

The NCAT Course Redesign Program: Improving Student Learning While Reducing Instructional Costs

Overview

- A program in whole course redesign that produces measurable gains in student learning and reductions in instructional costs.
- A research-based and data-driven approach that addresses critical issues facing higher education such as enrollment growth, student retention, quality assurance and funding limitations.
- A way to leverage existing investments in information technology to serve higher education's core mission – education.
- A structured, yet flexible methodology that accommodates differences among institutions and builds capacity at both the institutional and state/system level to undertake subsequent course redesign efforts.

Background

From 1999 - 2003, the National Center for Academic Transformation (NCAT), supported by an \$8.8 million grant from the Pew Charitable Trusts, created and managed the Program in Course Redesign (PCR.) Its purpose was to demonstrate how colleges and universities can redesign their instructional approaches using technology to achieve improved student learning outcomes as well as cost savings. Large enrollment, introductory courses were the focus of redesign. Thirty institutions were selected from hundreds of applicants in a national competition to participate. The institutions included research universities, comprehensive universities, private colleges and community colleges in all regions of the United States.

All thirty institutions in the Program in Course Redesign were able to improve or maintain quality while reducing costs, on average by 37%.

At Tallahassee Community College, students in a redesigned English composition course scored significantly higher on final essays, with an average score of 8.34 compared to 7.33 for traditional students. The cost-per-student was reduced from \$252 to \$145 a savings of 43%.

NCAT required each of the 30 institutions to conduct a rigorous evaluation focused on learning outcomes as measured by student performance and achievement. National experts provided consultation and oversight regarding the assessment of learning outcomes to ensure that the results were reliable and valid. The results were astounding. Twenty-five institutions showed significant increases in student learning (with the other five showing outcomes comparable to the course in its traditional format), eighteen of the twenty-four that measured retention showed sizeable increases, and all thirty reduced instructional costs, on average by 37%. In total, the 30 course redesigns affected more than 50,000 students each year and produced \$3,000,000 in annual savings while improving student learning outcomes.

The PCR successes have been replicated and further verified through a number of national NCAT projects designed to improve and streamline the course redesign methodology (the Roadmap to Redesign program) and determine its impact (a Lumina-funded analysis of the benefits of course redesign for traditionally underserved students: low-income students, students of color and adults.) More information about all three programs is available on the NCAT web site at www.theNCAT.org.

Building on these successes, NCAT's goal is to work in partnership with state/system leaders to replicate what has been achieved on the national level in states and systems. The NCAT Course Redesign Program for states and systems described below is a three-year; three-phase process that involves three partners: 1) states, systems or regional compacts which champion the program and provide funding for the effort; 2) NCAT staff who manage the program and provide the expertise and links to successful redesign participants; and, 3) local faculty, staff and administrators who are engaged in an initial education and commitment-building phase, a well-structured planning phase and a comprehensive implementation phase.

Course redesign projects generally focus on large-enrollment, introductory courses, which have the potential of impacting significant student numbers and generating substantial cost savings, but can be applied to any course that is taught through multiple sections or with more than one faculty member. NCAT's proven methodology coupled with an active communications plan ensures that results are achieved and knowledge is shared with all constituencies in order to leverage those successes and to build capacity within the state or system.

Portland State University and the **University of Tennessee-Knoxville** doubled the capacity of their introductory Spanish courses and eliminated a key bottleneck to on-time graduation. PSU maintained section size at 20-24 and doubled the number of sections offered on the same resource base, increasing the number of students from 690 to 1270. UTK increased the number of students served from 1500 to 2000 while reducing the cost-per-student by 74%.

At both universities, student learning rose in some skill areas and remained equivalent to traditional formats in others.

Program Development

Prior to the program's launch, NCAT and the sponsor engage in a series of program development tasks. The NCAT methodology is adapted to the particular organization and the problems it seeks to solve. A program structure is developed including grant strategies for redesign teams, participation guidelines and a plan to bring extensive visibility to the program at all levels.

With an undergraduate minority student population of approximately 46.4%, the **University of New Mexico** leads the nation's research universities in student diversity. Prior to redesign, 41% of traditional psychology students received a C- or below. This percentage was reduced to 23% after redesign. In addition, the cost of the course was reduced from \$161,184 to \$82,340, a 49% reduction.

Step 1 - Program Design: NCAT consults with the sponsor about the details of the program structure (making any needed modifications of NCAT's general approach in order to fulfill the sponsor's priorities) and a strategy for publicizing the program.

Step 2 - Program Structure: NCAT develops a Call to Participate directed toward all institutions in the state/system, Application Guidelines directed toward those institutions that are interested in applying to participate, a Plan of Work that details how the program will proceed including responsibilities and timelines, and a Publicity Plan. Both the Call and the Guidelines are issued by the sponsor. The Plan of Work and Publicity Plan are finalized based on mutual agreement.

Program Implementation

Because the goals of the program are to build capacity and awareness in addition to redesigning specific large-enrollment courses, NCAT engages both faculty and administrators throughout a three-phase process: an initial education and commitment-building phase, a well-structured planning phase, and a comprehensive implementation phase. Throughout this process, NCAT emphasizes building awareness among and communicating results to both state and national higher education communities.

Phase I: Building Awareness and Commitment

The purpose of this phase is to educate and ensure buy-in from all levels of the organization – including an understanding of institutional readiness for course redesign projects, the NCAT methodology, the commitment needed and the expected outcomes. The outcome of this phase is general knowledge of the process, an overview of the tools that have been developed by NCAT and a pool of potential course redesign teams.

Step 1- Initial Consultation Visit: NCAT staff meets with system/state administrators, campus executives and faculty leaders as appropriate to offer an introductory overview of the redesign process. NCAT's recommended approach for a visit is to meet first with senior administrators and faculty leaders and then to offer a presentation open to as many members of the entire organization as possible.

Step 2 – Program Visibility: NCAT assists the sponsor in generating interest in the program in multiple ways including 1) creating a Web site dedicated to the program linked to NCAT's national efforts that provides an ongoing method for the sponsor's institutions and other stakeholders to be informed; 2) building a database of those who will receive information and updates about the program throughout its duration; 3) developing other communication mechanisms such as broadcast emails or a newsletter dedicated to the effort as appropriate.

Step 3 – Distribution of Call to Participate: The Call is issued to all members of the sponsor's organization. The Call includes information about the Orientation Workshop.

Step 4 - Orientation Workshop: NCAT conducts a one-day, face-to-face workshop open to any institution interested in submitting a course redesign proposal. Through presentations, case studies, and group work, participants learn basic planning steps as well as how to adapt the redesign methodology to the needs of their particular institution. Workshop topics include:

- An Introduction to Redesign. Offers an overview of the redesign methodology, its purpose, the premises upon which it has been developed, the strategies it employs and the planning process.
- Institutional and Course Readiness. Includes a self-assessment of institutional readiness and a discussion of how to choose appropriate courses for redesign.
- Planning for Course Redesign. Provides an overview of NCAT's Course Planning Tool that facilitates the quality improvement and cost reduction planning tasks associated with redesign.
- Planning for Assessment. Provides guidance about how to assess the impact of course redesign on student learning.
- Developing a Resource Reallocation Plan. Discusses how resources can be saved through redesign and what can be done with the savings.

Step 5 – Distribution of Application Guidelines - The Guidelines are issued to all members of the sponsor’s organization. The Guidelines include the overall goals of the program, timelines and expectations for institutions at each step of the application process, and information regarding grants and other kinds of assistance that will be available throughout the process. NCAT establishes an atmosphere of competition so that institutions will strive to be selected to participate in the program. Establishing a competition conveys the message that the program is highly valued.

Phase II: Campus Planning

The purpose of this phase is to ensure that course redesign teams are created that are clear about what they are trying to accomplish and how they intend to achieve it. NCAT manages the program application and selection process and works with teams to develop full project proposal plans. The outcome of this phase is the desired number of complete redesign project plans with a high likelihood of success. Key to success is an emphasis on active intervention by NCAT staff in the planning process.

Step 1 – Establish Readiness to Participate: Those interested in participating in the redesign program complete a Course Readiness Instrument. NCAT works with the state/system to evaluate the readiness of specific courses for redesign. NCAT provides feedback to those submitting readiness criteria, asking for more information if needed and advising weaker institutions about what they need to do to be ready.

Step 2 – Publicity: NCAT publicizes those who submitted responses to the readiness criteria and those who are selected to move on to the next stage through all available communication channels. The message: it’s a privilege to be selected and we applaud their success.

Step 3 - One-Day Planning Workshop for Course Redesign Teams: NCAT conducts a one-day Planning Workshop for course redesign teams. Teams complete two activities prior to the workshop: a draft Course Planning Tool (CPT) and an outline of their redesign plan, which are reviewed by NCAT staff. Workshop agenda topics include identifying academic problems/resource problems; establishing academic goals/resource goals; developing an assessment plan; developing a project implementation plan; completing the CPT; and establishing a project budget.

Step 4 - Ongoing Consultation to Develop Project Plans: Successful redesign requires developing a detailed plan for improved learning outcomes and a cost analysis of the traditional and the redesigned course. This analysis provides a clear context for understanding how an institution uses its resources (human as well as others) and how these might be more effectively deployed for greater benefit to all. Teams of faculty, administrators, assessment professionals and technology staff work in consultation with NCAT to understand what student outcomes are expected from the course redesign and how these will be measured. Teams work collaboratively to assess the kinds of tasks that must be done by faculty, those that can be done by effective use of information technology and finally those that can be done by people other than faculty.

Step 5 - Plan Review and Ongoing Feedback: NCAT reviews plans and provides individualized consultation to institutional teams of faculty, administrators, assessment professionals and technology staff as they develop their project plans. A key to success is to require very specific plans as part of the proposal process which means that planning is accomplished before grant awards are made. This approach ensures that the redesign

teams are clear about what they are going to do and can focus on implementing plans that are roadmaps to success.

Step 6 – Selection - NCAT consults with sponsor selection committees on which plans to fund / move into implementation phase and advises the sponsor on how to structure the process moving forward. NCAT staff then follows up with teams to strengthen weak points of the plans, and clarify data collection issues (student learning assessment, cost analysis,) etc.

Step 7 – Publicity: NCAT publicizes those who submitted proposals and those who are selected to participate in the program through all available communication channels. Again, the message: it's a privilege to be selected and we applaud your success.

Phase III: Implementation, Capacity Building and Scaling

The purpose of this phase is to take the sound plans that were developed in Phase I, implement those plans, and follow through to ensure that adjustments are made where needed, roadblocks are overcome and models of successful redesigns are achieved. The outcome of this phase is persistence during the redesign process and institutional experience and capacity to improve quality and reduce instructional costs for more courses.

Step 1 - Implementation Consultation and Ongoing Technical Support: During the redesign implementation process, NCAT monitors institutions' adherence to their proposals to be sure that teams are actively following their plans for both quality improvement and cost reduction, providing individualized assistance as needed. If changes are made that have an impact on either cost or quality, NCAT discusses the implications with the teams and suggests alternative strategies. NCAT is available to work with participants to share lessons learned from other course redesign efforts, provide suggestions and help with overcoming roadblocks that threaten innovation and provide a coordinating body for the entire implementation effort.

Step 2 - An Active Communications Plan: NCAT continues to work with the sponsor to build a comprehensive web site by adding project descriptions and progress reports and engages in other awareness-raising activities to make sure that information is shared on a timely basis with state and national audiences. Active communications are crucial to ensuring that efforts are not duplicated, "lessons learned" are shared and course redesign experiences can be scaled to produce more quality improvements and cost savings.

Step 3 – Pilot Phase: Institutions engage in concrete preparation for a pilot implementation of the redesign with some subset of the students in the course. Throughout this period, NCAT actively consults with the teams. NCAT monitors the pilot implementation progress and consults with teams or with the sponsor as appropriate. Teams submit regular progress reports to NCAT including assessment data, using a consistent format to allow comparison among schools. NCAT reviews the redesign teams' work and offers suggestions for improvement.

Step 4 - Mid-course Sharing Workshop: NCAT then conducts a one-day, face-to-face workshop that provides a forum for teams to share their experiences and learn from one another. Teams from all institutions share their initial findings regarding learning and retention outcomes, cost containment and implementation issues. Teams receive feedback from the group as well as from NCAT staff. NCAT reviews the teams' work, assesses the pilot outcomes and offers suggestions for improvement and adjustments in preparation for full implementation.

Step 5 – Full Implementation: NCAT continues to monitor and support redesign teams as the course moves to full implementation, consulting with teams or individual team members as appropriate.

Step 6 – Progress Reporting: After the first term of full implementation, NCAT again collects, reviews and verifies assessment data and cost data from the institutions. NCAT works with the system/state to ensure the validity of the assessment results, accuracy of costing figures and overall fidelity of the process. Ongoing progress reporting is important to make sure plans stay on track and desired outcomes are achieved and are valid.

Step 7 - Assessing the Results Workshop: After the full implementation, NCAT conducts a one-day, face-to-face workshop to provide a forum for teams to describe their experiences and learn from one another and to share their data regarding learning and retention outcomes, cost reduction and plans for sustainability. This workshop may be open to the broader community so that they can learn about the redesign process and outcomes.

Step 8 – Program Evaluation: NCAT meets with the sponsor to assess what happened and why and to establish future plans. NCAT provides expertise on how course redesign efforts are proliferated throughout the institution and system.

Step 9 – Publicity: Throughout the implementation phase, NCAT communicates program progress and results through all available communication channels.

Step 10 - Building Internal Capacity: Throughout the course redesign process, NCAT works to build capacity at the system and institution levels to manage subsequent redesign efforts. In addition, NCAT advises the sponsor on how to scale the redesign effort and develop long-term policies that encourage “institutionalized” course delivery mechanisms that maximize quality and minimize costs.

A Three-Year Program - Sample Timeline:

May – Jun 2007	Program Development
Sep 2007	Program announced
Nov 2007	Campus teams attend Workshop #1
Dec 2007	Institutions respond to Course Readiness Instrument
Feb 2008	Course redesign teams attend Workshop #2
Mar - Apr 2008	Course teams develop final plans
May 2008	Campus submits final proposal. Grants awarded
Jun - Dec 2008	Campus planning and development
Spring 2009	Campus pilots
Jun 2009	Workshop #3 Interim Campus Reports
Summer 2009	Campus revisions
Fall 2009	Full implementation
Mar 2010	Workshop #4 Final Campus Reports
April 2010	Dissemination of Results
May 2010	Program concludes

Summary of Deliverables - NCAT will:

- Teach institutions of higher education NCAT's proven methodology for redesigning high enrollment courses using information technology to enhance learning and reduce instructional costs.
- Link new institutions with those experienced in successful course redesign and with NCAT's higher education publisher partners.
- Prepare prospective redesign teams to submit final proposals according to a specified format.
- Evaluate proposals based on judgments about likely success as well as potential impact on the greater higher education community in the state.
- Produce successful redesign models, all of which will achieve cost savings as well as quality enhancements.
- Continuously monitor project activity.
- Support communication and collaboration among grant recipients through the process of design, implementation and evaluation.
- Create a body of information and practice that can be shared broadly within the state's higher education community such that these practices can be implemented successfully at all institutions.
- Disseminate the results through an active communications plan.
- Build capacity within the institutions, the states and the sponsoring organization to replicate successful course redesigns.
- Change the conversation about what is possible in terms of increasing access and success through a comprehensive regional and national communications program.