LEAP: A Constructivist Laserdisc Program for English/Language Arts Teacher Education

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Abstract

Literacy Education: Application and Practice (LEAP) is video-case based laserdisc program designed to give preservice teachers an opportunity to observe and analyze real-world situations in a collaborative learning environment. *LEAP*'s structural design is based on the principles of cognitive flexibility hypertext, a constructivist approach to using laserdisc technology for instruction. Exploration of 23 mini-cases (naturalistic portrayals of three middle school teachers) is guided by themes: teacher role, student role and environment.

This paper discusses the results of the field testing of *LEAP* and describes how interactive video-case methodology did provide a shared environment for dialogue and self-reflection in an English/language arts teacher education program.

Keywords — Video-case methodology, teacher education, literacy.

1. Introduction

The subject matter that a middle and high school English/language arts teacher teaches as well as how it is taught are issues that have historically generated controversy and change in American curriculum (Applebee, 1974, Berlin, 1987). Current debates concern issues such as whose literature constitutes the "canon," what skills should be taught, and what theoretical and ideological assumptions underlie pedagogy (Elbow, 1990). One particular topic has captured the interest of educators: the reading/writing workshop approach (see Atwell, 1987, and Rief, 1992 for a detailed description of the approach). Tenets of the workshop approach call for a constructivist learning environment. That is, the reading/writing workshop classroom is a student-centered milieu in which reading and writing are taught holistically in meaningful contexts, and unique, individual responses to literature are valued and encouraged. Because it is based on constructivism, it differs from the more traditional English/language arts methodology that hinges on the mastery of isolated reading and writing skills and the "correct" interpretation of literature.

A number of publications and textbooks are available for helping pre-service English/language arts teachers and teacher educators to explore and comprehend the various perspectives on the application and practice of the workshop's constructivist approach. The education of these future teachers could be enhanced, however, through the use of video-case instructional programs such as those used for the preparation of professionals in other complex domains (see Spiro & Jehng, 1990). Such video-case methodology creates a *macro-context*, a rich environment for such knowledge construction and self-awareness because it provides the preservice teacher with an opportunity to explore authentic classroom interaction from many perspectives.

When video-cases are delivered on laserdisc, the video representations being explored can be accessed readily, randomly and repeatedly (Spiro & Jehng, 1990). Teachers-in-training can visit and observe the same classroom without having to physically travel to the school location, as is commonly the practice for students attending colleges and schools of education. Most importantly, laserdisc technology allows small and large groups of preservice teachers to access, play, pause, and replay video-cases as they construct meaning that is based on their observations and influenced by the ensuing group dialogue.

2. Creating a Prototype of *LEAP*

An 18-month qualitative study was conducted to investigate the process of designing, developing and evaluating a video-case laserdisc-based instructional support program that a) is specific to the professional development of English/language arts teachers, and b) focuses on the application and practice of the reading/writing workshop approach. A prototype of an interactive

laserdisc program named *Literacy Education: Application and Practice* (*LEAP*) was created and field-tested. This research critically analyzed results of the field test as well as examined the process of design and development that culminated in the prototype's three major components:

- A laserdisc containing 23 naturalistic (not rehearsed or scripted) video-cases featuring three experienced, middle school teachers who use the workshop approach and their students.

- Software that allows learners to randomly explore the mini-cases and to analyze and critique precepts of the workshop approach from various perspectives.

- A collection of seminal literature concerning the underlying theory and current practice related to the reading/writing workshop.

2.1. Research Questions

Three research questions guided the study. Two of these concerned the procedures of designing and developing the *LEAP* prototype. One question concerned the field testing of *LEAP*: What changes in perspective related to the teacher's role, student's role, and learning environment of an English/language arts classroom are revealed in the observations of and interviews with teachers-in-training as they interact with *LEAP*?

This paper will focus on the field test, and specifically on the collaboration that occurred within small groups as they interacted with *LEAP*. It will first outline *LEAP*'s structural design, then present the results of the field test, and finally, discuss the implications of the data analysis.

2.2. Design

LEAP's structural design is based on the principles of cognitive flexibility hypertext, a constructivist approach to using laserdisc technology for instruction. The most prevalent feature is that learners' exploration of 23 mini-cases is guided by themes: teacher role, student role and environment. Subthemes within each of these provides information about how teachers and students interact and about the elements of a workshop environment. A writing with video feature was added to the ingredients of cognitive flexibility hypertext. This feature provided a means for video-supported oral presentations.

Three goals were determined for *LEAP*:

- To provide thematic "paths" for exploration by which the whole class, small groups, or individuals can explore the video-cases of experienced language arts teachers.

- To facilitate the formulation of concepts related to literacy education among preservice teachers as they draw from models described in text and from observation and examination of teachers on video.

- To provide a forum, a shared experience, for discourse which could generate contextualized impressions and help to identify assumptions of the reading/writing workshop in specific and the teaching of literacy in general.

2.3. Development

Each of the middle school teachers were recommended by their school district's administrators and video-taped for four days. A two-hour tape of 43 mini-cases was culled from the 22 hours of raw footage. The tape was shown to four experts on the reading/writing workshop approach who were asked to rate each mini-case on a Likert-type scale. Based on these ratings, 23 mini-cases were selected and edited so that they would fit on two 30-minute sides of a CAV laserdisc.

Five main menu options guide the user through the *HyperCard 2.2* stack that controls the laserdisc player. The options are the following: *Teacher Stories, Themes, Creations, Re-Views, and Sources*.

- *Teacher Stories* allows the user to choose a teacher and view all of the video corresponding to her.

- *Themes* guides the learner through the mini-cases based on three very broad themes--teacher role, student role, and environment--or through 28 subthemes listed under the broad themes such as the following:

    Teacher Role - Teacher as Guide
    Teacher Role - Teacher as Learner
    Student Role - Student as Reader for Pleasure
    Student Role - Student as Negotiator
    Environment - Comfort Objects
    Environment - Technology

- *Creations* allows the student to write a response to what was viewed. These comments are stored and are accessible to other students to read. A unique highlight of this feature is that they are also able to write with video. That is, they can insert video clips into their writing.

- *Re-Views* provides the professor or the programmer the option of selecting a video clip and asking the students a question regarding that clip. This screen can be projected so that it serves as a visual aid to help guide class discussion. It can also be viewed by students individually.

- *Sources* gives the user an annotated bibliography of books on the reading/writing workshop.

3. Field Testing *LEAP*

A field test was conducted at a private university; 29 preservice teachers and their professor were observed as they used *LEAP* for eight weeks. Data was collected by video-taping and transcribing sessions and presentations, collecting questionnaires, and conducting interviews.

The students were asked to select a book of their choice from the *LEAP* collection and then form groups of 3-4 people to explore the mini-cases and prepare a presentation using the *Creations* component of *LEAP*. Eight groups met in a technology lab for 2 hours on one week and 2 hours on the following week.

3.1. Observations

Observations of the lab sessions and of the video-tapes of the sessions indicated that all of the groups relied on the general guidelines provided by their instructor to determine their course of action. Guidelines included open-ended questions designed to prompt the students as they prepared their presentations.

Based on an analysis of the transcripts of dialogue that occurred during the lab sessions, six general categories of discourse were recognized:

- All groups discussed their interpretations of the books read. These interpretations were not always directly related to the mini-cases, but they were most often triggered by them. Some of this talk was critical interpretation, but much of it was descriptive.

- Anecdotes/comments related to personal experience were often discussed by all groups. Usually comments about personal experiences were negative when memories were compared to what was perceived in the mini-cases (student autonomy, teacher support).

- Some groups engaged in debates on what is traditional and what is non-traditional in the mini-case scenarios and which approach is better for the student and for the teacher.

- Conversations often centered on some of the concepts labeled as subthemes, particularly, "teacher as learner," "reader/author for pleasure," "author's chair," "unrestricted space," and "comfort objects." For the majority of the students, the constructivist terminology of the reading/writing workshop approach was unfamiliar.

- Some of the dialogue concerned how to use the software and hardware, and often this discussion included the lab assistant. Most of the assistance requested from the groups regarded the software functions. Although every screen had a help button available, the group members preferred to ask their

questions directly to the lab assistant. By the second session in the lab, most of the groups had very few questions.

All groups engaged in discussion concerning what questions to choose to answer from those offered in the guidelines, what each member of the group would contribute, and how the presentation would be evaluated.

3.2. Questionnaires

Responses to a questionnaire collected before and after *LEAP* were compared. The questionnaire asked the respondents to identify their goals as teachers of literacy and their expectations of their students. It also asked them to describe a reading/writing workshop. An analysis of the content indicated that there was more variety in the types of responses after the *LEAP* experience. Also, terms associated with the reading writing workshop approach were found in the respondents' descriptions of goals. Verbs used to describe the goals in the post-*LEAP* responses were more student-centered than those found in the pre-*LEAP* responses. Several respondents said they would use the reading/writing workshop approach. All confidently defined the workshop approach.

The subjects were also given a questionnaire to determine what they considered the strengths and weaknesses of *LEAP*. Their responses indicated that they enjoyed being able to experience the reality of classroom. Another frequently stated response was that the experience with technology was beneficial and pleasant. They attributed the positive experience to their finding that *LEAP* was user-friendly. Negative comments regarded a lack of time and the need to flip the laserdisc. Various suggestions for improving minor mechanical capabilities were given, but highly ranked among the responses was the message that no improvements were necessary. In general, the instructor's comments mirrored the students: *LEAP* is a user-friendly program that provides active learning opportunities, but more time is needed. She also suggested that giving the students a broader background on theory would enhance their experience.

The preservice teachers' language suggested that they had internalized some of the precepts of the constructivist instructional methods of the workshop and they were able to recognize the existence of differing perspectives on how literacy is taught. In much of the dialogue in the lab sessions as well as in the ideas expressed in the presentations, there is evidence that the students had conceptualized a polar view of approaches: the traditional approach and the reading/writing workshop approach. In many cases, the students situated themselves within a constructivist circle, on the reading/writing workshop side. In some of the lab sessions, however, students outlined a clear division of teacher-centered and student-centered approaches but also attempted to align themselves with both in varying degrees. For example, they agreed with student au-

tonomy but they stressed the need for structured grammar drill, standardized testing, and teacher accountability. Or they praised the workshop advocates' propositions but admitted that they probably would not tolerate students laying on the floor or on bean bags to read (images portrayed in the mini-cases). In general, the richer vocabulary of the post-*LEAP* discourse was interpreted to mean that the students certainly had a more lucid awareness of their own perspectives on their role as teachers, on the role of their students and on the environment of their own future classrooms.

4. Conclusion

LEAP was designed to provide a *macro-context*, a rich environment for knowledge construction and self-awareness. The results of this qualitative study confirmed that the preservice teachers who field-tested *LEAP* did engage in rich dialogue triggered by the video-cases, the books, and their recollections of classroom experiences.

Had they adopted a *new* perspective, however? The majority of the students stated that they were not familiar with the approach before *LEAP*, and the education courses at this field site did not include instruction on the workshop approach. The authors of the sample essays were overwhelmingly in favor of the workshop approach after *LEAP*, and half stated their intent to use the approach in their classrooms. A comparison of the goals the preservice teachers expressed before their experience with *LEAP* and after it supports the conclusion that many of them had adopted a new approach, at least momentarily.

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