Mid-Western

Educational

Researcher

• Official Publication of the Mid-Western Educational Research Association •

The Ohio State University at Mansfield

On the Cover

Ovalwood Hall, opened in 1966 at The Ohio State University at Mansfield, serves as the campus's main administrative and instructional facility.

Through its Mansfield Campus, The Ohio State University extends courses, curricula and resources geographically to meet the educational needs of the people of North Central Ohio. The Mansfield Campus maintains Ohio State's Land Grant tradition of making higher education accessible to traditional and nontraditional students.

One of four regional campuses of The Ohio State University, the Mansfield campus occupies a 600-acre wooded site in the northwest corner of Mansfield, Ohio. Sharing the site with North Central Technical College, the campus comprises six major academic buildings, plus a gymnasium, a bookstore, a child development center, and a plant operation building.

The faculty is a highly qualified, university faculty that involves itself extensively in teaching at all levels. Ninety-five percent of the faculty hold a Ph.D. degree or an equivalent highest degree of their profession.

Students can earn baccalaureate degrees entirely at Mansfield in elementary education, English and psychology. In addition, the campus offers most of the courses necessary to complete a bachelor's degree in business, sociology, and criminology.

Graduate offerings leading to the M.A. are available for area elementary school teachers and the M.Ed. is offered for bachelor degree holders who wish to become elementary school teachers. The Ohio State University College of Social Work offers an MSW degree at the Mansfield campus.

MID-WESTERN EDUCATIONAL RESEARCHER

Volume 10, No. 4   Fall 1997   ISSN 1056-3997

Problems Related to Participants' Roles and Programmatic Goals in Student Teaching Supervision

Donald A. Williams
The Ohio State University, Lima

Hema Ramanathan
Butler University

Doug Smith
Coastal Carolina University

Josue Cruz
University of South Florida

Laura Lipsett
The Ohio State University, Columbus

Abstract

Current practices regarding the roles of cooperating teachers and university supervisors and the goals of student teaching were examined through an analysis of student teaching handbooks from midwest teacher education programs. Handbooks, representing 61 of the 340 teacher education programs in 13 midwest states, were analyzed to determine the roles assigned to cooperating teachers and university supervisors and to compare the goals of these programs to the outcomes measured in their evaluation instruments. The study found that student teaching materials lacked clear statements of program goals and objectives and lacked clear definitions of the roles of cooperating teachers and university supervisors. Correlation analysis indicated a lack of congruence between the stated program goals and the outcomes assessed in evaluative criteria. Recommendations relate to the clarity in defining roles and tasks and consistency between goals and outcomes.

Introduction

Resounding support is given to the belief that student teaching is singularly the most influential experience in preservice teacher education. However, student teaching generally is not accorded the attention warranting such support and rarely is it implemented in a strategic manner commensurate with its perceived importance.

A number of studies have revealed entrenched problems in the structure of student teaching. They call attention to incongruent role expectations of cooperating teachers and the university supervisors and a lack of congruence between the perceptions of participants in the triad (cooperating teacher, university supervisor, and student teacher) concerning the goals of student teaching (Grimmett & Ratzlaff, 1986; Guyton & McIntyre, 1990). It is these problems that have been identified as constraining the successful implementation of student teaching programs that serve as the foci of this study.

Objectives

The purpose of this study was to investigate the stated practices in student teaching as reflected in the supervision handbooks of midwestern colleges and universities. The two major areas examined were (a) the roles of university supervisors and cooperating teachers, and (b) the goals of the student teaching practicum and their corresponding outcomes derived from the institutions' evaluative instruments. The findings were compared to current theoretical frameworks of student teaching and to the extant reform proposals in order to generate recommendations that will define practice in student teaching programs.

In order to conduct this investigation, it was necessary to operationalize the terms "roles" and "tasks." Roles subsume a related group of tasks, and conversely, tasks define the major role categories. For the purpose of this study, *role* and *task* were defined as follows:

1. Role: An essential *function* performed in student teaching which is descriptive of the relationship intended between a cooperating teacher or university supervisor and a student teacher. For example, a cooperating teacher might take on the role of an *instructor* to student teachers.

2. Task: Any prescribed *activity* that a cooperating teacher or university supervisor undertakes in reference to the student teaching experience. For example, in the role of instructor, a cooperating teacher might be assigned the task of "guiding student teachers in their planning."

Additionally, the following questions were addressed:

1. What tasks were specified for cooperating teachers and university supervisors in student teaching handbooks, and consequently, what roles could be inferred from the tasks assigned to these individuals?

2. Were the goals of student teaching specified in cooperating teacher and university supervisor handbooks congruent with the intended outcomes reflected in the evaluative instruments found in those same handbooks?

Review of Literature

Student teaching is commonly viewed as the key element in the development of preservice teachers and a "critical site for the implementation of any educational reform agenda" (Borko & Mayfield, 1995, p. 502). Teachers consistently support this view by ranking student teaching as the most beneficial element of their preservice preparation (Guyton & McIntyre, 1990). Indeed, 77% of university supervisors and 70% of cooperating teachers surveyed believe that student teaching prepares students more than adequately for their first full-time teaching assignment (American Association of Colleges for Teacher Education, [AACTE], 1991).

In view of the perceived importance of student teaching to the development of preservice teachers, it is reasonable to believe that the goals of student teaching and the roles of cooperating teachers and university supervisors would be well defined and clearly articulated. However, student teaching programs, in general, lack clearly stated expectations regarding the roles and tasks of the cooperating teacher and university supervisor and typically lack goals that are congruent with proposed outcomes (Guyton & McIntyre, 1990). Guyton and McIntyre have observed that "The members of the triad experience intrapersonal and interpersonal role confusion during student teaching, uncertainty about their own and others roles, and divergent role expectations of themselves and others" (p. 523). Consequently, the potential for student teaching to produce disappointing outcomes is high, and it is unlikely in such a setting that participants would experience a sense of accomplishment of goals.

Role of Cooperating Teachers

Members of the triad typically hold conflicting views regarding the roles of cooperating teachers and university supervisors (Duquette, 1994). A survey by Grimmett and Ratzlaff (1986) revealed that student teachers, cooperating teachers, and university supervisors disagreed in 35 of 50 categories defining the tasks of cooperating teachers. Where they did agree, participants perceived the role of cooperating teachers to include tasks of evaluation, orientation, and professional development and assistance in planning and instruction. The findings of Grimmett and Ratzlaff confirmed similar findings from previous studies by Castillo (1971) and Copas (1984). Although their specific findings varied, these studies in general revealed conflicting perceptions among members of the triad regarding the role of cooperating teachers.

Agreement concerning the essential function of cooperating teachers has not been forthcoming through national efforts to standardize the roles and responsibilities of student teaching participants. The National Council for Accreditation of Teacher Education (1995) requires, in the Category I standards, that field experiences encourage reflection and provide feedback from the university and school faculty and peers and that such experiences should be a minimum of ten weeks or equivalent. It also stipulates that student teaching be a joint agreement between the schools and cooperating professionals. Category III, Professional Education Faculty, notes that unit faculty who supervise, have preparation and experience in school settings. Graduate students who have responsibility for field experiences should be qualified in terms of study, experience, and training. Lastly, Category III limits 1 full-time faculty member to 18 full-time students. No mention is made of the roles and responsibilities that the different members of the triad should play. Similarly, the 1986 Association of Teacher Educator's (ATE) national guidelines contained only general descriptions of the tasks for cooperating teachers and university supervisors, advancing no specific tasks (Guyton & McIntyre, 1990). Typical of the ATE (1986) guidelines are statements such as "establish and maintain open channels of communication" (p. 17). Guyton and McIntyre point out that such broad statements promote a variety of interpretations by members of the triad who bring individual role expectations to their experience.

While the intended role of cooperating teachers remains poorly defined, the effect of the role assumed by cooperating teachers in student teaching reveals a consistently bothersome pattern. As social agents, cooperating teachers exert the most profound influence on student teachers (Borko & Mayfield, 1993; Calderhead, 1988) yet often exert negative influences (Richardson-Koehler, 1988). Richardson-Koehler's study found that after two weeks in student teaching, preservice teachers had aligned their practice with their cooperating teacher. In general, student teachers' attitudes become more custodial and negative during field experiences (McIntyre, 1984). In addition, cooperating teachers also exercise influence through their evaluation of student teachers. However, the value of cooperating teachers' assessment of student teachers is questionable since they place a premium on being positive in their relationships with student teachers in an effort to bolster their confidence (Dunne & Dunne, 1993). Therefore, given the potential of cooperating teachers to impact the development of preservice teachers, there is substantial reason to define and clarify their role in student teaching.

Role of University Supervisors

The place and value of university supervisors in student teaching is difficult to define given the varied conclusions of individuals who have investigated this subject. Some studies suggest that the effectiveness of student teaching is

related to the assistance and mentoring provided by the co-operating teacher and university supervisor (Glickman & Bey, 1990), and that university supervisors improve a student teacher's performance (Zahorik, 1988) and are an essential component of student teaching (McIntyre, 1984). However other research indicates that the potential of mentoring relationships in student teaching frequently goes unrealized (Smith, 1990).

University supervisors report different views of their importance, seemingly based on their role perceptions. When university supervisors perceive their role to be evaluative, they experienced little satisfaction or accomplishment in their work (Koehler, 1984). However, when university supervisors consider their role to be one of providing intellectual, professional, and emotional support to student teachers, they experienced a strong sense of satisfaction and efficacy (Koehler).

The traditional evaluative role of university supervisors may very well hinder their ability to provide real assistance to student teachers since they are perceived by student teachers more in an assessment role than an assistance role (Calderhead, 1988). Regarding this, Borko and Mayfield (1993) recommended that university supervisors should spend their limited time in the field to help cooperating teachers develop knowledge and skill in serving as teacher educators. In this role, university supervisors would spend their time modeling appropriate supervisory strategies and facilitating the supervision process.

Goals and Outcomes

In addition to the confusion that exists in student teaching regarding the roles and responsibilities of participants, there is a similar lack of clarity with regard to the goals of student teaching. The expectations of cooperating teachers and university supervisors in student teaching was studied by Applegate and Lasley (1986). They found little agreement among the triad in terms of common goals or shared expectations. In addition, Applegate and Lasley found that cooperating teachers, university supervisors, and student teachers focus upon different problems and view specific problems with different levels of concern. Guyton and McIntyre (1990) assert that this finding is an indication of the triad's lack of shared expectations. This lack of congruence in the expectations of triad members contributes to their confusion over perceived goals of student teaching (Guyton & McIntyre, 1990; Grimmett & Ratzlaff, 1986) and presents a significant obstacle in the successful implementation of student teaching programs.

Clinical Supervision

A strong argument for clearly identified and well established roles for cooperating teachers and university supervisors has been made in the research substantiating a clinical approach to student teacher supervision, involving a team effort between the cooperating teacher, the university supervisor, and the student teacher and focusing on systematic

and formative evaluation (Glickman & Bey, 1990). Increased control (Armstrong & Ladd, cited in Guyton & McIntyre, 1990); positive self-assessment (Cook, cited in Guyton & McIntyre, 1990); improved supervision (Shuma, cited in Guyton & McIntyre, 1990); and improved teaching and attitude towards teaching (Krajewski, cited in Guyton & McIntyre, 1990) are outcomes related to a clinical supervision approach. Gitlin, Ogawa and Rose (1982) found that shared evaluation among members of the triad promoted self-analysis and reflection on the part of student teachers and resulted in more complex analyses of teaching and in more favorable attitudes toward pupils. However, this gulf between what is known about the clinical approach to supervision and what actually is practiced in the supervision of student teachers persists.

In summary, the student teaching experience seems to lack agreed upon purposes and is plagued with a confusion over the roles and corresponding responsibilities that participants should assume. Solutions to these problems seem to involve the convergence of goal perceptions among student teaching participants (Guyton & McIntyre, 1990). An obvious key to such convergence is clear communication in providing detailed and "better explicated guidelines, role definitions, and instructions" (Guyton & McIntyre, 523). However participants must have common goals and purposes and, in order to build agreement and a shared commitment to goals, participants need to interact in discussing the purposes of student teaching and their perception of one another's roles (Guyton & McIntyre).

Methodology

Sample

This study focused on a content analysis of student teaching handbooks. Accredited institutions offering teacher education programs in the Midwest were identified from lists obtained from the state department of education in the target states. *Midwest* was defined to comprise the following states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The 340 state-accredited institutions were placed into categories using four major Carnegie classification levels (liberal arts colleges, comprehensive colleges and universities, doctoral granting institutions, and research institutions), and a stratified random sample of 110 teacher preparation programs was selected. Student teaching handbooks and information and policies pertaining to cooperating teachers and university supervisors were requested by telephone from each institution in the sample. From this appeal, 61 handbooks were obtained representing one-fifth of the midwestern teacher education programs. In this sample, the Carnegie classification levels were represented in percentages equivalent to those found in the larger population of midwestern institutions: liberal arts colleges (34%), comprehensive colleges and universities (38%), and doctoral granting institutions (12%), and research institutions (15%).

Instrumentation

Two instruments were used for the purpose of systematically coding handbook statements. The first was designed to record *task* statements found in the handbooks. This instrument was organized according to the six major roles (assumed by either the cooperating teacher or the university supervisor):

1. Orienter - Describes, interprets, the student teaching program to participants, and acquaints student teachers to school culture.

2. Counselor - Engages student teacher as a colleague.

3. Instructor - Organizes, plans, and facilitates learning experiences for the student teacher during the practicum.

4. Facilitator - Promotes effective interaction of triad members in order to achieve the goals of student teaching.

5. Model - Demonstrates professional practices to the student teacher.

These roles had been identified through a review of the literature and preliminary content analysis of student teaching handbooks. The task subcategories, which were compiled from the pilot study, were organized within the major role categories according to the established definitions for these roles.

The second instrument was designed to record the presence of goals and outcomes in the handbooks. Similar to the development of the first instrument, categories of goals and outcomes (see Table 3) were compiled from a pilot study. Goals were defined as statements found in student teaching handbooks concerning the knowledge and skills student teachers were expected to achieve. Outcomes were defined as statements found in evaluative instruments of handbooks concerning the exit competencies necessary for successful completion of the student teaching program. The rationale for documenting and comparing the relationship between stated goals and measured outcomes in student teaching programs was based on the idea that congruence between objectives and the evaluation of those objectives is indicative of consistency of purpose and practice in a program.

The handbooks were analyzed by considering separate statements within the text of the handbooks. Prior to the analysis, four handbooks (not included in the sample) were analyzed to establish rater-reliability, and the four raters were able to achieve an inter-rater reliability of 90% agreement on coded statements. Raters were initially asked to code five handbooks along with one that was coded by all four individuals. The analysis of the common handbook was used as a further reliability check. This procedure was repeated in two more coding cycles until all of the handbooks were coded. Inter-rater reliability (percent agreement of coded statements) for the coding of the common handbooks fell between 85% and 90%.

Findings

Descriptive statistics were generated for the combined role categories and goals and outcomes. These data are summarized in Tables 1, 2, and 3. An examination of Table 1 reveals that of the 836 statements coded for the cooperating teacher, 34% involved instructing tasks, 28% involved evaluating tasks, and 27% involved orienting tasks.

Table 2 presents data for the university supervisor's role and reveals that of the 394 statements coded, 46% involved evaluating tasks, 21% involved instructing tasks, 15% involved facilitating tasks, and 14% involved orienting tasks.

Table 3 shows that the observed frequencies of outcomes stated in the handbooks were consistently higher than the observed frequencies of corresponding goal statements. Outcomes were coded nearly twice as frequently as goals. The total of outcome observations was 608, while goals were coded 337 times.

Correlation analysis was performed on the data gathered through the coding of goals and outcomes. Since both correlates were dichotomous, a phi-coefficient (ϕ)was generated for the observations on each of the handbooks. Additionally, a coefficient of determination (r^2) also was calculated to reflect the degree of interdependence of these two variables. It should be noted that 19 of the 61 handbooks did not include goals or outcomes and therefore could not be analyzed. This analysis is summarized in Table 4 and reveals that statistically significant correlations (p<.05) were found between the goals and outcomes in seven handbooks ($.21 \leq r^2 \leq .33$). The correlations (r^2) for the other 35 handbooks ranged from .00 to .13. Therefore, this analysis indicates that in 35 handbooks (84%) no statistically significant correlation was found between the stated goals and outcomes of those handbooks, and even the strongest interrelationship of goals and outcomes ($r^2 = .33$) reflects a rather weak link between program goals and outcomes.

Other findings include the following:

- In the sample of handbooks, 7% (n=4) directly described the role of cooperating teachers and 5% (n=3) directly described the role of the university supervisors.

- Over twice as much space or attention is devoted to the tasks of cooperating teachers as is given to the tasks of university supervisors.

- All of the handbooks delineate the tasks for cooperating teachers.

- Although 84% of the handbooks (n=51) define the tasks of university supervisors, in 16% of the handbooks no mention was made of the university supervisors' tasks. In another 16% of the handbooks the university supervisors' tasks were limited to one or two paragraphs.

- Less than 15% of the handbooks contained a formal statement of the goals of their student teaching program.

Table 1

Frequencies of Coded Statements for Cooperating Teachers' Responsibilities (N=61)

	Freq. Total	% of Role	% of Total		Freq. Total	% of Role	% of Total
Orienter				**Evaluator**			
Describes, interprets ST goals to ST	2	1		Conferences, gives feedback to ST	51	22	
Describes, interprets ST goals to CT, Principal	0	0		Provides ratings & written assessment of ST	45	19	
Describes & interprets roles, tasks of CT, US	0	0		Confers w/ US regarding ST's progress	18	8	
Acquaints ST w/ school's philosophy	8	4		Confers w/ CT regarding ST's progress	1	0	
Acquaints ST w/ school's procedures	37	16		Confers w/ US regarding ST's problems	24	10	
Acquaints ST to CT's classroom procedures	39	17		Confers w/ CT regarding ST's problems	1	0	
Introduces ST to students	39	17		Conducts triadic conferences other than midterm & final	3	1	
Acquaints ST to school's physical environ.	33	15		Conducts extended conferences w/ US & ST to review midterm & final evaluations	12	5	
Acquaints ST to school's social environment	38	17		Conducts extended conferences w/ CT & ST to review midterm/ final evaluations	1	0	
Provides workspace, materials, resources	29	13		Periodic evaluation of ST by CT apart from midterm, final evaluation	13	6	
Total	225		27%	Periodic evaluation of ST by US apart from midterm, final evaluation	1	0	
Counselor				Assigns final grade for ST	3	1	
Assists in job search/writes letters of recommendation	14			Manages the formal evaluations	6	3	
Accepts ST as partner	31			Manages the pre/ post conference cycle	2	1	
Inquires w/ ST into teach.-learning process	3			Conducts mid-term, final evaluation	50	22	
Total	48		6%	Totals	231		28%
Instructor				**Facilitator**			
Schedules teaching experiences	40	14		Promotes achievement of goals of STg	3	17	
Guides ST in planning & implementation	44	15		Promotes teamwork between triad members	3	17	
Promotes application of theory into practice	5	2		Promotes solution to problems in STg	3	17	
Involves ST w/ clerical aspects of teaching	27	9		Schedules supervisory visits	0	0	
Promotes ST's extra-curricular involvement	19	7		Maintains communication w/ Principal	0	0	
Arranges for ST to observe other classrooms	18	6		Serves as a resource for ST	9	50	
Provides opportunity for prof. growth	23	8		Totals	18		2%
Promotes reflection & self-evaluation	19	7		**Model**			
Helps CT schedule activities for ST	3	1		Demonstrates reflective approach in teaching	3		
Helps ST develop personal teaching style	12	4		Demonstrates professional behavior in relational skills	9		
Mentors ST in classroom management	29	10		Demonstrates effective teaching & pedagogical practice	17		
Serves as resource person for CT	0	0		Totals	29		3%
Promotes ST's experimentation & innovation	15	5					
Promotes professional relationships w/ students, parents & faculty/staff	15	5					
Helps ST develop pedagogical skills in teaching	14	5					
Conducts seminar for STs	0	0					
Promotes use of correct written & oral expression in instruction	2	1					
Totals	285		34%	Total Statements Coded for CTs	836		

Discussion

The problems cited in the review of literature regarding the confusion of cooperating teacher and university supervisor roles and the lack of agreement concerning the goals and outcomes of student teaching may in part be rooted in the materials disseminated to cooperating teachers and university supervisors. A significant finding from this study involves the paucity of information concerning the roles and tasks of cooperating teachers and university supervisors provided in student teaching handbooks.

These handbooks appear to provide little assistance in helping cooperating teachers and university supervisors to understand their essential roles in student teaching, including the kind of relationship they are expected to develop with each other and with student teachers. Five of the 61 handbooks included formal role statements for both cooperating teachers and university supervisors. None of these five contained definitions of the stated roles. An average of 13.7 statements per handbook related to the tasks of cooperating teachers, and an average of 6.5 statements per handbook related to the tasks of university supervisors. This suggests that a rather limited amount of information concerning participants' responsibilities is available in student teaching materials. When one recognizes that cooperating teachers and university supervisors do not effectively communicate about their respective expectations and goals (Bhagat, Clark, & Combs, 1989; Hoover, O'Shea, & Carroll,

Table 2

Frequencies of Coded Statements for University Supervisors' Responsibilities (N=61)

	Freq. Total	% of Role	% of Total
Orienter			
Describes, interprets ST goals to ST	14	26	
Describes, interprets ST goals to CT, Principal	23	43	
Describes & interprets roles, tasks of CT, US	12	22	
Acquaints ST w/ school's philosophy	2	4	
Acquaints ST w/ school's procedures	1	2	
Acquaints ST to CT's classroom procedures	0	0	
Introduces ST to students	0	0	
Acquaints ST to school's physical environ.	0	0	
Acquaints ST to school's social environment	2	4	
Provides workspace, materials, resources	0	0	
Total	54		14%
Counselor			
Assists in job search/writes letters of recommendation	9	60	
Accepts ST as partner	4	27	
Inquires w/ ST into teach.-learning process	2	13	
Total	15		4%
Instructor			
Schedules teaching experiences	3	4	
Guides ST in planning & implementation	20	24	
Promotes application of theory into practice	7	8	
Involves ST w/ clerical aspects of teaching	1	1	
Promotes ST's extra-curricular involvement	1	1	
Arranges for ST to observe other classrooms	0	0	
Provides opportunity for prof. growth	1	1	
Promotes reflection & self-evaluation	9	11	
Helps CT schedule activities for ST	8	10	
Helps ST develop personal teaching style	1	1	
Mentors ST in classroom management	2	2	
Serves as resource person for CT	8	10	
Promotes ST's experimentation & innovation	2	2	
Promotes professional relationships w/ students, parents & faculty/staff	3	4	
Helps ST develop pedagogical skills in teaching	5	6	
Conducts seminar for STs	13	15	
Promotes use of correct written & oral expression in instruction	0	0	
Totals	84		21%

	Freq. Total	% of Role	% of Total
Evaluator			
Conferences, gives feedback to ST	36	20	
Provides ratings & written assessment of ST	33	18	
Confers w/ US regarding ST's progress	1	1	
Confers w/ CT regarding ST's progress	23	13	
Confers w/ US regarding ST's problems	0	0	
Confers w/ CT regarding ST's problems	4	2	
Conducts triadic conferences other than midterm & final	11	6	
Conducts extended conferences w/ US & ST to review midterm & final evaluations	0	0	
Conducts extended conferences w/ CT & ST to review midterm/ final evaluations	10	6	
Periodic evaluation of ST by US apart from midterm, final evaluation	9	5	
Periodic evaluation of ST by CT apart from midterm, final evaluation	0	0	
Assigns final grade for ST	31	17	
Manages the formal evaluations	14	8	
Manages the pre/ post conference cycle	5	3	
Conducts mid-term, final evaluation	3	2	
Totals	180		46%
Facilitator			
Promotes achievement of goals of STg	6	10	
Promotes teamwork between triad members	11	19	
Promotes solution to problems in STg	7	12	
Schedules supervisory visits	13	22	
Maintains communication w/ Principal	7	12	
Serves as a resource for ST	14	24	
Totals	58		15%
Model			
Demonstrates reflective approach in teaching	0	0	
Demonstrates professional behavior in relational skills	2	67	
Demonstrates effective teaching & pedagogical practice	1	33	
Totals	3	1%	
Total Statements Coded for CTs	394		

1988), the absence of programmatic expectations is even more glaring.

The tasks assigned to cooperating teachers cast these individuals primarily in the roles of evaluator, instructor, and orienter. The role of evaluator seems to focus on formal and informal critiquing of the student teacher's performance, including a strong emphasis on the process of formal midterm and final evaluations. The role of instructor seems to focus primarily on practical concerns such as organizing student teaching experiences; assisting student teachers with planning; and mentoring them in the craft of teaching. Similarly, the role of orienter focuses on acquainting students with practical procedures of the school and classroom.

Given less attention than the cooperating teacher, *the university supervisor is cast primarily in the role of evaluator and secondarily in the roles of instructor, facilitator, and orienter.* The tasks predominating in the role of evaluator are essentially the same as the cooperating teacher's evaluative tasks: to conference, to provide feedback, and to prepare periodic written evaluations.

Table 3
Goals and Outcomes Frequency Totals and Ratios by Categories (N=61)

	Goals		Outcomes	
	Total	Ratio of Hndbks	Total	Ratio of Hndbks
Develop confidence in assessment	23	.38	39	.64
Develop ability to analyze & reflect on teaching	13	.21	9	.15
Link theory to practice	19	.31	5	.08
Accept and act on criticism	11	.18	26	.43
Develop skill in the use of instructional technology	8	.13	18	.30
Develop skill in reflectivity and self-evaluation	18	.30	20	.33
Develop an individual teaching style	10	.16	6	.10
Develop correct use of written & oral expression	10	.16	34	.56
Demonstrate the desire to be a life-long learner	12	.20	3	.05
Develop competence in planning	31	.51	47	.77
Develop sensitivity for individual differences	22	.36	40	.66
Develop skill in classroom management	24	.39	51	.84
Develop professional behavior (responsibility/collegiality)	31	.51	38	.62
Maintain professional appearance	16	.26	28	.46
Gain competence in using a variety of methods	16	.26	36	.59
Develop competence in questioning skills	4	.07	31	.51
Develop competence in instructional skills	12	.20	30	.49
Develop effective communication skills with students	9	.15	34	.56
Develop communication skills with parents and colleagues	13	.21	31	.51
Develop competence in motivational techniques	6	.10	26	.43
Develop ability to determine content to achieve objectives	10	.16	19	.31
Demonstrate competence in content knowledge	19	.31	37	.61

There were two important distinctions between the cooperating teachers and the university supervisors concerning the evaluation of student teachers:

(1) Eighty-six percent of the handbooks specifically require the cooperating teacher to conduct midterm and final evaluations while only 5% assign this task for the university supervisor.

(2) The handbooks do not charge cooperating teachers with assigning the final grades for student teachers but rather assign this task to university supervisors.

It appears contradictory that the cooperating teacher would be assigned the task of summative midterm and final evaluations and not the university supervisor who is responsible for assigning final grades for the student teachers. Since these handbooks do not explain the ways in which student teaching participants are expected to work together in the student teacher's evaluation, the overlapping tasks of evaluation and the contradiction in the assignment of the final grade may contribute to the kind of role confusion found in the research cited earlier.

There are indications that the handbooks in this study do not establish formal structures to enhance teamwork and to create an understanding of the cooperating teacher and university supervisor roles. Only 14 of the 61 handbooks charge cooperating teachers and/or university supervisors with the responsibility to promote teamwork within the triad. The major portion of the university supervisors' orienting and facilitating roles were concerned with organizing and interpreting the student teaching experience. However, only 12 of the 61 handbooks specifically state that the university supervisor is to interpret the student teaching program to school personnel and to student teachers.

In addition to a lack of clearly stated and well defined roles, *this study revealed a lack of congruency between articulated goals and their corresponding outcomes provided in evaluative instruments in the student teaching handbooks.* Only 42 of the 61 handbooks articulated programmatic goals.

Table 4
Correlation Coefficients by Institution

Institution	ϕ^a	r^{2b}	Institution	ϕ	r^2
Handbook #1	.351	.12	Handbook #22	.289	.08
Handbook #2	.010	.00	Handbook #23	.567	.32*
Handbook #3	.226	.05	Handbook #24	.462	.21*
Handbook #4	.024	.00	Handbook #25	.243	.06
Handbook #5	.000	.00	Handbook #26	.140	.02
Handbook #6	.179	.03	Handbook #27	.140	.02
Handbook #7	.216	.05	Handbook #28	.218	.05
Handbook #8	.025	.00	Handbook #29	.189	.04
Handbook #9	.574	.33*	Handbook #30	.283	.08
Handbook #10	.118	.01	Handbook #31	.466	.22*
Handbook #11	.332	.11	Handbook #32	.356	.13
Handbook #12	.482	.23*	Handbook #33	.277	.08
Handbook #13	.108	.01	Handbook #34	.199	.04
Handbook #14	.087	.01	Handbook #35	.056	.00
Handbook #15	.540	.29*	Handbook #36	.187	.03
Handbook #16	.199	.04	Handbook #37	.094	.01
Handbook #17	.462	.21*	Handbook #38	.059	.00
Handbook #18	.149	.02	Handbook #39	.089	.01
Handbook #19	.092	.01	Handbook #40	.302	.09
Handbook #20	.325	.11	Handbook #41	.059	.00
Handbook #21	.262	.07	Handbook #42	.138	.02

Note. $n = 42$ Only 42 of the 61 handbooks contained statements of program goals.

[a] ϕ: phi coefficient. [b] r^2: coefficient of determination.

* $p < .05$

Moreover, the frequency of outcomes found in the student teaching handbooks examined was consistently higher than the corresponding goals (see Table 3). Consequently, these student teaching handbooks demand more of students through the evaluative instruments than through what is explicated in the goals found in the same materials. This finding raises a serious question: How can student teachers be held accountable for expectations not established in the goals of the student teaching program? This finding may also help to explain the lack of agreement among triad members regarding program goals in the student teaching experience (Applegate & Lasley, 1986; Castillo, 1971; Copas, 1984; Grimmett & Ratzlaff, 1986; Guyton & McIntyre, 1990).

Recommendations

The analysis of the handbooks in this study provides additional insight into the findings of other researchers who have documented role confusion within the triad and a similar confusion in the goals and outcomes of student teaching.

Given the limited information found in the handbooks concerning the roles participants are intended to play and the established goals of student teaching, it is not surprising that cooperating teachers, university supervisors, and student teachers hold conflicting perspectives on their collective roles and express confusion over the goals and outcomes of student teaching.

In the absence of explicitly written materials to guide cooperating teachers and university supervisors, individuals are left to establish their own priorities based on their respective experiences. Given the constraints upon communication between cooperating teachers and university supervisors (AACTE, 1991; Bhagat et al., 1989; Hoover et al., 1988), it is unlikely that supervisors will establish stable expectations for student teaching. However, it is quite possible that clear and formal articulation of programmatic goals and related participant roles would facilitate communication within the triad.

The current "state of the art" in the supervision of student teachers, as reflected in student teaching handbooks, does not project the rigor or integrity one would expect of such a key program element. In general, the program materials analyzed in this study were quite traditional in philosophy and structure and did not reflect an application of the research and theory which supports the effectiveness of a clinical approach to supervision.

In order to make student teaching as meaningful and beneficial as possible, teacher educators must know what contributes to the success of the student teaching process. One step in that process is to know what roles cooperating teachers and university supervisors should play. In order to reach such an understanding, current practice must be assessed and compared with theoretical models of ideal practice. Guyton and McIntyre (1990) suggest three necessary conditions to produce appropriate roles, tasks and goals: (a) written role definitions of triad members and written goals for student teaching, (b) interpretation of roles by triad members, and (c) implementation of these roles.

It is incumbent upon professional organizations and accrediting bodies to trumpet the significance of student teaching supervision. As the single most influential experience in preservice preparation, student teaching should be accorded a prominent position in professional standards. As the data suggests, when it comes to actual practice, student teaching supervision has been neglected and not given the thoughtful attention befitting the culminating experience of preservice training.

A prudent response to the concerns addressed in this paper would be for teacher education faculty to engage K-12 teachers in a collaborative development of student teaching program goals and the related roles and responsibilities of student teaching participants. Additionally, effective means of communicating these structures to various participants in student teaching should be developed in order to insure that the goals of student teaching programs are in-

deed realized. Well-conceived and well-communicated program purposes and structures that are developed between university and K-12 faculty have the potential to promote two vital interests in teacher education:

1. Collaboration around program goals has the potential to promote reform in student teaching wherein university and K-12 faculty work collaboratively to marry the cultures of both institutions in a concerted effort to maximize the development of prospective teachers. Such teamwork in student teaching would likely foster a more open exchange of ideas and stimulate the development of new insights and a richer understanding of teaching and learning for all participants.

2. Valuing the expertise of K-12 teachers and engaging them as true colleagues in program development and in mentoring student teachers has the potential to promote the professional development of cooperating teachers and thereby furnish a piece of the reform puzzle.

Thus, the student teaching experience should be thought of as much more than just a bridge from preservice to inservice; it should be conceived as an essential structure to span the rather imposing chasm that separates the cultures of universities and K-12 classrooms.

References

Applegate, J.H., & Lasley, T.J. (1986). *Early field experience: A synthesis of role-perspective studies*. (ERIC Document Reproduction Service No. ED 310 065)

American Association of Colleges for Teacher Education. (1991). *RATE IV: Teaching teachers: Facts and figures*. Washington, DC: Author.

Association of Teacher Educators (1986). *Guidelines for professionals experiences in teacher education: A policy statement*. Reston, VA: Author.

Bhagat, D., Clark, C., & Combs, G. (1989). *A study of shared self-interests in a university-school partnership*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 307 668).

Borko, H., & Mayfield, V. (1995). Supervision in learning to teach. *Teaching and Teacher Education, 11* (5), 501-518.

Calderhead, J. (1988). The contribution of field experiences to primary teachers' professional learning. *Research in Education, 40*, 33-49.

Castillo, J.B. (1971). *The role expectations of cooperating teachers as viewed by student teachers, college supervisors, and cooperating teachers*. Unpublished doctoral dissertation, University of Rochester, Rochester.

Copas, E.M. (1984). Critical requirements for cooperating teachers. *Journal of Teacher Education, 35* (6), 49-54.

Dunne, E., & Dunne, R. (1993). The purpose and impact of school-based work: The class-teacher's role. In N. Bennett, & C. Carre (Eds.), *Learning to Teach* (pp. 135-148). London: Routledge.

Duquette, C. (1994). The role of the cooperating teacher in a school-based teacher education program: Benefits and concerns. *Teaching and Teacher Education, 10*, 345-353.

Gitlin, A., Ogawa, R.T., & Rose, E. (1982). Horizontal evaluation: Its impact in three case studies. *CCBC Notebooks, 3* (11), 1-13.

Glickman, C.D., & Bey, T.M. (1990). Supervision. In W.R. Houston, M. Haberman, & J. Sikula (Eds.), *Handbook of research in teacher education*. New York: Macmillan.

Grimmett, P., & Ratzlaff, H.C. (1986). Expectations for the cooperating teacher role. *Journal of Teacher Education, 37* (6), 41-50.

Guyton , E., & McIntyre, J.D. (1990). Student teaching and school experiences. In W.R. Houston, M. Haberman, & J. Sikula (Eds.), *Handbook of research in teacher education*. New York: Macmillan.

Hoover, N. L., O'Shea, L. J., & Carroll, R. G. (1988). The supervisor-intern relationship and effective communication skills. *Journal of Teacher Education, 39* (2), 22-27.

Koehler, V. (1984). *University supervision of student teaching*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

McIntyre, D. (1984). A response to the critics of field experience supervision. *Journal of Teacher Education, 35* (3), 42-44.

National Council of Accreditation of Teacher Education. (1995). *Standards procedures, and policies for the accreditation of professional education units*. Washington, D.C.: NCATE.

Richardson-Koehler, V. (1988). Barriers to effective supervision of student teaching. *Journal of Teacher Education, 39* (2), 28-34.

Smith, D. J. (1990). Intern satisfaction with cooperating teacher supervision. *The Alberta Journal of Educational Research, 63,* 133-140.

Zahorik, J. A. (1988). The observing-conferencing role of university supervisors. *The Journal of Teacher Education, 38* (2), 9-16.

Some Cautions Concerning Inferences about Proportions, Differences Between Proportions, and Quotients of Proportions

Thomas R. Knapp
The Ohio State University

Hak P. Tam
National Taiwan Normal University

Abstract

The purpose of this article is to bring to the attention of the educational research community several cautions regarding the use of inferential statistics for single proportions, differences between proportions, and quotients of proportions. The user of such procedures is urged to pay particular attention to the selection of the appropriate formula for the standard error and to the assumption of the independence of the observations.

Among the statistical procedures that are frequently encountered in the educational research literature are tests of hypotheses about, and/or interval estimates for, single population proportions, differences between two population proportions, and quotients of two population proportions. In survey research or in educational testing, for example, one is often interested in estimating a population proportion based upon a proportion obtained for a random sample drawn from that population. Testing the significance of the difference between or the quotient of two sample proportions is even more common. But despite the ubiquity of those procedures and the supposed simplicity of carrying them out, there are a number of problems associated with applying such techniques. This paper addresses some of the problems that may have escaped the notice of many applied researchers.

Single proportions

Hypothesis testing vs. interval estimation

It is reasonably well known that for many population parameters it is possible to do hypothesis testing "for free", so to speak, by first getting a two-sided 100(1-alpha)% confidence interval for the parameter and then seeing whether the null-hypothesized value of the parameter is or is not in the interval. (See, for example, Wilcox, 1996, p. 118.) Unfortunately, things can get complicated when the parameter of interest is a proportion. The problem is the appropriate formula for the standard error. It is in conjunction with the choice of standard error that a number of difficulties arise.

Hypothesized p vs. sample p

For hypothesis testing, one must use the hypothesized population p, not the obtained sample p, in the formula for the standard error, whereas in interval estimation there is no hypothesized p so one has no choice but to use the sample p. The traditional (and approximate—see below) formula, $[p(1-p)/n]^{.5}$, for the standard error of a single proportion, when doing hypothesis testing, is incorrectly specified in at least one recent textbook (Hinkle, Wiersma, & Jurs, 1994). They use the sample p rather than the hypothesized p in their for-

mula. [On page 216 of that text, Hinkle et al. (1994) acknowledge the problem in a footnote but make matters worse by using the population size N rather than the sample size n in the correct formula for the standard error. They go on to give two worked-out examples using the wrong formula.]

It can be argued that for p's near .5 it doesn't make much difference whether you use the sample p or the hypothesized p, since the product of p and 1-p is very close to .25 in the middle of the p scale. But for a sample p near the high or low end and a hypothesized p near the middle (a not uncommon combination), or vice versa, it can make a very big difference indeed. Tam and Kuo (1996) give examples of hypothesized p's and sample p's for which one can easily arrive at opposite decisions regarding rejection or non-rejection of the hypothesized p, depending upon which formula for the standard error is used.

As an illustration of this problem, consider testing a hypothesized p of .5 for a sample p of .7 and a sample n of 36. Using the hypothesized p in the formula for the standard error yields a "critical ratio" of $(.7-.5)/.083 = 2.40$, a value that is not statistically significant at the .01 level, two-tailed. Using the sample p yields a ratio of $(.7-.5)/.076 = 2.63$, which is statistically significant at that level. The latter, incorrect procedure would lead to the rejection of the null hypothesis whereas the former, correct procedure would not.

n vs. n-1

It has been argued, e.g., by Blommers and Forsyth (1977), that the formula for the standard error of a proportion should have n-1 in the denominator rather than n, since a proportion is a special case of a mean (where the data are all 0's and 1's) and the well-known formula for the standard error of a mean has n-1 in the denominator (when the population standard deviation is unknown). For purposes of descriptive statistics, a proportion is in fact a special case of a mean, but that similarity does not extend to inferences regarding means vs. proportions, and using n-1 rather than n is incorrect. Similar to the above argument, for large n it doesn't make much difference whether you use n or n-1, but it can matter for small n.

The derived formulas vs. the usual approximation

As Fleiss (1981, pp. 13-15) and some other authors (e.g., Ghosh, 1979; Blyth, 1986) point out, the popular formula for the standard error, $[p(1-p)/n]^{.5}$, using the hypothesized p for hypothesis testing and the sample p for interval estimation, is an approximation to more complicated formulas. [Hays (1994) provides a similar argument but, like Blommers & Forsyth (1977), he subtracts 1 from the sample size in the formula for the approximation.] If the sample p is used in conjunction with the approximate formula for hypothesis testing, the problem is exacerbated.

The normal approximation to the binomial (the continuity problem)

Even if the correct formula, involving the hypothesized p, is used for hypothesis testing in conjunction with the normal sampling distribution, it must always be kept in mind that the continuous normal sampling distribution approximation to the discrete binomial sampling distribution only "works" for values of np and n(1-p) that are not too small. Moore & McCabe (1989) recommend the use of the approximation when both are greater than or equal to 10, but some authors, e.g., Agresti (1996) claim that the approximation is sufficiently accurate for np and n(1-p) greater than or equal to 5. Fleiss (1981, p. 13) insists that a correction for continuity should also be incorporated in the numerator of the formula for the critical ratio (z) whenever the absolute difference between the sample p and the hypothesized p is greater than $(2n)^{-1}$.

The articles by Peizer and Pratt (1968); Pratt (1968); Blyth (1986); and Ramsey and Ramsey (1988) provide good discussions regarding the accuracy of the normal approximation. A particularly interesting situation arises in small samples in which the sample p is equal to 0 or 1. In either of those cases the usual standard error formula, $[p(1-p)/n]^{.5}$, yields a value of 0, which is of course a ridiculous underestimate of the amount of sampling error. Wilcox (1996) provides a good discussion of a one-sided confidence interval approach to this problem.

Differences between proportions

Most of the cautions just cited for single proportions extend to the case of differences between proportions as well (using the right p; being aware of the approximate nature of the usual formulas for the standard errors; etc.). In addition, there are the following issues.

"Pooled" vs. "unpooled" p's

The traditional formula for the (approximate) standard error of the difference between two independent sample proportions, when testing the null hypothesis of equality of the corresponding population proportions, involves the "pooling" of the two sample p's (p_1 and p_2) in order to get an estimate of the p that the two populations have in common, if the null hypothesis is true. [The formula for the pooled p is $(n_1 p_1 + n_2 p_2)/(n_1 + n_2)$.] For interval estimation there is no pooling (again, Fleiss, 1981, p. 29), and the correct formula for the standard error is not for the faint of heart, although its approximation, $[p_1(1-p_1)/n_1 + p_2(1-p_2)/n_2]^{.5}$, is often quite

good. Fleiss goes on to provide an alternative to the critical ratio test that doesn't involve the "pooled" p's.

The connection with chi-square

It is also reasonably well known that the significance of the difference between two independent sample proportions can be tested by applying the chi-square test of independence to a 2x2 table displaying the appropriate frequencies, but the equivalence of the chi-square to the square of the normal z holds only for the "pooled" case and without any continuity correction, unless the corresponding correction is incorporated in the chi-square formula. (The same argument holds for the connection between the z test for a single proportion and the chi-square goodness-of-fit test for a dichotomy.)

Independent vs. dependent sample proportions

If the two samples are "matched" in any one-to-one fashion (same people, paired people in a randomized block design, etc.) all of the formulas are different (but there remains the connection with chi-square via McNemar's test—see Pratt & Gibbons, 1981), since they must take into account the dependence of the samples by virtue of the pairing. One occasionally encounters certain applications in which the pairing is a feature of the design but is not incorporated in the analysis, i.e., the independent-samples test is used instead of the dependent-samples test. The article by Wild and Seber (1993) is particularly good for explaining the procedures for testing hypotheses about the difference between proportions for matched pairs and for determining interval estimates for such differences.

Other issues

Two other methodological articles are of special relevance to the investigation of the difference between two sample proportions. The first, by Beal (1987), compares five competing methods for getting confidence intervals for the difference between two independent sample proportions for very small samples (where the normal approximation is not good). The second, by Storer and Kim (1990), compares seven competing methods for testing hypotheses about differences between proportions, with an emphasis on the relative power of those methods.

Quotients of sample proportions

In most comparisons of sample proportions in epidemiological research, and in an occasional study of two proportions in educational research, the emphasis is placed on the quotient of the proportions (the so-called "relative risk") rather than the difference between the proportions (which the epidemiologists sometimes call the "attributable risk"). There are a number of advantages and a compensating number of disadvantages for emphasizing the quotient instead of the difference, as a descriptive statistic. For example, if the two proportions being compared are .006 and .002 for large sample sizes, a statement such as "the risk of __ is three times greater for __ than for __" may be more defensible than "the difference in risk is four-tenths of a percent". On the other hand, for small samples and for p's near the middle of the scale the difference may be more communicative.

For inferential statistics, the chi-square significance test for the quotient of two proportions is the same test as the significance test for their difference (the null hypothesis of a quotient of 1 is conceptually equivalent to a null hypothesis of a difference of 0), whereas the interval estimation formulas for the quotient, and for the "odds ratio" approximation to that quotient, are considerably more complicated (see Fleiss, 1981, pp. 71-75 and Bedrick, 1987).

Independence of observations

Since all of the inferential procedures for proportions and for their differences and quotients are based on the binomial sampling distribution for independent "trials", it is essential to consider that assumption when applying such procedures to real data. Researchers (e.g., Chase, 1996; Feldt, 1996) who use hypothesis testing in conjunction with criterion-referenced measurement, in order to test a sample proportion of correct answers against a hypothesized "cut-off" proportion necessary for "passing" an examination, are in an especially vulnerable situation. Here the inference is for a single person being measured on a sample of n items that usually correlate with one another, not for n persons being measured on a single item. In using the normal approximation to the binomial to test the null hypothesis that a person below the cutting point is actually a "passer" such researchers are apparently appealing, consciously or unconsciously, to the assumption of local independence that is made in conjunction with item response theory.

Summary

Proportions come up fairly often in educational research. (So, of course, do their corresponding percentages—just multiply by 100 and add a % sign). They are allegedly simple to use and to interpret. But as we have tried to point out in this article, they are subject to all sorts of statistical problems, some more serious than others. The following cautions need to be observed when employing inferential statistics for proportions:

1. Always use the appropriate p or p's in the formula for the standard error, even when that formula is an approximation.

2. Be prepared to face up to very complicated formulas for the appropriate standard errors for interval estimation.

3. When applying these procedures to unconventional inferential situations such as criterion-referenced measurement, be aware that the assumption of independent observations may be violated. In order to test that assumption, we suggest that the interested researcher follow Lord's (1980, p. 21) recommendation for testing the assumption of unidimensionality (from which local independence follows): Compare the first three eigenvalues of the inter-item tetrachoric correlation matrix. If the largest eigenvalue is much higher than the second largest and the second largest is not much different from the third largest, local independence can be assumed.

References

Agresti, A. (1996). *An introduction to categorical data analysis*. New York: Wiley.

Beal, S.L. (1987). Asymptotic confidence intervals for the difference between two binomial parameters for use with small samples. *Biometrics, 43*, 841-950.

Bedrick, E.J. (1987). A family of confidence intervals for the ratio of two binomial proportions. *Biometrics, 43*, 993-998.

Blommers, P.J., & Forsyth, R.A. (1977). *Elementary statistical methods in psychology and education* (2nd. ed.). Boston: Houghton Mifflin.

Blyth, C.R. (1986). Approximate binomial confidence limits. *Journal of the American Statistical Association, 81*, 843-855.

Chase, C. (1996). Estimating the reliability of criterion- referenced tests before administration. *Mid-Western Educational Researcher, 9* (2), 2-4.

Feldt, L.S. (1996). Confidence intervals for the proportion of mastery in criterion-referenced measurement. *Journal of Educational Measurement, 33*, 106-114.

Fleiss, J.L. (1981). *Statistical methods for rates and proportions* (2nd. ed.). New York: Wiley.

Ghosh, B.K. (1979). A comparison of some approximate confidence intervals for the binomial parameter. *Journal of the American Statistical Association, 74*, 894-900.

Hays, W.L. (1994). *Statistics* (5th. ed.). Fort Worth: Harcourt Brace.

Hinkle, D.E., Wiersma, W., & Jurs, S.G. (1994). *Applied statistics for the behavioral sciences* (3rd. ed.). Boston: Houghton Mifflin.

Lord, F.M. (1980). *Applications of item response theory to practical testing problems*. Hillsdale, NJ: Erlbaum.

Moore, D.S., & McCabe, G.P. (1989). *Introduction to the practice of statistics*. New York: Freeman.

Peizer, D.B., & Pratt, J.W. (1968). A normal approximation for binomial, F, beta, and other common, related tail probabilities, I. *Journal of the American Statistical Association, 63*, 1416-1456.

Pratt, J.W. (1968). A normal approximation for binomial, F, beta, and other common, related tail probabilities, II. *Journal of the American Statistical Association, 63*, 1457-1483.

Pratt, J.W., & Gibbons, J.D. (1981). *Concepts of nonparametric theory*. New York: Springer-Verlag.

Ramsey, P.H., & Ramsey, P.P. (1988). Evaluating the normal approximation to the binomial test. *Journal of Educational Statistics, 13*, 173-182.

Storer, B.E., & Kim, C. (1990). Exact properties of some exact statistics for comparing two binomial proportions. *Journal of the American Statistical Association, 85*, 146-155.

Tam, H.P., & Kuo, W-L. (April, 1996). Effect of misuse of sample standard error in hypothesis testing of proportions. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

Wild, C.J. & Seber, G.A.F. (1993). Comparing two proportions from the same survey. *The American Statistician, 47*, 178-181.

Wilcox, R.R. (1996). *Statistics for the social sciences*. San Diego: Academic Press.

Examining What Should Be the Role of an "Internationalized" Land Grant Extension System

Barbara G. Ludwig
Ohio State University Extension

R. Kirby Barrick
University of Illinois at Urbana-Champaign

Abstract

The purpose of the study was to identify the characteristics that will describe an internationalized state extension system. The study used a modified Delphi technique to explore and describe the characteristics of an internationalized state extension system. By consensus of the Delphi Panel, five critical elements were identified. Extension systems can use these as criteria to make initial assessments on the level of internationalization present.

"America's future rests on its ability to understand and compete in a world which year by year moves rapidly toward economic, political and social interdependence."

Ping (1990, p. 27)

Introduction

Extension has existed in the U.S. as part of the Land-Grant College system since 1914. Over time the mission and focus of Extension has changed from outreach education from the university targeted toward agricultural producers to include a broader social orientation. An increased interest in internationalization of Extension has occurred (Henson, Noel, Gillrad-Byers & Ingle, 1990; Ingle & Gage, 1990; Somersan, 1992). This interest appeared to be a result of many factors and influences, both within and outside Extension and the university. *America 2000* targeted the need for an educated citizenry who have the knowledge and skills to compete in a global economy. The report stated "all our people, not just a few, must be able to think for a living, adapt to changing environments, and to understand the world around them". (U.S. Department of Education, 1990, p. 35).

A review of literature indicated that internationalization is frequently viewed in general, rather amorphous terms that are difficult for some to understand and comprehend (Henson, Noel, Gillrad-Byers & Ingle, 1990). Arum and Van de Water (1992), in their book *Bridges to the Future: Strategies for Internationalizing Higher Education*, supported this view. In article after article, report after report, and at conference after conference the terms used to characterize the international dimension of education vary tremendously.

Purpose

The purpose of the study was to identify the characteristics of an internationalized state university Extension system.

Broad, but often ambiguous, goal statements are frequently used related to internationalization of Extension (ES-USDA, 1989; Ingle, 1990; King & Martin, 1991). Some ideas have been formulated for internationalizing (ES-USDA, 1989; Henson, Noel Gillrad-Byers & Ingle, 1991; Knox, 1987; Patton, 1984; Somersan, 1992; York, 1984), but there has been little emphasis on implementation by Extension systems across the country (Andrew & Lambur, 1986; Poston & O'Rourke, 1991; Rosson & Sanders, 1991). Few studies have been conducted related to internationalization of the Extension component of the land-grant university system. None defined internationalizing in terms of objectively verifiable indicators of success. A need to examine and improve the understanding of internationalizing of a state university Extension system became apparent through a review of literature. If the characteristics of an internationalized Extension system could be identified, then an organization might focus available resources to create changes needed to achieve internationalization.

Kaufman (1982, 1992) suggested putting problems into the context of what is and what should be when dealing with organizations. The Organizational Elements Model (OEM) developed by Kaufman (1982, 1992) provided a framework for the study. Kaufman's model used a holistic framework in looking at organizations and what those organizations use, do and deliver as well as the impact on clients and society in general. The current study was limited to examining organizational efforts and organizational results.

Methodology

The study used a three-round, modified Delphi technique to explore and describe the characteristics of an internationalized state Extension system. Delphi, a group process, utilized individual written responses to three researcher developed instruments as opposed to bringing individuals together for oral discussion. The process was further characterized by multiple iterations or feedback designed to accomplish convergence of opinion. Participants' anonymity was maintained during the three rounds of the study.

Linstone and Turoff (1975) outlined situations where the use of the Delphi was indicated. Situations included: (1) pre-

cise analytical methods were not suitable for studying the problem, but subjective judgment on a collective basis could provide beneficial information relative to the problem; (2) time and cost limited the ability to convene group meetings involving the individuals needed to address the problem; (3) the individuals needed to contribute to examination of a broad and complex problem represented different backgrounds with respect to experience or expertise; (4) anonymity assured that disagreements among individuals which might result in a face-to-face interaction could be referred; and (5) domination by a group or individual was avoided. All of these situations were evident in the problem to be addressed.

Panel Selection

The Delphi Panel members were purposefully selected following a nomination process. An accessible population was identified following a review of authors of significant publications, solicitations of nominations during consultations with professional leaders in the field, and personal knowledge of outstanding contributions made. A review panel consisting of three faculty members with extensive knowledge of the topic was used to assist the researcher in the selection process. A total of 15 individuals, well known and respected for their contributions to Extension or land-grant colleges or universities in the area of internationalization, was identified. The participants selected by the review panel met at least three of the criteria established for selection. The criteria were: (1) national/international reputation; (2) familiarity with the topic; (3) has conducted research, written or lectured on the topic; (4) was considered to have a deep interest in the problem and important knowledge or experience to share.

Instrument Development and Data Collection

Specialized instruments were developed following a review of the literature to clarify the concepts being studied and suitability of the modified Delphi research technique to assess these concepts. In the modified Delphi, position statements were used in place of an unstructured questionnaire on the first round. Three rounds were planned and three instruments were developed. The development and administration of questionnaires is interconnected in the Delphi technique.

Instrument Development

The initial instrument contained 39 position statements derived from the literature and structured interviews with international experts. Face and content validity of the initial instrument were assured through the use of a content validity panel. The reviewers, six faculty from universities in the U.S., Europe and Africa who were familiar with the U.S. Extension system were advised of the objectives of the study and the purpose of the instrument. Each was asked to review and refine the alternatives stated and identify additional important positions pertaining to the study. Comments and suggestions related to clarity and content were solicited. Given the nature of the Delphi technique, additional types of validity and reliability estimates were not appropriate for the instrument (Dalkey, Rourke, Lewis and Snyder, 1972; Hughes, 1993).

The Delphi Panel was asked to identify the degree to which they believed each item on the instrument contributed to the internationalization of a state university Extension system. A seven-point Likert-type scale was used with 0 indicating "no importance" and 6 indicating "critical importance". Delphi Panel members were asked to support their opinion with a rationale. Space was also provided for panel members to add new statements. Delphi Panel responses were incorporated in successive instruments.

Instrument II was developed based on responses to the first instrument and suggestions for new statements made by the Delphi Panel. During Round I, consensus was not achieved on any statement based on the criteria established. Consensus on a statement was considered to have been reached when 80% of the ratings (12 panel members) fell within two rating categories on a seven-point scale (Ulschak, 1983). The instrument used in Round II repeated the 39 items from Round I. Based on suggestions from the Delphi Panel, 12 new items were added and 9 items were reworded so that a total of 51 items were considered.

Two types of feedback were provided the Delphi Panel in Instrument II. The first was statistical feedback in the form of group response using a frequency table for each statement and the individual's own response on each statement. Neither the mean nor median was reported as a descriptive statistic. The dispersion of scores indicated these statistics could be misleading to the Delphi Panel. In addition to statistical feedback, all comments by the Delphi Panel for each statement in Round I were anonymously reported. The instruments used in the second and third rounds contained items on which a predetermined level of consensus was not achieved during the previous round. Consensus was achieved on nine items during the second round.

Instrument III was developed based on responses to the Round II instrument and suggestions made by the Delphi Panel. The round III instrument contained 42 items on which consensus was not achieved in Round II. Two types of feedback were used in Round III. The first was statistical feedback in the form of group response using a frequency table for each statement and the individual's own response on each statement. The mode was identified as well. In addition to statistical feedback, all comments by the Delphi Panel for each statement in Round II were anonymously reported. In Round III, the Delphi Panel was asked to review each statement, re-evaluate their position and rerate using the same seven point Likert-type scale. During Round III, consensus was reached on 29 items.

Data Collection

The Delphi instruments were mailed to the Delphi Panel using regular U.S. mail or air mail to international locations. The mailed packet consisted of the instrument, an individually addressed cover letter and a self-addressed stamped return envelope. A variety of techniques was used to ensure maintenance of interest and participation in the study.

Table 1

Characteristics Having Importance to Extension Internationalization

Item	Mean	SD	Category	Item	Mean	SD	Category
Clientele develop a fundamental understanding of global and national interdependence.	5.85	.38	R	Professional improvement activities increase activities increase knowledge of global issues.	4.93	.47	E
Extension educational programs within in the U.S. stress the impact of international economic forces on agricultural markets.	5.69	.86	R	Extension is involved with international development activities.	4.93	.92	E
Extension educators incorporate international perspectives into on-going educational activities.	5.54	.66	R	Local business persons are trained for participation in international markets.	4.93	.62	R
Extension faculty/agents recognize the relationships between basic international issues (e.g. knowledge of international agriculture, commitment to human development, significance of privatization) and the Extension mission.	5.54	.66	E	Specific groups (i.e. commodity groups) are targeted for public policy education on global decision-making.	4.86	.66	R
				The organization's best junior faculty/agents are identified to participate in overseas assignments.	4.86	.36	E
Personnel evaluation systems recognize international efforts.	5.50	.76	E	Administrators engage in experience which will internationalize their own professional lives.	4.86	.53	E
Key leaders participate in interdisciplinary international experiences.	5.36	.74	R	Regular encouragement/accommodation of visitation by scholars from other countries occurs.	4.86	.66	E
Sensitivity to diversity issues by Extension clientele is enhanced.	5.36	.63	R	Proposals for international work are developed and funded.	4.77	.44	E
Reward structure recognizes internationalization in its system of rewards. These include merit adjustments, tenure, promotion, and peer recognition.	5.31	.63	E	The organization's best senior faculty/agents are identified to participate in overseas assignments.	4.64	.63	E
Financial support for internationalizing activities is available.	5.21	.43	E	Exchange programs with extension organizations in other countries are institutionalized.	4.64	.74	E
Administrators clearly communicate support for internationalization.	5.14	.66	E	Rural clientele are targeted for educational programming related to the current international marketplace.	4.64	.74	R
A person(s) is identified to provide leadership to internationalizing efforts.	5.14	.53	E	Educational programs planned by Extension help clientele secure a better understanding of complex worldwide issues.	4.57	.76	R
International experiences are provided for county agents who do not have faculty status.	5.08	.64	E	Extension educational programs offered to 4-H members help develop international awareness.	4.57	.76	R
Policy and operating procedures facilitate international program efforts.	5.07	.62	E	Educational programs increase participant's understanding of other cultures.	4.57	.76	R
The organization culture expects international activity.	5.07	.62	E	A committee(s) is established to guide internationalization efforts.	4.57	.65	E
Extension educators assist communities in building a sense of responsibility for wise use of natural resources in the context of global trends.	5.07	.62	R	Exchange programs with extension organizations in other countries are planned and conducted on an on-going basis.	4.50	.65	E
Faculty increase their expertise by interacting with faculty and scholars from other cultures.	5.07	.47	E	Training programs are provided for foreign immigrants living in the United States.	4.50	.52	R
Human and physical resources are allocated to support the integration of international activities in the overall institution effort.	5.07	.47	E	Urban clientele are targeted for educational programming related to the current international marketplace.	4.50	.65	R
Opportunities for international experiences are provided for administrators.	5.00	.55	E	Extension clientele interact with visiting scholars and students to become more globally aware.	4.31	.75	R
The central mission of the Extension system includes a commitment to international education.	5.00	.55	E				

Scale: 0 = No Importance; 1 = Slight Importance; 2 = Limited Importance; 3 = Moderate Importance; 4 = Moderately High Importance; 5 = High Importance; 6 = Critical Importance

Categories: E = Organizational Effort; R = Organizational Result

Note: Round 1: N = 14; Round 2: N = 13; Round 3: N = 14

Data Analysis

Descriptive statistics were calculated for each round. The computer program SPSS was used for data analysis. For each round, items on which consensus was reached were identified. Consensus on an item was considered to have been reached when 80% of the ratings fell within two categories on a seven-point scale.

Frequency counts and percentages, along with the mode and median were reviewed in determining consensus. For each round, those items not meeting the criteria for consensus were included in the following round as well as new items generated from suggestions. Suggested items were compiled and content analysis was conducted following procedures outlined by Altschuld (1993) and Delbecq, Van de Ven & Gustafson (1975). Following Round III, statistics of central tendency and variability were calculated for all items on which consensus had been reached. The mean was used to describe the level of importance of the item to an internationalized state Extension system as determined by consensus of the Delphi Panel and variability was described through standard deviations.

Results

The results of the study represent the collective opinion of the experts participating in the Delphi Panel at a single point in time and cannot be construed to be representative of any other population or situation. Fourteen of the 15 participants responded to each round, a 93% response rate. Fifty-one items were considered during the three rounds of the Delphi. Consensus was achieved on 38 items which were identified as having moderately high importance to critical importance for the internationalization of a state university Extension system. Table 1 reports the items where consensus was reached. Consensus was not achieved on thirteen items after three rounds. Comments made by the Delphi Panel during each round and reported anonymously provided additional information to describe the ratings and clarify issues. Three hundred and sixteen comments were received.

Following Kaufman's model (1982, 1992), the results were categorized as Organizational Efforts and Organizational Results. Organizational efforts were comprised of inputs and processes. Inputs were identified as the existing starting conditions affecting organizational activities and processes as the means, methods and procedures necessary for managing inputs. Organizational results were comprised of products and outputs. Products were defined as the internal results accomplished through the application of inputs and processes; outputs were the products the organization delivered to external clients.

By consensus of the Delphi Panel, the most critical characteristic of a state university extension system which had internationalized was the output or end product of clientele who developed a fundamental understanding of global and national interdependence. Educational programming efforts

having high importance to internationalization included programs that help clientele understand complex worldwide issues, programs that train local business persons for participation in international markets and interdisciplinary international experiences for key leaders. The Delphi Panel placed high importance on targeting commodity groups for public policy education on global decision making and rural clientele for education on the international marketplace.

Critical Elements

Five critical elements were identified by the Delphi Panel as being present in an internationalized state university Extension system:

- Clientele develop a fundamental understanding of global and national interdependence.

- Extension educational programs within the U.S. stress the impact of international economic forces on agricultural markets.

- Extension educators incorporate international perspectives into on-going activities.

- Extension faculty/agents recognize the relationship between basic international issues and the Extension mission.

- Personnel evaluation systems recognize international efforts.

The absence of any one of these critical elements would mean that the Extension system could not be considered to be internationalized. An internationalized state university Extension system would exhibit other important characteristics as described in Table 1. Not all the important characteristics identified by the Delphi Panel need to be present for the Extension system to be considered to be internationalized, but many are likely to be evident. Each important characteristic provides a building block, process or programming goal which will enable the Extension system to develop and maintain the five critical elements identified.

Conclusions and Implications

The study brought greater clarity and focus to the definition of internationalization of an Extension system. Internationalization was not seen as a fourth dimension: teaching, research, service and international efforts. Instead, successful internationalization efforts were identified as integrating global perspectives into the basic mission and mandate of Extension. Using the definition of university internationalization developed by Henson and Noel (1989) as a starting point, a three-part definition is proposed for discussion and debate. The definition is based on results of the current study and reflects the five critical elements identified.

> Internationalization of Extension is the incorporation of international dimensions, content and considerations into Extension teaching, research, and service to enhance their relevance in an increasingly interdependent world.

Participation in Extension educational activities assist clientele to develop a fundamental understanding of global interdependence and international economic forces as they relate to the issue areas within Extension's mission.

Institutional commitment is evidenced by the development of a structure and capacity to support staff development and reward accomplishments.

Poston and O'Rourke (1991) reported 80% of Extension directors indicated their state had achieved either a low level or had not achieved any level of globalization. For these Extension systems, internationalization will represent a significant organizational change. Identification of characteristics essential to an internationalized Extension system can assist Extension leaders and university administrators to identify and focus available resources where the greatest impact or change can be realized. A clear sense of direction, strong leadership in internationalizing and enthusiasm from leaders of the organization will help to ensure concerted and sustained action. Policy and resource decisions such as the incorporation of fiscal support into the ongoing Extension budget and placing a person "in charge" of internationalization to support and coordinate Extension program and activities are necessary implementation strategies. Assessment must focus on the outcomes achieved. Organizational change is a slow and often discontinuous process in a complex organization. Ongoing assessment of the progress being made will be necessary.

One outcome of the current study was the generation of additional questions and avenues for research. Research in the area of internationalization of Extension has been limited and it is hoped that the results of the current study have raised additional questions. Suggestions for further study are illustrative of the types of problems yet to be addressed. Replication of the current study is suggested. Other issues to be explored include: Can the factor(s) which stimulated an uninvolved Extension system to change and begin the process of becoming internationalized be identified? What are the societal impacts of an internationalized state Extension system? What characteristics do state Extension systems have which by reputation are considered internationalized exhibit? How do these characteristics compare with the five identified by the current study?

In closing, a comment made by one of the Delphi Panel members is appropriate. The panel member indicated "Internationalization should not be viewed as a fourth dimension: teaching, research, service and international. Instead successful internationalization efforts will integrate global perspectives into the basic mission and mandate of Extension".

References

Altschuld, J.W. (1993). Delphi Technique. Lecture, evaluation methods: Principles of needs assessment II. The Ohio State University, Columbus, Ohio.

America 2000. (1990). Washington, D.C.: U.S. Department of Education.

Andrews, Mary P. and Michael Lambur. (1986). *International programming in the cooperative extension system: an eleven state survey of organizational capacity and field staff attitudes and processes*. A study by the Cooperative Extension Systems of Utah, Georgia, Rhode Island and Michigan and the consortium for international cooperation in higher education.

Arum, S. and Van de Water, J. (1992). The need for a definition of international education in U.S. universities. In C.B. Klasek (Ed.), *Bridges to the future: strategies for internationalizing higher education* (pp. 191-203). Carbondale, Illinois: Association of International Education Administration.

Dlebecq, A. L., Van de Ven, A.H., & Gustafson, D.H. (1975). *Group techniques for program planning*. Glenview, IL: Scott, Foresman, and Co.

Dalkey, N.C., Rourke, D.L., Lewis, R., Snyder, D. (1972). *Studies in the quality of life*. Lexington, Massachusetts: Lexington Books.

ES-USDA. (1989, October). *Going global - cooperative extension system*. Washington, D.C.: United States Department of Agriculture.

ES-USDA. (1989, April). *Global perspectives for extension*. Washington, D.C.: Extension Service, USDA.

Henson, J.B., Noel, J.C., Gillrad-Byers, T.E. & Ingle, M.D. (1990, June). Internationalizing U.S. universities: preliminary summary of a national study. *Proceedings of internationalizing U.S. universities (Appendix B)*. Pullman, Washington: International Program Development Office of Washington State University.

Henson, J.B. and Noel, J.C. (1989). Faculty and the internationalization of the agricultural education curriculum for the year 2005. In *Educating for a global perspective: international agricultural curricula for 2005* (pp. 19-26). Washington, D.C.: The North Central Curricular Committee Project.

Henson, J.B., Noel, J.C., Gillrad-Byers, T.E. & Ingle, M.D. (1991, May). Internationalizing U.S. universities: preliminary summary of a national study. (Occasional Paper #7) Pullman, Washington: International Programs, Washington State University.

Hughes, Matthew. (1993). *Career-oriented program activities and learning experiences that promote achievement of middle-grade education goals*. Unpublished doctoral dissertation, The Ohio State University, Columbus, Ohio.

Ingle, M.D. (1990). *Conference proceedings-internationalizing U.S. universities: a time for leadership*. Pullman, Washington: International Program Development Office of Washington State University.

Ingle, M.D. & Gage, J. D. (1990). *Conference proceedings - internationalizing U.S. universities: at time for leadership*. Appendix B. Pullman, Washington: International Program Development Office, Washington State University.

Kaufman, R. (1992). *Mapping educational success*. (pp. 28-46) Newbury Park, California: Corwin Press, Inc.

Kaufman, R. (1982). Means and ends - Needs assessment, needs analysis and front end analysis. *Educational technology*, *22* (11), 33-34.

King, D.R. & Martin, R.A. (1991). *Internationalization of the post-secondary agriculture curriculum*. Conference Proceedings Seventh Annual Meeting of the Association for International Agricultural and Extension Education. St. Louis, Missouri.

Knox, A.B. (1987). *International perspectives on adult education*. (Information Series No. 321). Columbus, Ohio: National Center for Research in Vocational Education.

Linstone, H.A. & & Turoff, M. (1975). *The Delphi method: Techniques and applications*. Reading, MA: Addison Wesley Publishing.

Patton, Michael Q. (1984, September/October). Extension - A Citizen of the World. *Journal of Extension*, XXII, 37-44.

Ping, C. (1990, June). Internationalizing U.S. universities: preliminary summary of a national study. *Proceedings of internationalizing U.S. universities*. Pullman, Washington: International Program Development Office of Washington State University.

Poston and O'Rourke. (1991, November). *Globalization and cooperative extension, final report: November 1991* (Publication 91-53). Washington State University: Social and Economic Sciences Research Center (SESRC).

Rosson, C.P. & Sanders, L.D. (1991, Summer). Extension in a global context. *Journal of Extension*, XXIX, 21-23.

Skinner, G. (1991, June). Extension's role in linking visions and global opportunities. Speech to the American Home Economics Association Extension Section, Twin Cities Conference.

Somersan, A. (1992). The realities of globalization, implications for extension. 1992 McDowell Lecture, November 18. Pennsylvania State University.

Ulschak, F.L. (1983). *Human resource development: The theory and practice of needs assessment*. (pp. 111-131) Reston, VA: Reston Publishing Company, Inc.

York, E.T. (1984, November). 1984 Seaman A. Knapp memorial lecture: A major international dimension for U.S. colleges of agriculture - an imperative. Paper presented at the Annual Meeting of National Association of State Universities and Land-Grant Colleges, Denver, Colorado.

Mentoring: Help or Hindrance?

Mary Bendixon-Noe
The Ohio State University, Newark

Carmen Giebelhaus
University of Dayton

The research literature shows mentoring programs in education to be highly complex and situational. While there are potential advantages for both the mentor and the novice teacher, several issues remain problematic and presently limit the effective, widespread use of mentoring as a way of inducting new teachers into the profession.

When we finished our preservice teacher education programs, we were awarded teaching certificates and were thought to be competent in all classroom endeavors, including teaching, discipline, and establishing classroom climate and environment. We had only one field experience, our student teaching. After securing a teaching position, we entered the classroom excited yet apprehensive. Noone was assigned to help us cope with any ensuing problems or to help us with school policies and procedures. Luckily, we attached ourselves to experienced teachers who were kind enough to help us muddle through our first year of teaching.

Not everyone is so lucky, though. Linda Darling-Hammond noted in a recent issue of *Kappan* (1996) that the lack of effective mentoring is one of the barriers to having competent teachers for every child. She suggested that teachers ". . . who do get hired are typically given the most difficult assignments and left to sink or swim, without the kind of help provided by internships and residencies in other professions. Isolated behind classroom doors with little feedback or help, as many as 30% leave in the first few years, while others learn merely to cope rather than to teach well" (p. 195). Rosenholtz (1989) and Veeman (1984) support Darling-Hammond's assessment regarding the astoundingly high attrition rate of beginning teachers after just a few years of service. Whether beginning teachers experience frustration and difficulty in the profession because they are expected to be responsible for the same work that experienced veterans do (Lortie, 1975), or because they are frequently given the most difficult or undesirable teaching situations, educators from across the country have responded by initiating teacher mentoring programs.

In recent years, we have worked with public school systems and their mentoring programs for beginning teachers. From our discussions, there appear to be wide latitudes regarding the processes and procedures in developing and maintaining mentors and mentoring programs. Our observations are verified by the National Association of State Directors of Teacher Education (NASDTEC) who notes variance in programs across states. Mentoring programs, or "Beginning Teacher Support Systems" (BTSS) as they are referred to by NASDTEC, are described in the 1996-1997 *NASDTEC Manual*. Currently, it is noted that only 28 states have BTSS programs and of those, just over half (15) have all of their beginning teachers involved in the programs. Most include some type of training and/or inservice programs for beginning teachers (20), but only 16 states provide

additional funding for the BTSS programs. The elements of each state program vary widely with regard to: (a) criteria and processes for selection to the BTSS, (b) criteria and processes for the selections of mentors, (c) policies regarding evaluation of the BTSS, (d) policies regarding second year support, and (d) funding of the BTSS. Further, the report notes that only eight states require support for beginning teachers by the teacher education institutions.

The original mentor is found in the classic poem *The Odyssey* by Homer. When Odysseus leaves to fight in the Trojan Wars, he entrusts his son, Telemachus, to an old and dear friend named Mentor. Mentor was to nurture and educate Telemachus during Odysseus's absence. Telemachus was to respect Mentor. Therefore, a mutual relationship developed where an older, experienced individual helped a younger novice to develop and grow. From this Greek myth, the process of helping entry persons into a profession by utilizing more experienced and valued employees has been labeled "mentoring." The established programs are based on the premise that a positive emotional attachment exists between two individuals. The older or more experienced persons share their wisdom and insights, while the younger or novice individuals value such knowledge and learn from it. Business and government introduced mentoring in their worlds beginning in the 1970s. Schools, colleges and universities, and states developed mentoring programs in the 1980s in an attempt to help acclimate new teachers nationwide (Gold, 1996; Tellez, 1992).

The literature reviewed for this article was very perplexing and compounding. One thing is clear. There is wide variance in how the term mentoring is used and in the programs described. Its implementation appears to be highly dependent upon the leadership of the organization, the interest generated, and available funds. There are numerous articles that described in detail how the various programs use mentors, including selection and training. The literature was much more limited, however, regarding how mentors or mentoring programs significantly improved an individual's performance.

The Impact of Mentors

The limited research available does indicate mentoring generally has a positive impact on both mentor and protégé. Kram (1983), in her study of 18 business mentoring relationships, concluded these relationships can enhance a novice's develop-

ment. The phases of development she identified were similar to those of Fuller and Bown (1975) or others. They included initiation, cultivation, separation, and redefinition. She also found the positive impact was influenced by the individuals and the type of interpersonal relationship that ultimately developed. Kram did note, however, that under certain circumstances, the mentoring relationship could become destructive for one or both individuals. Head, Reiman, and Thies-Sprinthall (1992) concur, warning that in facilitating the professional growth and development of teachers inadequate or nominal mentoring programs may actually be worse than no program at all. It appears, therefore, that mentoring programs can have either positive or negative effects.

In recent years, mentoring research has focused on educational inductees at various levels. For example, individuals in higher education who have been involved in a mentoring program learned political skills, risk-taking behaviors, and communication skills viewed as important to their profession. Researchers concluded that mentoring relationships were critical for developing quality professionals in higher education (Bova & Phillips, 1984). Ganser (1994) reported that principals in public school systems viewed mentors as a helpful supplement to their staffs. They also wanted to be involved in selecting the mentors who worked with beginning teachers.

The primary focus of the research literature, however, has been beginning teachers. Bainer and Didham (1994) reported that mentoring was viewed as an important dimension of support in education. Some research indicates that beginning teachers involved in mentoring programs engage in more conversations regarding teaching than beginning teachers who do not have mentors. Additionally, they are more likely to engage in action research and are more willing to work in collaborative contexts for teacher learning (Stanulis & Jeffers, 1995). Teachers who are involved in mentoring programs were identified as more collaborative in both professional and social context (Powell & Mills, 1995).

Ballantyne, Hansford, and Packer (1995) reported that beginning teacher and mentor journals revealed four major functions of mentoring, including: (a) personnel support, (b) task-related assistance and advice, (c) problem-related assistance and advice, and (d) critical reflection and feedback on practice. In their analysis of mentor teacher component of the North Carolina Beginning Teacher Program, Huffman and Leak (1986) concluded that "Mentor teachers...provided 'positive reinforcement', 'guidance and moral support', 'patience and understanding' and even a 'shoulder to cry on'"(p. 23).

Personal and emotional support is valued by beginning teachers, but mentors also gain a great deal of personal satisfaction from the relationship. Beginning teachers reported that the most important aspect of an induction program was having a mentor because it gave them someone to turn to when problems arose (Huling-Austin, Putman, & Galvez-Hjornevik, 1986). Researchers link the aspect of "mentor satisfaction" to the generativity stage in adult development based on Erikson's theory (Stevens, 1995). Findings from a qualitative study confirm the importance of mutual respect and trust necessary for a successful mentoring relationship (Abell, 1995).

Especially in the early weeks of teaching, beginning teachers value the advice, resources, and ideas that a mentor shares, information about school routines and curriculum content, assessment and evaluation of students, and innumerable other issues and concerns (Ballantyne et al., 1995). It also has been reported that both the curriculum content and instructional methods are significantly influenced by mentors (Harnish, 1994; McNamara, 1995). Beginning teachers reported receiving help from their mentors in 14 areas, according to Huling-Austin and Murphy (1987). Among the most mentioned were: someone to talk to/listen to, locating materials, help with clerical work related to district policies and procedures, lesson planning, classroom organization, and discipline (p. 33). Wilkinsons' 1994 survey of 286 first year teachers found that beginning teachers reported assistance with classroom procedures, lesson planning, teaching strategies and methods, and discipline as most helpful to them. Wilkinson also noted that when the teaching situation was more challenging, the beginning teachers wanted more assistance.

An appropriate time for mentoring to begin to focus on critical reflection and feedback on practice is during the later stages of a beginning teacher's first year (Ballantyne et al., 1995). They note that during the second term, most beginning teachers report growing confidence in task- and problem-related areas. This "naturally occurring shift in focus" (p. 302) is from teaching-centered concerns to student-learning concerns and a willingness to take risks regarding teaching strategies and styles.

Problems in Paradise

While research suggests many benefits of mentoring, many individuals continue to express concerns regarding mentors and mentoring. Areas of concern include the lack of definition of mentoring and mentors, the amount and type of training necessary for mentors, and what characteristics mentors need to be successful.

One of the biggest concerns regarding mentors and mentoring is the wide latitude given to how individuals define the two terms. If we are to utilize Homer's guide, many of the current programs implemented do not fit the term of mentor. Often what we see is one individual labeled as a "mentor", when actually they serve as a resource person or "buddy" for new teachers. This occurs when a school or district identifies one teacher to serve as mentor to all beginning teachers in a particular school building. This role, although formally established, has no allocated time for implementation. Therefore, information regarding policies and procedures is relayed, but no personal relationships are established. True mentoring takes time and effort. It is virtually impossible for an individual with his/her own classroom duties to find the time to establish personal relationships with several beginning teachers. Other school mentoring programs pair one experienced teacher with a novice during the induction year. Again, the teachers may or may not have common planning times where a relationship could be established. These are just two mentor program configurations. However, there are as many configurations along the spectrum between these two models as there are institutions or people who develop such programs. Perhaps this is why several definitions for mentor and mentoring are found (e.g. Gehrke & Kay, 1984; Kay, 1990; Little, Galagaran, & O'Neal, 1984).

Healy and Welchert (1990) believe a common definition must be established because "without such definitional consensus, efforts to develop a knowledge base relevant to mentorships in education has been haphazard" (p. 17).

Another issue is the amount or absence of training given to mentors. Some school districts have elaborate systems developed for the selection and preparation of mentors. At the other extreme, some do nothing beyond identifying the mentor. Training is an important aspect of any mentoring program. O'Dell (1987) emphasizes that mentor training should be based on the literature about teacher development, beginning teacher problems, effective teaching, supervision, and adult development. Research supports this, as beginning teacher concerns were the area most handled by mentors (Wilkinson, 1994). Kilgore and Kozisek (1988) concluded from their studies that when mentors received no training or compensation, their role was not fulfilled.

Hart (1985) found that teacher mentors were most successful as supervisors when they were trained in supervision. Research indicates that the role of mentoring is difficult to perform and that teachers want more time and specific training before they are comfortable with and competent in that role (Ganser, 1995; Hawley, 1990; Warren-Little, 1988). Thies-Sprinthall (1986) is adamant in her belief that mentor training and follow-up activities are critical to the success of the mentoring program. In a preliminary study, Giebelhaus and Bowman (1997) found that preservice teachers who worked with trained mentor teachers exhibited stronger skills in planning and demonstrated greater reflective and analytical skills about teaching and learning than did those student teachers whose cooperating teachers had no mentor training. Further, they found that although mentor training which included general principles and strategies of supervision produced good results, even better results occurred when the training was coupled with knowledge of and skill in recognizing specific effective pedagogical practices.

Kennedy (1991) describes one program which she found to be highly successful with more than 700 teachers and teacher candidates. Components of this mentoring program included: (a) mentor teachers being temporarily released from their full-time teaching load, (b) mentors received training in the task of mentoring and on-going assistance afterwards to discuss the challenges of mentoring, and (c) preparation and assistance focuses on the goals and purposes of teaching, on academic content, and on how to critically analyze teaching.

Wilson and Ireton (1995-1996) studied the competencies which a master or mentor teacher should possess in order to model, guide, and assist a beginning teacher. Eleven competencies viewed as important to fulfilling the role of mentoring a beginning teacher were identified by mentor teachers. Of the eleven competencies ranked, classroom management was identified as the most important. Other competencies necessary for effective mentor teachers included good communication skills, ability to respond to individual differences, ability to maintain a "close day to day liaison" with the beginning teacher, enthusiasm, willingness to accept constructive criticism, and ability to provide positive feedback. Personal characteristics necessary for successful mentoring relationships are also noted in the literature. In their list of essential mentor characteristics, Butler (1987) and O'Dell (1987) included the following: (a) successful teaching experience, (b) willingness to commit time, (c) ability to redefine roles as the other teacher grows and develops, and (d) responsiveness. Huling-Austin, Putman, and Galvez-Hjornevik (1986) stated that "The assignment of an appropriate support teacher is likely to be the most powerful and cost-effective intervention in an induction program" (p. 50). More recently, Fletcher (1995) indicates that mentors must have the ability to work as a partner in a shared learning process with another adult. Ballantyne et al. (1995) found mentor teachers who did not have the knowledge of progressive teaching methods or the ability to aid their protégé in critical reflection were not successful in their role. Therefore, attention must be given to the characteristics and selection of mentors.

The Bottom Line

Effective mentoring is highly complex. This is evidenced by the mentoring principles developed and adapted by the Association of Teacher Educators in 1991 (Bey & Holmes, 1992). Three areas are identified and elaborated. These are: the actual mentoring process, the establishment and maintenance of mentoring programs, and the selection and preparation of mentors. Research indicates that there are potential benefits for both individuals involved in a mentoring relationship. However, many issues remain problematic. Many of these problems deal with the definition of mentoring, the role of the mentors, and the selection of the mentors. Schools report that they are unsure about how to resolve these problems (Bradley & Gordon, 1994). If these are the biggest issues in the mentoring process, it is not surprising that schools cannot solve them alone. There appears, however, to be tremendous potential in inducting novices into the teaching profession by using mentors. By working together teacher education institutions and school districts may be able to make mentoring the best possible opportunity for "passing the torch to the next generation of teachers" (Head et al., 1992, p. 5) and realizing America's goal of providing "all students with what should be their educational birthright: access to competent, caring and qualified teachers" (National Commission on Teaching and America's Future, as cited in Darling-Hammond, 1996).

References

Abell, S. K. (1995). "Somebody to count on:" Mentor/intern relationships in a beginning teacher internship program. *Teaching and Teacher Education, 11* (2), 173-188.

Bainer, D. L., & Didham, C. (1994). Mentoring and other support behaviors in elementary schools. *Journal of Educational Research, 87* (4), 240-247.

Ballantyne, R., Hansford, B., & Packer, J. (1995). Mentoring beginning teachers: A qualitative analysis of process and outcomes. *Educational Review, 47* (3), 297-307.

Bey, T.M., & Holmes, C.T. (Eds.). (1992). *Mentoring: contemporary principles and issues*. Reston, VA: Association of Teacher Educators.

Bova, B.M., & Phillips, R.R. (1984). Mentoring as a learning experience for adults. *Journal of Teacher Education, 35* (3), 16-20.

Darling-Hammond, L. (1996). What matters most: A competent teacher for every child. *Phi Delta Kappan, 78* (3), 193-200.

Fletcher, S. (1995). Caveat mentor. *Language Learning Journal, 11*, 39-40.

Fuller, F., & Bown, O. (1975). Becoming a teacher. In K. Ryan (Ed.), *Seventy-fourth yearbook of the National Society for the Study of Education* (pp. 176-184). Chicago: University of Chicago Press.

Ganser, T. (1994). The perceptions of school principals about a mentoring program for newly hired urban school teachers. *Teacher Educator*, *30* (2), 13-23.

Ganser, T. (1995). What are the concerns and questions of mentors of beginning teachers? *NASSP Bulletin*, *79* (575), 83-91.

Gehrke, N.J., & Kay, R.S. (1984). The socialization of beginning teachers through mentor-protégé relationships. *Journal of Teacher Education, 35* (3), 21-24.

Giebelhaus, C., & Bowman, C. (1997, February). *The impact of clinical mentor training on the professional development of student teachers.* Paper presented at the meeting of the Association of Teacher Educators, Washington, DC.

Gold, Y. (1996). Beginning teacher support. In J. Sikula (Ed.)*, Handbook of research on teacher education* (pp. 548-594). New York: Simon & Schuster Macmillan.

Harnish, D. (1994). Mentoring strategies for faculty development. *Studies in Higher Education, 19* (2), 191-201.

Hart, A.W. (1985, April). *Formal teacher supervision by teachers in a career ladder.* Paper presented at the meeting of the American Educational Research Association, Chicago.

Head, F., Reiman, A., & Thies-Ssprinthall, L. (1992). The reality of mentoring: Complexity in its process and function. In T. Bey & C.T. Holmes (Eds.), *Mentoring: Contemporary principles and issues* (pp. 5-24). Reston, VA: Association of Teacher Educators.

Healy, C. C., & Leak, S. (1986). Beginning teachers' perceptions of mentors. *Journal of Teacher Education, 37* (1), 22-25.

Huling-Austin, L., & Murphy, S. C. (1987). *Assessing the impact of teacher induction programs: Implications for program development.* Paper presented at the meeting of the American Educational Research Association, Washington, DC. (ERIC Document Reproduction Service No. ED 283 779).

Huling-Austin, L., Putman, S., & Galvez-Hjornevik, C. (1986). *MTIP Satellite Conference Proceedings* (Report No. 7209). Austin, TX: University of Texas at Austin, Research and Development Center for Teacher Education.

Kay, R.W. (1990). A definition for developing self-reliance. In T.M. Bey & C.T. Holmes (Eds.), *Mentoring: Developing successful new teachers* (pp. 51-64). Reston, VA: Association of Teacher Educators.

Kennedy, M. (1991). Some surprising findings on how teachers learn to teach. *Educational Leadership, 49* (3), 14-17.

Kilgore, M., & Kozisek, J. A. (1988). *The effects of a planned induction program on first year teachers: A research report.* Paper presented at the meeting of the Association of Teacher Educators, San Diego, CA.

Kram, K. E. (1983). Phases of the mentor relationship. *Academy of Management Journal, 26* (4), 608-625.

Little, J. W., Galagarnan, P., & O'Neal, R. (1984). Professional development roles and relationships: Principles and skills of "advising". San Francisco: Far West Laboratory of Educational Research and Development. (ERIC Document Reproduction Service No. ED 267 515).

Lortie, D. (1975). *Schoolteacher: A sociological study.* Chicago, IL: University of Chicago Press.

McNamara, D. (1995). The influence of student teachers' tutors and mentors upon their classroom practice: An exploratory study. *Teaching & Teacher Education, 11* (1), 51-61.

National Association of State Directors of Teacher Education (1996-1997). *Section K.* In T. Andrews (Ed.), *The NASDTEC Manual 1996-1997* (pp. 1-10). Dubuque, IA: Kendall/Hunt.

O'Dell, S. J. (1987). *Mentor teacher programs.* Washington, DC: National Education Association.

Powell, R., & Mills, R. (1995). Professional knowledge sharing among interdisciplinary team teachers: A study of intra-team mentoring. *Research in Middle Level Education Quarterly, 18* (3), 27-40.

Rosenholtz, S. (1987). Workplace conditions of teacher quality and commitment: Implications for the design of teacher induction programs. In G.A. Griffin & S. Mills (Eds.), *The first years of teaching: Background papers and a proposal* (pp. 26-33). Chicago, IL: University of Illinois at Chicago.

Stanulis, R. N., & Jeffers, L. (1995). Action research as a way of learning about teaching in a mentor/student teacher relationship. *Action in Teacher Education, 16* (4), 14-24.

Stevens, N. H. (1995). R and R for mentors: Renewal and reaffirmation for mentors as benefits from the mentoring experience. *Educational Horizons, 73* (3), 130-137.

Tellez, K. (1992). Mentors by choice, not by design: Help-seeking by beginning teachers. *Journal of Teacher Education, 43* (3), 214-221.

Thies-Sprinthall, L. (1986). A collaborative approach for mentor training: A working model. *Journal of Teacher Education, 37* (6), 13-20.

Veeman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research, 54* (2), 143-178.

Wilkinson, G. (1994). Support for individualizing teacher induction. *Action in Teacher Education, 16* (2), 52-61.

Wilson, B., & Ireton, E. (1995-1996). Improving mentor teacher effectiveness. *Rural Educator, 17* (2), 28-30.

Index of Authors: 1997

The Index of Authors and the Index of Articles are alphabetical listings of MWER articles from 1997 indicating the issues where they can be found. Abstracts for these articles can be found on the MWERA Website, http://www.acs.ohio-state.edu/units/education/mwera/contents.htm.

Index of Articles: 1997

Mid-Western Educational Researcher

Call for Manuscripts

The *Mid-Western Educational Researcher* is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews, theoretical and methodological discussions that make an original contribution to the research literature, and feature columns. There are four issues of the journal published annually.

The journal is now accepting manuscripts for review and possible publication in 1997 and beyond. Manuscripts are submitted to blind reviews by at least two researchers with knowledge of the literature in the appropriate area. Furthermore, the editors will review the manuscript and make the final decision. The review process requires approximately three months.

Manuscripts are accepted from faculty, students, and professionals working in non-educational settings. Membership in the MWERA is not required in order to submit a manuscript for review. The editors encourage the submission of revised papers that have been presented at the annual meetings of the MWERA, AERA, and other professional organizations.

Submit four (4) copies of the manuscript with a cover letter to Deborah L. Bainer (see address in left margin). Manuscripts should conform to the style and format described in the *Publication Manual of the American Psychological Association*, 4th edition. All manuscripts should be typed, double spaced, on 8 1/2 x 11 paper with 1 1/2 inch margins on all sides. An abstract of less than 100 words should accompany the manuscript. The author's name and affiliation should appear on the title page only. Submissions typically are less than 20 pages in length. If the manuscript is accepted for publication, the author(s) will be asked to provide a disk file (WP 5.1 or higher on a 3 1/2 inch high density IBM formatted disk) as well as a printed copy of the final version. Please note that the editors reserve the right to make minor modifications in order to produce a concise and clear article.

Questions regarding the journal or the submission of feature columns should be directed to the editors.

Deborah L. Bainer (419) 755-4287 bainer.1@osu.edu

Gene A. Kramer (312) 440-2684 kramerg@ada.org

Richard M. Smith (630) 462-4102 jomea@rfi.org

Index of Articles: 1997 (cont.)

The Ohio State University
2500 Kenny Road
Columbus, Ohio 43210