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Putting theory into practice: a professional development school/university co-teaching project

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Abstract: This investigation measured the impact of co-teaching on pre-service teachers' sense of efficacy in classroom management and student engagement. The study utilized a Professional Development School partnership between a university and an elementary school to make a theory-to-practice connection for pre-service teachers enrolled in an applied behavior analysis course. Instruction was delivered by a university professor and an elementary school teacher using collaborative consultation. Changes in pre-service teachers' attitudes were measured by a pre/post administration of the Teachers Sense of Efficacy Scale (TSES) (Tschannen-Moran and Wolfolk, 2001). Results suggested that the pre-service teachers' sense of efficacy increased during the course.

Keywords: Co-Teaching, Professional Development School, Classroom Management, Self-Efficacy

I. Introduction.

Interest in school consultation and collaboration originated at least as early as 1970 (Caplan, 1970), and although research on school consultation has continued apace (see Dettmer, Thurston and Dyck, 2005, pp. 43-46 for a concise history of the evolution of consultation in schools), relatively little attention has been paid to research that has actually brought together university faculty with PreK-12 (preschool to 12th grade) teachers to co-teach university school of education courses. While much has been written describing what such co-teaching projects should look like (see, for instance, the National Council for Accreditation of Teacher Education, Standard III: Collaboration, 2001, or Addal-Haqq, 1988), actual data resulting from research projects that have employed university faculty and PreK–12 teachers in co-teaching pre-service courses has not been common. (For some exceptions to this scarcity see Evans, 1996, and Dallmer and Baker, 2002) There appear to be several reasons for this paucity of published research.

First, the pressure for schools of teacher education to collaborate with PreK-12 schools is so recent, that little research has yet to make its way into the literature (V. H. Pilato, Director, Teacher Quality, Maryland State Department of Education; N. Allen, Program Approval Specialist, Maryland State Department of Education; personal communications, September 9, 2005). It might be noted that early efforts to link schools of teacher education and PreK-12 schools by means of the Professional Development School model did not appear until the late 1980s in the first and second Holmes Group Report (Isher, 1995). It was not until the third Holmes Group Report's call in 1995 for raising standards for teacher education by increasing "…the numbers of university faculty who are as at home working in the public schools as on the university campus…" (Isser, 1995, p. 1), and by suggesting that "[B]oard-certified teachers and

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other qualified practitioners will join these faculties as colleagues in conducting important research and in better educating the nation's educators…." (Isser, 1995, p. 2) that the idea of PreK-12 teachers and university faculty co-teaching courses began to firmly take root in the firmament of schools of teacher education.

Second, there are several studies in the literature that suggest that teachers resist participating in education and educational psychology research. McBee (2004) reports that the small body of literature that exists describing PreK – 12 teacher attitudes towards educational research finds that "…(T)eachers unfortunately find much of existing research to be inaccessible, irrelevant to their daily experiences in the classroom, or counterintuitive" (p. 1). McBee (2004) also argues that "...,(I)n addition to the aforementioned factors of perceived irrelevance of research and inaccessibility, the exclusion of teachers' voices from the research literature, educational policy decisions, and curriculum decisions, may lead teachers to distrust 'outsiders'" (p. 2). Perhaps, as McBee (2004) notes,

> … one reason that teachers find research irrelevant is that almost none of the educational research is written by practicing teachers. The teachers are considered as objects of study and as implementers of research results, but the actual concerns, questions, and perspectives of teachers are conspicuously absent.
>
> Since much educational research is written by and for academic researchers, it is easy to understand why classroom teachers may not find it relevant or accessible (p. 2).

Third, Bryan (2001) states that although

> … the National Council for Accreditation of Teacher Education (1997), in its Draft Standards for Professional Development Schools**,** emphasized the integration of collaborative, practice-based inquiry within PDS, as well as the importance of school and university faculty learning to work together to produce research that enhances student learning and improves the organizational environment…PDS research in general has been slow to emerge and is underemphasized in relation to other PDS goals such as pre-service and inservice teacher development (p. 1).

Furthermore, "…(T)he National Council for Accreditation of Teachers Education standards for accreditation of teacher education programs does not list basic familiarity with statistics or experimental design as a goal for teacher training programs…." (McBee, 2004, p.2). Basic familiarity with statistics or experimental design might serve to make research studies more accessible and relevant to PreK-12 teachers. It might also encourage teachers to become better consumers of research.

Finally, reports of research on co-teaching projects involving PreK–12 teachers and university faculty may be scarce because of cultural differences between PreK–12 and faculty. Bryan (2001) states that the incentives

> … for participating in collaborative PDS research are different for teachers and university faculty because the two groups represent distinct and, at times, clashing cultures with different norms, roles, and expectations. For university faculty, the incentive of publication plays a central role in promotion, tenure, and merit decisions and is likely to constitute a major factor affecting their willingness to participate and sustain involvement in PDS collaborative research. In addition, PDS research represents a form of professional development for university faculty and enables them to use field-based methodologies (p. 2).

However, as Bryan (2001) continues, "…publication [of research] does not affect promotion, tenure, and merit decisions of (Pre – K) teachers and other public

school personnel" (p. 2).

If improvement in both PreK-12 schools and schools of education is to be expected, "[A] research agenda must be jointly established to improve teaching and learning in the schools. To be meaningful and useful, educational research should be designed in collaboration with K-12 teachers, integrated into schools over time and address real classroom issues." (National Association of State Boards of Education, 1994, p. 2). As this report continues,

> "Guidelines and incentive systems should promote exchanges between higher education faculty and teachers for the continuous professional development of all. Higher education/public school partnerships that involve co-teaching and incentives for interaction and exchange among education program faculty and classroom teachers provide excellent professional development opportunities" (p. 1).

In line with these concerns and suggestions, the authors decided to apply for permission to conduct an investigation into the effect co-teaching might have on a university teacher education program. After considering the mandates for collaboration that current models of Professional Development Schools place on school-university partnerships, the authors decided to petition the first author's school of education to allow both authors to co-teach a university course. Since the second author pointed out that her own teaching experience, as well as an extensive literature review that she conducted (see Mitchell, 2004; Orr, Thompson and Thompson, 1999, and Giallo and Little, 2003) indicated that classroom management is of critical concern to most new teachers, the authors requested to co-teach an applied behavior analysis course. Permission was granted, and planning for the co-taught course began immediately. All Institutional Review Board policies of the university were followed, as were confidentiality and privacy policies of the school district in which the second author taught.

II. Method.

A. Participants.

The participants were eight individuals who were enrolled in a small (total student enrollment: approximately 3800), Historically Black College or University (HCBU) in the Eastern United States, and enrolled in an applied behavior analysis undergraduate/graduate course. The course was required for certification and graduation from the University's Special Education program. The Special Education program was, and still is, accredited by the National Council for Accreditation of Teacher Education (NCATE). All students enrolled in this course had been admitted to the University's Teacher Education Program, which required completion of undergraduate general education requirements, with a 2.75 grade point average. Two of the students in the course were African-American, and the rest were Caucasian. Six were undergraduate students (three juniors, and three seniors); five of these undergraduates were females and one was male. Two of the participants were graduate students, both female, and both Caucasian. The course included a field experience placement in a public school for 15 hours in addition to class meetings. Six of the eight students in the course completed their field experiences in the second author's elementary school.

B. Materials.

Using a pretest/posttest design, The Teacher Sense of Efficacy Scale (TSES) (Tschannen-

Moran and Wolfolk, 2001) was administered at the beginning and at the end of the course. Research evidence (Giallo and Little, 2003) suggests a correlation between a pre-service teacher's sense of efficacy in classroom management and successful implementation of these management techniques.

Bandura (1986) defines efficacy as "…a judgment of one's capability to accomplish a certain level of performance" (cited in Emmer and Hickman, 1991, p. 755). Emmer and Hickman (1991) assert that self-efficacy is a more specific construct than self-concept or self-esteem because it describes the individual's self-conception of performance capability rather than a more global self-evaluation (p. 756). Giallo and Little (2003) suggest that a significant relationship exists between an individual's sense of self-efficacy and confidence in behavior management (p. 29).

The TSES was chosen because it had been used in a similar investigation (Tschannen-Moran and Wolfolk, 2001). This scale measures three components of individuals' sense of efficacy towards three moderately correlated factors: Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management (Tschannen-Moran and Wolfolk, 2001). In addition to administering the scale, deriving scores for the entire test, and examining differences in pre- and posttests, the authors examined the results of the Efficacy in Classroom Management and Efficacy in Student Engagement subscales for differences between pre- and posttest scores. Scores from The Efficacy in Instructional Practices subtest were not examined because the authors felt that the results from this subtest did not bear sufficiently on the purposes of the investigation.

Other materials used in the project included two textbooks the students were required to purchase (Miller, 1997, and Wolfgang, 1999), and miscellaneous teaching materials brought in by the second author. Students also used a logbook to record their observations in the second author's school, and their reflections.

C. Design and Procedures.

Considering McBee's (2004) suggestion that PreK-12 teachers often do not feel included or consulted as equals by university faculty conducting research projects, the authors felt that the choice of co-teaching model was important. In considering the six most common types of school consultation, that is, Triadic, Stephens/Systems, Vermont Consulting Program, School Consultation Committee, Resource/Consulting Teacher Program, and Collaborative Consultation (Dettmer, Thurston and Dyck, 2005), the authors decided that the Collaborative Consultation model best fit requirements for collegiality between university and PreK-12 teachers. This model also seemed to be designed to help assure that the research resulting from the investigation would be relevant and accessible to PreK-12 teachers.

The Collaborative Consultation model is derived form Tharp and Wetzel (1969) and Tharp (1975) and includes three components – (C)consultant, counsultee/(M)mediator, and (T)target (Dettmer, Thurston and Dyck, 2005). Dettmer, Thurston and Dyck (2005) conceptualize the consultant and consultee/mediator as equal partners with diverse experience. Communication is not hierarchical or one-way. Rather, there is a sense of parity that blends the skills and knowledge of both consultant and consultee/mediator, with disagreements viewed as opportunities for constructive extraction of the most useful information (Dettmer, Thurston and Dyck, 2005, p.57). In this investigation, the authors decided that both would hold and exchange roles as consultant and consultee/mediator, as situations warranted, and the students in the course

would be the clients, or targets.

Dettmer, Thurston and Dyck (2005) quote Pryzwansky (1974) as suggesting that the basic structure of the collaborative approach emphasizes the need for mutual consent on the part of both consultant and consultee/mediator, mutual commitment to the objectives, and shared responsibility for implementation and evaluation of the plan. The consultant, consultee/mediator, and target have reciprocally reinforcing effects on one another. Each collaborator, as part of the team, contributes a clearly defined portion of the effort so that all comes together to create a complete plan or solution (Dettmer, Thurston and Dyck, 2005, p. 57).

The authors, as co-teachers, served as both the consultant and consultee/mediator. These roles were often exchanged, as described by Dettmer, Thurston,. and Dyck, (2005) in their definition of collaborative consultation. One of the co-teachers, the first author, taught in the special education program of the university in which the applied behavior analysis course was taught. The other co-teacher, the second author, taught special education at a local elementary school. Both instructors agreed to, and attended, weekly planning meetings to outline instructional goals, review the current course syllabus in order to delineate tasks and define scope of teaching responsibilities, make any necessary changes in the course structure, and grade student projects/exams. The instructors felt that these weekly planning sessions were an essential component to support the co-teaching model as well as to give feedback, brainstorm, and guide instruction throughout the course.

In addition, although a possibly confounding variable might be introduced, the authors agreed that the existing format for the required school observation was not providing as adequate a theory-to-practice connection as might be hoped, and sought to change it. Informal conversations with pre-service teachers who had completed school observations appeared to indicate that such required observations were somewhat useless, since cooperating teachers rarely gave observing students responsibility at any level. These students felt that they had no direction from cooperating teachers, and often felt left out of any school activities. Traditionally, each pre-service teacher was assigned one cooperating teacher for the required school observation. Assignment was random, and often did not result in successful, theory-to-practice experience for the pre-service teacher, according to the students. Given the dissatisfaction students seemed to experience with the school observation, the authors considered a possible redesign of the traditional role the cooperating teacher plays during pre-internship school observation.

Under this redesign, most of the pre-service teachers in the course were placed at the same school. At this school, they all had access to the same mentor teacher, who also was one of the co-teachers in the university course the students took. This meant that most students had access to the mentor teacher at the observing school as well as during the course at the university, and this teacher could provide immediate feedback and additional resources to students in both settings.

The second author consulted with, and got permission from, the school administration to place and mentor the students from the behavior analysis course, assuring him that her participation in this project would not interfere with her instructional responsibilities. The second author also obtained cooperation from the faculty and staff at her school. She obtained this cooperation so that the students could observe a variety of instructional situations and classroom management styles.

The university in which the course was conducted was a Professional Development School (PDS). As defined by the Maryland State Department of Education, a Professional Development

School (PDS) is

> … a collaboratively planned and implemented partnership for the academic and clinical preparation of interns and the continuous professional development of both school system and institution of higher education (IHE) faculty. The focus of the PDS partnership is improved student performance through research-based teaching and learning. (Maryland State Department of Education, 2003, p. 3).

The Professional Development School model is intended to improve student performance at both the IHE and the PreK-12 school. It is intended that students in schools of education benefit by a closer exposure to actual teaching experiences and that PreK-12 schools benefit by exposure to current educational research in teaching interventions (Maryland State Department of Education, 2003).

The course, which met once per week in 2-3/4 hour sessions, was divided into two segments per session. The first section was taught by the first author, and presented applied behavior analysis theory and classroom management models. The second section, taught by the second author, was a weekly reinforcement section designed to highlight concepts introduced the previous week by utilizing resources used in local school districts. In this section the second author facilitated a "Classroom Connection" discussion for the last thirty minutes of the course period so students could discuss field placement observations, ask additional questions, and role-play discipline situations. The instructors believed that having most of the students in the course observing at the same school, in similar situations, encouraged more depth in these course discussions, with more authentic learning experiences.

III. Results.

The pre-service teachers' attitudes, as measured by pre/post test administration of the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran and Wolfolk, 2001) suggested that students developed a greater confidence in their ability to handle classroom management situations over the course of the course. Total Scale score means increased from 153.6 (*SD* = 15.9) in the pretest to 174.5 (*SD* = 22.3), a difference of 20.8 points, an increase in scores suggesting an increase in feelings of efficacy, and therefore increases in confidence.

Pretest/posttest difference scores suggested that students' confidence also may have improved in the factors measured by the Efficacy in Classroom Management and Efficacy in Student Engagement subscales of the TSES. Aggregated student scores in the Efficacy in Classroom Management subscale went from a mean of 53.5 (*SD* = 7.1) in the pretest to a mean of 59.8 (*SD* = 7.2) in the posttest. The Efficacy in Student Engagement subscale aggregated pretest scores went from a mean of 50.2 (*SD* = 4.9) to a mean of 56.9 (*SD* = 6.7). As stated previously, difference scores were not calculated for the Efficacy in Instructional Practices subscale because the authors felt that scores from this subscale did not bear directly or substantially on this investigation.

Table 1. Results from Total Score Scale pre-test/post-test administration of Teachers' Sense of Efficacy Scale (TSES).

Total Score Scale	M	SD	n
Pre-test	153.6	15.9	8
Post-test	174.5	22.3	8

Table 2. Results from Efficacy in Classroom Management subscale pre-test/post-test administrations of Teachers' Sense of Efficacy Scale (TSES).

Efficacy in Classroom Management Subscale	M	SD	n
Pre-test	53.5	7.1	8
Post-test	174.5	22.3	8

Table 3. Results from Efficacy in Classroom Engagement subscale pre-test/post-test administrations of Teachers' Sense of Efficacy Scale (TSES).

Efficacy in Classroom Management Subscale	M	SD	n
Pre-test	50.2	4.9	8
Post-test	56.9	6.7	8

IV. Discussion.

There is a great deal of evidence in the literature that classroom management is a major concern of new teachers (see for example Johannessen, 2004; Mitchell, 2004; Orr and Thompson, 1999, and Giallo and Little, 2003). This level of concern suggests a lack of confidence on the part of these teachers in their ability to successfully handle classroom management situations.

One means to measure the confidence a pre-service teacher has in his or her ability to handle classroom management is to use the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran and Wolfolk, 2001). In the present investigation, the authors employed this scale in a pretest/posttest design to examine any change in this sense of efficacy over the course of a university course in applied behavior analysis, taught by collaborative consultation between a PreK-12 teacher and a university instructor.

The authors conducted data analysis on both the whole-scale level and on the subscale levels. A comparison of pretest scores and posttest scores suggested that the pre-service teachers' overall sense of efficacy, in general, may have increased over the course of the course. Analysis of the subscale data suggested that the pre-service teachers' sense of efficacy may have also increased in classroom management and in student engagement, as measured by the scale.

Factors that may have influenced a change in the pre-service teachers' sense of efficacy in the areas tested included the content and process of the applied behavior analysis course, the co-teaching format, the presence on the co-teaching team of a teacher employed in a local school district and having day-to-day responsibilities and experiences in a public school, the school

observation experience, and the group format of student school observation experience. Some of these factors are common to every course taught in this subject, at this level, and at this university, so exposure to them was not unique. The other factors (the co-teaching format, presence on the co-teaching team of an individual employed as a PreK-12 teacher, and the group format of the pre-service teachers' school observations) are new to this university environment, and may have had influence in the difference scores between pre- and post-administrations of the scale.

There were several limitations to this investigation. The limited number of subjects would preclude firm conclusions from the data. In addition, the course that was taught was novel in the sense that its format had never before been used in this university education department. The need to flexibly change components of the course in light of unanticipated challenges might therefore have influenced the results. Further, the variety of new interventions used in this course (e.g., the co-teaching format, the group nature of the school observations) make it difficult to tease out the influence of the individual components. Finally, there was no control course to provide comparisons.

Future investigation might seek to evaluate the relative importance of the aforementioned components, in order to determine which were important ones and which were relatively unimportant or less powerful ones.

Finally, investigation into PreK-12 changes in teachers' attitudes towards both research and PreK-12 teachers' and university faculty using collaborative consultation might be fruitful.

In conclusion, the establishment of the Professional Development School model, with its emphasis on the improvement of student learning at both the PreK-12 and university level has brought with it the need to evaluate those factors that influence that improvement. University and PreK-12 teachers co-teaching school of education courses is one means of providing opportunities to determine what instructional practices influence that improvement. Replication of this investigation, with larger sample sizes, comparison across courses that do, and do not, use co-teaching, and better control of confounding variables might provide better insight into which components influence pre-service teachers' sense of efficacy in classroom management in a co-teaching environment.

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