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ABSTRACT

The combination of quantitative and qualitative methods as a way to improve research into the clinical preparation of teachers was studied using varied clinical-instruction models to quantify preservice teachers' perceptions of being prepared for inservice teaching. A traditional professional model emphasizes the idea of the teacher as leader and manager; an integrated model incorporates liberal theories to the professional model to emphasize the relationship between theory and practice and teacher preparedness for broader-based functions of inservice teaching. Loglinear analysis of survey results from 342 preservice teachers revealed that the overall effect of clinical instruction is highly significant (chi square = 59.18) ($p < .00001$). With pretest effects controlled, subjects' odds of perceiving themselves as fully prepared are 7.1 times greater ($p < .0001$) for "integrated-model" subjects than for "professional-model" subjects. The qualitative followup with 76 subjects, at one year, revealed that the odds of being inducted as full-time inservice teachers are 19.7 times greater (chi square = 16.19) ($p < .005$) for subjects who earlier perceived themselves as fully prepared than for those who did not. Concluding that the positive effect of the integrated model exceeds that of the professional model, the study discusses functional and significant implications of clinical instruction. Two appendixes present the criteria for selecting students teaching placement sites and evaluation forms for student use. (Contains 3 tables and 46 references.) (SLD)

Running head: IMPROVING CLINICAL PREPARATION RESEARCH

Combining Quantitative and Qualitative Methods to Improve the Research of Clinical Preparation

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Abstract

Trying the combination of quantitative and qualitative methods as a way to improve clinical preparation research, the experimenter varied clinical-instruction models to quantify preservice teachers' perceptions of being prepared for inservice teaching. Loglinear analysis revealed that the overall effect of clinical instruction is highly significant, X^2 (1, N = 342) = 59.18, $p < .00001$. With pretest effects controlled, subjects' odds of perceiving themselves as fully prepared are 7.1 times greater ($p < .0001$) for "integrated-model" subjects than for "professional-model" subjects. The qualitative follow-up, reveals that the odds of being inducted as full-time inservice teachers are 19.7 times greater ($p < .005$) for subjects who earlier perceived themselves as fully prepared than those who did not, X^2 (1, N = 76) = 16.19, $p < .0001$. Concluding that the "integrated" model's positive effect exceeds the "professional" model's, the study discusses implications of clinical instruction that is both functional and significant.

In response to an increasingly multicultural, technologically sophisticated, and legalistic social environment, the nature, scope and extent of tasks served by professional teachers has changed. Today's inservice teachers must serve not only the traditional content and pedagogical tasks but also new ones associated with legislative mandates surrounding educational equity (e.g., see LeFrancois, 1994). What is notable is that the effective performance of the new tasks requires teachers' on-going professional development, a reformed teaching function that now involves their motivation to continue learning before and after being inducted (e.g., see Zimpher, 1988). As such, the initial induction (i.e., hiring process) of today's preservice teachers encompasses not only the assessment of their emerging capacity to serve the more traditional teaching functions (e.g., see Braun, Willems, Brown, & Green, 1987) but also an evaluation of their motivation to continue learning throughout the inservice period (e.g., see Allen, Hutchinson, & Johnson, 1995).

If teacher education programs are to prepare candidates who effectively can perform the new tasks demanded in today's teaching field, then they first must consider that clinical training is the opportune time for preservice teachers' introduction to professional development activity. Second, such programs must consider that exposure to learning activity that is meaningful, relevant, and valuable inspires students' motivation to continue learning (e.g., see Brophy, 1983, 1987; Brophy & Alleman, 1991). Given these considerations and the circumstances of a rapidly changing field, the teacher preparation research must work to specify clinical conditions that effectively increase preservice teachers' capacity for effectively performing not only traditional teaching tasks but also those associated with the professional development function, thereby improving preservice teachers' chances of initial induction. This imperative is straight forward, requiring proof that (1) the proposed model of clinical instruction effects its designated outcome (i.e., is functional) and (2) its designated outcome is important beyond the model's scope (i.e., is significant).

Limitations of the Current Research on Clinical Preparation

Despite the urgency, teacher preparation research continues to propose clinical training models without providing evidence that the given model is both functional and significant (Joyce, 1988; Zeichner, 1980, 1981-1982). That is, when clinical preparation studies prove functionality, showing that changes in the model's designated outcome result from changes in its instructional conditions (e.g., see Cruickshank, 1985b, 1986), they frequently fail to take the next step, proving that the model's designated outcome is significant beyond the model's scope (see arguments by Beyer, 1986; Gore, 1987; Joyce, 1988; Lanier & Little, 1986; Zeichner, 1980, 1981-1982). Conversely, when such studies describe the model's significance, showing that the designated outcome is meaningful, relevant, and valuable to preservice teachers beyond preservice preparation (e.g., see Houston & Williamson, 1992-1993), they frequently fail to prove the model's functionality (see arguments by Beyer, 1986; Gore, 1987; Joyce, 1988). From the perspective of functional significance, many studies provide information that is less than comprehensive, inhibiting attempts at defining the efficacy of clinical preparation models.

The failure to provide comprehensive information traces to a shift in the primary approach to studying the efficacy of clinical preparation models from "quantitative" to "qualitative" methods, a phenomenon of the movement of social science inquiry away from "logical positivism" toward "constructivism." [1] Although the earlier studies of clinical training primarily were experimental, the teacher education research largely abandoned quantitative methods in the 1970's when researchers embraced ideographic techniques as the preferred approach to defining the efficacy of clinical instruction (see Joyce, 1988; Lortie, 1975; Zeichner, 1980). So doing, the research both gained and lost: it gained a capacity to define the efficacy of clinical training from the perspective of preservice teacher's experience, and it lost the capacity to attribute changes in the preservice teacher's skills and knowledge to the conditions of clinical instruction. Thus the dilemma for comprehensively researching clinical instruction models ensues.

Although experimental methods can strengthen researchers' capacity to make necessary attributions, evincing the extent of a clinical model's functionality, field constraints nevertheless limit their application to clinical situations, as experimenters must exercise control over (i.e., manipulate) conditions that for practical or ethical reasons may not be accessible (see Issac & Michael, 1995). Meanwhile, although descriptive methods can strengthen researchers' capacity to determine the significance of clinical preparation outcomes, showing the meaningfulness, relevance, and value of clinical training outcomes to preservice and inservice teachers, they nonetheless weaken researchers' capacity to attribute changes in the described outcome to changes in the describes clinical conditions (see Issac & Michael, 1995). Thus despite the long-term effort to define the conditions of appropriate clinical instruction, (e.g., see Lortie, 1975; Joyce, 1988; Lanier & Little, 1986; Zeichner, 1980, 1981-1982), the clinical models that clearly "...satisfy the prestated field experience outcomes and are also perceived as valuable to the professional development of the preservice teacher." (Wilson, 1996, p. 58) remain obscure.

As a solution, some have called for more comprehensive studies, arguing that the research of clinical preparation should "...provide examples of how quantitative and qualitative methodologies can be combined creatively in the study of field-based teacher education programs." (Zeichner, 1980, p. 53). The present study of clinical preparation responds to this call, adopting the two-fold criterion of functional significance. The study first quantifies the extent of its proposed "integrated" model's functionality for increasing preservice teachers' perceptions of being prepared for inservice teaching against a "professional" model's by manipulating the instructional conditions specific to each. It then relates this designated outcome to a meaningful, relevant, and valuable external criterion by defining the relative odds for preservice teachers of being fully inducted as inservice teachers as a direct function of their earlier preservice perceptions of being prepared.

Characteristics of Traditional Theories of Clinical Preparation

Its focus on propositional knowledge, emphasis of learning through inquiry, and humanitarian goals characterize the "liberal" theory of clinical preparation. Although few researchers would disagree with its principles, considering Dewey's ideal (as cited in Gore, 1987) of the teacher as a reflective-critical thinker to be noble, many have criticized liberal models as impractical, failing to prepare preservice teachers for surviving the "realities" of modern inservice teaching (e.g., see Berliner, 1982; Doyle & Ponder, 1977-1978; Fuller, 1969; Gore, 1987; Jackson, 1968). Still some continue to push for the full implementation and continued development of liberal approaches, arguing that the promotion of intellectual and ethical leadership is vital for effective teaching in democratic society (e.g., see Giroux, 1980, 1985; Ryan, 1988; Zeichner, 1981-1992).

Its focus on technical knowledge, emphasis of learning through practical experience, and utilitarian goals characterize the "professional" theory of clinical preparation. Despite the limitations of professional approaches for promoting intellectual and ethical leadership (e.g., see Beyer, 1986; Dewey, 1904/1965; Giroux, 1980, 1985; Gore, 1987; Hoy & Rees, 1977; Lortie, 1975; Zeichner, 1981-1982), some support the continuation and further development of professional models, arguing that the ideal of the teacher as an effective manager is valuable for achieving the institutionally desirable end of social control (e.g., see Berliner, 1982, 1983b; Cruickshank, 1986; Doyle, 1986; Doyle & Ponder, 1977-1978).

Even so, given the dearth of data on the functional significance of clinical models, the educational criticism surrounding the limitations of traditional theories seems based more upon proponents' idealism or realism and less upon their evaluation of strong evidence. As such, program developers cannot with certainty determine which of traditional models' conditions are pertinent to the issue of preparing for the new demands of today's teaching field. Encouragingly however, some teacher educators seek to re-focus the discourse, calling for investigations that look

at overcoming the limitations of both the liberal and professional approaches by integrating the strengths of both (e.g., see Lanier & Little, 1986; Zeichner, 1981-1982).

Framework for an Integrated Theory of Clinical Preparation

Going beyond traditional approaches, the alternative conception that proposes to incorporate the strengths of both liberal and professional theories should reflect characteristics that not only identify it with but also distinguish it from its conceptual forebears. The "integrated" approach to clinical preparation builds on this two-fold consideration: (1) its focus is on the relationship between theoretical and practical teaching knowledge; (2) its emphasis is learning through the critical application of theory to resolve practical issues; and, (3) its goal is to increase preservice teachers' preparedness for serving the broader-based functions of today's inservice teaching.

Focus of the Integrated Model. With its focus on the relationship between theoretical and practical teaching knowledge, the integrated model of clinical preparation promises to address not only the specific concerns of school-based practice (Zeichner, 1981-1982) but also the general concerns of professional development (Schnur & Golby, 1995). This bimodal focus simultaneously relates it to liberal theory and distinguishes it from the professional one. Not excluding the capacity of professional theory to broach important practical issues, this focus seeks to establish theoretical knowledge as the content base for resolving practical issues (Joyce, 1988).

Taking the theory-practice relationship as its focus, the integrated model promises to alter the norm ostensibly established by the professional theory's emphasis of learning "how to" at the expense of understanding "why so" (e.g., see Baxter, 1992-1993; Gibson, 1986). At the level of clinical training, the integrated model's focus aims to change preservice teachers' perspectives at the school placement site, providing them with alternative research-based ways to resolve practical issues. Equipped with these alternatives, preservice teachers become less subject to the problem of uncritically accepting the experience-based practices of their clinical supervisors (e.g., see Lortie, 1975; Joyce, 1988; Zeichner, 1981-1982).

Emphasis of the Integrated Model. Like its professional predecessor, the integrated model of clinical preparation differs from the liberal model by its emphasis of learning experiences that increase preservice teachers' capacity to meet the immediate demands of the practical situation. Yet, unlike the professional model, it seeks to accomplish this through a series of projects the successful completion of which require preservice teachers to use theoretical knowledge to resolve the clinical situation's emerging issues (Joyce, 1988; Schnur & Golby, 1995). Such applications obviously result in material products. Under the integrated model's assessment strategy, that is through the means of portfolio construction and assessment, the highly observable material products serve three important uses.

The first use is to provide accurate and corrective data to help preservice teachers improve their understanding of and appreciation for the relationship between theoretical and practical teaching knowledge (Joyce, 1988). The second, but no less important use, involves generating data to monitor the status of instructional objectives. The third use is to secure the empirical evidence (i.e., in portfolio form) that demonstrates for prospective employers the extent of the prospective teacher's capacity for performing traditional teaching functions and motivation to continue learning through on-going professional development. This concrete evidence promises to increase the probability of preservice teacher's being fully inducted (i.e., hired full-time) as inservice teachers (Braun, Willems, Brown, & Green, 1987), the first meaningful step after preparation into professional teaching.

Goal of the Integrated Model. The integrated model's designated goal is to increase preservice teachers' preparedness for serving the broad-based functions of today's professional teaching: instructional planning, lesson presentation, classroom management, classroom assessment, and professional development. The compass of this goal includes preservice teachers' cognitive and motivational development. As such, this goal is neither exclusively humanitarian (i.e., only serving personally meaningful ends) nor strictly utilitarian (i.e., only serving socially

meaningful ends) but psychosocial (i.e., serving the personally meaningful ends that have clear implications for future social behavior).

More precisely, these functions encompass the goals of liberal theory, including such teaching tasks as: creating democratic school environments; engaging in educational research and scholarship; articulating a morally defensible educational philosophy, understanding the ethical and moral aspects of teaching (e.g., see Ryan, 1988; Giroux, 1980, 1985; Zeichner, 1981-1982). These functions also encompass the goals of professional approaches, including such tasks as: preparing and teaching complete and appropriate unit and daily lesson plans; assessing and managing unacceptable classroom behavior; motivating and sustaining student interest and involvement (see Berliner, 1982, 1983b; Cruickshank, 1986; Doyle, 1986). Finally, these functions encompass behaviors not specifically identified with either liberal or professional approaches, such as: fostering students' cognitive skills through the use of technology (e.g., see Salomon, Perkins, & Globerson, 1991); teaching students of diverse linguistic, ethnic, cultural, sexual, and socioeconomic backgrounds (e.g., see LeFrancois, 1994; Colville-Hall, MacDonald, & Smolen, 1995); conducting alternative forms of assessment (e.g., see Airasian, 1994); and so forth.

Empirical models express the general characteristics of theories in concrete terms. In the context of clinical preparation, this means that the organization, implementation, and evaluation of the clinical instruction represent the parent theory's defining characteristics. As such, the organization, implementation, and evaluation of a liberal model's instruction (i.e., conditions designed for humanitarian ends) necessarily differ from a professional model's instruction (i.e., conditions designed for utilitarian ends). The work for the present research then is to relate the integrated model's unique instructional conditions to that designated outcome that effectively predicts preservice teachers' induction into inservice teaching. To facilitate this work, the study turns attention to preservice teachers' perceptions of being prepared.

The Research on Individuals' Perceptions of Being Prepared

The data on self-efficacy beliefs demonstrate that the way we evaluate our efficacy in meeting the demands of a given situation has consequences for our future capacity to meet those demands (Bandura, 1977, 1982, 1993; Bandura & Wood, 1989). That is, the greater one's perception of efficacy at successfully meeting task demands, the greater one's motivation to learn and thus become competent and persistent performers in the future (Bandura, 1977, 1993; Bandura & Wood, 1989). These circumstances establish a basis for using present behavior (i.e., judging one's own efficacy to perform specific tasks) to predict future behavior (i.e., performing specific tasks). Such circumstances have clear implications for studying relations between preservice teachers' present judgments of being prepared and their future induction as inservice teachers.

For example, based on Lent and Hackett's (1987) study of the impact of self-efficacy beliefs on career development, one would expect to find that those preservice teachers with relatively greater perceptions of self-efficacy for inservice teaching also are more successful in being fully inducted as inservice teachers than those with relatively fewer perceptions. In identifying increases in preservice teachers' self-efficacy beliefs with the organization, implementation, and evaluation of clinical training, Wilson (1996) suggests that variability in the conditions of clinical instruction affects variability in preservice teachers' self-judgments about their efficacy for inservice teaching. In their study of inservice teachers' behavior surrounding instructional planning and delivery, Gibson and Dembo (1984) suggest that the differences in preservice teachers' self-efficacy can account for variability in their perceptions of their instructional skill as inservice teachers.

Given that self-efficacy theory addresses both the preservice and inservice periods of the individual's teaching career, one need not wonder why some surmise that preservice teachers' perceptions of efficacy for teaching holds great promise for explaining variability in clinical preparation outcomes (e.g., see Ashton, 1984) and ostensibly variability in their motivation to continue learning as inservice professionals. In the present study, preservice teachers' self-

evaluations of being ready to perform the aforementioned broad-based teaching functions describe their perceptions of being prepared for inservice teaching.

Insofar as preservice teachers' perceptions of being prepared represent self-efficacy beliefs, the study reasonably anticipates that the probability of being fully inducted as an inservice teacher will be greater for former preservice teachers who earlier reported greater perceptions of being prepared than those who earlier reported fewer perceptions of being prepared for teaching. This anticipation inspires the present study to use preservice teachers' perceptions of being prepared to define the functional significance of the models considered here. Thus the theory and research of self-efficacy beliefs frame the major question for this study of clinical preparation: what is the extent of the proposed integrated model's functional significance?

Purposes

The general purpose of this study is to explore an alternative approach to the problem of improving preservice teachers' clinical preparation. To fulfill this purpose, the study set out to define the functional significance of an integrated model of clinical preparation by combining quantitative and qualitative methods. In this study "functional significance" refers to a clinical model's capacity to produce a designated outcome (i.e., is functional) that is meaningful, relevant, and valuable to preservice teachers beyond the model's scope (i.e., is significant). Given this definition, the study reasoned that its design must facilitate (1) the plausible attribution of variability in the proposed model's designated outcome to changing clinical conditions and (2) the evaluation of relations between this designated outcome and a pertinent criterion that transcends the scope of preservice preparation. This study surmised that the combination of experimental and descriptive methods could help fulfill this requirement.

Hypothesis and Rationale. This study tests the hypothesis that the functional significance of an integrated model of clinical instruction will surpass the functional significance of a professional model. The justification for this hypothesis rests on the general assumption that the relationship between models' instructional conditions and outcomes is causal. Although very few

clinical preparation studies directly test this general assumption, every study that attempts to attribute a clinical preparation outcome to the conditions of clinical instruction, whether the attempt is implicit or explicit, presupposes its truth.

If the general relationship between a clinical model's conditions and its designated outcomes indeed is causal, then one can expect that variability in its designated outcomes is a direct function of variability in the organization, implementation, and evaluation of the clinical instruction. As such, the study that varies these instructional conditions will induce variability in the clinical model's designated outcome, since these conditions are germane to the model. The subsequent analysis of induced variability will exact the instructional conditions under which the given model's designated outcome is maximal, moderate, and minimal.

In the present experiment, if the subsequent analysis of induced variability shows that the integrated model produces greater perceptions of being prepared than the comparison professional model, and the odds of being fully inducted as an inservice teacher increases as a function of increased perceptions, then the study necessarily must accept its hypothesis as one that is plausible. Given the plausibility of its hypothesis, the study will have evidence for cogently discussing the cognate issues of improved clinical training, overall teacher preparation, and ultimately the teaching profession.

Method

Subjects

The subjects were a non-random sample of teaching candidates ($N = 342$) who matriculated during two consecutive academic years, 1993-94 and 1994-95, at an urban Massachusetts college. The sample was 80% female and 20% male. Among females the 77.5% majority were students in Primary Education disciplines, while the remaining 22.5% minority were in Secondary Education disciplines. Conversely, among males the 63.2% majority were in Secondary Education disciplines, while the 36.8% minority were in Primary Education ones. The slight majority (51.6%) of subjects' were placed in the program's "criterion schools" and the remaining minority

(48.4%) in "non-criterion" schools. [2] Finally, the majority (65.2%) of the subjects were matriculating for the baccalaureate degree, while the remaining minority (34.2%) were baccalaureate degree holders in search of state-approved teaching certificates.

One-Year, Follow-Up Survey. For the one-year, follow-up study the subjects were a non-random, sub-sample (n = 142) drawn from the above described larger sample. The sub-sample was 76.7% female and 20.3% male. Among females the 78.4% majority were graduates of Primary Education disciplines, while the remaining 21.6% minority were graduates of Secondary Education disciplines. Conversely, among males the 55.6% majority were graduates of Secondary Education disciplines, while the 44.4% minority were graduates of Primary Education ones. A slight majority (53.4%) of the sub-sample's subjects were in the program's "criterion schools" and the remaining (46.6%) was in its "non-criterion" schools. Finally, the majority (61.7%) of sub-sample subjects matriculated for the baccalaureate degree while in the teaching program, and the remaining minority (34.6%) were then baccalaureate degree holders in search of state-approved teaching certificates.

Experimental Design

The paradigm that guides this quasi-experimental field research is the clinical preparation situation wherein the organization, implementation, and evaluation of the clinical instruction systematically varied among preservice teachers. According to its strategy, the study treated some to the conditions of "integrated-clinical instruction" (ICI) and others to those of "professional-clinical instruction" (PCI).

The study employed a modified non-randomized, pretest-posttest, control-group design (Issac & Michael, 1995) to study variability in the subjects' perceptions of being prepared as a function of variability in the instructional conditions. The modification consists in the fact that the present study did not randomly assign its experimental treatments to groups. Failing to assign treatments randomly weakens the study's reasonable attribution of variability in the subjects'

perceptions of being prepared to variability in the conditions of clinical instruction. The study addresses this issue forward under "Discussion: Weaknesses of the Study."

Measures and Factors

The criterion measure was "preservice teachers' perceptions of being prepared for inservice teaching." This measure is a nominal-level criterion with two categories, either "fully" or "not fully" prepared.

Independent and Classificatory Factors. The independent factor was "clinical instruction conditions" a two-level categorical factor. One level defines subjects' exposure to the conditions of "integrated-clinical instruction," while the other level defines subjects' exposure to the conditions of "professional-clinical instruction."

To define the effects of extraneous variables, the experimenter classified subjects on four other fixed two-level categorical factors: (1) clinical placement type, (i.e., criterion or non-criterion school); (2) discipline area, (i.e., Primary or Secondary Education); (3) sex (i.e., male or female); and (4) educational background (i.e., BA completed or BA not completed).

Definitions

The notion of "integrated-clinical instruction" represents the conditions wherein clinical instruction is: (a) organized so that the principal charge for imparting clinical knowledge and skills is to the school-based roles of "Cooperating Teacher" and "College Supervisor" and the college-based role of the "Seminar Leader"; (b) implemented by supplementing the clinical training with a weekly campus-based "developmental" seminar; and (c) evaluated on the basis of formal collaborative reports from the "Cooperating Teacher," "College Supervisor," and "Seminar Leader" that describe their student teacher's emerging capacity for performing broad-based teaching functions.

In contrast the notion of "professional-clinical instruction" represents the conditions wherein clinical instruction is: (d) organized so that the principal charge for imparting clinical knowledge and skills is to the school-based roles of "Cooperating Teacher" and "College

Supervisor"; (e) implemented by supplementing the clinical training with a monthly campus-based "informational" seminar; and (f) evaluated on the basis of formal collaborative reports from the "Cooperating Teacher" and "College Supervisor" that describe their student teacher's emerging capacity to perform broad-based teaching functions.

The "developmental" seminar describes a course of study, one wherein the overall objective is to advance the growth of students' applied teaching skills. Program functionaries monitor the developmental seminar's overall objectives using preservice teachers' completed class projects, the material products of which each uses to construct the requisite portfolio. In contrast the "informational" seminar describes a forum wherein the objective is to introduce students to recent and relevant information about the topics and issues germane to professional practice often by inviting speakers with demonstrated expertise in a given topic area.

Operations. Subjects' scores on the 25 subscales and five subtests of the "End-of-Program: Candidate Evaluation Form: Part III" (EOP III) self-evaluation instrument (refer to Appendix B-1) defines "preservice teachers' perceptions of being prepared." EOP III subscale scores measure subjects' perceptions of being prepared to complete 25 common teaching tasks, while it's five subtests, composites of subjects' subscale responses, define the broad-based functions of inservice teaching (i.e., instructional planning, lesson presentation, classroom assessment, classroom management, and professional development).

Subjects' responses to the "Professional Studies in Education Program: Program Graduate Evaluation Form: Part V" (PGE V) survey instrument (refer to Appendix B-2) defines the notion of "initial induction into inservice teaching" with their full-time, part-time status as inservice teachers. As a strategy for defining "inservice teachers' perceptions of being prepared," the one-year, follow-up survey asks program graduates to complete the "PGE III" instrument, the same EOP III device that they twice completed as preservice teachers, at the beginning and end of their clinical training. The results of the EOP III and PGE III reliability and validity studies are under "Instrumentation."

Instrumentation

The EOP III self-evaluation instrument seeks to define variability in subjects' perceptions of being prepared to perform various teaching tasks (refer to Appendix B-1). EOP III required subjects to rate on four-point categorical scale (i.e., "Not At All Prepared" to "Poorly Prepared" to "Well Prepared" to "Very Well Prepared") the extent to which they perceived themselves as prepared to complete 25 different teaching tasks. To guide subjects toward an accurate representation of their perceptions, the experimenter provided them with a description of the meaning of each category (refer to Appendix B-3).

The experimenter collapsed EOP III responses into dichotomous categories: "Adequately Prepared" (i.e., either "Well Prepared" or "Very Well Prepared" ratings) or "Inadequately Prepared" (i.e., either "Poorly Prepared" or "Not At All Prepared" ratings). Thus an item score of 1 indicates that a subject perceived him or herself as adequately prepared to perform a teaching task defined by the given item's content; conversely, an item score of 0 indicates that he or she felt inadequately prepared to perform a given task. Overall EOP III scores thus can range from 0 to 25. The category "fully prepared" describes the lower-bound estimate of the highest-possible overall EOP III score (i.e., a score of 25 minus the instrument's margin-of-error).

Five subtests drawn on related EOP III items represent broad-based teaching functions. Subtests scores range from 0-100% to represent the degree of subjects' perceptions of being prepared to perform a specific teaching function. The category "fully prepared" describes the lower-bound estimate of the highest-possible EOP III subtest score (i.e., a score of 100% minus the given subtest's margin-of-error). A description of the empirical justification for EOP III subtests is under "Construct Validity."

Reliability. A study of the relationship between EOP III as a pretest and then as a posttest not surprisingly shows that the scores are less than moderately correlated ($r = .3265$), suggesting that subjects' responses are quite different across the two administrations, as pretest scores explain only 10.7% ($r^2 = .107$) of the posttest variance. Since score differences are substantive in this

study, the study took the "Reliability of Difference Scores" approach (see Crocker & Algina, 1986) to estimate the reliability of the EOP III instrument. Table 1 shows the data for this determination.

Insert Table 1 about here

Considering the Table 1 data, the research estimates that the capacity of the EOP III instrument for consistently defining the differences in pretest and posttest scores is very good (r_{dd} = .846). Given the mean (M = 20.9) and standard error of measurement (SEM = 1.5), the study further estimates that the EOP III instrument's error rate across the two administrations is plus or minus 3.00 score points. Given these results, the estimate is 95% of true EOP III scores are within 18 and 24 score points.

Construct Validity. Considering the correlational structure of EOP III posttest scores, the study hypothesized that a factor analysis would uncover five latent factors in the data. As hypothesized, the confirmatory factor analysis uncovered five factors in the posttest scores. Table 2 shows the factors and rotated item loadings.

Insert Table 2 about here

As the study sought the orthogonal solution to interpreting the set of factors, the coefficients in Table 2 represent correlation coefficients. Considering these correlations, the study identified the five latent factors as it's broad-based teaching functions. Looking at significant loadings (i.e., those equal to or greater than .30), the study derived the EOP III's five subtests. In the order of their contribution to common variance, the EOP III subtests represent subjects' perceptions of being prepared to perform the: (1) lesson presentation, (2) instructional planning, (3) professional development, (4) classroom assessment, and (5) classroom management functions of inservice teaching.

Criterion-Related Validity. To further define EOP III validity, the study looked at the usable one-year, follow-up PGE III ($N = 61$) and PGE V ($N = 76$) scores. Table 3 shows the correlations and significance levels indexing the interrelations of respondents' previous (i.e., EOP III posttest scores) perceptions of being prepared, current (i.e., PGE III scores) perceptions of being prepared, and current (i.e., PGE V scores) induction status.

Insert Table 3 about here

As Table 3 shows, five subtest scores that represent the samples' previous perceptions of being prepared for lesson presentation, instructional planning, professional development, classroom assessment, and classroom management significantly correlate with the PGE V induction status scores.

Testing subtest scores against the rate at which the respondents became employed in teaching, the research discovered that the relative odds of being inducted (i.e., employed) full-time versus part-time as an inservice teacher are a direct function of their earlier professional development subtest scores, Model X^2 $(1, N = 76) = 16.19$, $p < .0001$. With the effects of the other four EOP III subtests controlled, the odds of being employed full-time as an inservice teacher are nearly twenty (19.7) times greater ($p < .005$) for respondents who as preservice teachers perceived themselves as fully prepared for professional development than for those who perceived themselves as not fully prepared to perform professional development tasks. Given these data, the research surmises that the EOP III's professional development subtest score constitutes a valid predictor of preservice teachers' future induction status as inservice teachers. Satisfying such an external criterion, this validity evidence has implications for the study's hypothesis. These implications are under "Discussion: Hypothesis Evaluation."

Data Gathering Procedures

The experimenter, serving as director of the student teaching program, enacted the conditions of professional-clinical instruction during AY 1993-1994, the first data-gathering phase. During AY 1994-1995, the experimenter enacted the conditions of the integrated-clinical instruction, the second data-gathering phase. Throughout the two phases of data gathering, the experimenter administered the EOP III to all subjects twice, first as a pretest and then as a posttest.

Pretesting Procedure. After the subjects assembled for the first large-group session, an orientation to student teaching, the experimenter distributed the EOP III and its categorical guidelines (refer to Appendixes B-1 and B-3). The experimenter instructed subjects to use the guidelines to complete each of the 25 EOP III items, work alone, and raise their hands for help if they had questions. After subjects finished, the experimenter collected the completed forms and coded and entered responses into the computerized data base for statistical analysis.

Treatment of AY 1993-1994 Subjects. During the two semesters of AY 1993-1994, the experimenter exposed the subjects (n = 232) to PCI conditions. That is, the two school-based clinical supervisors (i.e., Cooperating Teacher and College Supervisor) were responsible for the impartation and evaluation of clinical knowledge and skills. Over the course of the 16-week semester, the subjects attended four three-hour, large-group seminars. The seminar focused on providing information about a broad range of practical issues, such as: appropriate classroom assessment and management strategies, managing "ADHD" students, conducting effective parent-teacher conferences, appropriate assessment of learning, filing state-certification documents, hints on job search. In the informational seminar, the subjects did not actively engage in developmental learning activities, and none of the seminar speakers formally assessed the subjects to determine the supplemental instruction's efficacy.

Treatment of 1994-1995 Subjects. During the two semesters of AY 1994-1995, the experimenter exposed the subjects (n = 110) to ICI conditions. That is, the two site-based supervisors (i.e., Cooperating Teacher and College Supervisor) and the college-based Seminar

Leader were responsible for the impartation and evaluation of clinical knowledge and skills. Over the course of the 16-week semester, the subjects sat once a week in seminar for the developmental instruction.

The 1994-1995 subjects attended two three-hour, large-group informational seminars. One, the first seminar, was an orientation session; and the second, the last seminar dealt with certification procedures. In between the subjects attended an average of nine three-hour developmental seminars wherein the Seminar Leader focused on the relationship between theoretical and practical knowledge. The Seminar Leader specifically assigned and monitored a series of theory-based projects that required subjects to demonstrate their clinical skills after reviewing the theoretical background of and research on a given topic. Thus the Seminar Leader required subjects in the integrated-field experience condition to apply theory on behalf of resolving practical issues.

To further ensure learning through the application of theoretical knowledge to practical issues, the College Supervisor's formative evaluations of practice teaching provided corrective commentary for improving seminar projects (i.e., non-judgmental information about the integrity of subjects' overall unit plan, required daily lesson plans, presentation of the planned material, and plan for evaluating the instruction and learning).

The subjects used the materials produced by their completion of the various assigned projects to construct portfolios. College supervisors formally evaluated subjects' portfolios to determine the progress of growth in subjects' applied skills and professional development. Thus, unlike the 1993-1994 subjects' college-based seminar, the 1994-1995 subjects completed the seminars' learning tasks, demonstrating their emerging capacity for performing various teaching tasks and functions in their material production, the portfolio.

Posttesting Procedures. After the subjects assembled for their final large-group session, the experimenter distributed the EOP III and its categorical guidelines. As in pretesting, the experimenter again instructed the subjects again to use the categorical guidelines to complete each

EOP III item (see Appendixes B-1 and B-3). The experimenter instructed the student teachers to work independently and to raise their hands for help if necessary. The experimenter collected the completed forms, coded the responses, and entered them into the computerized data base for statistical treatment. The experimenter employed the SPSS-X version 4.0.3 statistical software package for the Macintosh personal computer (SPSS, 1990) for the analyses of the data.

One-Year, Follow-Up Survey Procedures. One year after completing the student teaching program, the experimenter mailed the categorical guidelines, PGE form, and a self-addressed stamped envelope to all graduates. After receiving initial responses, the experimenter directed staff members to call the non-respondents and conduct telephone interviews using the PGE V as the telephone interview instrument. The mail and telephone strategy resulted in a 41.5% response rate ($N = 142$) for the PGE V survey of induction status. Of this group, the 51.4% majority reported that they are full-time inservice teachers, the 19.7% smaller minority reported that they are part-time inservice teachers, and the 28.9% larger minority reported that they either are not working as inservice teachers or not at all employed.

The experimenter coded the responses, and entered them into the computerized data base for statistical treatment, again employing the SPSS-X version 4.0.3 statistical software (SPSS, 1990) for the data analyses.

Findings

The analysis uses loglinear regression to define the systematic relationship between the factors and the criterion measure. It employs chi-square analysis to define the conditions under which subjects' post-clinical perceptions of being fully prepared are independent of their pre-clinical perceptions of being fully prepared. Finally, the analysis uses loglinear regression to define the systematic relationship of earlier and current measures of the designated outcome and subjects' current induction status.

Testing the Assumption of Uncorrelated Error. Given the collection of data over time and the general assumptions of multiple regression models, the analysis tested the extent to which the

assumption of uncorrelated error is intact by regressing the factors of a fully-saturated general linear model on the overall measure of perceptions of preparedness. The yield of this regression was a Durban-Watson statistic (D) for testing autocorrelation. Adopting the decision rule to reject H_O: $\rho > 0$ if $D > d_u$, (Neter, Wasserman, & Kutner, 1985), the analysis produced evidence that the pretest and posttest data meet the assumption of uncorrelated error, as the pretest D (1) = 1.95 $> d_u$ = 1.69 and the posttest D (1) = 1.71 $> d_u$ = 1.69. In both cases, the experimenter concluded that the assumption of uncorrelated error is intact in the present study, rejecting the null hypothesis at $p < .05$.

Loglinear Regression

Testing a fully saturated loglinear model, the study regressed the factors and interactions on the overall EOP III scores as a means to derive a reduced regression model. To quantify the impact of factors on specific teaching functions, the study separately regressed the reduced model's factors on each of the EOP III's five subtest measures.

Inclusion-Exclusion Criteria. The study adopted two criteria for excluding factors from the fully saturated model: (a) a main effect with a significance level falling outside the $p < .01$ probability limit or (b) involvement in a significant interaction with no accompanying significant main effect. The satisfaction of either of the two criteria qualified factors for removal.

As its strategy for solving the regression problem, the study adopted a forward-stepwise, two-block approach. To test the main effect of pretest preparedness, the experimenter entered it into the equation during the initial analytical block. During the second block, the experimenter entered the independent and classificatory factors to test their main effects and interactions. Using this approach, the study isolated the pretest effect and, based on their contribution to the explanation of variance, identified the factors for removal or retention.

Derivation of the Reduced Model. The test of the fully saturated model showed that: the main effects of the pretest and the clinical instruction factors are significant; the interaction of pretest scores and the field-experience factor were not significant; and none of the classificatory

factors' main effects were significant. With all insignificant terms removed, the study's reduced regression model consisted of the pretest and clinical instruction factors.

To test the functionality of ICI conditions against PCI conditions, the study employed odds ratios computed as a linear function of the reduced models' regression coefficients (e.g., see Affifi & Clark, 1984).

Perceived Preparedness for Performing General Teaching Tasks

The reduced-model regression of factors on the overall posttest preparation scores reveals that the main effect of the pretest factor is significant, Model $\underline{X}^2$ (1, $\underline{N}$ = 342) = 4.752, $\underline{p}$ < .0001. However, the inclusion of the clinical instruction factor into the equation significantly improves the model's explanatory-predictive power, Improvement $\underline{X}^2$ (1, $\underline{N}$ = 342) = 59.182, $\underline{p}$ < .00001. The reduced model correctly predicts 71.35% of the cases, as its fit to the overall preparedness data is near moderate, Fit $\underline{X}^2$ (339, $\underline{N}$ = 342) = 341.706, $\underline{p}$ < .4486. The odds of subjects perceiving themselves as fully prepared on the posttest measure are 2.9 times greater for those who perceived themselves as fully prepared on the pretest measure than those who did not see themselves as fully prepared on the pretest measure ($p < .0001$). With pretest differences controlled, however, the odds of subjects perceiving themselves as fully prepared for performing general teaching tasks are 7.1 times greater for ICI subjects than PCI subjects ($\underline{p} < .00001$).

The 2 x 2 contingency analysis of the pretest and posttest preparedness frequencies by clinical instruction conditions reveals that the association between pretest and posttest scores is highly significant for PCI subjects, $\underline{X}^2$ (1, $\underline{N}$ = 225) = 12.69, $\underline{p}$ < .0003, while it is not significant for ICI subjects. The odds for subjects perceiving themselves as fully prepared on the posttest, when they first did not perceive themselves as fully prepared on the pretest, are 7.4 times greater for ICI subjects than for PCI subjects, $\underline{X}^2$ (1, $\underline{N}$ = 232) = 45.69, $\underline{p}$ < .00001. The odds for subjects perceiving themselves as fully prepared on the posttest, when they first perceived themselves as fully prepared at pretesting, are about 6.2 times greater for ICI subjects than for PCI subjects, $\underline{X}^2$ (1, $\underline{N}$ = 110) = 12.62, $\underline{p}$ < .0003.

Perceptions of Preparedness for Performing Specific Teaching Functions

To further specify the relations between perceptions of being fully prepared and clinical instruction conditions, the study applied the fully saturated model to each of the EOP III's five subtest scores, retaining factors according to the aforementioned criteria. Each of the five reduced models included an interaction term for testing the significance of the interaction between the pretest and the clinical instruction factor, as the initial full-model regression revealed that the main effects of both were highly significant. What follows are the results of five separate reduced-model regressions, one conducted on each of the EOP III subtests, scores that represent the lesson presentation, instructional planning, professional development, classroom assessment, and classroom management functions of inservice teaching.

Lesson Presentation Function. The results of the reduced-model regression of factors on the posttest lesson presentation scores revealed that the main effect of the pretest lesson presentation scores is significant, Model $\underline{X}^2$ (1, $\underline{N}$ = 342) = 12.4, $\underline{p}$ < .0004. Meanwhile, the interaction of pretest and clinical instruction factors is not significant. However, the inclusion in the equation of the clinical instruction factor significantly improves the regression model's explanatory-predictive power, Improvement $\underline{X}^2$ (1, $\underline{N}$ = 342) = 38.367, $\underline{p}$ < .00001. Meanwhile, the fit of this reduced model to the lesson presentation data, Goodness-of-Fit $\underline{X}^2$ (329, $\underline{N}$ = 342) = 343.391, $\underline{p}$ < .4233, is such that it correctly predicts 65% of the lesson presentation cases.

The odds of subjects perceiving themselves on the posttest measure as fully prepared for lesson presentation are 3.2 times greater for those who perceived themselves as fully prepared on the pretest measure than those who did not ($p < .00001$). Irrespective of their pretest perceptions, however, the odds of subjects perceiving themselves as fully prepared for lesson presentation are 6.5 times greater for ICI subjects than PCI subjects, $\underline{p}$ < .00001.

With field experience conditions controlled, a 2 x 2 contingency table analysis of subjects' perceptions of being either fully or not fully prepared by pretest and posttest preparedness reveals that the association between pretest and posttest perceptions of being prepared for lesson

presentation is highly significant for PCI subjects, X^2 (1, N = 225) = 24.242, p < .000001. In contrast this association is not significant for ICI subjects.

Instructional Planning Function. The reduced-model regression of factors on the posttest instructional planning scores revealed that the main effect of pretest perceptions of being fully prepared for instructional planning is significant, Model X^2 (1, N = 341) = 13.75, p < .0002. At the same time, the interaction of pretest and clinical instruction factors was not significant. The main effect of the clinical instruction factor is such that its inclusion in the equation significantly improves the model's explanatory-predictive power, Improvement X^2 (1, N = 341) = 40.219, p < .00001. Meanwhile, the fit of this reduced model to the instructional planning data, Goodness-of-Fit X^2 (338, N = 341) = 350.159, p < .3129, is such that the model correctly predicts 71.2% of the instructional planning cases.

The odds for subjects perceiving themselves on the posttest measure as fully prepared for instructional planning are 3.7 times greater for those who perceived themselves as fully prepared on the pretest measure than those who did not (p < .00001). Despite their status on the pretest, the odds for subjects perceiving themselves as fully prepared for instructional planning are 5.7 times greater for ICI subjects than PCI subjects (p < .00001).

With clinical instruction conditions controlled, a 2 x 2 contingency table analysis of subjects' perceptions of being either fully or not fully prepared by pretest and posttest preparedness shows that the association between pretest and posttest perceptions of being prepared for instructional planning is highly significant for PCI subjects, X^2 (1, N = 224) = 23.36, p < .000001. Meanwhile, for ICI subjects, this association is not significant.

Professional Development Function. The result of the reduced-model regression of factors on the posttest professional development scores revealed that the main effect of pretest perceptions of being fully prepared for professional development is significant, Model X^2 (1, N = 341) = 5.979, p < .01; meanwhile, the interaction of pretest and clinical instruction factors was not

significant. The main effect of the clinical instruction factor, however, is such that its inclusion in the equation significantly improves the model's explanatory-predictive power, Improvement $\underline{X}^2$ $(1, \underline{N} = 341) = 47.387, \underline{p} < .00001$. Moreover, the fit of this reduced model to the professional development data, Goodness-of-Fit $\underline{X}^2$ $(338, \underline{N} = 341) = 334.506, \underline{p} < .5435$, is such that it correctly predicts 71.8% of the professional development cases.

The analysis of pretest effects revealed that the odds for subjects perceiving themselves as fully prepared for professional development are 3.6 times greater for those who perceived themselves as fully prepared on the pretest measure of professional development than those who did not see themselves as fully prepared on this pretest ($p < .00001$). Pretest odds notwithstanding, the odds of subjects perceiving themselves as fully prepared for professional development are 6.5 times greater for ICI subjects than those for PCI subjects ($\underline{p} < .0001$).

Controlling for clinical instruction conditions, a 2 x 2 contingency table analysis of subjects' perceptions of being either fully or not fully prepared by pretest and posttest preparedness revealed that the association between pretest and posttest perceptions of being prepared for professional development is highly significant for PCI subjects, $\underline{X}^2$ $(1, \underline{N} = 224) = 20.936, \underline{p} < .000001$. In contrast this association is not significant for ICI subjects.

Classroom Assessment Function. The regression of factors on the posttest classroom assessment scores revealed that the main effect of pretest perceptions of being fully prepared for classroom assessment is significant in the regression model, Model $\underline{X}^2$ $(1, \underline{N} = 341) = 19.765, \underline{p} < .0001$. Meanwhile, the interaction of pretest and clinical instruction factors was not significant. The main effect of the clinical instruction factor is such that its inclusion in the equation significantly improves the model's explanatory-predictive power, Improvement $\underline{X}^2$ $(1, \underline{N} = 341) = 42.025, \underline{p} < .00001$. The fit of this reduced model to the classroom assessment data, Goodness-of-Fit $\underline{X}^2$ $(338, \underline{N} = 341) = 344.088, \underline{p} < .3981$, is such that it correctly predicts 67.4% of the classroom assessment cases.

The odds for subjects perceiving themselves on the posttest measure as fully prepared for classroom assessment are 4.1 times greater for those who perceived themselves as fully prepared on the pretest measure than those who did not see themselves as fully prepared for this function ($p < .00001$). Regardless of their pretest perceptions, the odds for subjects perceiving themselves as fully prepared for classroom assessment are 5.2 times greater for ICI subjects than PCI subjects ($p < .00001$).

A 2 x 2 contingency table analysis of the frequencies of subjects' perceptions of being either fully or not fully prepared by pretest and posttest categories, with clinical instruction conditions controlled, revealed that the association between pretest and posttest perceptions of being prepared for classroom assessment is highly significant for PCI subjects, X^2 $(1, N = 224) = 36.09$, $p < .000001$. At the same time, this association is not significant for ICI subjects.

Classroom Management Function. The result of the reduced-model regression of factors on the posttest classroom management scores revealed that the main effect of pretest perceptions of being fully prepared for classroom management is significant, Model X^2 $(1, N = 342) = 10.486$, $p < .001$. Meanwhile the analysis showed that the interaction of pretest and clinical instruction factors was not significant. The main effect of the clinical instruction factor is such that its inclusion significantly improves the model's explanatory-predictive power, Improvement X^2 $(1, N = 342) = 68.842$, $p < .0001$. The fit of this reduced model to the classroom management data, Goodness-of-Fit X^2 $(339, N = 342) = 341.852$, $p < .4459$, is such that this model correctly predicts 71.3% of the classroom management cases.

The odds for subjects perceiving themselves on the posttest measure as fully prepared for classroom management are 4.3 times greater for those who perceived themselves as fully prepared on the pretest measure than those who did not see themselves as fully prepared for this function ($p < .00001$). Regardless of their pretest perceptions, the odds for subjects perceiving themselves as fully prepared for classroom management are 8.9 times greater for ICI subjects than those for PCI subjects ($p < .00001$).

A 2 x 2 contingency table analysis, with clinical instruction conditions controlled, revealed that the association between pretest and posttest perceptions of being prepared for classroom management is highly significant for both PCI subjects, $\underline{X}^2$ (1, $\underline{N}$ = 224) = 20.936, $\underline{p} < .000001$ and ICI subjects, $\underline{X}^2$ (1, $\underline{N}$ = 117) = 6.74, $\underline{p} < .009$. In this notable case, both PCI and ICI subjects' perceptions of being prepared for classroom management apparently depend on conditions outside the scope of the present experiment.

One-Year, Follow-Up Study of Current Induction Status

Using a main effects loglinear model to analyze the survey data, the study regressed the five earlier EOP III and five later PGE III subtest scores on the criterion measure, induction status (see Table 3). This analysis revealed that the main effect of the earlier EOP III professional development scores is significant in the model; the main effects of remaining factors were not significant. The reduced model regression exacted the highly significant main effect of professional development, Model $\underline{X}^2$ (1, $\underline{N}$ = 76) = 16.19, $\underline{p} < .0001$. The reduced model's fit to the induction status data, Goodness-of-Fit $\underline{X}^2$ (74, $\underline{N}$ = 76) = 76, $\underline{p} < .4139$, is such that it correctly predicts 67.1% of the induction status cases.

With the effects of the remaining subtests controlled, the further analysis determined that the odds of being inducted full-time as an inservice teacher are nearly twenty times greater (19.71) for the respondents who as preservice teachers perceived themselves as fully prepared to perform the professional development function than for those who did not previously perceive themselves as fully prepared to perform this function ($\underline{p} < .005$). Given this result, the research concludes that the prediction of preservice teachers' later induction as a full-time or part-time inservice teacher is significantly improved by knowing whether they perceived themselves as fully prepared for professional development immediately after the completion of their clinical training.

Summary of the Results

The regression data evince that variability in the perceptions of being prepared to perform teaching tasks is a direct function of variability in the conditions of clinical instruction. Moreover,

the odds data show that ICI conditions effectively produce greater perceptions of being prepared than PCI conditions. This fact suggests that the integrated model's functionality is greater than the professional model's.

Most surprisingly, the contingency data indicate that PCI subjects' posttest perceptions of being fully prepared to perform general teaching tasks depend more on events not associated with the conditions of their clinical instruction. As neither the school-based nor the college-based instruction proved significant for PCI subjects, the study must speculate that instructional experiences undergone before clinical instruction (e.g., pre-clinical experiences) affect PCI subjects' posttest perceptions. In stark contrast, however, ICI subjects' posttest perceptions clearly depend on ICI conditions.

In view of the significant main effects of factors and a corresponding lack of significant interaction, the odds of subjects perceiving themselves as fully prepared on the posttest become additive. This fact leads the study to the specification of the conditions under which the odds of perceived preparedness vary. These odds predictably are maximal when subjects (a) perceive themselves as fully prepared at pretesting and (b) undergo ICI conditions; moderate when subjects fail to meet condition (a) but meet condition (b); and, minimal when they fail to meet both conditions (a) and (b).

Specific Preparedness. The regression analysis of subtest measures found that the odds of subjects perceiving themselves as being fully prepared to fulfill the broad-based functions of inservice teaching are significantly greater for ICI subjects than for PCI subjects. Except in the case of classroom management, the association between pretest and posttest perceptions of being prepared for lesson presentation, instructional planning, professional development, and classroom assessment are significant for PCI subjects but not for those treated to ICI conditions. Regarding subjects' perceptions of being prepared to serve the classroom management function, the findings suggest that both PCI and ICI subjects' perceptions of being fully prepared ostensibly depend more on experiences undergone outside the scope of the present study's conditions.

Current Induction Status. The odds of being inducted full-time as an inservice teacher are well over nineteen times greater (19.71) for the survey respondents who as preservice teachers perceived themselves as fully prepared to perform professional development tasks than for those who perceived themselves as not fully prepared to perform this function ($p < .005$). Since, in the regression model, these odds directly result from earlier perceptions of being prepared, the induction data establish the systematic relationship between the earlier outcome of preservice preparation and the later affairs of inservice teaching, thereby suggesting that the significance of ICI conditions to preservice teachers is greater than PCI conditions.

Given this relationship and the evidence of functionality, by extension the odds of respondents being inducted as full-time inservice teachers are maximal when respondents earlier (a) perceived themselves as fully prepared for professional development at pretesting and (b) undergo ICI conditions; moderate when subjects fail to meet condition (a) but meet condition (b); and, minimal when they fail to meet both conditions (a) and (b). The specification of these conditions and those outlined above opens the way for devising future hypotheses to test the appropriateness of clinical instruction activities.

Discussion

Hypothesis Evaluation

This quasi-experimental field study induced variability in preservice teachers' perceptions of being prepared by manipulating the conditions of their clinical instruction while controlling the effects of extraneous conditions. The subsequent data analysis evinces that greater and fewer perceptions of being prepared directly result from the experimenter's manipulation of clinical instruction conditions. The relatively greater perceptions of being prepared systematically relate to the particular pattern of conditions subsumed under the integrated model, while the relatively fewer correspond to the particular conditions subsumed under the professional model. This fact demonstrates that the integrated model indeed is functional, proving that it engenders greater levels of the designated outcome across a broader range of teaching functions than its comparison.

Moreover, the one-year, follow-up study's findings (refer to "Instrumentation: Criterion-Related Validity") indicate that the preservice teacher sample's earlier perceptions of being fully prepared to perform the professional development function positively influence their odds of being inducted full-time as inservice teachers. That the preservice sample's earlier and greater perceptions of being prepared systematically relates to their future professional status documents the integrated model's significance, proving that it produces an outcome that is relevant, meaningful, and valuable beyond the teaching program's scope.

In view of its findings, the present study accepts the plausibility of its hypothesis: indeed, the functional significance of the integrated model of clinical instruction surpasses that of the professional model's. Being functionally significant, this integrated model has implications for the systematic improvement of clinical preparation.

Implications for the Advancement of Clinical Preparation

The general data show that variability in the conditions of clinical preparation corresponds to variability in preservice teachers' perceptions of being prepared to perform broad-based teaching tasks and functions. However, the specific data identify the integrated model's unique set of conditions for clinical instruction as vastly more pertinent to connecting the concerns of the program and the interests of preservice teachers. Furthermore, the specific data document what many have been arguing: the models of clinical preparation are neither necessarily functional nor necessarily significant (Beyer, 1986; Gore, 1987; Joyce, 1988; Lanier & Little, 1986; Lortie, 1975; Zeichner, 1981-1982). Indeed, as I illustrate here, the manner in which programs organize, implement, and evaluate clinical instruction will determine the clinical activity's functional significance. I found that three specific values of these conditions: (a) the involvement of both school-based and college-based personnel, (b) the implementation of college-based developmental instruction, and (c) the performance-based evaluation of clinical training carried out by school-based and college-based personnel are important for establishing a clinical model's functional significance.

Having made these assertions, I hasten to point out that some clinical models, such as the professional one I investigated here, may be neither functional nor significant and thus functionally autonomous, that situation wherein the means to some higher end have become an end in itself. Being required to undergo learning activities that are less than functionally significant or functionally autonomous, preservice teachers learn that clinical preparation is something negative rather than something positive. Given the specter of promoting negative attitudes toward foundational activity (see Baxter, 1992-1993), teacher preparation programs should reexamine the conditions of their clinical instruction, evaluating the extent to which their clinical model's functional significance warrants its further implementation, modification, or outright abandonment.

Since today's educational research of clinical preparation relies on qualitative techniques, few of the existing studies can prove clinical models' functional significance. The research therefore must consider stronger techniques in seeking ways to improve; it also must design experimental investigations (Zeichner, 1980), manipulating clinical conditions to account for variability in clinical outcomes. Yet, in urging the research of clinical preparation to prove functional significance, I am not calling for a regression to logical positivism but an advance beyond description to the logical next step of explanation. Although a field study's constraints frequently do not permit researchers to obtain the levels of control explanation demands, I agree with Zeichner (1980) that such issues can be resolved by creatively combining quantitative and qualitative methods.

As I have demonstrated here, clinical preparation research can move forward by adopting the two-fold criterion of functional significance. Although, as I have found, the satisfaction of this criterion is tedious, I nonetheless remain convinced that the achievement of functionally significant clinical models holds bright promise for: (1) advancing the inquiry of clinical preparation, (2) improving the quality of preservice teacher's clinical experience, and (3) ultimately revitalizing professional teaching.

Advancing the Inquiry of Clinical Preparation. The broader-base of functions that characterize today's professional teaching field require new approaches to clinical preparation inquiry. To specify the clinical conditions that improve preservice teachers' chances of meeting the new more complex demands of inservice teaching, the inquiry must advance to the more complex explication of relations between clinical training conditions and their future performance of the broader-based functions. Although forward-looking researchers have outlined the methodological means and necessity for making such advances (e.g., see Zeichner, 1980), few studies in teacher education have combined quantitative and qualitative techniques to investigate the efficacy of clinical training models. Nevertheless, such combinations are necessary to prove that a proposed clinical model serves not only the program's ends but also preservice teachers' needs, functional significance.

Inspired by the forward-looking few, I combined quantitative and qualitative methods to produce evidence suggesting that the nature of the relationship between a clinical model's conditions and its designated outcome is not necessarily causal: the nature of this relationship depends on specific values of instructional conditions. The quantitative evidence here indicates that the integrated models' conditions causally relate to preservice teachers' perceptions of preparedness, while the professional model's conditions do not. Meanwhile, the qualitative data indicate that preservice teachers' perception of preparedness directly relates to their induction as professional teachers. This evidence clearly raises questions about the organization of roles, implementation of instructional activity, and evaluation of clinical instruction under traditional professional theories.

For example, as Joyce (1988) and Zeichner, (1980, 1981-1982) predict, I found traditional school-based placement limited for successfully imparting the broader-base of clinical knowledge and skills demanded by today's professional teaching environment. One salient reason may be that many of the emerging functions (e.g., the non-discriminatory instruction of Gay and Lesbian students, the provision of "sheltered" instruction for ESL students, alternative forms of classroom

assessment) are just as new to clinical supervisors as they are to their charges. Thus, although my evidence shows that the integrated model's college-based developmental seminar profoundly and positively affects preservice teachers' perceptions of preparedness for serving a broad range of teaching functions, it also indicates that the clinical placement site has no significant impact on preservice teacher's perceptions of being prepared. [1] Given its validity, this finding raises serious questions about the rectitude of traditional school-based placement in teacher preparation. I thus join Zeichner (1981-1982), Joyce (1988), and others in the conviction that teaching programs should at least supplement school-based clinical placement with a college-based instructional component that is developmental in nature.

Beyond agreement, I must urge the decision makers in teacher education who rely on simple descriptions of a clinical model's efficacy to consider that, despite the significance of clinical experience to preservice teachers, the described model's instructional conditions may not relate to the growth of their applied skills. In the teaching programs wherein the clinical component is not functional for preserving broad-based skills and knowledge, the clinical training component is no more than functionally autonomous, a means in service to itself. I join Gore (1987) in observing that the technical focus and utilitarian goals of stricly professional models make them highly susceptible to functional autonomy.

Improving the Quality of Clinical Experience. Clinical activity is significant to preservice teachers when it expands their capacity to meet the cognitive and motivational demands of inservice teaching and thereby enhances their chances of achieving and retaining full professional status. As such, the psychosocial conceptions that encompass professional teaching's preservice and inservice periods should attract the attention of the research that aims to improve the quality of preservice teachers' clinical experience. Drawing on self-efficacy theory (Bandura, 1977, 1982, 1993) and working to meet the two-fold criterion of functional significance, I found evidence that the preservice teachers with relatively greater perceptions of being prepared also has a more positive fate as inservice teachers.

This discovery reveals a self-efficacy conception that supports the research of functionally significant clinical models. Although the particular conception I developed here does not exhausts the versions of self-efficacy that might apply to clinical preparation, it nevertheless represents one viable approach to the identification of instructional activity that is relevant, meaningful, and valuable to not only the teaching program but also its participants. In the main I am urging educational researchers to adopt the criterion of functional significance to guide their efforts to improve the quality of clinical experience. Considering the importance of so doing, I join Ashton (1984) in urging the research of clinical preparation to tap the rich potential of self-efficacy theory to improve preservice teachers' clinical experience.

Revitalizing Professional Teaching. Like all of America's institutions, today's professional teaching is taking place in the context of rapid social change. This fast-paced change, a transition from our industrial period to our information era, has consequences; social institutions quickly must adjust to a qualitatively different social environment. One highly observable consequence in the institution of professional teaching is rapid expansion in the base of tasks and functions that inservice teachers must serve. Since this rapid expansion is environmentally responsive, one can predict that this base will continue to expand; but one cannot predict the pedagogical capacity that is necessary to serve the tasks and functions whose educative content is undefined.

As a case in point, twenty years ago, the public health research had not defined the educational content for addressing AIDS. Although then researchers knew that education would be necessary to control the spread of AIDS, educators nevertheless lacked the knowledge for disseminating AIDS information, as the disease's etiology was not confirmed. Yet, as this content became clear, educators began searching for the best methods and pedagogical procedures to impart AIDS information (e.g., see Prater & Serna, 1992-1993). Although the AIDS instruction initially was a specialization in the field; today, with some few exceptions, it is fast becoming a general task fulfilled by all professional teachers.

The circumstance of expanded professional tasks and functions means continuous learning, on-going professional development for the professional whose aspiration is effective service (Allen, Hutchinson, & Johnson, 1995). On-going professional development, like any active learning encompasses the motivation to continue learning. As I previously indicated, we cannot teach the motivation to continue learning, but most certainly we can inspire it (Brophy, 1983, 1987; Brophy & Alleman, 1991). This inspiration moreover should begin during not after the period of preservice preparation. Inspiring the motivation to continue learning, preservice programs can thus revive professional teaching, as new teachers will view their professional development activity as a usual event, an opportunity to continue learning, rather than as an ancillary task imposed on them by the "powers that be."

I have shown in this study how preservice programs, by seeking psychosocial outcomes, can increase the emerging teachers' perceptions of being ready to serve the professional development function. Whether these greater perceptions translate into an inservice teacher who's motivation to continue learning is greater, I cannot with certainty say. Nonetheless, I am certain that the vitality of professional teaching depends on the induction of highly prepared and motivated inservice teachers.

Weaknesses of the Present Study

The design considerations of this quasi-experiment involve the control of threats to the study's internal validity. I set out to make the plausible attribution of the designated outcome's variability to variability in the organization, implementation, and evaluation of clinical instruction. I found that the categorical change in these conditions systematically relates to categorical change in the designated outcome. Upon further analysis I discovered that the conditions subsumed under the integrated clinical instruction engendered significantly greater levels of the designated outcome than the comparison. This finding led to my conclusion that a causal link exists between the integrated model's conditions and the designated outcome. I found no such link between professional model's conditions and the designated outcome.

However, I apprise readers that the integrity of my conclusions depends on the integrity of my experiment's design, the non-randomized, pretest-posttest, control-group design (Issac & Michael, 1994). Although by design, I did not select subjects' at random, I failed to assign at random the experimental treatments to groups, and I had no untreated control group. Therefore, questions about unaccounted preexisting differences and reactivity arise as threats to the study's internal validity and thus my reasonable attribution of cause.

To control the threat of unaccounted preexisting differences, I included pretest scores, sex, educational background, type of placement, and educational area in the regression analysis as factors. Although the clinical instruction conditions proved significant over-and-above pretest differences, and none of the classificatory variables proved significant, I nevertheless remain uncertain about the extent to which unknown preexisting factors affected variability in the outcome measure. Thus unknown preexisting differences remain a threat to the study's internal validity. Further, in deference to the ethical constraints of the field and the program's practical demands, I treated the entire sample of preservice teachers to some form of clinical instruction. So doing, I forfeited the means for defining reactivity, the effect on subjects' behavior of being placed in the artificial environs of an experiment.

Subsequently, I remain uncertain about the extent to which reactivity affects their perceptions of being prepared. Reactivity therefore poses a second threat to the study's internal validity. Considering these threats, I limit my attribution of cause to the conclusion that the experimental conditions constitute one significant cause of the differences in the criterion measure. I am confident in doing so for two reasons. First unaccounted preexisting differences effectively increase the magnitude of experimental error; the experimenter can reduce this error by accounting for such differences. The effect of reduced error is not to render highly significant effects insignificant but to stabilize them.

Second, I have no reason to suspect that reactivity was more a factor among ICI than PCI subjects, since both were in the same experiment and thus reacting to its conditions. That only the

conditions of the integrated model and the designated outcome appear linked indicates this form of clinical instruction caused the subjects to react in the manner I hypothesized. Since subjects' clinical instruction conditions are actual programmatic structures and not artificial laboratory ones, critics would be hard-pressed in the circular argument that this reactivity is undesirable. Indeed, this reactivity constitutes the point of the experiment.

Finally, although external validity is not a primary issue in the present study, I nonetheless note that I did not randomly select the subjects. Thus, despite the large sample, I remain uncertain about the extent to which it represents the universe of preservice teachers. Counting generalizability as a weakness, I restrict the application of my findings and conclusions to preservice teacher populations that reflect the sample's characteristics (refer to "Subjects").

Conclusion

As an applied construct, one that transcends its conceptual forebearers' limitations by including their strengths, the integrated model's goal is to improve the preservice teacher's capacity for performing the broader-based functions of today's professional teaching. This broader-base of functions not only includes the tasks previously identified with traditional preparation theories but also encompasses the more complex tasks associated with effectively teaching in a multicultural, technologically advanced, post-industrial, and democratic society. In this sense the clinical preparation that replicates the integrated model's conditions represents a significant departure from that of its conceptual forebearers.

This departure presses the inquiry of clinical preparation to broaden the scope of its methods and definition of efficacy, including both qualitative and quantitative techniques toward a more comprehensive-integrative study of the functional significance of existing and proposed clinical models. So doing, the research and development of clinical preparation will advance the enterprise of professional teaching by increasing the number of effective intellectual leaders.

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Footnotes

[1] I use the terms "quantitative" and "qualitative" methods to distinguish the means for producing data. By "quantitative methods" I mean studies wherein researchers systematically manipulate specific experimental conditions while controlling extraneous ones to produce data. On the other hand, I define "qualitative" studies as those wherein researchers systematically observe but do not by design manipulate conditions to produce data.

By "logical positivism" I describe the school of thought that argues for the primacy of nomothetic (i.e., discovering laws) research, while "constuctivism" describes the position that argues for the primacy of ideographic (i.e., producing meaning) research.

[2] A "criterion" school describes the teaching program's selection criteria for the appropriate clinical placement (refer to Appendix A). These criteria require school sites that are socially diverse, has adequate human, informational, and material resources, wherein the school administration formally agrees to collaborate with the teaching program by encouraging Cooperating Teachers to undergo college-based mentorship training in exchange for professional development credit. The school-site factor was not significant in the regression model. Although a more finely-grained analysis of the conditions of school-site placement is needed, this study's preliminary conclusion is that placement in either a criterion or non-criterion school does not necessarily increase preservice teachers' perceptions of being prepared for inservice teaching.

Table 1

Means, Standard Deviations, and Reliability Estimates for EOP III Pretest and Posttest Perceptions of Preparedness Scores (N = 246)

	EOP III Scores [a]	
	Pretest	Posttest
Mean	21.03	20.75
Standard Deviation	4.46	4.97
Reliability Estimate [b]	.8851	.9058

Notes:

[a]The correlation between the pretest and posttest scores is $r = .3265$.

[b]Estimates are Cronbach's index of internal consistency (α).

Table 2

Factor Loadings for EOP III Posttest Item Scores [a]

Item Number [c]	Factor Number [b] 1	2	3	4	5
1.	.00	.00	.00	.37	.52
2.	.00	.40	.00	.00	.65
3.	.00	.80	.00	.00	.00
4.	.00	.80	.00	.00	.00
5.	.00	.70	.00	.00	.37
6.	.33	.60	.00	.00	.00
7.	.41	.35	.00	.00	.38
8.	.32	.40	.00	.00	.39
9.	.00	.00	.52	.00	.32
10.	.34	.00	.38	.00	.00
11.	.00	.00	.00	.73	.36
12.	.61	.00	.00	.00	.42
13.	.00	.00	.42	.00	.62
14.	.00	.00	.68	.00	.33
15.	.00	.00	.65	.00	.00
16.	.00	.00	.68	.31	.00
17.	.00	.00	.00	.83	.00
18.	.52	.00	.00	.37	.00
19.	.67	.00	.30	.00	.00
20.	.67	.00	.00	.00	.00
21.	.66	.00	.34	.00	.00
22.	.38	.00	.50	.00	.00
23.	.44	.30	.00	.53	.00
24.	.51	.00	.00	.53	.00
25.	.64	.00	.00	.00	.37

Notes: Eigenvalues for factors = 1=10.75; 2=1.66; 3=1.24 4=1.00; 5=0.90

[a]Factor loadings less than .30 are shown as .00

[b]Factors : 1=Lesson Presentation; 2=Instructional Planning; 3=Professional Development; 4=Classroom Assessment; 5=Classroom Management

[c] Refer to Appendix B-1 for specific EOP III item content.

Table 3

Correlations of EOP III and PGE III Subtests and PGE IV Induction Status Scores

	Graduate [a]					
Candidate [b]	LP	IP	PD	CA	CM	Status [c]
LP	.71**	.70**	.56**	.48**	.70**	.31*
IP	.60**	.76**	.46**	.28*	.58**	.37**
PD	.58**	.51**	.56**	.29*	.58**	.34**
CA	.44**	.35**	.29*	.45**	.43**	.23*
CM	.64**	.63**	.59**	.43**	.69**	.36**
Status	.03	.17	.07	.06	.10	1.00

Notes: Subscale responses (N = 61) are of those of the Teaching Candidates who completed both EOP III posttest and PGE III surveys. Status responses (N = 76) are from PGE IV survey. Underlined correlations represent stability coefficients, indexing subscale consistency over time.

*Two-tailed probability is significant at $p < .05$.

**Two-tailed probability is significant at $p < .01$.

[a]Later (i.e., Program Graduate) responses to Lesson Presentation, Instructional Planning, Professional Development, Classroom Assessment, and Classroom Management Subtests

[b]Earlier (i.e., Teaching Candidate) responses to Lesson Presentation, Instructional Planning, Professional Development, Classroom Assessment, and Classroom Management Subtests

[c]Status=Induction as either a full-time or part-time inservice teacher.

Appendix A

Criteria for Selecting Appropriate Student Teaching Placement Sites

I. **Service to the Teaching Program's Mission**

A. School's Mission Concords with the Educational Unit's Mission

II. **Diversity**

A. Various Ethnic/Cultural/Linguistic/Socioeconomic groups Represented in the Classroom

B. Special Needs Students Represented in the Classroom

C. Innovative Practices (e.g., Whole Language, Discovery Learning, Cooperative Learning, Multiple Intellegences)

III. **Resources**

A. Human

1. Effective-Enthusiastic Cooperating Practitioners

a. Willing to Provide Feedback

b. Willing to Undergo Mentorship Training

c. Willing to Permit and Promote Innovative Practices

B. Material

1. Well-Equipped Classrooms

2. Multimedia Resources (e.g., Access to Computers,VCR, AV Equipment)

IV. **Proximity to the College**

A. School is within the College's Twenty-Mile Radius

V. **School Department's Willingness to Cooperate and Collaborate**

A. Will Provide Placements for at Least Four other of the College's Student Teachers

B. Will Provide Release Time for CP to Attend College Functions and Trainings

C. Will Collaborate on Grant Writing Projects

Appendix B-1

EOP III and PGE III Evaluation Form

Part III. Instructions: Use a check mark (✓) to rate yourself on each of the below listed areas.

State how well did the teaching program prepared you to:	Very Well	Well	Poorly	Not at All
Understand the legal and moral aspects of teaching.				
Maintain classroom environment conducive to learning.				
Prepare and teach complete and appropriate lesson plans.				
Develop complete and appropriate unit plans.				
Motivate and sustain student interest and involvement.				
Use arts and technology to foster students' analytical skills.				
Systematically identify student learning needs and styles and plan appropriate instruction based on this knowledge.				
Communicate effectively by presenting instructions and ideas clearly and meaningfully to all types of students.				
Provide limited English proficient students with "sheltered instruction."				
Use scientific methods to improve teaching and learning.				
Evaluate and grade students accurately and fairly.				
Demonstrate a capacity for teaching students of diverse ethnic, cultural, sexual, and socioeconomic backgrounds.				
Assess and manage unacceptable classroom behavior.				
Establish and maintain positive relations with parents.				
Work effectively with special needs/ handicapped students.				
Engage in educational research and scholarship.				
Define the reliability and validity of assessment data.				
Articulate a morally defensible educational philosophy.				
Communicate and work effectively with colleagues.				
Translate developmental principles into teaching practices.				
Understand my role in creating a democratic school climate.				
Translate students' IEP's into effective learning activities.				
Employ alternative forms of classroom assessment to determine the extent of student learning.				
Utilize assessment data to define the weaknesses and strengths of my approach to teaching and learning.				
Master effective strategies to address discrimination (i.e., based on student's race, sex, religion, social class, or disability) both within and outside the classroom.				

Appendix B-2

PGE V: Induction Status Survey Instrument

Part V. Instructions: Check applicable items or fill in those as specified.

1. I completed the PSEP program in (name of your discipline)_____
   on (state the date on which you compled your program)_____
2. I am qualified for certification at the provisional level_____ full level_____.
3. I completed the state certification process, receiving my certificate number : yes_____ no_____
   (if you checked no, use the space below to explain why you decided not to complete the state certification process)

4. I also am certified in the following areas (list below your other areas of certification, including the level of the given certificate):

5. Currently, I am employed (check all that apply) full-time_____ part-time_____ in a public_____ private_____ school_____ program_____, working at the following institution(s) (write in below the name and address of each school/program in which you are employed. If you are not employed in education or unemployed, please indicate this):

6. I am (check only one) not at all____ somewhat _____ highly_____ satisfied with my present employment situation (briefly discuss below why you checked the above category):

7. The three things that I would change about my employment situation, if I could, would be (use the space below and on the back to complete and elaborate on this statement):

Appendix B-3

Description of EOP III and PGE III Evaluation Form Categories

Instructions: The descriptions below pertain to some of the rating categories represented on your PSEP evaluation form. Please read each description before completing your evaluation, as doing so will enable you to make a more accurate response to the form's items.

"Very Well Prepared" describes the situation wherein one's knowledge or skill level is such that one is capable of executing a given professional teaching behavior to the benefit of school students' learning, growth, or motivation **without either** further field supervision **or** further in-class instruction.

"Well Prepared" describes the situation wherein one's knowledge or skill level is such that one is capable of executing a given professional teaching behavior to the benefit of school students' learning, growth, or motivation **with a minimum** of further field supervision **but no** further in-class instruction.

"Poorly Prepared" describes the situation wherein one's knowledge or skill level is such that one is capable of executing a given professional teaching behavior to the benefit of school students' learning, growth, or motivation **with both a maximum** of further field supervision **and a minimum** of further in-class instruction.

"Not at All" describes the situation wherein one's knowledge or skill level is such that one is capable of executing a given professional teaching behavior to the benefit of school students' learning, growth, or motivation **with both a maximum** of further field supervision **and a maximum** of further in-class instruction.

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