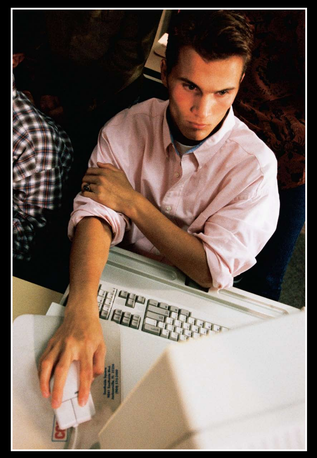

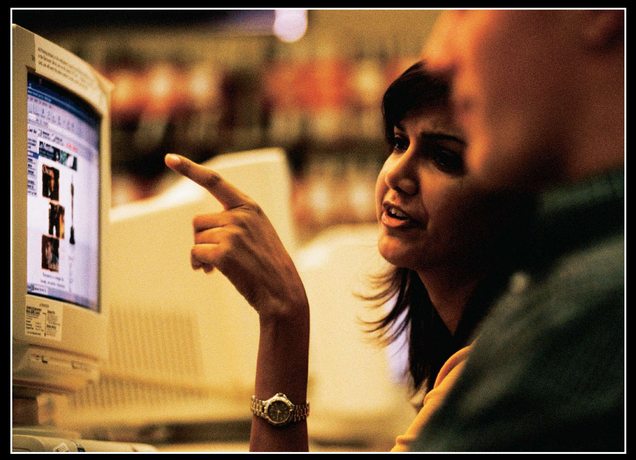

National Research Center on Rural Education Support

Enhancing Rural Online Learning

Overview & Year 1 Findings

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Background & Rationale

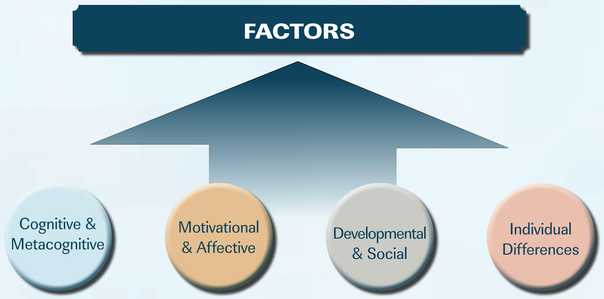
Rural schools are challenged to offer a full curriculum, especially AP courses, due to geographical isolation, insufficient numbers of students, and difficulties finding and retaining AP certified teachers. Online learning provides a potential way of addressing these issues in rural schools. Yet we lack sound data on how to improve the quality of online learning.

Problem & Approach

- Rural schools use DL (74%)
- Lack research base for rural DL
- High dropout rates in DL
- Need to
  - enhance learning outcomes
  - improve retention
- Local school-based support
- On-site facilitator
- Facilitator Preparation Program
- Evidence-based approach for training facilitators and supporting students

Learner-Centered Principles

An APA Task Force identified 14 research-based principles that have been empirically shown to promote learning outcomes. These principles are grouped under four factors.



Study 2007–08 (Year 1)

Purpose	Sample	Intervention	Measures
Cluster randomized control trial testing effectiveness of Facilitator Preparation Program based on Learner-Centered Principles	Students in randomly selected rural high schools across the country	Local facilitators in intervention schools were trained in using Learner-Centered Principles to support students taking AP English Literature & Composition online	AP exam scores Course grades Retention Survey of student perceptions Interviews with facilitators Analysis of discussion forums

Sample for Year 1

A sample of 36 match pairs of rural schools was randomly selected for participation in the study. We selected from schools identified as rural using three classifications: GAO, SRSA, Locale Codes. One school in each pair was assigned at random to intervention or control group with the remaining school in the alternate condition.

Study Design for Year 1

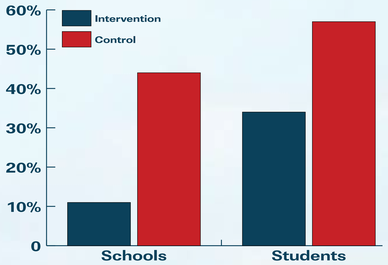
- All students participated in year-long AP English Literature & Composition course taught online
- Each school had a local facilitator without teaching responsibility in the classroom at all times
- Intervention group had Facilitator Preparation Program based on Learner-Centered Principles in addition to standard training on technical aspects of distance learning
- Intervention included scenario-based instruction plus on-going discussion forum to reinforce application of these principles by facilitators
- Control group received standard training on technical aspects of distance learning
- Measures included: AP exam, course grades, course completion, self-efficacy, motivation, course satisfaction, online isolation, facilitator learner centeredness

Initial Results

Multilevel (SAS Mixed procedure) and generalized linear mixed models (SAS GLIMMIX procedure) were used to estimate effect of treatment on length of attendance and dropout status, respectively. Pretest student and school- level or facilitator covariates were included. Initial results indicated that students in treatment condition had higher rates of course completion and stayed enrolled in the course for more weeks.

Table 1 Effect of Treatment on Length of Attendance and Dropout in First Semester

	Length of Attendance[a]	Dropout[b]
Fixed effects		
Intercept	12.27*** (1.35)	-0.10 (0.64)
Treatment	4.69** (1.50)	-2.00** (0.72)
Instructor	-3.69* (1.51)	1.52* (0.73)
Facilitator pretest measures	–	–
Student pretest measures	–	–
Random effects		
School variance	15.97*** (5.02)	3.28 (1.17)
Student variance	27.62*** (2.74)	–

[a] Table entries are mixed model effect estimates. Standard errors in parentheses. Significant grand mean centered school-level fixed effects selected by OLS stepwise regression.
[b] Table entries are CLIMMIX effect estimates. Standard errors in parentheses. Significant grand mean centered school-level fixed effects selected by stepwise logistic regression.
* p < .05. ** p < .01. *** p < .001.

Drop Out Rates