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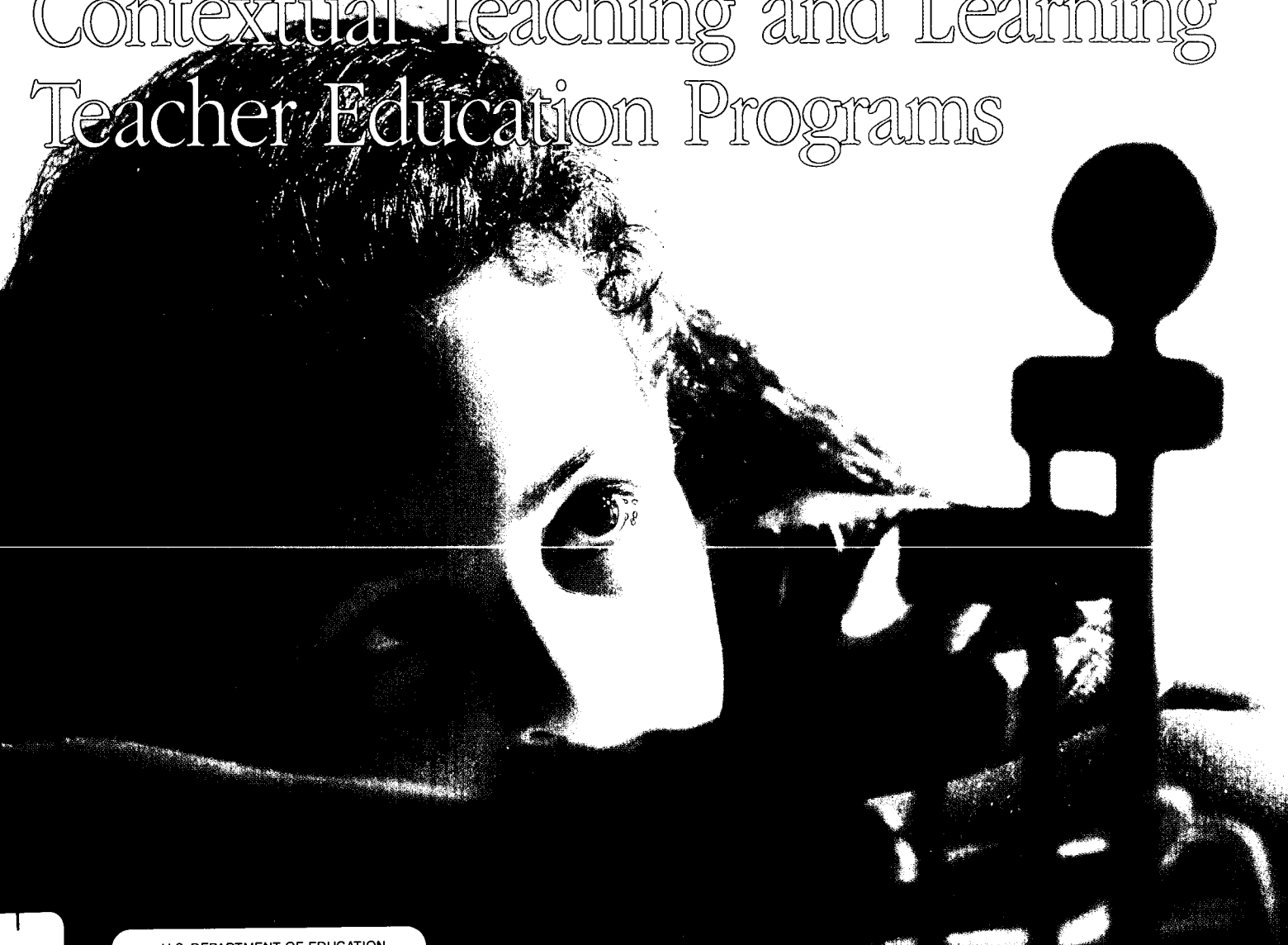
ABSTRACT

This report documents best practices in teacher education at five universities (George Washington University, Western Oregon University, the University of Louisville, Colorado State University, and the University of New Mexico). The universities were part of a project to identify and document how contextual teaching and learning can improve student achievement. Contextual teaching and learning involves teachers relating subject matter content to real world situations and helping students make connections between knowledge and its applications to their lives. The report contains five articles on best practices: "An Extraordinary Partnership Benefits Both Students and Teachers in Urban Areas" (George Washington University); "New State Standards Lead to Dramatic Changes in WOU's Teacher Education Program" (Western Oregon University); "Kentucky Education Reform Act Drives Educational Change" (University of Louisville); "Innovative Teacher Education Programs are a Success at CSU" (Colorado State University); and "A Long-Standing Partnership Benefits Pre-Service and In-Service Teachers" (University of New Mexico). A final article is entitled "The Office of Vocational and Adult Education and the National School-to-Work Office Fund Seven New Projects." (SM)

George Washington University
Western Oregon University
University of Louisville
Colorado State University
University of New Mexico

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Contextual Teaching and Learning Teacher Education Programs



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Contextual Teaching and Learning Teacher Education Programs

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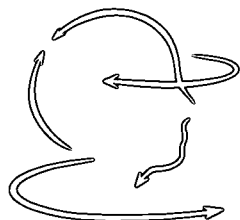
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Contextual Teaching and Learning Teacher Education Programs

Dear Reader:

We are delighted to provide you with this publication which documents best practices in teacher education at five universities. The institutions were selected as part of a project funded by the U. S. Department of Education and the National School-to-Work Office. The purpose of the project was to identify and document best practices in teacher education; specifically how contextual teaching and learning can improve student achievement. Contextual teaching and learning is a bold conception of teaching and learning in which teachers relate subject matter content to real world situations and help students make connections between knowledge and its applications to their lives. These strategies emphasize problem solving, recognize the need for learning to occur in many contexts such as the community and work place, teach students to monitor and direct their own learning so they become self-regulated learners, anchor teaching and learning in students' diverse life contexts, encourage students to learn from each other, and employ authentic assessment.

George Washington University, Western Oregon University, University of Louisville, Colorado State University and the University of New Mexico were selected from a group of more than 80 nominees. Site visits were made by a project team of four educators from The Ohio State University and Bowling Green State University. A detailed program profile of each of the five teacher education programs with a cross-profile analysis is being developed and will be available in late 1999. You will be able to access these materials on line at <http://www.contextual.org>.

It is our hope that this publication will not only inform you about these practices but also demonstrate the efficacy of contextual teaching and learning as a powerful conception for improved student learning. We would like to thank Patricia W. McNeil, Assistant Secretary, Office of Vocational and Adult Education; Stephanie Powers, Director, National School-to-Work Office; Peggi Zelinko, Contracting Officer's Technical Representative; and Susan Toy, Project Officer for their guidance and support.



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George Washington University

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University of Louisville

Colorado State University

University of New Mexico

An extraordinary partnership benefits both students and teachers in urban areas

George Washington University interns spend an entire year at Cardozo High School. The teacher education program not only prepares teachers for the urban environment, but it is partnering in the renewal of Cardozo High School.

Walking into the literacy/technology classroom at Francis L. Cardozo High School in Washington, DC

can be somewhat overwhelming for the first time visitor. Adults seem to be everywhere, and indeed, there are a lot of adults. Nataki Reynolds, a doctoral candidate in the George Washington University Graduate School of Education and Human Development is in charge of the technology program while Jane Zimmerman, a GWU research scientist is in charge of the literacy program. Juliana Taymans, a faculty member, and Lynda Tredway, the project director are also in and out of the classrooms as they work with the GWU Urban Initiative (UI) teacher interns. Ann Saunders, Special Education coordinator for the UI and Maxine Freund, the professor responsible for partnership activities are also in

close contact with the program. All of this activity is centered around a group of ninth grade students in the Explorers Learning Community at Cardozo High School. The school is actively engaged in preparing students for the transition from school to work. In addition to studying traditional subjects, all 9th graders are expected to develop success-oriented goals and attitudes along with literacy and technology skills that will prepare them to participate in the learning communities for 10th-12th graders at Cardozo. The Sports Management, Trans-tech, and Fine Arts/Humanities/International Studies communities provide an opportunity for students to prepare for the workplace by engaging in specialized curricula, job shadowing, and internships.

The Urban Initiative is an extraordinary partnership between the university and an urban, inner-city public high school. The partnership has resulted in a teacher preparation program that not only prepares future teachers but has also triggered a variety of activities in which the UI and Cardozo teachers and administrators are jointly engaged, such as on-site professional development and school renewal.

The Urban Initiative was developed in full partnership with AT&T and the World Bank, which provided funding and helped develop a school/university/community/business partnership. The UI also receives funding from a number of other foundations and agencies.

Learning in Context

The Urban Initiative is a selective graduate program that has recruited a mature, (average age, 28-30), ethnically diverse cohort of students who are committed to working in an urban setting. The UI interns spend a full academic year at Cardozo. Each one is responsible for teaching two classes and for developing inclusion practices for all teaching situations. One class is in the content area and is taught with a Cardozo teacher while the other is a team-teaching endeavor with fellow interns in the literacy/technology class.

Unlike traditional programs that place teacher education students in a classroom to student teach for a month or two, the UI program immerses students into the culture of Cardozo High School and the community in which their pupils live. After a year the interns know the pupils, the school, the teachers, the administrators, and the community. They have an opportunity to become a part of the daily context of life in an urban school, to see what problems emerge, how those issues are resolved and how to negotiate the complexities of teaching in an urban setting.

A unique experience that helps both the interns and the Cardozo ninth graders gain a better sense of the context in which they live and work is a community mapping project. The interns divide the neighborhood around Cardozo into quadrants, prepare a map, collect artifacts from the neighborhood, then, using that information, develop a unit





which addresses school-to-work and service learning objectives.

Like the interns, the ninth graders engage in a scavenger hunt in Malcolm X Park. They divide into small groups and assume jobs such as scout, map maker, photographer and cataloguer. They follow a designated route, stopping at cultural institutions, businesses, and government agencies to collect information, see what they do, and simply become more familiar with their surroundings. When they return to school with photographs, collected items, and data, they use the computers to construct a large map of the community. This activity helps students understand much more about their physical environment and the world of work that surrounds them.

Problem-Based Instruction

A goal of the Urban Initiative is to prepare teachers who can work as part of an educational leadership team to solve problems. In doing so, the UI partners with Cardozo on its school reform initiatives. The goals for interns, Cardozo teachers, and UI staff are to improve the attendance and achievement of Cardozo students and to help them make stronger connections to the goals of school. Since there are a number of issues in urban schools and communities that confound even the best plans to reach these goals, the issues provide a rich context for problem-based learning. In this venue, the interns are able to immediately put into practice what is usually taught as theory in university classes labeled Curriculum and Instruction.

Interdependent Learning Groups

In the Urban Initiative program, interdependent learning groups can be seen among the faculty, the interns, and the high school students taught by the interns. Because the program is designed to offer

dual certification, faculty from Special Education and Secondary Education are working together to ensure the success of the program. With the support of Dean Mary Futrell, faculty from Special Education and Secondary education have restructured courses, team-taught courses, and worked with interns and teachers at Cardozo High School. Since high schools seldom offer opportunities for regular and special education teachers to talk to each other, GWU is starting the conversations while teachers are in preparation.

Working in interdependent learning groups is more than sharing conversation. The UI teacher interns enter as a cohort group and work together throughout the program. The students team teach in the technology/literacy class and all work with students in the special education setting. In addition, they tutor students, assist in a homeroom, facilitate advisory groups, and provide feedback for their peers. Every day the interns come together to reflect on what they are doing and learning. Because they are all involved in a common experience working with many of the same students and teachers, they are able to learn much from each other. For example, they share video tapes of lessons they have taught and discuss how they would change the lesson if they had another opportunity.

The pupils in the Explorers Learning Community are engaged in interdependent learning groups as well. All of the ninth graders are organized

into Advisory Groups of approximately 15 students that typically meet 45 minutes a week. The purpose of the Advisory system is to provide a "circle of strength" for all students, in which students get to know and support each other and teachers get to know the students as individuals.

Enablers

A small group of high-energy, dedicated faculty at George Washington University, along with a group of committed administrators and teachers at Cardozo High School are at the heart of the Urban Initiative's success. The willingness of faculty from special education and secondary education to work with each other and to work in partnership with high school teachers, along with the support from the dean and the high school principal have been crucial.

The setting and structure of the program have also been key components of success. A year-long internship in a reform minded urban high school has facilitated the use of problem-based education strategies and interdependent learning groups. In addition, as a graduate program, the UI is able to recruit highly motivated and committed students who enter the program with relevant work experience. And lastly, GWU and Cardozo faculty and administrators have been active participants in The Holmes Partnership and Project UNITE, a network to bring together partnerships that are preparing teachers for the urban environment. The

The Urban Initiative includes faculty from both Special Education and Secondary Education. All interns are prepared to work with students who are at-risk for educational failure.

network has helped the partnership gain ideas from others who are working in a similar environment and to validate their own initiative.

Barriers

Cost and time are the two major barriers of the Urban Initiative program. In order to attract the highest quality candidates to the program, GWU has offered scholarships and financial aid equal to more than 90% of tuition to each of the interns. To do that, the faculty has spent a great deal of time engaged in fund raising, taking much needed time away from working in the program.

A barrier at Cardozo has been the continuing political and structural change in the DC school system. The system, however, appears to be stabilizing.

Despite the barriers, the Urban Initiative is an exemplary teacher education program that highlights many of the Contextual Teaching and Learning practices in a cohesive program that prepares teachers for the urban setting. □

George Washington University

Western Oregon University

University of Louisville

Colorado State University

University of New Mexico

New state standards lead to dramatic changes in WOU's teacher education program

The teacher education curriculum at Western Oregon University is designed around a series of proficiencies that students master in an integrated series of team-taught courses.

"Students will interpret data from horizontal or vertical bar graphs with five or fewer bars, and pictographs that represent ten or fewer data points."

—Oregon Standards, 3rd Grade Benchmark

The above example of a third grade mathematics benchmark represents the new performance-based standards that are at the heart of educational reform in Oregon. In order for students to receive a Certificate of Initial Mastery (CIM) and graduate from high school, they must be able to demonstrate through tests, performance assessments, and work samples what they know and can do in the areas of English, mathematics, science, social studies, the arts, and a second language. Benchmarks at different grade levels provide students, teachers, and parents an indication of whether or not the student is on target for meeting the standards.

The introduction of the standards has dramatically changed K-12 education in Oregon. At Western Oregon University (WOU), teacher education has undergone the same radical

change. To insure that pupils meet the more rigorous standards, teachers need to have higher expectations for all students, use a greater variety of teaching strategies, have a deeper understanding of the content they teach, and have a better understanding of human development and learning. WOU is committed to preparing teachers who can meet those challenges.

Interdependent Learning Groups

Although the WOU catalogue lists a series of separate courses that Education majors must take, Helen Woods, a faculty member in the College of Education was most emphatic in explaining that the students do not take course work in the typical sense of a one hour session offered three days a week. Instead, students meet with a team of professors during a large block of time in which subject matter from all the courses is integrated. The teacher education program is a four term undergraduate program that students typically enter during their junior year. Elementary and Secondary

Education have been linked into a single professional core with the courses team taught. Classes that begin in the first term are carried over into succeeding terms and teams of faculty rotate so students have the same faculty for more than one term.

Faculty plan together as well as teach together and offices have been designated as team planning rooms to encourage working together. Jim Long, a faculty member who now has more than four terms of experience with team teaching explained the pitfalls and benefits:

"You give up some autonomy because you can't make the decisions for the team. There's a time variable in there too. But it's worth it. I find it's worth it. I can depend on my other team members to help me out."

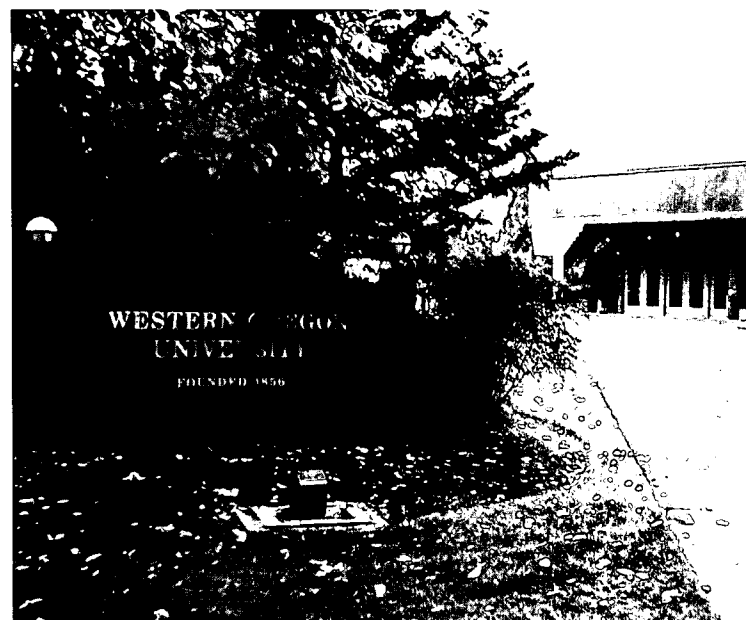
The structure of the program encourages not only faculty, but also students to become engaged in interde-

pendent learning teams where they learn from each other. Students enter the program as a cohort group and they remain with their cohort throughout the program. Because of the integrated nature of the professional core, all teacher education students, whatever their licensure area, participate in the courses together.

During each term they do a great deal of group work and they are expected to learn from the experiences of the other students.

Authentic Assessment

Just as the CIM standards have defined what K-12 students should know and be able to do, WOU College of Education has defined teaching proficiencies which are statements of what teacher candidates should know and be able to do. The curriculum, instruction, and assessment of the teacher education program are based on the teaching profi-



*A vision without a task
is but a dream
A task without a vision
is drudgery
A vision with a task is
the hope of the world*

ciencies. There are four points in time when teacher education students are assessed as to their current level of performance in the proficiencies. At the end of each term, the candidates submit portfolios of evidence that document their level of proficiency in each of the areas. The final evaluation occurs at the end of student teaching. A scoring rubric has been developed that provides ratings for Beginning, Emerging, Developing, Maturing, Strong, and Exemplary practice. Licensure recommendation is based upon the student's score on the rubric.

While traditional forms of documentation such as tests and term papers are still used to evaluate students' knowledge, more authentic instruments are used to evaluate what they are able to do. During the later terms, particularly in student teaching, when students design, plan, teach and reflect on an integrated unit, authentic assessment instruments are used.

Each teacher education student at WOU is expected to produce two Teacher Work Samples during their four terms. The first is a smaller version of the final product which is required for completion of student teaching and recommendation for initial licensure. The Teacher Work Sample is similar to a portfolio and consists of:

- A unit topic
- A brainstormed graphic organizer
- A rich description of the context/setting
- Related national, state, and/or district goals
- Rationale
- The unit goals
- The working graphic organizer
- The list of objectives (at least 10)
- Lesson plans, at least 10, including any supporting materials
- Unit pre- and post-assessment items for each unit

- Pretest/Post assessment results displayed by cluster and goal
- Narrative data interpretation
- Reflective essay

The Teacher Work Sample Methodology is being viewed as the benchmark for other states considering a standards based curriculum and it provides an exemplar for the attribute of authentic assessment. The most unique aspect of the Teacher Work Sample is that it uses student learning to assess teacher performance. Student teachers are required to pre and post test pupils and interpret the resulting data. Both the Teacher Work Sample and the teacher proficiencies include assessment strategies that have been derived from multiple sources and that are on-going and blended with instruction. Thus while assessment is used to help professors evaluate student teachers, it is also used to help student teachers modify instruction to insure that pupils are learning.

Self-regulated Learning

An important part of the Teacher Work Sample is reflection. Student teachers are asked to examine what they are doing during each stage of the unit. They provide a rationale for what is taught, relating the lesson not only to the curriculum objectives, but also to the context, interests, and ability of the pupils. When the student teachers complete the unit, they are asked to write a

reflective essay that describes what worked and why and what might be done differently. The importance of this is suggested in the closing paragraph of one student's reflective essay:

"I learned a lot in the process of doing this work sample both about myself and my students. Hopefully the next one will go smoother and I will do a better job of meeting the needs of all my students."

Enablers

Educational reform efforts in the state of Oregon have led to productive changes in teacher education. Dean Meredith Brodsky suggested that state reform initiatives provided a window of opportunity to make important changes. The support for change from both the University leadership and from Dean Brodsky came in terms of providing time and resources to facilitate change. In response to that support:

"The faculty have made a significant, collaborative team effort to our redesign. We have overcome major, traditional barriers around scheduling, faculty load assignments, and evaluation practices. We are continuing to work on issues such as grades and/or proficiencies, student financial aid, athletic eligibility, etc."

The small size of the College of Education at WOU has also served as an enabler for change. Reaching consensus with 35 faculty, is an easier task than with 100. More

importantly, the change has encompassed most of the teacher education programs. The program-wide change allows students and faculty to speak in one voice. And finally, the presence of the Teaching Research Center on Western's campus has served as a catalyst for change. Under the early direction of Del Shallock, the Teaching Research Center received a major grant to fund the Teacher Effectiveness Project designed to study the relationship between teacher performance and the ability to produce learning. This research has provided much of the knowledge base for the Teacher Work Sample Methodology.

Barriers

Team teaching and team planning are the critical pieces of the WOU program, and the time involved was the most difficult obstacle to overcome. Team-teaching two three-hour courses cannot be equated in time and effort to teaching one three-hour course alone. But

**Teacher Work
Samples use
student learning
to assess student
teachers'
performance.**

in terms of teaching load, they were equated. The time is still an issue for faculty.

When asked why they were willing to continue the work, the faculty expressed a feeling of exhilaration when working in a team. They believed they were truly making a difference for the pre-service student teachers and for the students these teachers would teach; on most days, they were having fun. □

George Washington University

Western Oregon University

University of Louisville

Colorado State University

University of New Mexico

Kentucky Education Reform Act drives educational change

Educational reform in Kentucky is a pioneering effort by the state to create an equitable system of public education and to improve the performance of Kentucky's entire system of education.

The Kentucky Education Reform Act (KERA), passed after the public school system was declared unconstitutional in 1989, has changed both the state's public schools and its colleges. Public schools are expected to design and implement instruction that develops students' abilities to:

- Use basic communication and mathematics skills;
- Apply core concepts from science, math, social studies, and arts and humanities;
- Become self-sufficient individuals;
- Become responsible group members;
- Think and solve problems; and
- Connect and integrate experiences and new knowledge throughout the curriculum and apply concepts to real-life situations.

In addition to influencing public school teaching and learning, KERA clearly addresses the preparation of teachers through its New Teacher Standards (*see box*).

Louisville's teacher education program focuses on what teachers must know and be able to do as successful practi-

tioners incorporating the standards above. The course syllabi, assignments, activities, and student portfolios all provide evidence of the influence of KERA's New Teacher Standards.

Schools, families, and communities

An underlying belief or theme of KERA and Louisville's teacher education program is that teachers must understand the relationships among schools, families, and the immediate and wider commu-

nities within which students live and work. Louisville's teachers-in-training get to know their students through community service. They tutor them in reading and math or work with them in debate clubs or in athletics. Instructors in Exploring Teaching, a course designed to assist students in discovering if teaching is a career they want to pursue, encourage students to work at a local Family Resource Center, a social service agency housed in a high school. The students keep logs of their activities at the community sites to help them reflect upon their experiences. They also include their reflections in the teaching portfolios they develop throughout their preparation as a teacher.

In other teacher education classes, prospective teachers are encouraged to learn about the community in which they are teaching. Small groups of future teachers interview high school students, practicing teachers, staff, and parents to learn more about the local

neighborhoods. They visit businesses, agencies and homes in the community and summarize their experiences by preparing a videotape that captures the community's assets and challenges.

Professor John Fischetti describes Louisville's teacher education program this way: *"Our program occurs in multiple sites. Students make home visits and do community projects during their methods courses. Students are encouraged to try out instructional strategies that include the workplace as a resource, they invite speakers from the business community into their classes. We encourage them to use the community whenever possible."* Community-based experiences help future teachers understand relationships among students, families, and their communities.

Professional development schools

For more than a decade the University of Louisville has collaborated with several of the 87 elementary schools, 23 middle schools and 20 high schools in the Jefferson County Public School District to create professional development schools. PDS sites are used as laboratories in which to prepare prospective teachers. In return for these teaching laboratories, the University of Louisville is committed to providing professional development opportunities for current teachers. The special relationship that exists between the University and the public school system in Jefferson County reflects Louisville's mission statement which pledges that: *"The University shall collaborate with*

New Teacher Standards

Kentucky, a leader in educational reform, expects both beginning and experienced teachers, to meet specific standards.

According to KERA, the new teacher

- designs/plans instruction and learning climates.
- creates/maintains supportive learning climates.
- implements/manages instruction.
- assesses and communicates learning results
- reflects/evaluates teaching and learning.
- collaborates with colleagues, parents, and others.
- engages in professional development.
- demonstrates knowledge of content.

(Kentucky Education Reform Act, 1989).

the public schools to further educational reform in Kentucky.”

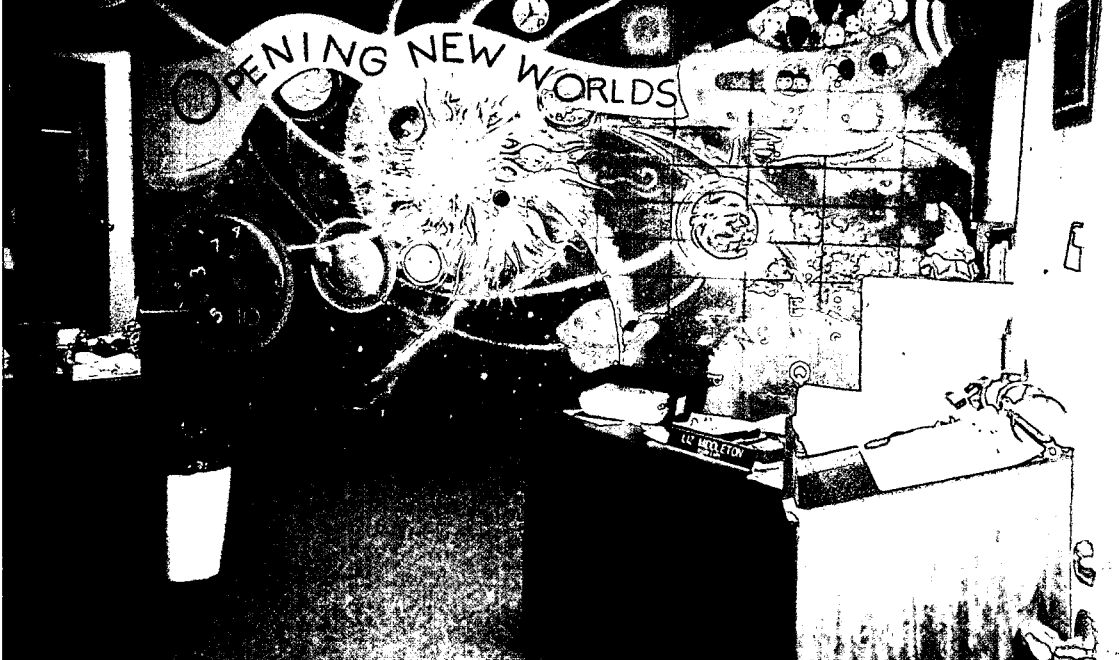
Professor Al Dittmer, chair of the Secondary Education Department, points out that many courses in the School of Education actually are taught in public schools. Thus, those preparing to teach have an opportunity to learn about the context of schools and to apply theory almost immediately. Other clear advantages of school-based classes include working with expert teachers in their classrooms and participating in the daily lives of students inside and outside the class. Prospective teachers value this opportunity too. One student observed: *“Seeing real live practitioners at work, teaching alongside them and discussing teaching with them makes our preparation more authentic.”*

Teachers must know content

Believing that teachers must be well educated themselves, the University of Louisville requires prospective teachers to complete a bachelor's degree, typically in liberal arts, prior to entering a master of arts program in teaching. Therefore, math, English, social studies, and science teachers are well grounded in their content areas before learning how to teach. Students are also expected to schedule additional content (math, science, etc.) courses in their subject area specialties while completing the masters of arts in teaching.

Problem-based and cooperative learning strategies

Professors John Fischetti and Ann Larson are teacher educators committed to leading the reform of teacher training. In one of their classes, offered at school sites, they employ problem-based and cooperative learning strategies in their teaching. To do this, Fischetti and Larson divide the future teachers into working groups. The groups then participate in practicing teachers and



administrators in solving actual school-related problems such as:

- revising teacher or student handbooks,
- helping students prepare for achievement tests;
- developing a handbook of strategies to improve student literacy, or
- updating and maintaining the school's website.

One group of preservice teachers developed an entire anger management curriculum for Fairdale High School. Sherry Abma, the school principal, discussing how much she appreciated the help and involvement of the students, commented: *“It really helps prospective teachers understand the needs of schools and students and its been good for our teachers to see what these college students can accomplish.”*

Self-regulated learning and authentic assessment

Today's teachers need to monitor their own professional growth and to think about their work and how it can be improved. When assessing students, they need to use multiple sources of information. To stimulate education majors to learn and practice these important teaching skills, Louisville's School of Education professors engage teacher candidates in thinking about and assessing their work by requiring them to create professional portfolios. Their portfolios include journal entries reflecting upon what they have learned, prod-

ucts from problem-solving projects they completed in schools, essays and research papers, curriculum units, and video tapes of their teaching. Creating portfolios helps teacher education students provide evidence of the quality and nature of work they've completed in their training. Professors and peers evaluate the portfolios and education students present them in job interviews to prove they have met Kentucky's New Teacher Standards.

Enablers

The passage of The Kentucky Education Reform Act has enabled Louisville to develop an innovative teacher education program that emphasizes the importance of students' ability to learn independently, to be responsible group members, to solve problems, and to apply academic concepts to real-life situations. KERA, without ever using the term “contextual teaching and learning,” embodies goals that embrace it. (*See New teacher standards.*)

The support of the University of Louisville's administration, particularly the late Dean Ray Nystrand, was crucial. He not only supported the needed

changes but provided the resources to make them. One faculty member commented that the Dean had been very helpful, “not to his benefit but to his credit.”

The existence of a core group of faculty dedicated to creating programs which were more real, school-based, and geared to the lives of students in K-12 schools also was an important enabler. This group of faculty were able to foster positive relationships with the county school system and the schools have bought into the importance of maintaining close relationships with the university.

Barriers

Louisville's program is time intensive. Junior faculty in particular feel the press of publishing and yet are drawn to the exciting learning going on in the schools. Also, in the view of some faculty, the statewide tests in Kentucky are stressing content to the detriment of the teaching-learning process. Time will tell if this emphasis becomes a significant barrier.

The School of Education has been involved in change and bringing change to others for over a decade. Some faculty fear the emphasis being placed on subject matter content in statewide K-12 proficiency tests motivates teachers to stress mastering content over other important basic skills like thinking and problem-solving. Time will tell if this emphasis will become a significant barrier to contextual teaching and learning strategies. □



George Washington University

Western Oregon University

University of Louisville

Colorado State University

University of New Mexico

Innovative teacher education programs are a success at CSU

Project Promise and the Rocky Mountain Teacher Education Collaborative (RMTEC), two unique programs at Colorado State University, are successful in improving teacher education.

Project Promise is the name of Colorado State University's (CSU) highly selective, experimental secondary teacher licensure program that works with a cohort of 20 teacher candidates a year. The students already have earned a bachelor's degree and have experience in a wide range of careers from law to engineering to journalism. These students have demonstrated success in other occupations and have now chosen to make a career change to teaching. Project Promise students commit to three semesters of full time preparation that leads to licensure (after they pass the Colorado teacher licensure test) and can be applied to a Master's degree in Instructional Leadership. This full-time, 47 credit hour teacher licensure program integrates theory and practice through course work and 23 weeks of field experiences. Students in the program complete five field experiences which include a rural student teaching assignment, ten weeks in a middle school/junior high school, ten weeks student teaching in a school, an inner-city/

urban experience and a week-long service learning experience. Faculty and staff supervise these challenging experiences and provide feedback to students to help them improve and refine their teaching.

Project Promise students describe their program very positively. One student characterized it as "a powerful experience as well as an excellent education." The Colorado Commission on Higher Education has recognized Project Promise as a "Program of Excellence."

Rocky Mountain Teacher Education Collaborative

Cooperation between faculty in the School of Education and the Arts and Sciences departments prompted a group of faculty to seek and subsequently receive an innovative grant from the National Science Foundation to create the Rocky Mountain Teacher Education Collaborative (RMTEC). One goal of this project was to improve ways in which future math and science teachers prepare for careers in teaching by emphasizing the development of innovative curricula or the

restructuring of existing curricula and instructional methods for teaching math and science. To this end, faculty redefined and combined two classes—a first-year chemistry lecture and a laboratory class—into one two-semester course in which students participate in "small-scale science." In small-scale science, experiments are scaled down to the point where students, using petri dishes instead of beakers, and drops instead of ounces, can perform desktop lab experiments. This hands-on approach involves more students in laboratory experiments than was possible in traditional chemistry classes. Students report that they gain a deeper understanding of chemistry.

RMTEC curricular and instructional reforms occur in education, mathematics, and science classes. Another effort at restructuring has led to a field based, interdisciplinary "linked classes" in which students register simultaneously for two separate classes taught in conjunction with one another. Curricular and instructional methodology are directed toward enhancing student enthusiasm, understanding, and curiosity with a balance between students learning by themselves and learning together in small groups. In general, restructuring efforts are directed toward student-centered, experiential, inquiry-based curricula and instruction sensitive to the needs of women and students of color.

Integration of academic and vocational teacher education

Colorado State University's

School of Education prepares teachers who will teach in high schools and is the only institution designated to prepare vocational education teachers. Conversely, CSU does not prepare elementary teachers because the Colorado Commission on Higher Education, in order to prevent duplication across the institutions of higher education, has mandated that different levels and areas of professional preparation occur at specific universities.

Those students interested in teaching graduate with a Bachelor's degree with an endorsement or license to teach in particular areas such as math, the sciences, social studies, business and marketing, etc. Prospective teachers complete their endorsement or licensing program in the School of Education in the College of Applied Human Sciences through a series of core courses which all future teachers take. Structuring their program around a series of core courses has permitted CSU to deliver their teacher education program efficiently.

CSU's School of Education intentionally brings together students preparing to become vocational teachers and those preparing to teach other high school subjects. In other words, students from all disciplines learn alongside one another. The purpose of the integration is to teach vocational teacher education students how to embed academic skills into vocational studies and to teach academic teacher education students the value of relating academic content to work and real world problems.

The program integration has resulted in changes among the teacher education faculty also. Vocational educators typically have been a separate entity in the Colleges/Schools of Education. Integration has led to more collaboration between the vocational and academic teacher educators. They plan instruction and teach together on teams. Colorado State views its academic teacher educators as being able to learn a lot about instruction from their colleagues in vocational education and vice versa.

Being sensitive to needs of diverse learners

The student population at Colorado State University is 89% white. To prepare Education students to work with diverse student populations, the School of Education developed a course entitled "Diversity and Communication" which focuses on the educational needs of diverse learners, effective communication skills, and service learning experiences. This course is taught at Centennial, an alternative high school and a CSU professional development school, by a team consisting of a CSU faculty member and K-12 administrator or school counselor.

Centennial is different from many high schools because its specific mission includes reaching diverse learners. It has a small student body of several hundred students who have not thrived in a more traditional school setting. Some students have been suspended or expelled from their previous schools while others have just not succeeded academically. Staff members at Centennial pride themselves on creating an atmosphere in which learners begin to develop a strong sense of belonging and community. Students who transfer into Centennial go through a 6-week induction, the Discovery Program, which develops specific life skills in anger management, Transactional Analysis communication skills, conflict resolution, assertiveness, and problem-solving. Centennial students praise the program and maintain that it helps them learn to deal with their anger or sorrow and move on to learning.

In a milieu of diverse student needs and views, CSU's Education majors learn to work with students whose school-related experiences have been vastly different from their own. Future teach-

ers try out their teaching strategies and learn to listen to and build on the experiences of students. They begin to understand how to create a positive classroom environment and how to interact with students to support and motivate their learning.

Enablers

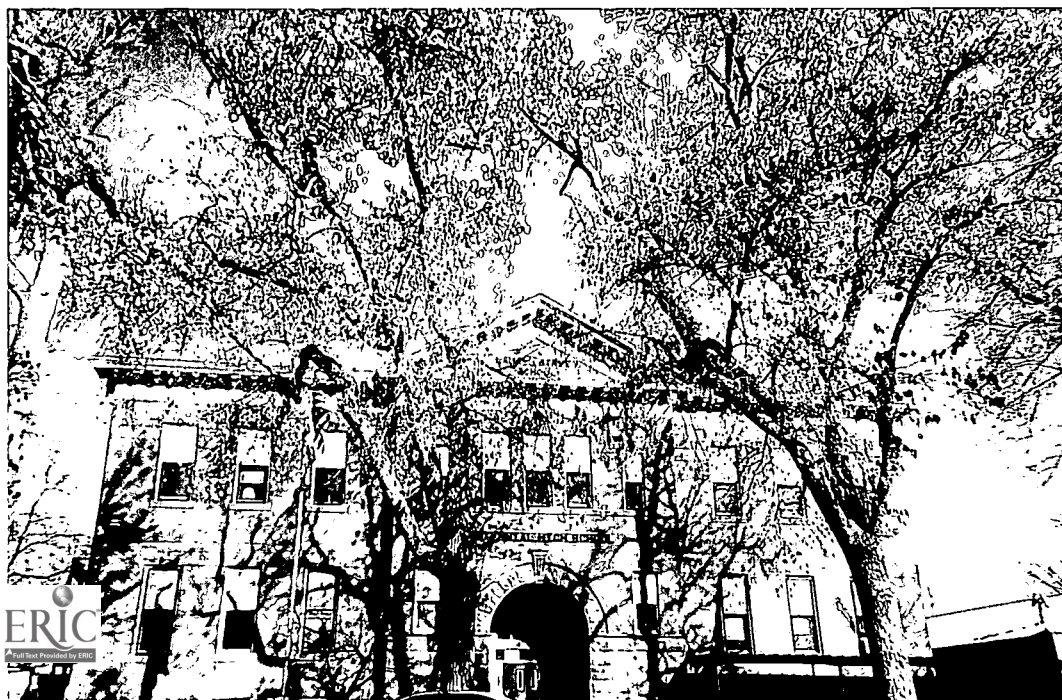
As noted, CSU uses a series of core courses to deliver its teacher licensing program. This structure appears to make it significantly easier to influence the preparation of all teacher education students. If the faculty see a need for change or want to experiment with a new approach, they can use one or more of these courses as the vehicle to modify and improve the teacher education program. This kind of flexibility is needed to maintain high quality programs. In addition, the interaction generated among the students through working together in core courses seems to create better understanding of and respect for each other's contributions to student learning. A second enabler of quality teacher education at CSU is their strong cadre of highly qualified, non-tenure track faculty who are committed to improving teacher education.

They, along with tenure track faculty, teach the core courses and work with future teachers in professional development schools. The non-tenure track faculty have strong credentials in teaching and do not have the same publication pressures experienced by tenure-track faculty in a Research I University.

At Colorado State University, academic and vocational teacher educators plan instruction and teach together in teams.

Barriers

In many Research I institutions, the time and energy faculty spend in implementing innovative teacher education programs and modeling innovative teaching and learning strategies like problem-based learning and authentic assessment is usually not rewarded in the same way that research and publication is. This creates a conflict for young or beginning faculty in particular. They learn quickly that they need to attend to publishing if they wish to gain tenure and promotion. Thus, Colorado State University, as well as other Research I institutions, continues to strive to develop faculty reward systems that acknowledge the importance of being involved in the difficult and labor-intensive work of improving teacher education. □



George Washington University
 Western Oregon University
 University of Louisville
 Colorado State University
 University of New Mexico

A long-standing partnership benefits pre-service and in-service teachers

The University of New Mexico, the Albuquerque Public Schools, and The Albuquerque Teachers Federation are engaged in an exceptional partnership that provides extraordinary benefits for pre-service and in-service teachers.

The University of New Mexico (UNM), the Albuquerque Public Schools (APS), and the Albuquerque Teachers Federation (ATF) are engaged in one of the most unique and long-standing partnerships in the country. At the center of the partnership is an Exchange of Services agreement in which the APS provides placements and on-site support for more than 130 interns each year. In addition, more than 35 APS teachers are released to work with the College of Education in supporting interns and first year teachers in the district. Because vacant classrooms are staffed by interns who receive a much lower salary, the money saved by the school district is used to provide tuition for the interns and stipends for the experienced teachers to work on their own continuing professional development. Since salaries of classroom teachers are involved, the support of the Albuquerque Teachers Federation was vital. The ATF is part of a reform minded group of teacher's unions around the country that have become

involved in providing quality professional development to the members, particularly through partnerships.

A second unique aspect of the College of Education structure at UNM is the Center for Teacher Education headed by Peter Winograd. One of six divisions in the College, it has no faculty assigned to it, but rather "borrows" faculty from other divisions in order to: *"create and sustain outstanding teacher preparation programs that recruit diverse populations of outstanding students and then support them in systematic ways throughout their careers."*

The Center brings together all the faculty who are involved in teacher preparation, including: early childhood education, elementary education, physical education, health education, secondary education, and special education. The Center also includes all the partnership programs that encompass alternative teacher preparation, entry year teacher programs, and continuing professional development graduate programs.

The Partnership and the Center have created an inviting environment in which Contextual Teaching and Learning attributes can occur.

Self-regulated learning

An excellent example of a partnership program is the Career Development Program (CDP). The CDP is a 17 month post-baccalaureate program for mid-career adults who wish to obtain an Elementary Education license. Because these students hold a Bachelor's degree they qualify for a provisional teaching license and are able to replace experienced teachers in the classroom. Before going into the classroom, the interns complete a series of Education courses prior to their internship. Once they begin teaching, they teach in pairs or triads until they are deemed ready to "solo." Throughout the experience, veteran teach-

ers and university faculty provide intensive on-site supervision and support.

At Osuna Elementary School, two CDP intern teachers, Kim and Dave, are replacing one experienced teacher in a third grade classroom. The interns exemplified the use of CT&L strategies with elementary children. The science textbook has been replaced by a series of hands-on activities that relate to the students' everyday lives. For a lesson on simple machines, the interns used a cinder block and rope to teach the concept of inclined planes. Third graders learned how the ramp outside their classroom door could be used to simplify the moving of heavy objects. The previous day, the students had worked with a shovel to develop the concept of using levers to simplify work. Following the hands-on experience with simple machines, the



pupils were introduced to how the concept is used in the world of work. The interns brought in an Air Force helicopter pilot to talk about how he used simple machines in search and rescue missions. The real world examples and activities made the concepts more comprehensible to the third graders. After hearing the speaker, the third graders were asked to write in their journals about the lessons they had learned from the pilot and how it related to what they had learned earlier about simple machines.

The reflective use of journals and other self-regulated learning strategies are modeled and explicitly taught to interns during their methods classes. Each intern is expected to participate in a Peer Mirror Episode. In this activity, an intern has his/her partner and a clinical supervisor observe specific teaching behaviors during a lesson. A peer observer and the clinical supervisor then write an analysis of the lesson observed. The intern uses that to write a personal analysis describing what was learned about teaching and the implications for future teaching experiences.

Problem-based learning

While the Partnership programs provide opportunities for alternative licensure programs, most UNM teacher education programs occur at the undergraduate level, which have also been influenced by the partnership with APS. All have long term field-based activities embedded into many of the courses. For example, the relationship has encouraged university faculty such as Kathleen Powell who teaches science methods, to teach her class at Delores Gonzalez Elementary School.

During the International Hot Air Balloon Festival in Albuquerque, the school celebrated the event with theme based activities. Using the theme as a springboard, the Powell's class were

asked to create a miniature hot air balloon and to identify ways to make it rise higher. The first step was for small groups to create the balloon, then to brainstorm ways to make a balloon rise higher and finally to determine how they could use this activity with their own class. As students worked, it was clear they had to use sophisticated problem-solving skills. Prodded by questions from the instructor, they had to ascertain why the balloons did not work and what they might do differently. As one problem was solved, others would emerge. They figured out how to funnel hot air into the balloon by taping juice cans together, but then had to figure out how to keep the tape from melting. Once they solved the problems for creating the balloon, they had to establish methods for making it a safe activity for young children.

The example is an excellent illustration of the CT&L attribute of problem-based learning. Not only were students asked to solve the problem of how to make a balloon rise, they also had to solve multiple practical problems that occurred in the process. By working together with each other and with their instructor, they were able to solve the problems.

Diversity across the curriculum

The student population in New Mexico is among the most diverse in the country which makes it imperative that UNM stress the importance of preparing teachers to anchor teaching and learning in students' diverse life contexts. The mission and goals of the program explicitly state that the program values diversity of people and perspectives and that it prepares pre-service teachers to work with diverse students. But the College's commitment to diversity runs far deeper than statements.

Students applying to the teacher preparation program are expected to have "experi-

ences and commitments to work in a variety of cultural settings...with various ethnic groups in situations such as community shelters, schools, social programs, youth programs, retirement centers, etc. Mastery of a second language will add weight..."

Once students are admitted to the program, they have the opportunity to work with children from diverse settings in Partnership schools. Included in the Partnership contract is the following statement: "Affirming diversity by acknowledging and valuing language and culture as strengths and sources of enrichment which can help enlarge our understanding of what it means to be human." This affirmation of diversity in the contract makes it more likely that students will be placed in settings where diversity is acknowledged and where anchoring learning in students' diverse life contexts is modeled by clinical faculty.

Current courses include assignments designed to help preservice teachers become aware of students' cultural backgrounds. In addition, a new course called "Teaching Strategies for Second Language Learners" is being piloted. This campus-based course focuses on insuring that all new teachers will be able to work effectively with the diverse students in their classrooms.

Enablers

The Center for Teacher Education has served as a catalyst for creating interest and enthusiasm for Teacher Education among College of Education faculty. The Center brings faculty from across the College to work toward the common goal of preparing high quality teachers.

The nationally recognized partnership programs attract non-traditional, mature students who wish to move into teaching from other careers. These programs work because of the commitment and support of the three partners: UNM College of Education,

APS, and ATF. The success can be attributed to the foresight of those who created the exchange of services model many years ago.

Lastly, under the strong leadership of Dean Viola Florez-Tighe and Peter Winograd, faculty have been encouraged and rewarded for working in schools. Their work has been enhanced by

All pre-service teachers at UNM have long-term field experiences in one of the most diverse school districts in the country.

an extraordinary cadre of clinical educators and staff who have been working in the schools for many years.

Barriers

The teacher education program costs the faculty their most valuable resource: time. Working in schools and working in partnerships require faculty to change the way they have typically worked. That in itself is time consuming. In addition, the new way of teaching takes more time. While service to the schools is applauded, it is still not rewarded in the same way that research and publication are rewarded.

Still, it appears that the positive aspects are beginning to outweigh the negative ones and a structure has been created that benefits the college, the faculty, the students, the school district, and the children and community served by the school district. □

The Office of Vocational and Adult Education and the National School-to-Work Office fund seven new projects

Recruitment Project

Recruiting New Teachers, Inc. and Council of the Great City Schools

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The Urban Teacher Academy Project (UTAP) promotes a more qualified and diverse teacher workforce by expanding a proven School-to-Work approach, teacher academies. Teacher academies encourage high school students to consider careers in teaching through a specialized two- to four-year curriculum. Many academies operate in partnership with community college and university education programs, giving students a supportive corridor to the teaching profession.

UTAP is made up of four teacher academies/magnets and their college partners working together to identify

and disseminate best practices to new and existing teacher academies. The project will produce a case study of the four teacher academies and a teacher academy "toolkit," a how-to guide for school districts that want to start them. The toolkit will offer advice on how to plan a sequence of courses and activities; find and establish college partners; recruit students and program teachers; and train staff and support students in the college admission process.

Pre-Service Projects

University of Georgia

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The Contextual Teaching and Learning (CT&L) Project at UGA is an effort of several departments within the College of Education and the College of Arts and Sciences, as well

as local business, industry, and school partners. The overall project goal is to develop and implement a preservice teacher model which integrates CT&L concepts into instruction. The project includes: pre-professional courses revised to include CT&L principals; community work experiences designed to expose students to academic applications in a broad range of work and community settings; seminars focused on how field experiences connect education and the world outside of schools; and disciplinary courses linked with CT&L examples and concepts so that preservice students can experience and apply these strategies in school settings.

Faculty professional development activities provide our faculty with experiences similar to those their students will encounter in the Community Work Experience facet of the program. Professional development will continue throughout the project in an effort to give real context to the concept of CT&L and to provide opportunities for UGA faculty to adapt and model the strategies in the classroom.

The Ohio State University

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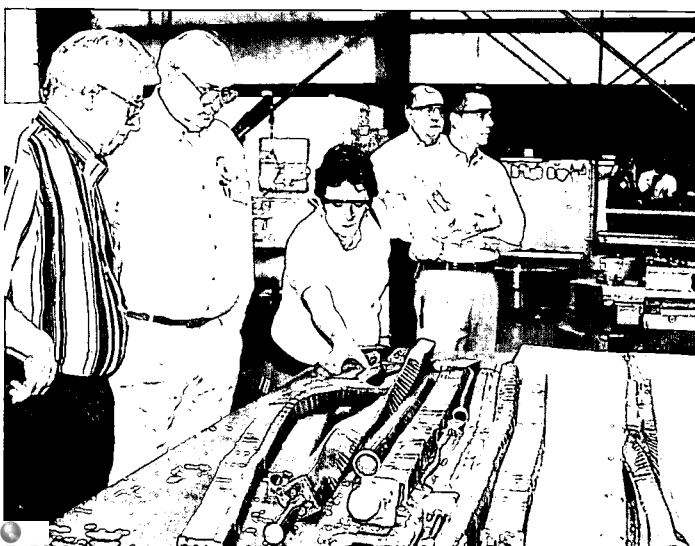
Building upon the information gained from developing the site profiles (summarized in this document), The Ohio State University College of Education in partnership with Project UNITE at the University

of Wisconsin-Milwaukee is developing several models of teacher education programs. These models will be based on the attributes of Contextual Teaching and Learning. In addition to the profiles, a cross-profile analysis based on education change literature is being written. The analysis along with Teacher Education Program Inventories being completed by Project UNITE partnerships, and continued dialogue with faculty from the profile sites will also help in the development of the models. A package will be developed to provide documents and materials for programs that wish to duplicate the model in their own institution. The package will include a monograph describing various types of programs, a CD-ROM disk with various documents (mission statements, syllabi, contracts) that exemplify CT&L attributes, an inventory to help programs determine readiness for the model, and several background pieces describing the development of the CT&L model.

Washington State Consortium

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The Washington State Contextual Education Consortium is a partnership of ten universities and colleges and K-12 teachers and administrators to enhance attention to contextual learning in preservice teacher preparation programs throughout Washington State. The consortium is facilitating a





year long Contextual Education Academy to improve student learning, to address new state standards, and to enhance preparation of new teachers for CT&L.

At this consortium, teachers and education professors from Washington's diverse colleges, universities, and school districts are collaborating to produce exemplars of CT&L strategies and activities that work well at both K-12 and preservice teacher education levels; and are also exploring non-traditional ways to engage these K-12 teacher leaders with the preservice preparation of beginning teachers. Promising results will be posed on the project's website, www.wacontextual.edu.

The consortium plans to initiate regional variations of this academy approach statewide beginning the 2000-2001 academic year and involve several hundred additional K-12 teachers and professors responsible for preparing new teachers.

In-Service Projects

Bowling Green State University

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Bowling Green State University is creating an interactive, Web-based Model of Excellence for

the in-service professional development of P-12 teachers in the effective use of contextual teaching and learning (CT&L) to enhance student success. The Web system is based on CT&L theory and allows teachers to learn CT&L in a contextual, problem-based, engaging manner.

The ultimate outcome of this project will be to improve P-12 student learning, resulting in better success in post-secondary education and careers. Teachers will use the site in virtual learning communities. The Web system will be available for use by teachers across the country and, indeed, around the world, who are either involved with such activities as college courses or inservice, or

who are learning CT&L independently.

Johns Hopkins University

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The Johns Hopkins University project is developing, demonstrating, and evaluating materials and an in-service professional development program for high schools. The program supports contextual teaching and learning within a high school Career Academy structure. A professional development model of facilitated instructional reform will be used for two approaches of contextual and integrated learning: Student Team Literature and Student Team Writing in high school English, and Talent Development High School Mathematics. In addition, the professional development materials and approaches will cover the use of contextual learning and integrated curriculum within the extended class period and the development of student social and communication skills for active learning. The approaches will be field-tested with ninth grade English and mathematics teachers in three Baltimore high schools. Prior to the field test, a three-day summer workshop will be conducted in Student Team



Literature, Student Team Writing and Transition Mathematics. A research design with comparison classrooms in other matched high schools will use surveys, achievement tests and classroom observations to evaluate the implementation of the facilitated instructional reforms and the impacts on student motivation and learning.

University of Wisconsin-Madison

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TeachNET, an inservice professional development project, is designed to provide teachers with professional development opportunities to participate in workplace/community learning experiences and assist them in applying what they learn to instructional practices. The goals are to:

- establish a national network of Regional Cluster Teams, including schools and Professional Development Provider Organizations committed to connecting professional development and contextual teaching and learning for educators.

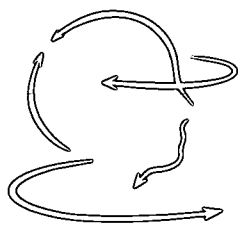
- demonstrate and document a model for professional development that connects workplace/community applications and contextual teaching and learning

- document the impact of project participation on the professional development of participants and on contextualized teaching learning practices

- conduct a national dissemination initiative to ensure the model and supporting framework are widely used.

TeachNET will be guided by a model that will provide educators with expertise to develop and use contextual teaching and learning approaches. The model has emerged from the research literature on integrating academic and vocational learning, professional development, school restructuring, and the NCRVE/CEW project on Teacher Learning in the Workplace and Community. □

Contextual Teaching and Learning Teacher Education Programs



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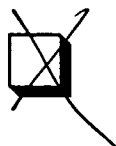


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