. Content developers and media personnel from WWVU-TV, who had contracted to do the filming, then visted these sites. A primary goal in site selection for filming was to show a variety of programs in different regions of Appalachia which met the course objectives in demonstrating means of program implementation. Thus, certain schools which had exemplary programs in specific areas might be selected for

filming of a particular unit. For example, New Tazwell Elementary School in Tazwell, Tennessee was found to have an active parental involvement program; this site was a primary site for filming of that unit.

Following completion of filming, programs were edited and completed for the film-video mix units. Units using prepared media were then completed. These units made use of existing media which had been previously identified. Panel members with expertise in the content area of the unit were identi-fied, and panel discussions were filmed to precede and follow the prepared media portions of the program. These panel discussions were chaired by the course instructor and were designed to introduce the films and present the rationale of the unit. The discussion following the film focused on issues of implementation related to the unit objectives.

With the completion of the film-video mix programs and prepared media programs, all taped programs were complete. The third type of programming, the interactive seminars, are live programs chaired by the course instructor. Three other panel members were selected for each live seminar based on their familiarity with content covered in the previous units.

Ancillary materials for each unit were finalized following completion of the filmed portions of each unit. These materials are designed primarily to meet basic, comprehension-level objectives for each unit. Pre-program readings associated with each unit provide participants with a basic foundation for concepts to be demonstrated in the filmed programs. Exercises and discussions which take place on-site following the filmed program are intended to reinforce principles and techniques described in the program. Practicum activities then require participants to either apply what they have learned in their classroom or to develop plans for implementation.

In summary, the course development process consisted of selection of topics, development of instructional objectives, identification of existing media, completion of unit outlines and scenarios for filming, selection of film-ing sites, completion of scripts and actual filming, and final development of ancillary print materials. Content development was aided by external reviews of objectives and subsequent outlines and scenarios by content experts and field representatives. Filmed portions of each unit focused upon the affective and application objectives for each unit. Printed materials were designed to satisfy information and comprehension level objectives, while practicum activities addressed higher level analysis and evaluation objectives. This pairing of objectives and types of instruction is consistent with instructional design principles concerning most effective means of conveying objectives.

Course Delivery and Evaluation

The course was delivered during the fall of 1976 to 314 students at 31 sites in Appalachia. Participants could elect to receive three hours graduate or undergraduate credit for the course from one of 23 cooperating colleges or universities in the Appalachian region.

The evaluation of the course was quite extensive as this first delivery was essentially a pilot testing of the course. A brief exploration of the evaluation design and the major findings will be presented here. The evaluation plan was designed to address two major issues: (1) Did the curriculum meet its affective and cognitive objectives? and (2) How did participants react to the course structure and content? Instruments were designed to assess the overall success of the course and to provide information for revision of the course for future delivery and dissemination.

The success of the course, in meeting its cognitive and affective objectives were measured by instruments keyed to the cognitive and affective objectives. The cognitive instrument consisted of 80 items administered as a pre-test, mid-term, and final. The affective instrument was a 29-item instrument which participants responded to on a 5-point Likert scale. A low score indicated positive attitudes toward mainstreaming and the handicapped child. Items were selected for scoring based on factor loadings. This instrument was administered at the first and last sessions of the course.

Data concerning participants satisfaction with the course were collected in three forms: (1) Site monitors at each site rated their perception of students' reaction to the videotaped program and ancillary materials at the conclusion of every session. (This instrument was also designed to provide feedback concerning signal reception and functioning of on-site equipment.) (2) A sample of participants consisting of approximately one-third of the students enrolled completed on evaluation instrument concerning the videotaped program or live seminar and ancillary materials at the conclusion of each session. (3) At the conclusion of the final session all participants completed a summary evaluation form concerning various aspects of the entire course.

The weekly evaluation data from the site monitors and sample of participants were used to provide relatively quick information to several components of the AESP system in order to smooth the delivery of the course. Project administrators, engineers responsible for technical quality, media personnel who produced and directed the live seminars, course content developers all received weekly evaluation feedback based on their particular information needs.

The summary evaluation instruments completed by participants and site monitors during the last session was designed more for purposes of validation of the course and to assess students' overall reaction. This data was useful

in providing general directions for content revision. The weekly evaluations provided more specific information of this nature. Background information was also collected from all participants during the first session. This data will be used to determined how different target audiences reacted to the course.

Results

Data from the cognitive and affective instruments were analyzed in an analysis of variance design with factors for administration and for sites. Data for these analyses consisted of the total number of cases for whom pre- and post-test data were complete. The size of the sample for the affective analysis was considerably smaller than that for the cognitive analyses due to an error in administration.

A two-way ANOVA with the cognitive data revealed significant main effects for administration (F = 489.36, df = 1/195, p < .001) and for sites (F = 4.03, df = 27/195, p < .001); a significant interaction effect for sites by administration was also demonstrated (F = 4.64, df = 27/195, p < .001). Examination the mean scores for the pre- and post-administration shows a gain in performance from the pre-test ($\bar{x}$ = 45.90, S.D. = 10.97) to the post-test ($\bar{x}$ = 64.63, S.D. = 11.15). The effect for administration indicates that participants did gain in their knowledge instructing the handicapped child after taking the course. The significant effects for site and site by administration are due to variations by site in the degree of change from the pre- to post-administration. While all sites demonstrated a gain, the degree of change ranged from 7 percentage points at one site to 46 percentage points at another site.

A two-way ANOVA on scores on the affective instruments failed to show significant effects for administration (F = 1.67) or for sites (F = 1.16).

One possible explanation for the absence of meaningful attitude change is the very positive attitudes expressed by the participants on the pre-course measure, thus allowing little room for improvement. (The pre-test mean was 1.86 on a five-point Likert scale.) Participants relatively high degree of experience with handicapped children as demonstrated in the background instrument (47.6% had worked actively to improve the education of the handicapped), would suggest that this audience is probably more familiar with issues concerning the handicapped child than the typical regular educator, thus, one would expect their attitudes to be rather positive. In addition, as participants elect to enroll in the course, their interest in the topic may be presumed.

The second part of the evaluation focused upon participants' reactions to the course format and curriculum. On the individual unit evaluations, participants were required to respond to specific aspects of videotaped programs, ancillary materials and live seminars, such as applicability of information to the classroom, clarity of instructions, relevance of instruction to stated objectives, etc. This data was most useful in the revision of individual units. However, time and space do not permit a thorough discussion of the findings from individual unit evaluations here. Instead, the focus will be upon the overall participant ratings completed during the last class session. This data is useful in summarizing participants' general reaction to the course.

In order to determine how this course compared with courses taught in a more traditional manner, participants were asked to compare particular components of the course to comparable activities in a traditional course. The mean ratings as shown in Table 1 reveal that participants perceived different aspects of the course as being equal to or slightly better than comparable activities in a traditional course. The one exception to this trend was with interactive seminars which were rated slightly lower than traditional classroom

discussions. These findings demonstrate the validity of the course curriculum and format as a viable alternative to traditional means of instruction.

Participants were also asked to rate the particular components of the course curriculum in terms of the degree of information provided by each. Mean ratings for each component of the course are presented in Table 2. These ratings reveal that the videotaped portions of the course and the readings were most positively received, while the in-class ancillary activities and the interactive seminars received lower ratings. In response to these findings and examination of evaluations of individual units, the format of the ancillary activities and the seminars were revised extensively for future deliveries of the course.

Other items on the final evaluation were concerned with the utility of information provided, its impact on teaching, general reactions to the technology of the course, and need for such instruction. Responses to these items are presented in Table 3. The course appears to have succeeded in its objective of providing practical information to teachers which they can then apply in the classroom, as seen in the responses to Items 1 and 2. The difficulty of obtaining such information by other means was attested to by a majority of the respondents as seen in Item 3. Finally, it would appear that the technology involved in the course did not act to de-personalize the course. Participants often comment that the site monitor provides the necessary personal element, and the films enable them to see techniques demonstrated which they could rarely see in a traditional course. These findings serve to validate the need for educational programs of this sort in rural Appalachia and to demonstrate the value of satellite technology in delivering such programs.

Summary and Discussion

This paper has described the development and delivery of a course, "Teaching the Young Handicapped Child: An Overview" by satellite to 314 participants at 31 sites in Appalachia. The evaluation study revealed that the course had succeeded in its cognitive objectives of increasing participants' knowledge of techniques for working with handicapped children. Success in achieving its affective objectives was not demonstrated; however, the potential for change was minimized by the very positive entry attitudes of participants. The affective influence of the course will continue to be assessed with more naive audiences. The affective instrument is being revised to measure finer discriminations in attitudes toward mainstreaming and handicapped children. Finally, revision of the ancillary and practicum materials directly addressed these affective issues.

Participants' reactions to the course were generally positive. Components of the course were found to compare favorably to comparable aspects of traditional courses. The videotaped portions of the course and the course readings were the most positively received components. The course was perhaps most successful in conveying information which was practical for the classroom teacher and would be put to use in the classroom.

The evaluation findings have been used for revision of the course content for future delivery. Ancillary materials and activities have been revised to focus more upon small group discussions with questions for discussions geared to the videotape and readings. The site monitor receives a discussion guide summarizing the objectives of the discussion and relevent, content-related issues which may arise. This guide is designed to allow the site monitor, who is not a content expert, to act as an effective stimulator of small group discussions.

The seminar format has been revised to include a short break to stimulate questions and discussion on-site concerning the seminar. Students are strongly encouraged to send in questions every week for the up-coming seminar rather than waiting until the evening of the seminar when controversial issues of two weeks before may be forgotten. Short film clips and live phone lines to selected sites are being used to stimulate questions and students' sense of participation in the seminars.

The course is currently being delivered via satellite to a second group of 300 students. The delivery of this course is enabling teachers in rural Appalachia to receive training they might not have otherwise received. In the summer of 1978 the course will be prepared for dissemination to agencies and school districts in other areas of the country. The course will be adapted for use in traditional settings, over cable television systems, and in workshop formats.

Given the urgent need for in-service training to meet the requirements and timelines of P.L. 94-142, some type of instruction which can effectively train large numbers of teachers at a relatively low cost is necessary. This type of course with a curriculum combining videotaped demonstrations and discussions of applicational techniques and printed ancillary materials which can be used without an on-site content expert can provide the means to meet these needs.

Table 1

Student Comparisons of Course with Traditional Course*

Component	$\overline{x}$	S.D.
Pre-program preparation	2.73**	.88
Seminars compared to traditional class discussions	3.15	1.00
Ancillary activities compared to traditional in-class activities	2.86	1.00
Film-Video Mix programs compared to traditional lectures	2.54	.99
Prepared Media programs compared to traditional lectures	2.80	.93
Practicum Assignments compared to traditional homework	2.97	.93
Site Monitor compared to instructor	2.16	1.08

* n=257

** Comparisons were made on the following scale: 1 = Excellent - Received a lot more from the activity than in a traditional course; 2 = Very Good - Received a little more; 3 = Good - Received about the same; 4 = Fair - Received a little less; 5 = Poor - Received a lot less.

Table 2

Student Ratings of Course Components*

Component	$\overline{x}$	S.D.
Film-Video Mix	2.56**	.90
Prepared Media	2.65	.84
Interactive Seminars	3.19	.98
Reading Assignments	2.71	.93
Ancillary Activities	3.08	1.00

* n=257

** Scale: 1 = Excellent; 2 = Very Good; 3 = Good; 4 = Fair; 5 = Poor

Table 3

Student Perceptions of Impact and
Need for Course*

Item 1: What effect do you think the information contained in this course will
have on your teaching?

Response	Frequency
Has little or no relevance for me in my teaching situation	10.8%
Would like to use, but probably won't be able to	7.8%
Would like to use, but don't understand enough	3.9%
Plan to use	57.5%
Already know or am using	18.9%

Item 2: The course presented many interesting ideas and techniques for
practical application in the classroom.**

$\bar{x} = 1.98$ S.D. = 1.00

Item 3: It would have been very difficult for me to get the information that
was provided in this course in any other way.

$\bar{x} = 2.61$ S.D. = 1.1

Item 4: I did <u>not</u> feel the technology employed in the delivery of this course
made it an impersonal experience.

$\bar{x} = 2.68$ S.D. = 1.1

* n=256

** Scale for items 2-4: 1 = strongly agree; 2 = moderately agree; 3 = neutral;
4 = moderately disagree; 5 = strongly disagree.

Teaching the Young Handicapped Child:
An Overview

Unit Description

-Unit 1:   Orientation and Organization Seminar
            Registration and testing activities will be led by local site
            coordinators. The format of the course and a brief history
            of AESP and Project PUSH will be shown.

Unit 2:   Early Childhood Special Education Overview
            An overview of the major issues of educating special children
            at the early childhood level as well as a description of P.L. 94-142
            will be presented.

Unit 3:   Informal Observation and Assessment
            Practical considerations of education within the classroom will
            be related to theories regarding developmental milestones,
            application of techniques for observation and procedures for
            assessment.

Unit 4:   Live Seminar
            The need for "child find" efforts for early identification of
            handicapped children will be discussed.

Unit 5:   Parent Involvement
            This unit will focus on the common needs of parents, and, in
            detail, describe why involving parents in the child's program
            is important.

Unit 6:   Developing Social Skills
            The development of social skills and techniques for building
            positive social skills in the special child at home and in the
            classroom are discussed in this unit.

Unit 7:   Live Seminar
            A variety of approaches for parent involvement and techniques
            to develop the social skills of children will be addressed.

Unit 8:   Classroom Integration - Mainstreaming
            Appropriate placement of the handicapped child in the classroom,
            grouping for instruction and individualizing the instructional
            program will be presented.

Unit 9:   Planning for Individualized Education
            This unit focuses on competencies that enable the teacher to
            individualize and sequence the child's program through writing
            instructional objectives and task analyzing each objective.

Unit 10: - Techniques for Meeting Special Needs
            This unit illustrates how teachers can develop and utilize
            specific teaching techniques for the special children in their
            class.

Unit 11: Live Seminar
The integration of units 8, 9, and 10, dealing with strategies and techniques to use in the classroom, will be addressed.

Unit 12: Language and Speech Development
Developmental milestones of speech and language, sequences of speech-sound development, and word and sentence development will be studied in this unit.

Unit 13: Language and Speech Activities
Language stimulation activities including the presentation of concepts, vocabulary development and discrimination activities will be presented in a manner that can be utilized with the entire class.

Unit 14: Live Seminar
Topics of this unit include the role of the speech therapist and the importance of early identification as a panel integrates the material in units 12 and 13. An overall summary and evaluation of the entire course will also occur.