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AUTHOR Grow-Maienza, Janice  
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ABSTRACT

Four case studies of institutions which have made innovations in teacher education are presented in this paper. The four institutions are the University of New Hampshire (Durham), Austin College (Texas), the University of Florida (Gainesville), and Northeast Missouri State University (Kirksville). In each of the programs, change is visible at two levels: substantive change that has occurred in the specific philosophy and knowledge base that drive the program, and structural change that has occurred in the delivery of the new knowledge base. Each program has made structural moves to 5-year teacher education formats. Commonalities and differences among the programs are discussed, including the change processes involved in bringing about curriculum innovation at each institution. A bibliography containing more than 65 references is included. (IAH)

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TEACHER EDUCATION REFORM AND CURRICULUM CHANGE:  
FOUR CASES

By

JANICE GROW-MAIENZA, Ph.D.

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DIVISION OF EDUCATION  
NORTHEAST MISSOURI STATE UNIVERSITY  
KIRKSVILLE, MO

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**TEACHER EDUCATION REFORM  
AND CURRICULUM CHANGE:  
FOUR CASE STUDIES**

Janice Grow  
Division of Education  
Northeast Missouri State  
University  
Kirksville, MO 63501

Introduction

Much of the thinking of the newest reform movement in teacher education is reflected in the recommendations of three major reports: The Holmes Group's *Tomorrow's Teachers* (1986), the Carnegie group's *A Nation Prepared: Teachers for the Twenty-First Century* (1986), and *A Call for Change in Teacher Education*, the report of the National Commission for Excellence in Teacher Education (1985). The widely read reports, all of which propose extending teacher education, have also been widely criticized by those who take issue with extended teacher education programs, at least as the only alternative for teacher education institutions. For fifty years, the debate has existed on extended teacher education programs (Counts, 1935; Holmes, 1937; Conant, 1963; Smith, 1980). Alan Tom is one who has raised a truly substantive issue over extended teacher education (Tom, 1989).

Tom has argued that the rationale for extended preparation focuses on expanding the general education and subject area courses for teachers, and has little bearing on the professional education component of teacher preparation (1989). Tom argues that the problem with general education in traditional teacher education programs is its quality and coherence not its length. The focus, he proposes, should be not on lengthening general education but on reorganizing the study around core disciplinary ideas and inquiry processes. Tom surveyed the literature on extended programs in teacher education up through the early 1980's and judged most of what was proposed to involve structural changes only--not substantive changes (Tom, 1989).

I proposed in a paper last year, after examining those programs having gone to a five-year structure in the last 20 years, that there are some programs that have indeed made substantive changes, and described those curriculum changes in four programs that have moved from four-year to extended five-year teacher education formats (Grow, 1990). In the present paper I propose that those programs that have made structural moves to five-year formats--and prevailed--are those that have made substantive changes as well as structural innovations, and have grounded and supported those substantive changes with a clear articulation of the knowledge base that undergirds those changes.

Four case studies of substantive and structural innovations in teacher education are presented here. In each of these programs one can clearly see change on two levels:

- 1) substantive change that has occurred in the specific philosophy and knowledge base that drives the program, and
- 2) structural change that has occurred in the delivery of the new knowledge base.

This paper discusses the four programs, and describes for each the substantive curriculum innovations made within the framework of structural changes. A naturalistic case study approach was used to investigate the changes made in the four programs. For each program the substantive changes in the knowledge base undergirding the curriculum were unique. The structural changes made in moving from the traditional four-year teacher education format to extended five-year programs were common to all the cases. That is, all the programs in moving from a four-year to a five-year plan, had raised entrance standards, increased academic requirements and field experiences, increased subject area content and strengthened the professional education component, and all the programs had made stronger connections to the client schools.

Analysis of the data collected in the four case studies revealed not only substantive changes in the curricula and knowledge bases of the four investigated programs, but revealed also how institutional and external forces shaped institutional reform efforts in each case. The analysis provided insight into the "why's" for those changes, pointing to changes in the priorities at each of the institutions, and to the change processes which involved forces internal and external to the institution, all of which seemed to have had important influences on how curriculum was formulated.

#### Methodology and Data Source

Using the case study approach, I have examined published documents as well as internal documents on each program, interviewed the founders and/or directors of each program as well as observers not involved, and conducted an extensive literature search. The review of the literature on five year programs included documents indexed in ERIC and RIE written by the writers of the four programs. Yet another data source was a national symposium at which all four programs were discussed (Grow-Maienza, 1990; Tom, 1990; Tate, 1990).

Data from several sources were triangulated to compensate for potential bias. Analysis involved pattern seeking (Cook and Campbell, 1979) and explanation building (Lin, 1984). No attempt was made to define a representative case or set of cases. Rather, findings were generalized to the theory generally accepted in the academic community.

#### Analysis and Results

The principal questions addressed substantive changes and processes--"what" innovations were made, and "how" innovations were made. The assumption was made after Tom (1989) that though structural changes were obvious, substantive change in program may or may not have been made. It was hypothesized that substantive changes were made; an effort was made to discover those changes in the data.

Analysis of the data reveal substantive changes seem to have occurred in the philosophy and specific knowledge bases that drive each program. Structural changes have occurred in the delivery of the knowledge bases. The data demonstrate that descriptions of the programs are usually written in structural terms. And even the rationales for the programs in the public documents are written in general structural terms (E.g., University of New Hampshire, 1989).

But examination of the internal and some of the published and unpublished scholarly documents reveal for each of these programs four characteristics:

- 1) substantive changes reflecting a change in priorities at the respective institutions,
- 2) an articulation of the new knowledge base which reflects the change in priorities at each institution,
- 3) a history of sound formative planning involving both inside participants and outside clients and agencies, and
- 4) evidence of a firm commitment from the beginning of the planning of innovation by the central administration of the institution.

A paper I will read for Division K later this week on **Teacher Education Reform and the Rise of External Actors** discusses relationships of 1, 3, and 4 above, that is, the change processes involved in making these substantive changes and in the successful implementation of the structural changes each institution made in going to a five-year extended teacher education model.

This paper addresses the second and first characteristics detailed above, the substantive changes reflected in the articulated knowledge bases of the programs, which have addressed the change in priorities at the respective institutions. There is an implication in the results that how well the developers of innovation go through the process of defining and articulating the philosophy and knowledge bases of a program may be a major factor in the relative longevity of innovation.

### Educational Significance

This study is significant for educational case study research. The naturalistic case study approach lends itself very well to the study of innovative programs in teacher education. Yin (1984) details how case studies may take the form of explanatory or descriptive research, for in case study research a small number of subjects are studied across a large number of variables which can result in a vivid and detailed picture of the subject studied. Case study methodology is uniquely suited to research that questions the "how" and "why" of phenomena. The case study methodology used here revealed the not so obvious "what" in this study--changes firmly articulated in knowledge bases undergirding curriculum changes. The methodology revealed also the unexpected "how", the change processes that occurred in making curricular changes in extended teacher education programs that are the focus of this report.

The study is significant also for educational practice in that it speaks to the recommendations made by the Holmes Group and by the Carnegie Task Force for extended teacher education. Results of the study speak also to the major substantive argument against extended teacher education programs, which is that extended programs represent only structural change, not substantive change, and therefore do not represent real reform.

More specifically, the study describes substantive curricular changes in four programs, and more importantly, the study reveals patterns of processes at work in institutions making innovations in teacher education which are highly relevant to other institutions that would effect change or curriculum reform in teacher education.

#### Four Case Studies

In each case described herein, faculty were very involved in articulating a change in philosophy at the institution and in articulating the knowledge base undergirding the curriculum. The University of New Hampshire with its five-year teacher education program in its sixteenth year of successful operation is an example.

Michael Andrew, with a keen ear to his faculty (according to a personal conversation with Andrew, 1990) articulated internally a full blown model for teacher education reform which was later published by the Association of Teacher Educators (Andrew, 1974). Andrew initiated a series of planning and coordinating committees which involved graduate students, faculty, school personnel and representatives of state agencies to define and refine details of the program. Faculty were given leeway to develop their own courses and the program, based on a model well articulated by Michael Andrew, was implemented after the first four years of intensive planning.

Andrew credits the success of the innovations at New Hampshire partially to the pre-existing model which addressed the traditional criticisms of teacher education and kept the momentum going during initial internal discussions so that the faculty did not bog down into negative reactions (Personal conversation with Michael Andrew at AACTE in Chicago, 1990).

Austin College too, apparently goaded by a new administration, took the pulse of alumni and in the spirit of the sixties reorganized the structure of teacher education there. At Austin College, the teacher education program changed from a behaviorally oriented program containing one common set of skills to be received by the students to a student-centered approach featuring the development of the individual in unique ways.

The University of Florida made radical substantial changes from a campus dominated by the humanistic philosophy of Art Combs to one oriented to the new, product/process research literature on effective teaching, just surfacing in the early eighties, reflected in the work of B. O. Smith and J. Brophy, just out in gally form.

Teacher education at Northeast Missouri State University, faced with a new exclusively liberal arts and sciences mission in the larger University, phased out its traditional behaviorally oriented four-year program for a liberal arts and sciences based Master of Arts in Education program reflecting the notions of Shulman, Shoen and others who have written on reflective professional decision making.

Commonalities and differences in the four programs are discussed more in detail below, and generalizations made in the section following.

#### **Five Year Program, University of New Hampshire, Durham, NH.**

The University of New Hampshire may represent the most radically different program and that may be due, at least partially, to the independence with which institutions in the New England states have traditionally operated vis a vis the state accrediting agencies.

New Hampshire's integrated, undergraduate/graduate five-year teacher education program, which predates the Holmes (1986) and Carnegie (1986) recommendations, features a full year internship in the fifth year, a semester of classroom experiences in the sophomore year, a major outside of education, a core of professional course options, and graduate work leading to the Master's degree (Andrew, 1986).

The framework which provides a unique identity to New Hampshire's five-year teacher-education program is provided by three major themes which are articulated in a document written by Michael Andrew, director of the program in 1974 (Andrew, 1974):

- 1) The centrality of philosophy of education for producing the ideal beginning teacher
- 2) The importance of a personalized and humanistic framework for preparing the ideal beginning teacher
- 3) The reliance on guided clinical experience as the vehicle to produce acceptable beginning teaching skills

(Andrew, 1989, p.47).

But the true uniqueness of the New Hampshire program comes from the professional curriculum which is anything but standard. Based on the assumptions that giving choices increases the chances that students will see their courses as relevant, that there is no agreement on what knowledge is critical anyway, and that faculty will best teach that in which they are interested, faculty design courses around their own interests and expertise, students do not take the same professional courses. In each course, students engage in in-depth study of a limited topic, rather than broad comprehensive subjects. Concern is not with the specific content, but that students learn the skills and

attitudes of thorough analysis, investigation of all relevant points of view, and synthesis of a well-formed, personal position on educational issues.

This use of faculty interests and strengths may have facilitated what appears to have been an easy transition at New Hampshire. Andrew (1984) claims to have implemented his own model of teacher education reform in the space of four years. Introducing discussions in 1969, Andrew acquired faculty approval of his plan in 1971, the model for which was published by the Association of Teacher Educators in 1974 (Andrew 1974). A cooperative planning committee of graduate students and outside agents, comprised of eight task forces with over 100 agencies represented, planned the details of the new program the second year, and program implementation was begun in 1973. During this year the central planning committee and task forces were dissolved, and replaced with an advisory board to implement inservice training (Andrew, 1984, pp. 14-15).

New Hampshire has not eliminated their traditional 4-year program, but it is the 5-year alternative which recruits and retains the best students and places 90% of the graduates in teaching positions the first year they are out (Andrew, 1986). A ten-year comparison of graduates from the 4-year and the 5-year programs at New Hampshire reveal significant differences between graduates of the two programs.

Significantly more 5-year graduates entered and stayed in teaching than graduates of the 4-year program. Graduates of the 5-year program were more satisfied with their career and perceived the quality of their program to be higher than the 4-year graduates did (Andrew, 1990).

Andrew attributes this success and the commitment of students to the raised standards and quality built into the program, as well as to conditions at New Hampshire that supported change. First, there was an initial model for a revised program, developed by Andrew which took into account long-standing criticisms of teacher education, and which then addressed the tendency of planners to bog down into traditional complaints (Andrew, 1984).

Other conditions supporting change at New Hampshire were the location of the Department of Education in a College of Liberal Arts where it was equitably funded, and the willingness of the administration to put more resources into a higher quality program. In addition, demographics were such that lowering the number of students in the program was no threat--faculty had appointments in other divisions, there was an over-supply of teachers in the field (Andrew, 1984).

But the relative ease with which the new program was implemented seems to me to be due to four factors: First, the well articulated model from the very beginning has provided the knowledge base for the new program. According to a private conversation with Michael Andrew, the model was in tune with the faculty--he was well aware of that before the document was published in its final form (Conversation between Michael Andrew and the author at the annual meeting of AACTE in Chicago in February, 1990).

Other factors which have insured the success of the New Hampshire Five-Year Program are the relative lack of influence of the state department, and the care with which all agents, internal and external to the Program were involved in planning. Faculty from the Department of Education, from other departments within the University, graduate students, teachers from the schools, and agents from various state departments were all involved in committees and task forces, and continue to be advisory in the implementation of the program.

#### **Austin College Teacher Program, Sherman, TX**

Innovated in 1972, and designed to prepare sensitive, perceptive teachers who are well qualified to provide leadership toward excellence in teaching, the program at tiny Austin College in Sherman, TX has won two national awards for innovation from the AACTE.

In the Austin College Teacher Program, a five-year program of study is required before students obtain a teaching certificate and a master's degree. A liberal arts program is emphasized, and students are provided with a public school classroom teaching assignment as an intern or student teacher for at least four to five months at the graduate level. Students take three educational labs during their first three years. This lab work exposes students early and extensively to classroom teaching in order to help them make a career decision. Students are heavily involved in a field-based teacher education program that permits them to acquire the necessary skills to be a competent teacher. At the same time, they develop a close relationship with supervising teachers in their assigned schools. Public schools in the area are committed to assist the college to prepare high quality teachers (Freeman, 1985, Abstract).

Impetus for this program, according to the late Bill Freeman writing about the Austin program, came from strong leadership and encouragement from the College administration, who in the late sixties and early seventies, was urging faculty to exercise their freedom to make a difference (Freeman, 1985 and 1989). The teacher education faculty, claims Freeman, took the opportunity

to turn off the defensiveness typical of teacher education faculty to listen, evaluate, and design a truly innovative program.

Like other small, private liberal arts colleges I have known, Austin seems to have its ear to students and to alumni. When one is dependent upon endowments and tuitions, one must necessarily hear a different drummer. In 1965-67, surveying teachers locally and nationally--largely their own alumni, the teacher education department at Austin discovered their program was considered to have too much theory, not enough practice, and too little humanities and science. Alumni wanted improved classes and redundancy eliminated. Students wanted more participation, more involvement, the acceptance of a variety of teaching modes, and the opportunity to direct their own learning. . . .And the faculty wanted better students (Freeman, 1985, 1989).

As a result, Austin College changed its 4-year Bachelor of Arts program in Teacher Education to a 5-year Master of Arts program emphasizing the Language Arts and classroom-teaching experience. Austin raised its entrance requirements and added 36 semester hours to the curriculum - none in education. Educational psychology, sociology, and philosophy, formerly taught in the Education Department, are now taught in the disciplines. Students now log 200 to 300 hours in elementary or secondary classrooms before they are admitted to the masters program. Students are encouraged to be assertive and to direct their own learning.

What is important is that the developers appear to have changed the knowledge base from which the program was driven. The program changed from a focus on a standard set of skills to be learned to a focus on an individualized subjective list of behavior patterns likely to be different for each student.

Again in 1989 and 1990, the faculty at Austin College engaged in a strategic planning process to determine the ideal teacher education program for Austin College students of the 1990's. Data presented in Pierce et al (1991), in 1989 year-end reports from Austin College, and in personal conversations with Virginia Pierce, the Director of the Teacher Program indicate yet more innovations--what Pierce calls a restructuring and a reconceptualization.

Where early field experiences had been given no credit, now credit is given, and Gordon's professional development concepts undergird the experiences. And every course is driven by the four notions of collaboration, inquiry, reflection, and critique. Whereas the substantive curricular changes of the seventies at Austin College reflected the humanistic self-development notions of Arthur Combs (1974), the goals of the second phase of the Teacher Program reflect the notions of Lee Shulman (1987), Giroux and McClaren (1986), and others such as Schoen and Zeichner.

A conversation with Pierce reveals that Austin College, the recipient of large career development grants, supports faculty well. The entire teacher education faculty, five in number, are sent to several meetings a year; all are very active on the state and/or national level; and all have opportunities to network and interact with leaders in their respective fields across the nation. Thus there is strong administrative support, and faculty have consistently kept abreast of the emerging knowledge bases in teacher education.

#### **PROTEACH, The University of Florida, Gainesville, FA.**

The University of Florida, Gainesville began their new program called PROTEACH in 1983. PROTEACH is a teacher preparation program - an extended 32 hours beyond the baccalaureate degree and culminating in a Masters degree. The new program was built not upon the existing program, but upon a reconceptualization of what a beginning teacher should know, should be able to do, and should be, as a model for youth (University of Florida, 1983).

It's distinguishing characteristics are:

- 1) an increase in academic subject matter,
- 2) utilization of the research about effective teachers' knowledge, skills, and personal attributes,
- 3) expanded foundational studies as well as expanded clinical and laboratory experiences,
- 4) and recruitment of high quality students.

(Smith, 1984)

The rationale cited by writers of the Florida documents for changing to a five-year program include components of the rationale given in the Holmes Group and Carnegie Task Force reports. PROTEACH is a response, they say, to changes in the teaching profession, to new demands placed on teachers, to the need to prepare for increasingly more complex teaching fields, to the need for teachers to master effective teaching practices, to the need for more comprehensive and demanding requirements, as well as to changing perceptions of the teaching degree (Smith, 1984).

Winds of change at Florida began with the wave of noisy criticism in the late seventies which birthed *A Nation at Risk* (National Commission on Excellence, 1983), *A Place Called School* (Goodlad, 1983), etc. The impetus for the change at Florida appears to have come because educators in that state were witnessing more than a fair share of grandstanding in the state legislature. Bills were actually introduced in the legislature in 1979 and 1980 that would abolish colleges of education in the state of Florida, and would place teacher education in the realm of the liberal arts and sciences.

According to David Smith, Dean of Education at Florida, there was a mandate from the provost to the College of Education in the form of a question: "What will you do to counter these attacks?" (Personal conversation with David Smith at AACTE conference in Atlanta, 1991). PROTEACH conferences were held during the next four years. In the first year, 1979, seventeen groups or task forces comprised of faculty, graduate students, school personnel and representatives of the state met to consider the following questions: In a preservice program for professional teachers:  
What should beginning teachers know?  
What should beginning teachers be able to do?  
What kind of persons should beginning teachers be?

According to Smith, the expectations of the outside agents were perceived by the faculty at the University of Florida to be considerably more than what the old program--always considered strong--was then producing.

During 1980, the second year of planning at the University of Florida, work began on the redesign of the curriculum to provide a knowledge base for what planners the first year had determined teachers need to know, be able to do, and be. B. O. Smith's work and Jere Brophy's work were just emerging. And the Florida Coalition was working on the domains for the Florida Performance Measurement System. The process/product research surveyed by the Florida Coalition, in Smith's work and in Brophy's work were used as the focal point for the knowledge base undergirding the curriculum redesign.

The three components in the new program at Gainesville begun in 1983 reflect three philosophical positions that were avidly defended by various members of the large teacher education faculty at the University of Florida during their planning years between 1978 and 1983. Robert Carroll has written that whereas a vocal minority of the faculty at the University of Florida believed the various departments at the University should get out of preservice teacher education and become graduate level research centers, the majority of the faculty believed the preparation of preservice teachers to be a legitimate function of the University and that such a mission should be guided by one of two philosophic orientations, or a combination of them.

Carroll represents the first orientation as a child-centered, humanistic approach designed to help each student find his own best way of teaching, an alternative model to the traditional behavioristically oriented model prevalent in some colleges and in many state and federal agencies today (Carroll, 1989, 120-121).

The second philosophical orientation reflected in the Florida Task Papers and Curriculum is a cognitive approach, based on the notion that schools are entrusted to impart a body of knowledge to the young, and that schools of education should be training teachers in the most efficient means of communicating that knowledge. The focus for curriculum, based on this orientation

then, is knowledge of the process-product research. The goal is that students gain knowledge about teaching behaviors supposedly most likely to succeed in the presence of specific critical student and text variables. The ultimate goal, of course, is that students master those behaviors so that they can be effectively utilized in the classroom.

Carroll, who takes an ethnographic approach to the study of curriculum change, discusses the significant impact on the new program at Florida made by the Florida legislatures' birthing of the Florida Performance Measurement System (FPMS), on which all beginning teachers are required to demonstrate proficiency. At the same time that the University of Florida task forces were searching the literature to develop a knowledge base, the Florida Coalition was searching the literature to develop a knowledge base for the FPMS.

According to Carroll, the domains of teaching identified by the task force at the University of Florida look very much like the domains of teaching defined by the Florida Coalition that devised the FPMS, the FPMS is a system which codified the knowledge base for teacher education into six domains of teaching, three dozen generic teaching competencies, and seemingly hundreds of behavioral indicators of effective practice (Carroll, 1989).

"Hence that which was believed to be important by one group was indirectly mandated by the other and the curriculum changed accordingly (Carroll, 1989, p. 122)."

However, the Domains developed at the University of Florida appear to go farther than do the Domains of the FPMS. The Domains of the FPMS contain only those behaviors that are observable in planning and implementation of instruction, and in classroom and instructional management. (Florida State, 1983 and Smith, 1983).

The domains developed at the University of Florida undergird a very real compromise that is represented in the curriculum in place since 1983. PROTEACH developed from a position of acknowledged strength, with the recognition of a newly emerging knowledge base, and indeed in response to the state legislated requirement that beginning teachers demonstrate mastery on the Florida Performance Measurement System. All the programs in PROTEACH have elements that are skill-oriented and require mastery of specific competencies. Each program has some form of support system built into it to meet the affective humanistic needs of students; and there is a very heavy emphasis on academic undergraduate preparation and on the graduate research functions of the college.

### **The MAE at Northeast Missouri State University**

Northeast Missouri State University began to phase out their traditional four-year teacher education program in 1986. In its place is a new five-year Master of Arts in Education (MAE) program. The goal of the Master of Arts in Education program stated in Northeast Missouri State University's Five Year Planning Document (1987, p. 69) is to offer a graduate professional education program that grows naturally out of the philosophy, values, content, and desired outcomes of undergraduate liberal arts and sciences education to prepare master teachers.

The mission of the Education Faculty is to prepare liberal arts and science graduates for the profession of teaching in a diverse society. The faculty's goal in the MAE is defined by their view of the Master Teacher as one who is a reflective critical thinker, problem solver, and creative leader in the school and in the community, and who will cultivate those qualities in his/her students.

Students enter the Master of Arts in Education program with a Bachelor of Arts degree, having acquired a strong major in a discipline, a strong general education background, and ACT scores which are above the state and national norms. The graduate year consists of a coherent program of professional and advanced study in the subject matter area with a capstone internship consisting of a full year teaching experience in a public school in close collaboration with master teachers, administrators, and university professors.

The professional studies sequence which integrates theory and practice, is research based and interdisciplinary, and is designed to produce teachers who have knowledge in a variety of skills which can be applied in diverse ways. The goal of the program is to produce professional decision makers who are outstanding teachers. Students begin the professional sequence with an examination of the four commonplaces of teaching described by Schwab coupled with observations in classrooms which they analyze from the perspective of the research on effective teaching.

In place of many separate methods courses faculty from Science, Mathematics, and Fine Arts team with Education faculty in Social Science and Language Arts, as well as with classroom teachers and students to design and implement units of instruction to be implemented in participating teachers' classrooms. The units are thematic in nature, integrate the disciplines across the curriculum, and are taught in the second of the three course professional sequence.

Northeast has, since its beginnings in 1867, provided Missouri some of its best teachers. The first normal school and the oldest regional state University in Missouri, Northeast is one of

the first public institutions of higher education west of the Mississippi. Known until 1972 as Northeast Missouri State Teachers College, Northeast was given university status in 1972, and until 1986 served 17 northeast Missouri counties as one of the state's regional universities, and one of the state's regional teacher preparation centers.

But on the recommendation of the Coordinating Board of Higher Education, which board was attempting to eliminate duplication and differentiate the missions of the institutions in the state university system, the Missouri General Assembly in 1986 changed the mission of Northeast Missouri State University to that of a state university for undergraduate arts and sciences (Missouri General Assembly House Bill 196).

The recommendation had not been made arbitrarily. Since 1972, a value added evaluation system had been in place and former President Charles McClain had been recruiting a more widely based, liberal arts oriented faculty and a superior student body. Missouri General Assembly House Bill 196 put into law what was already well on the way to reality at Northeast.

The substantive changes made in teacher education at Northeast in 1986 are evident when one compares descriptions of the two programs in the 1972 Institutional Report to NCATE and in the 1986 Five Year Planning Document and working papers for the 1992 Institutional Report to NCATE.

The curricular patterns for teacher education described in the 1972 document are very different from the 1986 program. The 1972 document articulates a concern for liberal education, and cites the 15-hour minimum requirement in an academic area of concentration for elementary education (NMSU, 1972). The institutions's conception of the teacher's role described in that document emphasizes the teacher's need to know various methods of thinking and problem solving, and details various observable, desirable teacher behaviors.

Students in the new program bring to the professional sequence in the MAE grounding in a strong and cohesive liberal arts and sciences core curriculum that has provided them with the foundation and breadth of knowledge appropriate to a liberal arts and sciences education. In addition students bring to the professional component an undergraduate disciplinary specialization which will have furthered the goals for the liberal arts and sciences by involving the integration of knowledge and will have prepared them for entrance into first, rigorous professional study and second, positions of leadership in the profession of education in a diverse society. The general education and specialization requirement in the undergraduate divisions at Northeast total over 100 hours.

Structural changes made in teacher education at Northeast Missouri State University when the MAE was inaugurated as part of teacher education reform at Northeast included raising the requirements for the education of prospective teachers, augmenting their liberal arts background, and lengthening their period of training. But the substantive changes made in teacher education at Northeast are reflected in the knowledge base which is the foundation of the current curriculum and in value added outcomes which are evaluated in every student through the case study and the culminating comprehensive examination.

The comprehensive plan for teacher education has three elements in its knowledge base, and these are 1) subject matter knowledge, 2) the systematic knowledge of teaching and learning, and 3) the knowledge of practical experience. The curricular elements addressing all three of these components must involve for students critical thinking, inquiry, and on-going reflection. These notions are articulated, of course by the writers of the Holmes Report (1986), Shulman (1987), and before them Schwab (1983), Fernstermacher (1978), and Dewey (1904).

Content or subject knowledge is addressed in the MAE program in the undergraduate disciplines and in the advanced course work in the disciplines at the graduate level. The systematic knowledge of teaching and learning--pedagogical knowledge--comprised of knowledge of the structure of the disciplines, knowledge of curriculum, and knowledge of instructional strategies along with knowledge of the nature of learning and the learner, is addressed in the professional studies core of the MAE. And the practical knowledge comes from the clinical and field components of the professional studies, starting with early field experiences, progressing through clinical portions of the course work, and culminating in the internship.

Various strategies are used throughout the program to bring about these final goals involving the ability to make sound professional judgments based on critical reflective thinking, reasoning, and strategic understanding. In the introductory curriculum course students reflect on their classroom observations in relation to the literature assigned. In the foundations course students use the situational analysis/case study approach to reflect on hypothetical problems. In educational psychology classes students reflect on their experiences in journals and dialogues. In the advanced curriculum course students develop strategies to be used in their internships based on careful reasoning and critical analysis of the curriculum and the context in which it is taught.

The culminating case study of the student's own internship is one of the research options for the MAE. The case study is an inquiry into the intern's experiences in which the intern brings to bear on the research questions the theory, the context variables, the methodology employed in the classroom, and

numerous measures of student output to reflect on his students' growth in academic and attitudinal achievement, and on his own growth as a professional.

The MAE at Northeast, first presented to the State for approval in 1986, looks very much like the recommendations made by the Holmes Group (1986) whose report discussed the difficulty of teacher education reform without undergraduate reform in the disciplines, or without university support at the highest level. Northeast is uniquely in a position to make these changes because there has been structural and substantive changes in the disciplines at the undergraduate level. And those at the highest level of the University administration are very committed to the program.

The uniqueness of their position which has enabled Northeast to make these structural and substantive changes in a very conservative state, I believe, comes from three components. Those unique components at Northeast are the value added assessment system in place since 1972 which has changed the character of the student body as well as the character of the faculty, the new mission of the University, and the vision of former President McClain and those around him (Grow, 1988).

The value added concept in place at Northeast for the past 18 years, and the assessment of that value added, has focused attention on the quality of the undergraduate education students receive at Northeast. Such scrutiny has increased accountability, which in turn contributes to a rise in standards for students, and is reflected in the new mission.

The new mission of the University, as the statewide liberal arts and sciences institution, commits the University to providing a high quality academic program grounded in the liberal arts and sciences, and visible in the demonstrable growth and achievement of its students and graduates. The mission is supported by the recruitment of high quality students and the continued support of faculty from diverse backgrounds.

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The vision of the former president and those around him is apparent when one looks at the last 20 years at Northeast. When other universities, in an era of drastically dropping enrollments, lowered standards to stay afloat, Northeast raised standards and raised enrollments. The same phenomenon occurred at the University of New Hampshire and at Austin College. Obviously, the vision experienced at Northeast was seen also at New Hampshire, at Austin College, as well as at the University of Florida.

#### Commonalities, Differences, and Generalizations

Commonalities in the results of the study are reflected in structural formats in the way each program is delivered to students. All the programs have developed more intensive preparation in general education and in the teaching specialization, as well as in the professional education component. Most have developed extended field experiences and/or full year internships in the schools where candidates are Beginning Teachers.

The differences are reflected in the philosophies that undergird and determine the respective curricula, in the specific knowledge bases that were articulated to support the respective philosophies, and in the changes in priorities that in each case influenced the change in philosophy and subsequent curriculum innovation.

At New Hampshire, one man with an ear close to his faculty addressed the critics of teacher education and created his own model, involved faculty in careful planning, preserved what appears to be a great amount of freedom and autonomy for his faculty, and used graduate students and outside agency and school people to design the details of his program. The University of New Hampshire was reacting to wide-spread criticism of teacher education in the seventies, declining enrollments, and a decreasing market. New Hampshire's reaction to a drastic change in priorities in teacher education lead to a new program that is highly successful.

At Austin College where administrators and faculty must always, no doubt, have their ear to students and alumni, faculty responded to the agitation for more involvement on the part of students in the '60's, articulated the humanistic knowledge base reflected in the work of Art Combs, and created a program in which students are facilitated in directing their own learning and encouraged to develop their own teaching modes. The administration appears to support faculty development and change,

and encouraged risk taking. Yet another change has occurred on the Austin College campus reflecting the new writings of Schoen, Shulman, and others.

At the University of Florida considerable tension was reflected in faculty discussions and papers in the early '80's. The tension was between those advocating the affective domains and the child-centered philosophy on the one hand, those supporting the cognitive domains and the process-centered philosophy on the other. The latter orientation seems to have won out and may be due, notes Carroll, to the fact that the political climate in Florida was favoring change in the process-centered direction, evidenced, of course, in the state-mandated Florida Performance Measurement System (Carroll, 1989, p. 121). But the process-centered knowledge base was articulated well, and it seems to prevail.

The changes in teacher education at Northeast Missouri State University were not tied to the mandated change in mission toward an exclusively liberal arts and sciences orientation in the university at-large. But the innovation to a liberal arts based Masters program in education with its goal of producing reflective, critical thinking professional decision makers, seems to have followed naturally.

The generalization can be made, as stated in the beginning of this paper, that those programs that have changed and prevailed have all demonstrated a very real change in curriculum grounded on a well articulated knowledge base which reflects a major change in priorities imposed by an interaction of internal and external actors and circumstances.

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