CONCEPTUAL ORIENTATIONS IN TEACHER EDUCATION[1]

Sharon Feiman-Nemser[2]

Concern about the quality of teaching has focused attention on the quality of teacher preparation. Spurred by legislative mandates, commission reports, research findings, and personal commitments, teacher educators around the country are considering a variety of programmatic changes. To help teacher educators locate their efforts within a larger universe of alternatives, I discuss five conceptual orientations. Drawn from a larger survey of structural and conceptual alternatives in teacher education, the orientations highlight some of the traditions of thought and practice that have characterized the field.

By conceptual orientation, I mean a cluster of ideas about the goals of teacher preparation and the means for achieving them. Conceptual orientations are not tied to particular programmatic structures. They can shape a single component or an entire professional sequence, apply to undergraduate as well as graduate-level programs. Nor are conceptual orientations mutually exclusive. By design and default, they can and indeed do exist side by side in the same program.

Ideally, a conceptual orientation reflects a coherent perspective on teaching, learning, and learning to teach that gives direction to the practical activities of educating teachers. In reality, conceptual orientations in teacher education do not have uniform or explicit positions or well-developed practices. Still it is possible to summarize what supporters have to say about the teacher's role, teaching and learning, knowledge for teaching and learning to teach and to illustrate how these ideas have been expressed in programs and components. Although most of the descriptions reflect the espoused rather than the enacted curriculum, they reveal some of the variations within and among the various orientations.

The orientations themselves emerged from a comparison of previous efforts to identify theoretical perspectives, models, and paradigms in teacher education (e.g. Joyce, 1975; Zeichner, 1983; Zimpher and Howey, 1987). While there is considerable overlap between this formulation and the earlier ones, there are also important differences. First, I give serious attention to the academic orientation, which is generally ignored by teacher educators. Second, I link the practical orientation with a renewed respect for the "wisdom of practice." Third, I eliminate what others call an inquiry orientation on the grounds that reflection is a generic professional disposition, not a distinct programmatic orientation. The fact that teacher educators of various persuasions adopt reflective teaching as a goal lends further support to this position.

---

[1]This paper is based on a chapter called "Teacher Presentation: Structural and Conceptual Alternatives" that will appear in W. R. Houston (Ed.), *Handbook of Research on Teacher Education* (New York: Macmillan).

[2]Sharon Feiman-Nemser, professor of teacher education, is a senior researcher with the National Center for Research on Teacher Education.

The Academic Orientation

The academic orientation in teacher preparation highlights the fact that teaching is primarily concerned with transmitting knowledge and developing understanding. Traditionally associated with liberal arts education and secondary teaching, the academic orientation emphasizes the teacher's role as intellectual leader, scholar, subject matter specialist. Supporters stress the importance of teachers' academic preparation, which some associate with subject matter knowledge and others with the ideals of liberal learning.

The academic orientation embraces various images of good teaching, ranging from expository instruction to Socratic inquiry. Some supporters advocate the teaching of basic skills; others talk about inducting students into the scholarly disciplines or fostering "meaningful" understanding of academic content. These diverse academic goals imply different views of teaching, knowing, learning.

Because teacher educators have had little say about teachers' academic preparation, they have tended to ignore the question of what teachers need to know about their subjects to teach them effectively. Recently researchers have begun to consider what it means to "know" particular subjects and how teachers' subject matter knowledge interacts with other kinds of knowledge to influence classroom teaching and learning (see, for example, Ball, 1988a, b; Brophy, in press; Leinhardt and Smith, 1985; McDiarmid, Ball, and Anderson, 1989; Shulman, 1986, 1987; Stodolsky, 1988).

While many people assume that majoring in an academic subject will automatically provide teachers with an adequate grounding in their teaching subjects, this new research suggests that the requisite knowledge is not likely to emerge from academic study alone. Subject matter or content knowledge consists of knowledge of the facts, concepts, and procedures that define a given field and an understanding of how these pieces fit together. It also includes knowledge about knowledge--where it comes from, how it grows, how truth is established in different fields (Anderson, 1988; Buchmann, 1984; Schwab, 1978). In addition, teachers need a special blend of content and pedagogy that Shulman (1986) has labeled "pedagogical content knowledge." The unique province of teachers, pedagogical content knowledge includes useful ways to conceptualize and represent commonly taught topics in a given subject, plus an understanding of why learning those topics is difficult or easy for students of different ages and backgrounds (Wilson, Shulman, and Rickert, 1986).

The academic orientation challenges the traditional division of labor between arts and science faculty and teacher educators. It calls for coordinated opportunities to gain both disciplinary and pedagogical knowledge. Advocates of the academic orientation must figure out what teachers need to know about their subjects to teach them, what they need to know besides their subjects to teach them, and where and how they can be helped to acquire and develop that knowledge.

The Academic Learning Program

The Academic Learning Program at Michigan State represents one serious effort to grapple with some of the questions raised by the academic orientation. Set in an undergraduate context, the program aims to prepare elementary and secondary teachers who can foster conceptual understanding of school subjects.

The program emphasizes three areas of knowledge: (a) a broad understanding of the disciplinary roots of school subjects, (b) knowledge about how pupils learn in different subject areas, and (c) knowledge of effective teaching strategies that promote conceptual understanding. The program consists of an integrated sequence of core courses with related field experiences. The first two core courses, Learning of School Subjects and Curriculum and Academic Learning, draw on concepts from cognitive psychology, philosophy of science, and curriculum to explore major themes in the program--that knowledge is socially constructed, that learning is an active process of making meaning, that good teaching depends on a deep understanding of disciplinary knowledge and a repertoire of ways to represent key ideas in one's field (Amarel, 1988a).

At the beginning of the program, students are paired with a local teacher. Each term they visit their mentor teachers' classrooms to carry out field assignments and, in the second year, to student teach. The field assignments help students link concepts taught in university courses with classroom practices. For example, students analyze how mentor teachers represent knowledge in lessons and assignments and interview pupils to discover how they make sense of particular learning activities.

Elementary candidates take a specially designed, three-course math sequence taught by a mathematics professor and a math educator. The first course focuses on number theory, the second on geometry, and the third on statistics. All three involve students actively in making sense of mathematical situations and solving a variety of real-world problems. The sequence is motivated by the realization that elementary teachers cannot teach for understanding if they themselves have never been taught to understand the conceptual foundations of school mathematics (Schram, Wilcox, Lanier, and Lappan, 1988).

The Personal Orientation

The personal orientation places the teacher-learner at the center of the educational process and shifts the emphasis from teaching to learning. Learning to teach is construed as a process of learning to understand, develop, and use oneself effectively. The teacher's own development becomes a central goal of teacher education.

Supporters of the personal orientation emphasize the teacher's quest for self-understanding and personal meaning. In a classic statement of the personal orientation, Jersild (1955) names self-understanding as the most important prerequisite for guiding students and Combs (1965) defines a good teacher as "first and foremost a unique personality, striving to fulfill himself" (p. 6).

Since pupils share this basic drive for self-adequacy and enhancement, teaching is less a matter of prescribing and molding and more a matter of encouraging and assisting. The teacher is a facilitator who creates conditions that support learning. Advocates of the personal orientation favor classrooms in which the curriculum reflects pupils' needs, interests and hopes. Because they want teachers to foster independent learning in their pupils, some supporters believe that prospective teachers should experience the same independence in their teacher preparation.

Proponents of the personal orientation describe learning to teach as a process of becoming or development and they attach various meanings to these phrases. For some, becoming a teacher means making a psychological shift from the partly dependent role of student to the fully responsible role of teacher (Biber and Winsor, 1967). For others, it means developing a personal psychology and findings one's own unique style of teaching (Combs, 1965; Combs, Blume, Newman, and Wass, 1974). Still others focus on helping prospective teachers make the transition from early concerns about self-adequacy to more mature concerns about pupils and their learning (Fuller and Bown, 1975).

The rationale for the personal orientations draws on developmental, humanistic, and perceptual psychology. From these sources proponents derive content for the preservice curriculum such as dynamic concepts of learning and development and theories of human behavior and potential. They advocate field experiences in which teacher education students can discover their own style of teaching and gain personal knowledge of pupils. They also stress the importance of personal interactions with teacher educators who function as counselors, helping prospective teachers explore problems, events, themselves, and others (e.g. Combs, 1978; Fuller and Bown, 1975).

Developmental Teacher Education Program (DTE)

The Developmental Teacher Education program, a postbaccalaureate program leading to an elementary teaching credential, rests on the belief that a grounded understanding of developmental principles is the best foundation for a teaching career. According to the directors, the primary goal of the program is to "improve the quality of instruction by enhancing the teacher's understanding of the learner as a developing individual" (Ammon, Hutcheson, and Black, 1985, pg. 1; see also Black, 1989).

The program consists of a two-year sequence of courses and field experiences. The academic components are organized around two core seminars. During the first year, the seminar focuses on theories of human development--cognitive, social, moral, and language. Curriculum analysis is emphasized in the second year, particularly the application of developmental principles to teaching math, science, and literacy. Much of the knowledge about developmental stages and subject matter is conveyed by working through constructs related to mathematical and natural phenomena such as number, time, measurement, and conservation. The practicum consists of five teaching placements monitored by university staff and backed by a weekly supervising seminar. To earn a master's degree, students do a thesis based on original research linking development and education.

The program seeks to (a) provide teachers with an understanding of the principles of human development, including the attributes of hierarchically ordered, developmental stages; (b) align these stages with the core content areas of the elementary curriculum; and (c) help teachers translate developmental principles into pedagogical decisions, judgment, and practices in school settings. The concept of development provides a comprehensive rationale for the organization of the program. The two-year sequence is considered necessary to allow the spiral of learning, reflecting, and relearning that leads students to higher levels of understanding (Amarel, 1988b).

The Advisement Program at Bank Street College

Since its founding in 1931, Bank Street has been dedicated to a clear system of educational values and a child-centered model of teaching. The advisement program is conceived as an analogue to that system of values and model of teaching because it allows students to experience on an adult level the kinds of learning opportunities and personal relationships which they, in turn, will enact with their pupils (Shapiro, 1988).

The advisement program has been described as "the intersection of learning in course work, fieldwork, in informal exchange with peers, and in the development of a personal style of teaching" (Shapiro, 1988 p. 10). Advisors help students integrate the different parts of the program and reflect on what they are learning and how they are changing.

Advisors work with students in three settings. They help students function in the field and relate

what they are learning to their course work. They hold weekly group conferences where students can learn from their peers through group reflection and problem solving. Finally, advisors meet with students in individual sessions in which they function more as counselors, helping students deal with personal questions and problems that have arisen in their interactions with pupils and colleagues.

Bank Street advisors must balance their commitment to a particular view of good teaching with their wish to help students find their own teaching style. Openness to individual styles is bounded by the learner-centered ethos of the institution.

The Critical Orientation

The critical orientation combines a progressive social vision with a radical critique of schooling. On the one hand, there is an optimistic faith in the power of education to help shape a new social order; on the other, is a sobering realization that schools have been instrumental in preserving social inequities. Just as the teacher plays an important role in social reform, so teacher education plays a part in the larger strategy of creating a more just and democratic society.

The teacher is both an educator and a political activist. In the classroom, the teacher creates a learning community that promotes democratic values and practices. In the school, the teacher participates in curriculum development and policymaking. In the community, the teacher works to improve school conditions and educational opportunities through community involvement and political activity.

The discourse about critically oriented teacher education is rather theoretical. Contemporary proponents speak about "critical pedagogy," "emancipatory teaching," "student empowerment," without always translating these terms into concrete classroom practices. There is a general consensus about the importance of promoting democratic values, helping students find their voice and developing their identity, and linking schooling with students' experiences in the community.

The literature does contain advice about the kinds of issues and topics that a critically oriented program should address. For example, Giroux and McLaren (1986) recommend a critical study of language, history, culture, and field experiences that help teachers understand the societal forces influencing their pupils. They suggest that student teachers might compile oral histories of the communities in which they teach and analyze the role of different community agencies. Such experiences would help them develop curricula around the traditions, histories, and forms of knowledge often ignored within the dominant school culture.

From descriptions of critically oriented methods courses, curriculum courses, and field experiences, Zeichner (1987) has culled five instructional strategies that promote critical analysis and critical pedagogy: ethnographic studies, journal writing, emancipatory supervision, action research, and curriculum analysis and development. Of course, it is the purposes to which the strategies are put and

not the strategies themselves that justify the link with the critical orientation.

The New College Program

The New College program, mounted at Teachers College, Columbia University, in the 30s, illustrates the progressive roots of the critical orientation. An unorthodox experiment in teacher education, New College attempted to integrate general education, professional education, and laboratory experiences. The program was shaped around a definition of the teacher as a social leader. The faculty believed that "teachers should view their work against the backdrop of world events and conditions and regard community involvement and leadership as a professional responsibility" (New College, 1936, pp. 29-30).

In their first two years, students attended a central seminar, organized around broad problem areas, supplemented by divisional seminars in philosophy, natural sciences, the arts, and human relationships. In the last two years, the emphasis shifted from general cultural background to professional preparation. The central seminar took up educational implications of persistent social problems, while divisional seminars focused on particular teaching specializations. New York City served as a natural laboratory for developing general cultural understandings. Students made use of libraries, museums, galleries. They attended lectures, concerts, and plays and studied commercial enterprises, social agencies, community and political organizations. New College students were also required to spend time in the New College Community, a student-run farm in North Carolina and to study and travel abroad for at least a summer.

The student teaching program provided contacts with all the important phases of the teacher's work. In addition to opportunities for curriculum development, child study and instructional planning, student teachers surveyed local resources and needs and took part in various community activities. The faculty continually tried to encourage political activity among the students. In 1937, the director announced that two scholarships would be awarded to students "who go furthest beyond `academic neutrality' in active participation in life outside the walls of the university" (Cremin, Shannon, and Townsend, 1954, p. 226).

Student Teaching at the University of Wisconsin

The activist stance of the New College program contrasts with the more analytic stance of the University of Wisconsin student teaching program. Developed by teacher educators closely identified with the critical orientation, Wisconsin's student teaching program is designed to foster critical reflection and critical pedagogy. Earlier statements of the program's rationale stressed the need for teachers to reflect on the moral and political implications of school structures and classroom practices and participate in curriculum development and educational policymaking (Zeichner, 1981-82). Recent refinements call for teachers to add the role of political activist outside the classroom to their primary role as educators (Liston and Zeichner, 1988b; Zeichner and Liston, 1987).

The student teaching curriculum has five elements (Liston and Zeichner, 1987). The first is a teaching component that combines the gradual assumption of classroom responsibilities with an emphasis on curriculum development. The second is an inquiry component that focuses attention on the culture of schools and classrooms and their relationship to the larger political milieu. Students carry out some investigation related to their own practices or the settings where they work. The third component, a weekly seminar, is designed to help students "broaden their perspectives on teaching, consider the rationale underlying alternative possibilities for classrooms and pedagogy, and assess their own developing perspectives toward teaching" (p. 32). Journals, the fourth component, encourage student teachers to reflect systematically on their own development and their actions in classrooms and in the school. Finally, supervisory conferences provide an arena for analyzing teaching in relation to student teachers' intentions and beliefs, the classroom context, the content of instruction, and the hidden curriculum.

Technological Orientation

The technological orientation focuses attention on knowledge derived from the scientific study of teaching. The primary goal is to prepare teachers who can apply professional knowledge to the tasks of teaching. Learning to teach means acquiring and using research-based principles and practices. Competence is measured in performance terms.

The technological orientation goes hand in hand with a search for a scientific basis for teaching. Proponents believe that the future of teaching as a profession rests on improvements that will come from the accumulation and application of scientific knowledge (Berliner, 1985; Gage, 1978) and they are optimistic about the results of teacher effectiveness research (for a recent summary, see Brophy and Good, 1986). Based on studies of math and reading instruction in conventional classrooms, this program of research has identified a set of generic teacher behaviors and strategies associated with student achievement gains that cohere around a model of direct instruction.

Some supporters regard this knowledge base as critical content for teacher training and criteria for teacher assessment. Others believe the research findings should be taught as principles and procedures to be used by teachers in making decisions and solving problems. In both cases, professional knowledge is basically procedural knowledge--ways to achieve specified objectives, solve familiar problems, accomplish routine tasks. Teaching is regarded as a rule-governed, instrumental practice, with professional artistry a matter of personal style "grafted onto technical expertise" (Schon, 1987, p. 33).

The technological orientation is generally associated with a training model of learning to teach. Joyce and Showers (1980, 1984) suggest that effective training includes four components. First, teachers need opportunities to learn about the theory or rationale behind a given strategy or procedure. Second, they need a chance to see a demonstration. Third, teachers need to practice and receive feedback on their performance. Ideally this practice should occur in a relatively "safe" environment in which teachers can concentrate on mastering the new behaviors without having to deal with all the complexities that arise in real classrooms. Finally, teachers need help in transferring the new behaviors to the classroom from a coach who can detect errors in application and point out correct responses.

Competency-Based Teacher Education at Toledo

The elementary teacher education program at the University of Toledo illustrates a version of the technological orientation. Implemented in 1973, the program still exhibits many features associated with competency-based teacher education--explicitly stated competencies that students will acquire, courses composed of instructional modules designed to help students meet specific objectives, a mastery-learning approach to instruction, a heavy emphasis on field-based learning (Howey and Zimpher, 1989).

Organized into six instructional blocks and taught by interdisciplinary teams, the program begins with an introductory career decision-making course, moves through general pedagogical courses, and then focuses on methods of teaching various school subjects. Each course or block experience contains a set of instructional modules that communicate to students what is expected of them. The strong skill orientation of the program may help account for the confidence expressed by one student:

> The program has given me competence and confidence to teach in an elementary classroom. So, whether I have all the competencies, I may be lacking in one or more, but I think overall we understand the material we are going to teach, classroom management, behavioral management, test writing, and being able to handle the situations that arise. (Howey and Zimpher, 1989, pp. 88-89)

Teacher as Rational Decision Maker

A closer look at the technological orientation comes from a description of an educational psychology course in a program organized around the theme of "teacher as decision maker."[3] The course examined instructional decision making from a systems perspective and communicated a view of teaching as rule-governed and certain.

The instructor organized the course around five topics: goals, objectives, task analysis, evaluation, information, and practice. He presented a format for planning daily lessons--introduction, instruction, practice and feedback, daily evaluation, application. He also told students that if they plan systematically and base their plans on empirically validated principles of motivation and instruction, they could be reasonably certain that pupils will learn what they are trying to teach.

The course followed the training model. The instructor explained and demonstrated the elements in lesson planning. Students practiced each step separately and then put them together in designing an instructional unit. They were also expected to transfer their newly acquired planning skills to the field. All term students developed and taught minilessons while their field instructors used the lesson plan framework as a basis for classroom observation and feedback.

Practical Orientation

The practical orientation focuses on the elements of craft, technique, and artistry that skillful practitioners reveal in their work. Supporters emphasize the unique, local, uncertain aspects of teaching. They also endorse the primacy of experience as a source of knowledge about teaching and a means of learning to teach.

While advocates of the practical orientation do not necessarily share the same image of good teaching, they agree on the essential character of the work. Teaching calls for flexibility, invention, and judgement (Jackson, 1968, 1986; Kohl, 1976; Schon, 1983; Tom, 1984). Because teachers often face situations that present equally important but conflicting alternatives, they must learn to invent temporary responses in the face of unsolvable problems (Lampert, 1985).

Schon's (1983) insights about the nature of professional practice further illuminate ideas about teaching associated with the practical orientation. Schon discusses the kind of artistry or knowing-in-action that competent practitioners reveal in their work. Highlighting those situations in which established theory and codified technique do not apply, he describes how thoughtful practitioners engage in on-the-spot reflection and experimentation, drawing on a repertoire of images, theories, and actions to construct an appropriate response. According to the practical orientation, learning the

[3] This description comes from an exploratory study of what was taught and learned in this preservice program. For a fuller account, see Feiman-Nemser, l987, and Feiman-Nemser and Buchmann, l989.

practice of teaching occurs through a combination of firsthand experience, interaction with peers and mentors and general exposure and initiation. In these ways, the novice is inducted into a community of practitioners and a world of practice.

Apprenticeships and practice are standard modes of learning associated with the practical orientation. An apprenticeship offers direct exposure to the real conditions of work; a practicum presents a simplified or protected encounter with the world of practice. Both provide an opportunity to learn with and from other practitioners.

Ever since Dewey (1904) distinguished the *laboratory* view with its emphasis on intellectual methods from the *apprenticeship* view with its focus on technical proficiency, the apprenticeship has had bad press in teacher education circles. Apprenticeships, say the critics, encourage imitation rather than understanding and foster the maintenance of existing standards and practices (e.g. Arnstine, 1975; Wilson, 1975).

While the apprenticeship model does encourage novices to learn the practices of the master, it does not preclude a consideration of underlying principles or the development of conceptual understanding (Ball, 1987; Tom, 1984). Collins, Brown, and Newman (in press) have coined the term "cognitive apprenticeship" to describe experiential learning situations in which teachers think aloud so that learners cannot only observe their actions but also see how they work through particular problems of tasks.

The Teachers for Rural Alaska Program

The Teachers for Rural Alaska Program (TRA), located at the University of Alaska in Fairbanks, prepares teachers to work in situations of extreme ambiguity and uncertainty. Perhaps this explains why the directors were drawn to ideas about teaching and learning to teach associated with the practical orientation. The TRA program prepares liberal arts graduates to work in the unique, multicultural educational settings of rural Alaskan high schools. In these small, isolated communities, teachers are expected to teach many subjects and grade levels and assist communities faced with complicated political, social, and economic challenges. Differences in social and cultural backgrounds between teachers and students further complicate the tasks of interpreting student behavior, choosing appropriate educational goals, and finding one's place in the community.

To give students practice in deliberating about uncertain situations, the staff has developed cases based on the experiences of rural Alaskan teachers. Each case describes a problem situation familiar to rural teachers in cross-cultural and multicultural communities (e.g., Native students' feelings about being "dumb" in a class with middle-class Caucasian students). Students analyze the cases from different vantage points, imagining a range of possible actions and their consequences.

Students also complete a series of design projects during the professional seminar that meets

daily on campus during the fall term. For example, students are given information about a particular context and culture (e.g., a village economy based on salmon fishing, parental ambivalence about sending children to college) and descriptions of individual students (e.g., seven Yup'ik Eskimo children of varying ages). Their job is to design a biology curriculum, formulating goals, exploring curricular materials, developing an instructional plan, and justifying it on the basis of knowledge about students, subject, and setting.

The practical wisdom of experienced teachers has a prominent place in the TRA program. During the planning summer, five master teachers, selected by their colleagues, helped the project staff identify problems and dilemmas that teachers in rural settings typically face. Master teachers also serve as mentors during a six-week, afternoon apprenticeship and a semester of student teaching (Noordhoff and Kleinfeld, 1987).

Discussion

This survey of conceptual orientations identifies different theoretical positions concerning the means and ends of teacher preparation. Loosely connected to views of teaching, learning and/or learning to teach, the conceptual orientations reflect distinct program emphases. As a map of important ideas and approaches that have shaped teacher preparation, the conceptual orientations framework can be useful, but the orientations should not be treated as a set of mutually exclusive and equally valid options from which program developers might choose. The orientations highlight different issues that must be considered and none offers a fully developed framework to guide program development.

We can see the partial nature of the orientations by relating them to the commonplace of education. Like any teaching situation, the preparation of teachers involves the interaction of four elements--teacher, student, subject matter, and milieu (Schwab, 1973). A comprehensive programmatic framework would attend to each commonplace stipulating the roles of teacher educators and teacher/learners and the nature of the content and contexts for learning to teach.

Each orientation highlights a different commonplace, drawing it to the center as figure and treating the others as ground (see Figure 1). The personal orientation gives primary attention to the teacher as person and learner. It reminds us that learning to teach is a transformative process not only a matter of acquiring new knowledge and skills. It suggests that personal development is a precondition of teaching. The critical orientation focuses on the contexts of schooling, highlighting the teacher's obligations to pupils and society. It challenges teacher educators to help prospective teachers learn to create classrooms that reflect democratic principles and develop the habit of questioning taken-for-granted assumptions about teaching, learning, knowledge.

The technological and practical orientations reflect different ideas about the character of teaching and the sources of knowledge about teaching. The former stresses scientific knowledge and

systematic training; the latter stresses the "wisdom of practice" and learning from experience. Clearly both capture some truths about teaching that prospective teachers need to appreciate. Finally, the academic orientation focuses attention on the distinctive work of teachers. What distinguishes teaching from other forms of human service is its concern with helping students learn worthwhile things that they could not pick up on their own. It follows that preparing someone to teach means helping them develop understandings, skills, and dispositions related to this goal (Buchmann, 1984; Feiman-Nemser and Buchmann, 1989; Wilson, 1975).

Different orientations and approaches exist because people hold different expectations for schools and teachers and because, in any complex human endeavor, there are always more goals to strive for than one can achieve at one time. Teacher educators cannot avoid making choices about what to concentrate on. Thus, deliberations about worthwhile goals and appropriate means must be an ongoing activity in the teacher education community. In such deliberations, it would be more productive to clarify the kind of teaching one wishes to foster rather than to debate the orientation one favors.

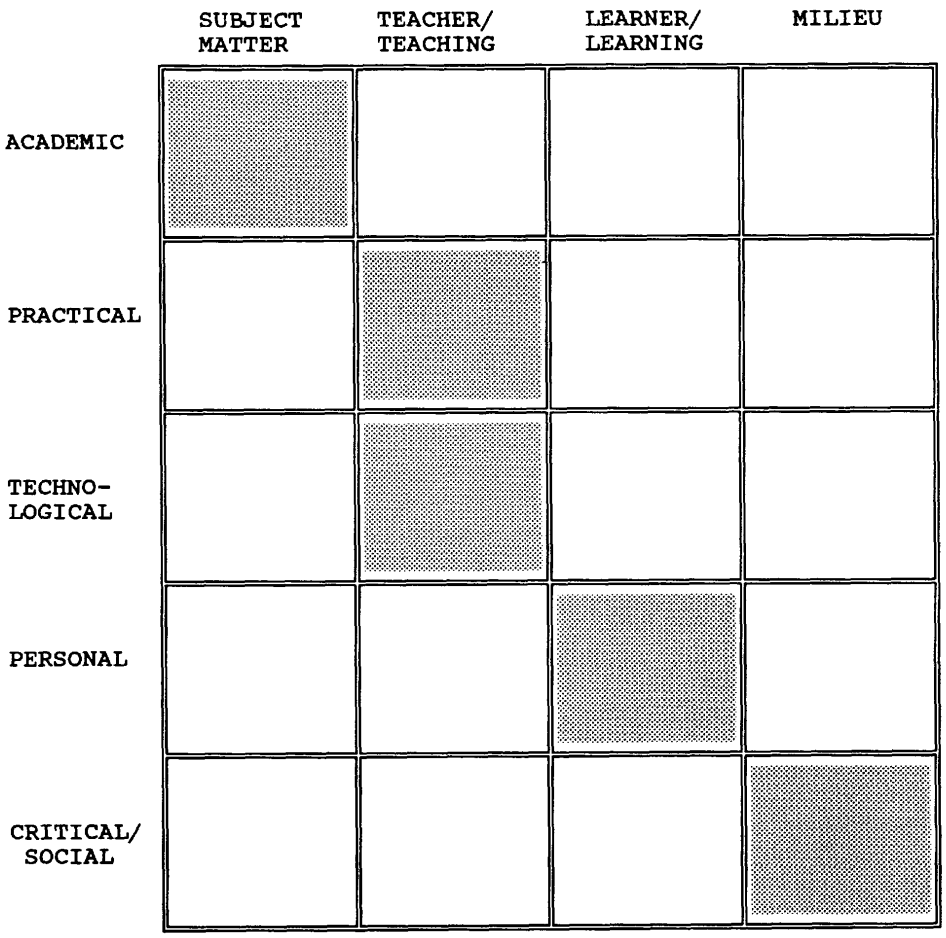

Figure 1. Conceptual orientations in relation to educational commonplaces.

References

Amarel, M. (1988a). *Site report: Academic Learning Program*. Unpublished paper, National Center for Research on Teacher Education, Michigan State University, East Lansing.

Amarel, M. (1988b). *Site report: Developmental Teacher Education*. Unpublished paper, National Center for Research on Teacher Education, Michigan State University, East Lansing.

Amon, B. P., Hutcheson, B. P., and Black, A. (1985, April). *Teachers' developing conceptions about children, learning and teaching: Observations from a clinical interview*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Anderson, C. (1988). The role of education in the academic disciplines in teacher education. In A. Woolfolk (Ed.), *Research perspectives on the graduate preparation of teachers* (pp. 88-107). Englewood Cliffs, NJ: Prentice-Hall.

Arnstine, D. (1975). *Apprenticeship as the miseducation of teachers*. Philosophy of Education 1975: Proceedings of the 31st annual meeting of the Philosophy of Education Society (pp. 113-123). San Jose, CA: Society for Studies in Philosophy and Education.

Ball, D. (1987, April), *"Laboratory" and "apprenticeship": How do they function as metaphors for practical experience in teacher education?* Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

Ball, D. (1988a). *Research on teaching mathematics: Making subject matter knowledge part of the equation* (Research Report 88-2). East Lansing: Michigan State University, National Center for Research on Teacher Education.

Ball, D. (1988b). *The subject matter preparation of prospective mathematics teachers: Challenging the myths* (Research Report 88-3). East Lansing: Michigan State University, National Center for Research on Teacher Education.

Berliner, D. (1985). Laboratory settings and the study of teacher education. *Journal of Teacher Education*, 36(6), 2-8.

Biber, B., and Winsor, C. (1967). *An analysis of the guidance function in a graduate teacher education program*. In Mental health and teacher education (46th yearbook of the Association for Student Teaching, pp. 81-119). Dubuque, IA: Brown.

Black, A. (1989). Developmental psychology as core knowledge for elementary school pedagoy and teacher education. *The Genetic Epistomologist, 17* (4), 4-14.

Brophy, J. (in press). *Advances in research on teaching: Vol. 2. Teachers' subject matter knowledge and classroom instruction*. Greenwich, CT: JAI Press.

Brophy, J., and Good, T. (1986). Teacher behavior and student achievement. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 328-375). New York: Macmillan.

Buchmann, M. (1984). The priority of knowledge and understanding in teaching. In L. Katz and J. Raths (Eds.), *Advances in teacher education* (pp. 29-50). Norwood, NJ: Ablex.

Collins, A., Brown, J., and Newman, S. (In press). Cognitive apprenticeship: Teaching the craft of reading, writing and mathematics. In L. B. Resnick (Ed.), *Cognition and Instruction: Issues and agendas*. Hillsdale, NJ: Erlbaum.

Combs, A. (1965). *The professional education of teachers*. Boston: Allyn and Bacon.

Combs, A. (1978). Teacher education: The person in the process. *Educational Leadership, 35*, 558-561.

Combs, A., Blume, R., Newman, A., and Wass, H. (1974). *The professional education of teachers: A humanistic approach to teacher education*. Boston: Allyn and Bacon.

Cremin, L., Shannon, D., and Townsend, M. (1954). *A history of Teachers College*. New York: Columbia University Press.

Dewey, J. (1904). The relation of theory to practice in education. In C.A. McMurry (Ed.), *The relation of theory to practice in the education of teachers* (Third yearbook of the National Society for the Scientific Study of Education, Part I, pp. 1-30). Chicago: University of Chicago Press.

Feiman-Nemser, S. (1987). *Talking to prospective teachers: Lessons from educational psychology*. Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

Feiman-Nemser, S., and Buchmann, M. (1989). Describing teacher education: A framework and illustrative findings from a longitudinal study of six students. *Elementary School Journal, 89*, 365-377.

Fuller, F. F., and Bown, O. (1975). Becoming a teacher. In K. Ryan (Ed.), *Teacher education* (74th yearbook of the National Society for the Study of Education, pp. 25-52). Chicago: University of Chicago Press.

Gage, N. (1978). *The scientific basis of the art of teaching*. New York: Teachers College Press.

Giroux, H., and McLaren, P. (1986). Teacher education and the politics of engagement: The case for democratic schooling. *Harvard Educational Review*, 56, 213-238.

Howey, K., and Zimpher, N. (1989). *Profiles of preservice teacher education*. Albany: SUNY Press.

Jackson, P. (1968). *Life in classrooms*. New York: Holt, Rinehart and Winston.

Jackson, P. (1986). *The practice of teaching*. New York: Teachers College Press.

Jersild, A. T. (1955). *When teachers face themselves*. New York: Teachers College Press.

Joyce, B. (1975). Conceptions of man and their implications for teacher education. In K. Ryan (Ed.), *Teacher education* (74th yearbook of the National Society for the Study of Education, pp. 111-145). Chicago: University of Chicago Press.

Joyce, B., and Showers, B. (1980). Improving inservice training: The message of research. *Educational Leadership*, *37*, 379-385.

Joyce, B., and Showers, B. (1984). *Power for staff development through research on training*. Washington, DC: Association for Supervision and Curriculum Development.

Kohl, H. (1976). *On teaching*. New York: Schocken Books.

Lampert, M. (1985). How do teachers manage to teach? Perspectives on problems in practice. *Harvard Educational Review*, *55*, 178-194.

Leinhardt, G., and Smith, D. (1985). Expertise in mathematics instruction: Subject matter knowledge. *Journal of Educational Psychology*, *77*, 247-271.

Liston, D., and Zeichner, K. (1988a, April). *Critical pedagogy and teacher education*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

Liston, D., and Zeichner, K. (1988b). Reflective teacher education and moral deliberation. *Journal of Teacher Education*, *38*(6), 2-8.

McDiarmid, G. W., Ball, D. L., and Anderson, C. (1989). Why staying ahead one chapter just won't work: Subject-specific pedagogy. In M. Reynolds (Ed.), *Knowledge base for beginning teachers*. Washington, DC: American Association of Colleges of Teacher Education.

New College. (1936). *Teachers College Record*, *38*(1), 1-73.

Nordhoff, K., and Kleinfeld, J. (1987). *Rethinking the rhetoric of "reflective inquiry": What this language came to mean in a program to prepare rural teachers*. Paper prepared for the Reflective Inquiry Conference, Houston.

Schon, D. (1983). *The reflective practitioner*. New York: Basic Books.

Schon, D. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass.

Schram, P., Wilcox, S., Lanier, P., and Lappan, G. (1988). *Changing mathematical conceptions of preservice teachers: A content and pedagogical intervention* (Research Report 88-4). East Lansing: Michigan State University, National Center for Research on Teacher Education.

Schwab, T. (1973) The practical translation into curriculum. *School Review, 81*, 501-522.

Schwab, J. (1978). Education and the structure of the disciplines. In I. Westbury and N. Wilkof (Eds.), *Science curriculum and liberal education: Selected essays* (pp. 229-272). Chicago: University of Chicago Press.

Shapiro, E. (1988). *Teacher: Being and becoming*. New York: Bank Street College.

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*, 1-22.

Stodolsky, S. (1988). *The subject matters*. Chicago: University of Chicago Press.

Tom, A. (1984). *Teaching as a moral craft*. New York: Longman.

Wilson, J. (1975). *Educational theory and the preparation of teachers*. Windsor, England: NFER.

Wilson, S., Shulman, L., and Richert, A. (1986). "150 different ways" of knowing: Representations of knowledge in teaching. In J.Calderhead (Ed.), *Exploring teachers' thinking* (pp. 104-124). London: Cassell.

Zeichner, K. (1981-82). Reflective teaching and field-based experiences in teacher education. *Interchange, 12*, 1-22.

Zeichner, K. (1983). Alternative paradigms of teacher education. *Journal of Teacher Education, 34*(3), 3-9.

Zeichner, K. (1987). Preparing reflective teachers: An overview of instructional strategies which have been employed in preservice teacher education. *International Journal of Educational Research, 11*, 565-575.

Zeichner, K., and Liston, D. (1987). Teaching student teachers to think. *Harvard Education Review*, 57, 23-48.

Zimpher, N., and Howey, K. (1987). Adapting supervisory practice to different orientations of teaching competence. *Journal of Curriculum and Supervision, 2*(2), 101-127.