Course portfolio for Special Education 305: Introduction to Exceptional Learners - collaborative decision making in teacher preparation

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Indiana University - Bloomington

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My name is Theresa Ochoa. I am an Assistant Professor of Special Education in the School of Education at Indiana University.

My intention in this portfolio is to highlight the multimedia problem-based learning simulations I have developed to prepare my undergraduate students to enter the field of education with skills to make decisions about students with disabilities.

The options below indicate the various components of the course available for you to view.
Course Overview - Teaching Exceptional Students

K305 is an introductory course to special education for pre-service general education teachers. This is the only special education course requirement in the School of Education at Indiana University to fulfill the requirements for an elementary level teaching credential. The course enrolls a minimum of 25 pre-service teachers each semester.

The students who enroll in this course usually have junior standing in their program. A few, however, have senior standing. Regardless of class standing, most students lack experience in the classroom or exposure to students with disabilities. They are apprehensive about teaching students with disabilities.

Despite limited exposure to students with disabilities and minimal special education teaching skills, general education teachers with similar characteristics as the students in my K305 courses teach over 90% of the population of students with disabilities in U.S. public schools. In my view, this means that the majority of teachers in general education, due to programmatic shortcomings perhaps, are unprepared to adequately teach students with disabilities.

My course objectives are threefold. First, introduce general education teachers to students with disabilities and the laws governing their education and treatment in schools. Second, provide opportunities for pre-service teachers to become acquainted with the controversies inherent in the field of special education. Third, and most important, increase their skills to work collaboratively with professionals from related fields in making decisions about students with disabilities in general education settings.

The course syllabus for K305 is attached. For purposes of this portfolio, I provide details on two problem-based multimedia modules I use in the preparation of future teachers of students with disabilities.
Problem-based learning is an instructional innovation in education and an offspring of constructivist theory.

The goal of PBL is to use multiple perspectives to encourage individuals to develop alternative solutions to complex problems.

PBL encourages better solutions by tapping the cognitive abilities and skills of students through activating prior knowledge, eliciting active participation, and eliminating hierarchies among individuals.

A typical PBL activity is not focused on finding a single correct solution; instead, the intent in PBL activities is to involve all members of a problem-solving team in the discussion and generation of a number of equally viable solutions to one problem.

PBL is distinct from lecture-based instruction in its capability to increase student motivation and active participation in their learning process.

Proponents of PBL argue that teaching students in practical contexts, that is, in environments similar to those that they will one day practice in, best prepares student for success in their future profession.
Teaching Approach (2 of 2)

PBL Simulations

Click to hear about the structure of the PBL modules

The Question: Disability or Language Difference?

The Problem: Determining if the student needs referral for special education evaluation.

The Task: Deliberate on the referral decision.
## Simulation Activity (1 of 3)

### Resources & Collaborative Simulation

**Narrative**

<table>
<thead>
<tr>
<th>Role Strands</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychologist</td>
<td>Interview a Specialist</td>
</tr>
<tr>
<td>Parent Advocate</td>
<td></td>
</tr>
<tr>
<td>Special Educator</td>
<td></td>
</tr>
<tr>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>General Educator</td>
<td></td>
</tr>
<tr>
<td>Bilingual Educator</td>
<td></td>
</tr>
<tr>
<td>Educational Plan</td>
<td></td>
</tr>
</tbody>
</table>

**Problem Identification**

- What is the assessment process and how can parents be involved?
- What is family advocacy? How do parents find out about their rights in becoming involved?
- How should parents be involved in their child's schooling?
- How can a non-English speaking parent help their child who is in an English only classroom?

**Recipe for Writing Goals**

1. Define the goal precisely:
   
   "Student X will spell his name, first and last, correctly..."

2. Give a time frame for completing the goal:
   
   "...in 6 months."

3. Indicate evidence of reaching the goal and how it will be measured:
   
   "This will be shown by 100% accuracy over one week as evidenced in his writing samples."

4. Indicate any and all activities that will help Student X reach goal:
   
   - Student X will work toward this goal by:
     a. Practicing with magnetic letters on the refrigerator at home,
     b. Copying his name from his desktop to his paper,
     c. Drill by covering the name, then checking for correction,
     d. During Art the students will create a name art,
     e. Student X’s name will also be part of his spelling list until he spells it correctly, therefore will be included in homework.

5. State the present level of functioning:
   
   "At this time Student X knows the first letter of his name."

---

**Student X will spell his name, first and last, correctly in 6 months, this will be shown by 100% accuracy over one week as evidenced in his writing samples. Student X will work toward this goal by practicing with magnetic letters on the refrigerator at home, copying his name from his desktop to his paper, practicing by covering the name and trying then checking for corrections, he will also work on this during art the students will create name art. Student X’s name will also be part of his spelling list until he spells it correctly, therefore it will be included in the weekly homework packets. At this time Student X knows the first letter of his name."
1. At the time of the incident, did the student have a disability?
2. In relation to the behavior, are the IEP and placement appropriate?
3. Did the disability impair the student’s ability to understand the impact and consequences of his misbehavior?
4. Did the disability impair the student’s ability to control the behavior?
Collaboration In Action (1 of 2)

Video

Click on the picture to see a video of pre-service teachers in the process of making a decision about a student with language issues. Note that the instructor is present.

Click on the picture to see a video of pre-service teachers engaged in discussion about the goals for the student. Note that the instructor is present and students raise hands to be called upon.

Click to see a video of pre-service teachers making a decision about a student with language issues. Note that the group works independent of the instructor. Turn-taking is mediated by the team, not an instructor.

How does the instructor variable impact discussion in these two groups?
Participants had much to say about their experiences using the MUSE case. Responses such as, “My group discussed Andres like he was a real student, we felt we were actually on his study team” and “We gained the experience of working with teams like we will in the future” were common. Although students were challenged by the case’s intentionally ill-structured problem, they worked together to form decisions. Positive comments such as, “The case really opened my eyes as to what teachers are actually doing” and “This is like having our first field experience” were typical.

Instructors and students also appreciated the group work aspect of the MUSE case. Comments from all interviewees indicated that most students were “afraid to let their group members down by coming to class unprepared.” Interviews also revealed that both instructors and students felt relief in students’ opportunities to “take in all the content without feeling the frustration of feeling lost or confused all alone.”

Although students and instructors reported excitement about the benefits of problem-based learning, these benefits were sometimes discussed with caution. Several students, for example, indicated that viewing, rather than reading, the case study strengthened their emotional connections to Andres and his situation. These strong emotional ties led to feelings of frustration when group members could not come to a consensus about a decision or when groups felt uncertain about their decisions. It was difficult for many students to accept that there was not a “clear cut right or wrong answer.”
## Analysis of Collaborative Work (1 of 3)

### Results: Collaborative Decision Making Simulations

<table>
<thead>
<tr>
<th>Group</th>
<th>Does student have a disability?</th>
<th>Is IEP appropriate?</th>
<th>Did disability impair ability to understand consequences?</th>
<th>Did disability impair ability to control behavior?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Yes</td>
<td>No</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>G</td>
<td>Yes</td>
<td>No</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>No</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Click to hear an analysis of the data
Click on the picture to see a former K305 student describe how the PBL module prepared her for her teaching profession.

Highlights in video clip:

“It [the simulation] was helpful because it’s all real life. It was interesting to be able to hear everyone’s goals. Hearing what everyone else had to say [about the case]. “

“You talk about IEPs [Individual Education Programs], if anyone would have said that word before I took this class [k305] I would have no idea what they were talking about.”

“And when they [someone at her school of employment] set the IEPs on my desk, I already felt comfortable about it because I had already planned one out. So when you’re looking through them you’re like, I understand all of this, I’ve done this before.”

“It [the simulation] makes you understand that each student has individual needs and if this was about another student, it would be completely different.”
Benefits notwithstanding, there are challenges associated with PBL

According to Parsons and Drew (1996), instructors who use PBL are required to spend more time preparing for the activities compared to lecture-based instructional approaches.

As my research has documented, some students experience increased levels of frustration (Ochoa, et al., 2001; Ochoa et al. 2003).

Furthermore, Parsons and Drew (1996) report that students perceive PBL instruction as unorganized. They also point out that some students want the instructor to monitor (or force) group members to stay for the duration of the period.
Collaboration Research

Recommendations & Future Research

Continue to monitor and improve self and peer evaluations of group work.

Research Questions

Do the knowledge and skills generalize to new cases?

Do the skills transfer from preparation program to place of employment?

What types of decisions are PBL trained teachers making in real IEP teams?

Simulation Publications & Conferences
K305: Introduction to Exceptional Learners  
Fall 2004

Section/Days/Time: 4072/T&R/9:30-10:45  Location: ED 1004
Professor: Dr. Theresa A. Ochoa  Office: W.W. Wright Education Building Room 3222
Office Hours: Tuesday 8-9 a.m.  Phone: (812) 856-8135
(or by appointment)  Secretary: Claudetta Kelly, (812) 856-8123

Course Textbook
1. Exceptional Learners: Introduction to Special Education by Daniel Hallahan & James Kauffman (9th Edition)

Course Overview: K305 is an introduction to special education for general education majors. The course addresses the need to adapt general education classrooms and schools to respond to the needs of all diverse learners. Diverse learners may include students with a formal federal label of exceptionality (e.g. mental retardation, behavior disorders, learning disabilities, autism, gifted and talented) or informal labels (e.g., “at-risk”, “slow learner”, “difficult to teach”). The course also provides an overview of the history and special education laws and the plethora of issues and controversies (e.g., labeling effects, least restrictive environment) inherent of the special education field.

Purpose of the course: This course serves as introduction for future elementary teachers to issues related to the education and lives of students with significant instructional and behavioral challenges. In order to maximize teaching success for students in this course, the course encourages students to practice being responsible and informed consumers of education literature and practice. For most of you, this is the first and only required course in special education. As a professional in the field, I assure you that you will need much more that what is possible for me to teach and expose you to in one semester. The course will be fast-paced by necessity. I encourage you to take this course seriously from the first day of the semester.

Course Goals
- Students will become more aware of their own beliefs about issues related to disabilities and the role of the teacher in accommodating all learners.
- Students will seek out and familiarize themselves with resources and information related to meeting the instructional needs of all students.
- Students will become literate in the discourse of special education regarding special education service delivery.
- Students will develop collaborative decision-making skills pertinent to students with disabilities.
- Students will increase their awareness of societal obstacles confronted by individuals with disabilities and the need for increased inclusion in educational, social, and leisure activities.

Course Requirements:
- **Participation (10 points).** Active participation in all activities is expected of all students. This course includes a combination of activity-based projects and lectures. Impromptu assignments will arise throughout the semester. Consistent attendance is expected of all students. A sign-up sheet will be provided every class session. Each absence, unless it is a school-sanctioned event or a school-recognized holiday, will impact your participation grade. Each absence will result in the loss of one point. Three (3) or more absences may reduce your final course grade by at least ½ of one letter grade. Students who are late will sign in after class. Students observing university-recognized religious holidays are expected to notify the professor in writing before the anticipated holiday. Plan your emergencies carefully. These may be in-class assignments, quizzes, or group activities that will generally be completed during that class period and cannot be made up at a later time, regardless of reason for absence. Grades for these activities will be computed in your final grade. You must be in class to receive and complete the activity. You are expected to complete peer participation for attendance and participation. In evaluating your participation, I will also be looking at your level of professional behavior and contributions to the general climate of the class.
- **Assignments.** Completion of all assignments and their timely submission is expected of all students (Independent Project = 20 points, Special Education Referral Process Simulated Activity = 10 points, Discipline and Students with Disabilities Simulated Activity = 10 points, Group Discussion Leader Assignments = 10 points, Start-to-End-of-Course Reflective Assignment (Journal) = 5 points). Assignment due dates are listed on the course Anticipated Topic and Assignment Schedule. I reserve the right to change assignment due dates. Changes will be announced...
and noted in class. If you are absent, it is your responsibility to check with a classmate for changes in due dates. Descriptions and guidelines for all assignments will be provided either in class or through Oncourse, our class’ website as assignment due dates occur. Completion of some projects includes group work and time outside of class. All assignments are to be typed and follow APA 5th edition guidelines unless indicated otherwise. I will return handwritten assignments without a grade and they will be counted as late. Assignments handed in after the due date will have 1 point subtracted for each day. No projects will be accepted beyond 1 point if they are more than 2 weeks late. Please indicate the date on your paper if it is late and provide me with your signature.

- **Readings & Quizzes.** You are responsible for the information in the textbook. Generally, class time will be spent on activities/information extending beyond reading assignments. Each reading assignment will have a quiz. At the end of the semester you will have the choice of turning in 5 of them for a maximum of 5 points.

- **Examinations.** There are three examinations: Exam 1 = 10 points, Exam 2 = 10 points, and Exam 3 = 10). Preparation for the exams is the responsibility of you, the student. It is impossible for me to cover all that of the material in class but I strongly encourage you to visit my office before any examination to clarify any concept in the textbook you do not understand. Exams will include material covered through the last discussion before each. Students are responsible for notifying me at the beginning of the semester if special accommodations, due to a university recognized disability, are necessary.

- Unless you are absent for a school sanctioned event, there will be no-make ups for any exams (or any other assignments). Please tell me of a pending school sanctioned event or university observed holiday in advance so that I may make arrangements to allow you to complete the assignments before your absence.

- **Course Website.** You are responsible for consulting the course web site through Oncourse on a regular basis to maintain abreast information. The website will contain class material for you to print out. You will also be able to view and track your points on assignments. If you are experiencing academic difficulties that may require you to take an incomplete in this class, you are responsible for notifying me, in writing, of your request, and ensuring that you meet deadlines for application of such and the completion of all paperwork. Please be advice that incompletes are only granted under certain circumstances.

- **Students with Disabilities.** I make accommodations on any and all of my assignments for students with disabilities. According to university policy, I need documentation of your disability and the accommodation you need at the beginning of the semester, not after an assignment is due or graded. Contact the Office of Disability Services for Student in Franklin Hall 096 or see their URL at www.indiana.edu/uubdss

- **Academic Misconduct.** My goal is for everyone to succeed in this course. I will try to make everything as clear as I can. I trust that all students are familiar with the university’s guidelines on academic conduct particularly those that related to plagiarism and honesty. Dishonesty will result in failure in my course, no exceptions. If you are confused or need my help, talk with me.

**Course Grading Scale**

<table>
<thead>
<tr>
<th>Letter</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100-94</td>
</tr>
<tr>
<td>A-</td>
<td>93-90</td>
</tr>
<tr>
<td>B+</td>
<td>89-87</td>
</tr>
<tr>
<td>B</td>
<td>86-84</td>
</tr>
<tr>
<td>B-</td>
<td>83-80</td>
</tr>
<tr>
<td>C+</td>
<td>79-77</td>
</tr>
<tr>
<td>C</td>
<td>76-74</td>
</tr>
<tr>
<td>C-</td>
<td>73-70</td>
</tr>
<tr>
<td>D+</td>
<td>69-67</td>
</tr>
<tr>
<td>D</td>
<td>66-64</td>
</tr>
<tr>
<td>D-</td>
<td>63-60</td>
</tr>
<tr>
<td>F</td>
<td>59 and below</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>M Au 30</td>
<td>Course overview and expectations Group Assignments (6 per team)</td>
</tr>
<tr>
<td>W Sept 1</td>
<td>History of Special Education</td>
</tr>
<tr>
<td>M Sept 6</td>
<td>SPED Law &amp; Legislation Quiz on Chapter 1</td>
</tr>
<tr>
<td>W Sept 8</td>
<td>SPED Law &amp; Legislation Quiz on Chapter 1</td>
</tr>
<tr>
<td>M Sept 13</td>
<td>Intro to Independent Project Sign Up for Presentation</td>
</tr>
<tr>
<td>W Sept 15</td>
<td>Writing Center Guest Speaker: Dr. Plummer</td>
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<tr>
<td>M Sept 20</td>
<td>Trends &amp; Issues in SPED Quiz on Chapter 2</td>
</tr>
<tr>
<td>W Sept 22</td>
<td>Parents &amp; Families Quiz on Chapter 14</td>
</tr>
<tr>
<td>M Sept 27</td>
<td>Exam 1 (Chapters 1,2,14)</td>
</tr>
<tr>
<td>W Sept 29</td>
<td>Independent Project</td>
</tr>
<tr>
<td>M Oct 4</td>
<td>Oral Presentations – Independent Project Due</td>
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<tr>
<td>W Oct 6</td>
<td>Oral Presentations</td>
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<tr>
<td>M Oct 11</td>
<td>Oral Presentations</td>
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<tr>
<td>W Oct 13</td>
<td>Exam 2 (Chapters 3,5, 8)</td>
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<td>M Oct 18</td>
<td>Referral Process Simulation</td>
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<td>W Oct 20</td>
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<tr>
<td>W Oct 27</td>
<td>Referral Process Simulation</td>
</tr>
<tr>
<td>M Nov 1</td>
<td>Referral Process Simulation</td>
</tr>
<tr>
<td>W Nov 3</td>
<td>Introduction to MR Sign up for Group Discussion Leader Assignment</td>
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<tr>
<td>M Nov 8</td>
<td>Quiz Chapter 4 Issues in Mental Retardiation</td>
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<td>W Nov 10</td>
<td>Quiz Chapters 6&amp;13 Group Discussion Leaders: ADHD &amp; Special Gifts &amp; Talents</td>
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<td>M Nov 15</td>
<td>Quiz Chapter 7 Introduction to EBD</td>
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<tr>
<td>W Nov 17</td>
<td>Issues in EBD</td>
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<tr>
<td>M Nov 22</td>
<td>Simulation on Discipline</td>
</tr>
<tr>
<td>M Nov 29</td>
<td>Simulation on Discipline</td>
</tr>
<tr>
<td>W Dec 1</td>
<td>Quiz Chapter 11 Group Discussion Leaders: Learners with Low incidence, multiple, and severe disabilities: Autism spectrum, traumatic brain injury &amp; deaf-blindness</td>
</tr>
<tr>
<td>M Dec 6</td>
<td>Quiz Chapter 12 Group Discussion Leaders: Learners with Physical Disabilities</td>
</tr>
<tr>
<td>W Dec 8</td>
<td>Course Evaluations and Goodbye Final Exam (4,6,7,11,12,13)</td>
</tr>
<tr>
<td>M Dec 15</td>
<td>Final Reflective Assignment</td>
</tr>
</tbody>
</table>
Critical Features of Special Education Teacher Preparation:
A Comparison With General Teacher Education

Mary T. Brownell, Dorene D. Ross, Elayne P. Colón, and Cynthia L. McCallum
University of Florida, Center on Personnel Studies in Special Education

Policy and program decisions involve choices among different ways of preparing teachers. These choices are shrouded in increasingly contentious debates as teacher shortages reach crisis proportions. Yet, research on special education teacher education is almost nonexistent. Findings from comparative research documenting the characteristics of effective teacher education programs can inform these choices, but these findings should be grounded in what we know from previous research in general teacher education. To assist educators, we have analyzed literature in general and special teacher education toward two ends. First, we present a framework, derived from work in general education, for analyzing teacher education programs. Second, we use this framework to analyze practice in teacher education in special education. Specifically, we conducted an exhaustive review of special education program descriptions and evaluations. We conclude by describing steps necessary to improve the special education teacher education research base.

Chronic teacher shortages in special education, as well as concerns about a dwindling teacher workforce in general, have led to a variety of alternative routes to the classroom. The nature of these alternative routes is largely unknown, as is their capacity for ensuring that qualified special education teachers are available to serve students with disabilities (Rosenberg & Sindelar, 2001). Moreover, the development of alternative routes comes at a time when teacher education is under fire for its perceived inability to prepare quality teachers.

Critics argue that teacher education programs make no contribution to K–12 student achievement, are not intellectually challenging, and act as deterrents to bright, young people interested in entering the classroom (Finn & Kanstroom, 2000; Walsh, 2001). The federal government recently lent considerable credence to this position. Specifically, the U.S. Secretary of Education, in a highly controversial report (U.S. Department of Education, 2002), claimed that a teacher's verbal ability and subject matter knowledge are key factors in improving student achievement, whereas the role of teacher education is questionable.

Parallel to the debate about certification and teacher quality, a spate of national reform reports have targeted teacher education since the mid-1980s. These include such reports as A Nation at Risk (National Commission on Excellence in Education, 1983), A Nation Prepared (Carnegie Task Force on Teaching as a Profession, 1986), Tomorrow’s Schools of Education (Holmes Group, 1995), A Call for Change in Teacher Education (National Commission on Excellence in Teacher Education, 1985), and What Matters Most: Teaching and America’s Future (National Commission on Teaching and America’s Future, 1996). Although the recommendations vary, each report focused on the importance of a high-quality teaching force and on the quality of teacher preparation. Valli and Rennert-Ariev’s (2000) review of nine of these reports found the strongest consensus for the importance of disciplinary preparation (content) and multicultural emphasis. They also found strong consensus for (a) the use of authentic (i.e., field-based) pedagogy; (b) the existence of a clear programmatic vision; (c) a programmatic emphasis on learning and development, curriculum and assessment, and reflection and inquiry; and (d) the use of performance assessment. Moreover, the reviewers found a consensus (but less support) for emphasis on stu-
students with special needs, collaboration, and technology and for the use of professional development schools.

Although the reform reports accept the premise that teacher education makes a difference, the national debate continues because we lack definitive studies about the impact of teacher education on student achievement. Studies demonstrate that teachers with pedagogical and content preparation are better able to engage students in the learning process (Kennedy, 1999; Wilson, Floden, & Ferrini-Mundy, 2001), but data generated in most studies are limited to small samples, single institutions, and, often, single courses or programs within an institution (Wilson et al., 2001). Thus, making generalizations about the features of effective teacher education courses or programs is difficult.

Despite these limitations, a comprehensive review of the research on learning to teach and a large-scale study of preservice and alternative certification reinforce some of the national reform reports’ recommendations (National Center for Research on Teacher Learning [NCRTL], 1991; Wideen, Mayer-Smith, & Moon, 1998). In a review of 97 studies on learning to teach, Wideen et al. found four common features in programs that produced conceptual change in preservice students: (a) the use of a pedagogy that helps preservice students examine their beliefs, (b) a strong programmatic vision that fosters program cohesion, (c) a small program size with a high degree of faculty–student collaboration, and (d) carefully constructed field experiences in which university and school faculty collaborate extensively. Similarly, NCRTL found that teacher education programs that make a difference in teachers’ beliefs (albeit small) were characterized by a coherent programmatic vision, embraced a more constructivist orientation to teaching, and created opportunities to apply course-based knowledge to the classroom. Although these studies demonstrate that teacher education programs can change teachers’ beliefs, we need cross-institutional studies that delineate the features of effective programs and document impact on preservice students’ conceptions of teaching, classroom practices, and the achievement of children to determine whether a change in beliefs influences classroom practice (Wilson et al., 2001).

More recently, two large-scale studies of teacher education in general education have provided additional information about important program features. These studies, funded by the Association of American Colleges of Teacher Education (AACTE) and the International Reading Association (IRA), included 15 institutions that varied dramatically in terms of context. The findings of these studies support many of the recommendations from the national reform agendas and are consistent with the findings from the studies by Wideen et al. (1998) and NCRTL (1991). The AACTE and IRA studies are consistent with the findings from the studies by Wideen et al. (1998) and NCRTL (1991). The AACTE and IRA studies are included in the national reform reports’ recommendations (National Center for Excellence in Elementary Teacher Preparation for Reading Instruction [NCEETPRI], 2003). Faculty from each program outlined the features that contributed to its overall effectiveness and described how these features were integrated in the program. Researchers determined common features, conducted interviews with graduates, and compared graduates of the reading programs to graduates from the same institutions’ elementary education programs. Across the two studies, seven common features of effective teacher education programs emerged.

- **A coherent program vision** permeates all coursework and field experiences. This vision provides faculty with a common language for communicating with each other, students, and school-based personnel.

- **The conscious blending of theory, disciplinary knowledge, subject-specific pedagogical knowledge and practice** helps students link the knowledge they acquire in coursework to their classroom practice. Faculty accomplish this goal by modeling active pedagogy, spending considerable time discussing important readings, and providing students with numerous opportunities to practice and reflect on what they learn and practice in applied settings.

- **Carefully crafted field experiences** are extensive, integrated well with coursework, developmental

Framework for Defining Effective Practices in Teacher Education

The conceptual framework described in this section includes features that characterize 15 teacher education programs nominated as exemplary by other teacher educators, school-based professionals, and graduates of the programs. The AACTE study involved seven institutions, including graduate, 5-year, and undergraduate programs (Darling-Hammond, 2000). To identify crucial program features across the seven contexts, external researchers used qualitative methodologies that varied from one institution to the next. The researchers gathered extensive information about the individual programs and employed qualitative or quantitative methodology for collecting information about participating students or program graduates. The IRA study involved eight institutions selected by a panel of experts for their excellent undergraduate programs in reading education (Koppich, 2000; National Commission on Excellence in Elementary Teacher Preparation for Reading Instruction [NCEETPRI], 2003). Faculty from each program outlined the features that contributed to its overall effectiveness and described how these features were integrated in the program. Researchers determined common features, conducted interviews with graduates, and compared graduates of the reading programs to graduates from the same institutions’ elementary education programs. Across the two studies, seven common features of effective teacher education programs emerged.

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- The conscious blending of theory, disciplinary knowledge, subject-specific pedagogical knowledge and practice helps students link the knowledge they acquire in coursework to their classroom practice. Faculty accomplish this goal by modeling active pedagogy, spending considerable time discussing important readings, and providing students with numerous opportunities to practice and reflect on what they learn and practice in applied settings.

- Carefully crafted field experiences are extensive, integrated well with coursework, developmental
in nature, and supervised carefully. Furthermore, the classrooms where students intern are selected on the basis of the skills of the cooperating teachers, who collaborate with university faculty members to help students practice what they learn in coursework.

- Faculty establish and monitor the accomplishments of standards for quality teaching. Strategies range from high admissions standards to stringent exit criteria based on classroom performance. Many institutions, especially those based in urban environments, attempt to balance quality with equity of opportunity by using multiple admission criteria and ongoing mechanisms for monitoring and supporting student progress.
- Faculty use active pedagogy that employs modeling, helps students connect theory and practice, and promotes student reflection to help students move beyond their initial, sometimes simplistic, views of teaching and learning.
- The programs focus on meeting the needs of a diverse student population by attending to issues of diversity in required courses, assignments, and field experiences with students from diverse cultures and, in some instances, with students with disabilities.
- Faculty view collaboration as a vehicle for building professional community. Collaborations bridge preservice teachers, cooperating teachers, liberal arts and sciences faculty, and college of education faculty. Furthermore, some programs stress the importance of building community in the classroom by using a cohort structure.

In summary, the AACTE and IRA studies provide in-depth information about the specific features of teacher education programs that exemplify excellence. Moreover, the identified program features support the conclusions of a review of research on programs from single institutions (Widen et al., 1998), the recommendations of the national reform reports, and some of the findings generated by the NCRTL (1991). What is missing from the AACTE, NCRTL, and Wideen et al. reviews is a strong link between program features, actual classroom practices, and student performance. Only the IRA study included this link, and the initial analyses suggest that graduates from exemplary reading programs differ from graduates of comparison programs on several specific dimensions:

1. The reading program graduates view their preparation as more useful to their current teaching assignments and are more confident in their abilities.
2. They are perceived more favorably by their principals and supervisors.
3. They use a greater quality, variety, and quantity of children’s narrative and expository texts in their classrooms.
4. They are capable of more actively engaging students in literacy instruction.
5. They achieve better student gains on reading comprehension measures (NCEETPRI, 2003). Although the limitations of these studies are evident, the findings provide a starting point for analyzing the literature on teacher education for special education.

Method

Special education teacher education is not a well-established area of inquiry, and we found no solid syntheses of available programs or the features exemplifying those programs. For this review, we included literature if the manuscript was published within the past 13 years and described any special education personnel preparation program or program within a program. Alternative and traditional programs at both the undergraduate and graduate level were included.

Strategies

Several strategies were used to locate relevant literature. First, we entered keywords into the ERIC, PROQUEST, and PsycInfo databases. Keywords included combinations of the following: research, teacher education, special education, effectiveness, preservice preparation, policy, program evaluations, program descriptions, and exemplary teacher education. We then conducted a search of the Library of Congress using the following keywords: teacher education, teacher preparation, and preservice preparation.

Second, we conducted hand searches of five refereed journals in teacher education: Journal of Teacher Education, Teaching and Teacher Education, Teacher Education and Special Education, Action in Teacher Education, and Teacher Education Quarterly. We limited our search to program descriptions and evaluations in special education published from 1990 to 2003. We assumed that publications in this time period would reflect best practice in special education teacher education. Finally, after collecting articles, ancestral citations were identified. Eighty-three publications were gathered, and 64 were reviewed. Nineteen publications with insufficient information were discarded. Programs not included were published in both ERIC documents and peer-reviewed journals. The nature of program descriptions did not vary in any systematic way by publication source. Of the reviewed programs, 22 were published in ERIC, 32 were published in peer-reviewed journals, and 10 were published in a book about unified teacher education.
Determining Common Features of Special Education Programs

We reviewed programs across different types of institutional contexts to determine common features. Forty-four programs were situated in research institutions and 20 were not. Additionally, 27 (42%) of the programs were funded by the U.S. Department of Education, Office of Special Education Programs (OSEP); 37 (58%) were not. The majority of programs were special education programs (n = 38); 26 (41%) programs were unified or dual certification programs.

To identify program characteristics, one researcher read all program descriptions and made a list of every program feature described. During this phase of the research, we analyzed the special education literature for evidence of the characteristics identified in our framework for exemplary teacher education programs (e.g., use of student cohorts). We also added characteristics that emerged as unique to special education teacher education (e.g., focus on inclusion, strong emphasis on research-based practice). After the initial list of features was complete, two researchers examined articles to ensure that these features were present and to verify the count of programs that included each feature. Interrater agreement was calculated by summing the total number of agreements and dividing it by the total number of potential agreements. These two raters achieved 83% agreement. All points of disagreement were then discussed and consensus was reached about how to assign features.

In the following section, we present the program features commonly described in the special education literature, with one important caveat: The articles for this research were written for a variety of purposes. Thus, authors may have omitted some relevant descriptive information about programs.

Results

In our review, the following program characteristics were identified. These characteristics occurred frequently enough to assume that many special education faculty believe they are important features of teacher education. These program characteristics include extensive field experiences, collaboration, and program evaluation, although the ways in which programs incorporated these components varied. Furthermore, many programs emphasized inclusion and cultural diversity. Moreover, special education programs in teacher education were diverse in terms of their program philosophies.

Crafting Extensive Field Experiences

In 54 (84%) of the reported programs, faculty described extensive field experiences that were well crafted, carefully supervised, and tied to practices acquired in coursework (Bay & Lopez-Reyna, 1997; Benner & Judge, 2000; Browning & Dunn, 1994; May, Miller-Jacobs, & Zide, 1989). Preservice programs with the most intensive field components (e.g., Bay & Lopez-Reyna, 1997; Epanchin & Wooley-Brown, 1993; Keefe, Rossi, de Valenzuela, & Howarth, 2000; Lovingfoss, Molloy, Harris, & Graham, 2001) required early field experiences, one to two practicum experiences, and a semester or yearlong student teaching placement. In addition to describing extensive field experiences, authors mentioned careful supervision and assessment as important characteristics of their programs (Burstein & Sears, 1998; Langone, Langone, & McLaughlin, 1991; Ludlow, 1994; Rosenberg & Rock, 1994; Ruhl & Hall, 2002).

Programs varied in how knowledge and skills acquired in coursework were integrated with field experiences. Some programs required students to implement course-based assessment and instructional activities in the classroom (e.g., Fox & Capone, 1993; Ludlow, 1994; Miller, Wienke, & Friedland, 1999; Rosenberg & Rock, 1994; Russell, Williams, & Gold, 1992). Other programs attended to integration across courses by teaching courses in integrated blocks, using weekly seminars, or both. Furthermore, many programs used case-based approaches, portfolios, and weekly seminars to help students reflect on their learning across courses and practicum experiences (Affleck & Lowenbraun, 1995; Bay & Lopez-Reyna, 1997; Burstein & Sears, 1998; Emond, 1995; Epanchin & Wooley-Brown, 1993; Lovingfoss et al., 2001; May et al., 1989; Otis-Wilborn & Winn, 2000; Sobel, French, & Filbin, 1998).

Working Together

All program descriptions emphasized collaboration. They differed, however, in the ways in which they emphasized collaboration: (a) knowledge of collaborative skills, (b) faculty-to-faculty collaboration, (c) school-to-faculty collaboration, (d) use of student cohorts, or (e) some combination of these. Forty-six (72%) of the authors described course content focused on collaborative and consultative skills for working with other professionals and families (Bay & Lopez-Reyna, 1997; Browning & Dunn, 1994; Kemple, Hartle, Correa, & Fox, 1994; Lovingfoss et al., 2001); however, they rarely mentioned the pedagogy used to develop these skills. Exceptions included one program that explicitly mentioned faculty modeling as a way to teach collaboration skills (Keefe et al., 2000) and two others that described the use of projects to help students apply collaborative skills with other students or professionals (Dieker & Berg, 2002; Grisham-Brown, Collins, & Baird, 2000).

Faculty collaboration was a component of 45 (70%) of the program descriptions (Keefe et al., 2000; Kemple et al., 1994; May et al., 1989; Sobel et al., 1998); however, in many cases, authors did not describe the nature of the collaboration. In some programs, faculty described collaborative program planning activities (Bay & Lopez-Reyna, 1997). In other programs, faculty collaboration extended beyond planning to include co-teaching and collaborative monitoring of student...
progress. Faculty collaboration even occurred across universities to deliver special or alternative certification programs (Dieker & Berg, 2002; Snell, Martin, & Orelove, 1997).

Collaboration with schools was mentioned in 47 (73%) of the program descriptions. Partnerships sometimes employed a professional development school model; in other cases, individual teachers across a district or districts were selected to work with students because of the teacher’s expertise (Emond, 1995; Kozleski, Sands, & French 1993; Rude, Dickinson, & Weiser, 1998; Savelsbergh, 1995). In the most sophisticated instances of collaboration, entire school faculties, and sometimes school district personnel, collaborated around the following activities: (a) planning the teacher education program, (b) identifying quality placements for teacher education students, (c) selecting students for the program, (d) mentoring students, (e) evaluating students’ progress in the classroom, (f) co-teaching courses in the teacher education program, and (g) participating in training to become a mentor teacher (e.g., Affleck & Lowenbraum, 1995; Andrews, Miller, Evans, & Smith, 2003; Emond, 1995; Hall, Reed, & McSwine, 1997; King-Sears, Rosenberg, Ray, & Fagen, 1992; May et al., 1989). Clear examples of programs that demonstrate most of these features can be found at the University of South Florida (Epanchin & Wooley-Brown, 1993) and at Johns Hopkins University (King-Sears et al., 1992). Teacher educators described using student cohorts to foster collaboration in 33 cases (52%) (Burstein, Cabello, & Hamann, 1993; Corbett, Kilgore, & Sindelar, 1998; Gettys et al., 2000; Lesar, Benner, Habel, & Coleman, 1997), and cohorts were more commonly found in programs located within teacher education institutions and in those that were not receiving OSEP funding.

Evaluating the Impact of Teacher Education Programs

Fifty-two (81%) of the program descriptions described how personnel collected information for evaluating the quality of the students, the effectiveness of the program, or both. Evaluation methods, however, varied widely and focused on different outcomes, including direct assessment techniques, such as observation of teaching performance, and indirect assessment techniques, such as student satisfaction, faculty perceptions of the program, and cooperating teachers and administrators’ perceptions of the student-teacher and program. Almost half the programs had some observation mechanism for evaluating the classroom performance of prospective teachers. When direct assessments were used, they were often combined with indirect assessment methods in ways that provided a comprehensive picture of program impact (Aksamit, Hall, & Ryan, 1990; Benner & Judge, 2000; Cambone, Zambone, & Suarez, 1996; Corbett et al., 1998; Snell et al., 1997). For example, at Johns Hopkins University, faculty evaluate program effectiveness using (a) direct observations of student-teachers, (b) ratings by supervisors of graduates’ competence, (c) surveys from supervisory personnel comparing program graduates to other beginning teachers, (d) performance evaluation data on beginning teachers, (e) self-report data from program participants, and (f) certification or graduation rates of program participants (Rosenberg & Rock, 1994).

Twenty (31%) of the programs used only indirect assessment techniques for establishing program effectiveness. Most of these evaluations used surveys or interviews with current or former students as the only method for providing feedback about the program (Belknap & Mosca, 1999; Bay & Lopez-Reyna, 1997; Goodwin, Boone, & Wittmer, 1994; Minner, Tlosie, Newhouse, Owens, & Holiday, 1995). A smaller number of programs created a more robust assessment by combining several indirect assessment methods (Keefe et al., 2000; Sobel et al., 1998; Panyan, Hillman, & Liggett, 1997).

Focusing on Inclusion and Cultural Diversity

Student diversity was an important feature for 54 (84%) of the described programs. In 22 (34%) program descriptions, authors mentioned inclusion or cultural diversity as program topics (Andrews et al., 2003; Benner & Judge, 2000; Campbell & Fyfe, 1995; Corn & Erin, 1996; Ganser, 1996; Lehmann & Sample, 1997; Rude et al., 1998), but the authors did not always discuss the pedagogy used to help students learn relevant skills. Approximately one third of the authors delineated fieldwork and classroom practices they used for ensuring that graduates could work in inclusive settings. Eighteen articles (28%) described methods used to help teachers address the cultural and linguistic needs of students with disabilities, and 17 (27%) discussed how the faculty helped students learn about inclusion. An additional 32 (50%) programs addressed both inclusion and cultural diversity, reflecting a broader focus on diversity that included children with disabilities as well as those with diverse cultural and linguistic needs (Corbett et al., 1998; Keefe et al., 2000; Kemple et al., 1994; Otis-Wilborn & Winn, 2000; Sobel et al., 1998).

Maintaining a Positivist or Constructivist Orientation Toward Teacher Knowledge

Variations in program orientation are not surprising, given the strong role that behavioral theory has played in special education and the emergence over the past 2 decades of a more constructivist philosophy in special education. A strong, competency-based approach to teacher education reflected in many programs is one indicator of the role that positivist thought has played in special education. This approach assumes that a specific set of knowledge and skills exists and should be disseminated to students (Blanton, 1992).

The majority of program descriptions included competencies that students were expected to acquire; however, the manner in which competencies were addressed either was not clear or varied depending on the orientation of the program. (e.g., see Emond, 1995; Heston, Raschke, Kliewer, Fitzgerald,
Teacher education programs adopted approaches to teacher education (Grisham-Brown, Collins et al., 2000; Miller et al., 1999; Russell et al., 1992; Snell et al., 1997) that viewed teacher learning as an accumulation of knowledge generated by experts. This characterization of knowledge reflected an epistemological stance that acknowledges a single, valid body of knowledge that teachers should acquire through training—that is, a more positivist view of knowledge (Guba, 1990). Programs that subscribed to this epistemological orientation did so by either specifying competencies to be acquired in coursework and then applying them in practical settings or requiring students to use research-based methods in field experiences and then evaluating the effectiveness of those methods through single-subject methodologies (Lovingfoss et al., 2001; Salend & Reynolds, 1991).

Thirty-five (55%) of the descriptions suggested that program faculty viewed learning to teach from a different epistemological stance (Affleck & Lowenbraun, 1995; Anderson & Baker, 1999; Epanchin & Wooley-Brown, 1993; Hall et al., 1997). These teacher educators viewed teacher learning as the collective examination of multiple knowledge bases, including, but not limited to, knowledge generated by experts. This view of knowledge would be more commonly attributed to constructivist epistemologies (Guba, 1990). In these programs, teacher educators used a variety of strategies to help students examine their beliefs about instruction; integrate the knowledge they were acquiring in coursework with prior knowledge; acquire academic, social, and cultural knowledge about their students; and reflect on the impact of their instruction.

Although programs tended to present a particular orientation, we were not certain how pervasive orientations were. In fact, in some cases determining the program orientation was difficult. Moreover, some program descriptions indicated that faculty either blended or maintained multiple orientations to teacher knowledge and learning (Correa et al., 1997; Ryan, Callahan, Krajewski, & Flaherty, 1997; Salzberg, Lignugaris-Kraft, & Monson, 1997).

Conclusions About the Two Literature Bases

The special education programs in the literature that we reviewed share features with programs considered exemplary in general education. In both fields, teacher education is labor intensive, carefully crafted, focused on connecting theory and practice, collaborative, and invested in creating teachers who can respond to the needs of children and youth, particularly those with diverse needs. Some of the qualities of the exemplary general teacher education programs (e.g., clear programmatic vision, integrating subject-matter pedagogy with educational theory and field experience), however, are referred to minimally in special education. Similarly, special education teacher education programs have some unique features differentiating them from the exemplary general education programs.

Commonalities and Differences

Faculty both in the exemplary general education programs and in the reviewed special education programs stressed the importance of extensive, well-planned, and well-supervised field experiences. Similarly, faculty across programs stressed the importance of collaboration between faculty, school personnel, and preservice and inservice teachers. We deemed this focus on collaboration and carefully crafted field experience important in light of findings from the IRA study that demonstrated that opportunities to participate in extensive collaboration during preservice education resulted in graduates who were better prepared than their peers to teach reading. Program descriptions in both areas, however, omit a focus on improving collaboration with families. Although some special education programs contained coursework on families, the articles did not make clear how students were taught to apply the knowledge and skills they acquired. Given that collaboration requires sophisticated interactive skills, particularly when teachers are dealing with people who may have a perspective different from their own, careful instruction in these skills seems necessary (Brownell & Walther-Thomas, 2002).

All the exemplary teacher education programs and many of the reviewed special education programs offered experiences focused on diversity, with special education faculty placing greater emphasis on students with disabilities. Furthermore, all the exemplary general education programs provided experiences likely to promote conceptual change about diverse learners (Wideen et al., 1998). How pervasive these practices are in special education programs is not clear, as only one third of the programs described the use of conceptual change strategies.

Teacher educators in the reviewed programs worked to document their impact on student learning. The exemplary general education programs collected both direct and indirect evidence of student performance to improve the programs. It was encouraging that 32 (50%) of the special education programs engaged in intensive evaluation efforts that included direct assessment of teacher performance. As teacher education programs come under increasing pressure to be accountable for demonstrating that their graduates are competent teachers (e.g., Title II reporting requirements under the Higher Education Act and the National Association for the Accreditation of Colleges of Education requirement for evidence of student performance), we expect to see more focused efforts on evaluation in general and special education and more research about how to best accomplish this task.

Program philosophies varied more widely in the special education programs than in the exemplary general education programs. The programs in the AACTE and IRA studies were founded in constructivist or constructionist epistemological views of how teachers acquire knowledge. In contrast, special
education programs represented more diverse epistemological views of teacher learning. Programs focusing solely on special education tended to embrace a more positivist epistemological stance on teacher knowledge. Programs adopting constructivist or constructionist orientations were often integrated or dual preparation programs or focused on preparing teachers to work with culturally and linguistically diverse students. What we do not know is whether or how varying epistemological views of teacher knowledge make a difference in teacher learning. In a review of the literature on coaching, both epistemological approaches to teacher learning seemed to result in positive gains (Nowak, 2003).

In the special education program descriptions, we saw limited evidence of two defining features of exemplary teacher education programs: a strong programmatic vision and a heavy emphasis on subject-matter pedagogy (e.g., reading, mathematics, science). In the AACTE, IRA, and NCRTL studies, a clear vision drove program design implementation. Moreover, faculty in the AACTE and IRA studies continually used these shared visions to revisit programs and make revisions. In special education, some program descriptions articulated a clear vision, whereas others did not. Programs combining general and special education or those focusing on cultural diversity were more likely to articulate themes that faculty used as the basis for making programmatic decisions (see Affleck & Lowenbraun, 1995; Aksamit et al., 1990; Bay & Lopez-Reyna, 1997; Benner & Judge, 2000; Kemple et al., 1994; Sobel et al., 1998).

Exemplary programs in general teacher education also placed heavy emphasis on subject matter pedagogy, whereas special education programs tended to focus on more generic pedagogy (e.g., instructional methods, assessment, individualized education plans). Only in the case of unified programs (see Affleck & Lowenbraun, 1995; Meyer, Mager, Yarger-Kane, Sarno, & Hex-Conteras, 1997; Norlander, Case, Reagan, Campbell, & Strauch, 1997; Ryan et al., 1997) and a few special education programs (Epanchin & Wooley-Brown, 1993; Giovani, Zide, & Banahan, 1974; Lovingfoss et al., 2001) did faculty focus on the integration of subject-matter pedagogy with special education and classroom practice. Many of the programs accomplished this integration by infusing special education competencies into subject-specific pedagogical coursework or teaching courses in integrated blocks. Because subject-matter knowledge is a factor in effective teaching, we need to know how its infusion into these special education programs affects the teaching methods of prospective special education teachers.

Special education programs were distinguished from the exemplary teacher education programs, and we suspect from general education teacher education programs overall, in terms of the amount federal funding received. Twenty-seven programs (42%) were funded through OSEP. There is no similar funding source in general education. These funded programs typically focused on specific needs within special education, such as preparing teachers to serve students with severe disabilities or to work in inclusive environments. We do not know whether funded programs are similar to other programs offered at the same institution or how well integrated they are with long-term programs at the institution.

Comparisons within the special education literature revealed that OSEP-funded programs were very similar in their characteristics to nonfunded programs, with only a few exceptions. OSEP funded programs tended not to employ student cohorts as much as nonfunded programs (44% compared to 57%). Moreover, these programs were less likely to emphasize inclusion and cultural diversity in the coursework or to emphasize the acquisition of teacher knowledge from a constructivist epistemology (48% for OSEP-funded programs versus 59% for nonfunded programs). Comparisons between programs situated in teacher education institutions and other programs revealed slightly different findings. Programs situated in teacher education institutions were more likely to maintain program orientations that focused on cultural diversity and inclusion and emphasized constructivist or constructionist philosophies. Interpreting the findings about program orientation, particularly those related to philosophical orientation, and the role orientation might play in teacher learning is difficult. Programs focusing on cultural diversity, however, are likely to make a difference. In general education, teachers who receive preservice or inservice preparation on the needs of culturally diverse learners are more likely to indicate that they are better prepared and to secure stronger student achievement gains than those without this preparation (NCEETPRI, 2003; Wenglinsky, 2000a). Finally, the reduced emphasis on direct assessment in research institutions and student cohorts may reflect the lack of resources available to support both research and teacher education missions.

**Recommendations for Future Research**

Our comparison of special education teacher education programs to exemplary general education programs suggests that certain features probably influence the quality of beginning special education teachers. For example, carefully designed field experiences that allow prospective teachers to integrate information they are acquiring in coursework may enable better knowledge and skill development in beginning teachers than programs that do not have this integration. Additionally, it is reasonable to assume that programs that facilitate a high degree of faculty and student collaboration and focus on instructional methods and knowledge for addressing student diversity will result in better outcomes for beginning special educators. Research-based link between teacher education program components and beginning teacher and student outcomes are necessary, however, to document the ways in which special education teacher education makes a difference.

Yet research in special education teacher education is almost nonexistent. If we are to respond to policymakers’
scathing criticisms of teacher education and their pressure to increase alternative routes to the classroom, we need research that demonstrates how teacher education makes a difference in securing highly qualified special education teachers. In crafting a teacher education research agenda that responds to these criticisms, we suggest several areas of studies that researchers must undertake immediately.

First, and arguably most important, we need to determine the valued outcomes of teacher education and how we assess these outcomes. At minimum, criterion measures must include retention in the classroom, as well as valid and reliable measures of teacher knowledge and behavior that can be linked to student learning. Without such measures, we cannot determine the impact of teacher education on students or the ways in which it affects the development of teachers.

In crafting teacher quality measures, researchers will confront challenging conceptual and design issues. They will need to define what it means to be a qualified beginning special education teacher. This is no small task when one considers the complex nature of special education teaching. Any measure of teacher quality must account for the knowledge needed for (a) teaching students with dramatically different needs, (b) providing instruction in different content areas, and (c) engaging in different roles to interact with students, administrators, and parents. Furthermore, researchers must identify ways of measuring student outcomes that are sensitive to what teachers can do in the classroom. Researchers in special education cannot rely on standardized national and state assessments of students as indicators of effectiveness. These assessments are not sufficiently sensitive to achievement growth for students in special education, particularly when they are administered at grade level. Nor do these tests capture other valued outcomes in special education, such as the ability to live independently or engage in desired social behaviors.

Second, we need to know how preparation programs make a difference. Currently, teacher educators create programs that include knowledge of validated practices and that meet some or many of the criteria for high-quality teacher education identified in the literature on general teacher education programs. Although the link between evidence-based practice and student achievement exists, no research exists to show that including this knowledge in teacher preparation programs or including specific teacher education program components make a difference in outcomes for special education teachers, and more important, for their students with disabilities. To identify the essential components of special education preparation programs, we need comparative studies that can control for the considerable variation found in special education preparation programs. Simple comparisons between program types, such as alternative versus more traditional routes, will be wrong-headed because the heterogeneity inherent in both types of programs will make such comparisons useless (Wenglinsky, 2000b). Our review suggests researchers might consider selecting programs according to specific features that potentially make a difference in how teachers learn. For example, quality and extensiveness of field experiences might be one feature to consider in differentiating programs for further study. Researchers then must determine how variations in these program features make a difference in teacher and student learning.

Third, we need to understand if or how opportunities to acquire subject-matter knowledge influence special education practice. Research in general teacher education, although inconclusive (Wilson et al., 2001), suggests that teachers with subject-matter preparation achieve better student outcomes than graduates who lack that preparation. In the IRA study, teachers extensively prepared in literacy achieved stronger student literacy achievement gains than other beginning teachers, but they did not feel more prepared to teach mathematics (Flint et al., 2001). Until this point, conversations about subject-matter learning have not figured prominently in research studies of special education teachers. Instead, special education researchers have assumed that effective special education teachers are those who implement validated interventions. But can special education teachers implement validated interventions for individual students without a deep understanding of the content area and how students might develop in that content area? And, if subject matter is important, how would teacher educators best address it when special educators are responsible for teaching multiple subjects to students with varying disabilities in a variety of contexts? Moreover, do prospective teachers acquire stronger subject-matter knowledge in unified preparation programs in which pedagogy is addressed in specific content areas or in more traditional special education programs that tend to provide methods instruction targeted exclusively at disability levels (e.g., methods for students with mild disabilities)?

Finally, we need more research examining the impact of OSEP funding on teacher preparation. To date, we know little about the impact of OSEP-funded programs on teacher quality or retention in special education. We do not know if OSEP-funded programs are sustainable, what institutional factors affect the sustainability of these projects, and if these programs embrace effective practices in teacher education. Given the significant investment of federal dollars in the preparation of special education teachers, we need to know a good deal more about the impact of this investment.

At a time when teacher education is coming under increased scrutiny, a rigorous research agenda seems more crucial than ever. We need greater commitment on the part of the federal government and professional organizations to fund multi-institutional, longitudinal studies of teacher education. The teacher education enterprise is incredibly complex, particularly in special education where beginning teachers play many different roles and serve students with diverse needs. Consequently, the special education research community needs sufficient support to address these complexities and to establish a professional knowledge base in teacher education that
can rival that which exists in the instructional innovation literature for students with disabilities.

**AUTHORS’ NOTE**

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**REFERENCES**


Written Language Disorders: Theory Into Practice—Second Edition
Ann M. Bain, Laura Lyons Bailet, and Louisa Moats

The second edition of Written Language Disorders was designed especially for teachers, speech–language pathologists, tutors, and graduate students. It gives you the most up-to-date research and theory about complex writing disorders. Using Written Language Disorders, you will update your knowledge base regarding the complex issues involved in evaluating students with writing disorders and in providing them with a cohesive treatment plan.

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Is it Truly Possible to Have Such a Thing as dPBL?

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Background

Problem-based learning (PBL) surfaced over 30 years ago as a reaction to the problems and shortcomings of conventional educational approaches. Through experience and research in many different educational arenas it has evolved into what was a distinct educational method aimed at giving the learner effective skills in problem solving, self-directed learning as a life-time habit and team work, all while acquiring an integrated body of knowledge from many different subject areas or disciplines. This integrated information, learned while working through a problem, is structured in the learner’s mind for later recall and application to future problems and tasks. One of the method’s strongest attributes is that it is an engaging and motivating way to learn as the learner works with problems that are challenging and perceived as relevant. The student realizes that the learning required to solve and understand the presented problems is useful and appropriate.

There are four keys to the method. First, the problems are presented to the learner in the way they would present in the real world, as unresolved ill-structured problems, stimulating the generation of multiple hypotheses about cause and management. These problem simulations are designed to allow free inquiry by the learners to gather more information in their attempt to achieve understanding and resolution, while practicing and perfecting problem-solving skills. Second, the learners have to assume responsibility for their own learning, determine what it is they need to learn and find the appropriate resources for the information from the world about them (texts, libraries, online, experts). In addition, they have the responsibility to monitor and assess their own performance and that of their peers. Problem-based learning is a learner-centered learning method. Third, to cause this to happen, the teacher’s role is that of a guide or facilitator of learning; commonly referred to in PBL as a tutor. As PBL teachers in secondary education put it, the tutor is a guide at the side of the learner instead of a sage on the stage at the front of the class. It is an adult–adult relationship with students aimed at growth and independence, not a parent–child relationship so common between teacher and student in traditional teacher-centered learning. Fourth, the problems chosen are those most apt to be confronted by the learner in life and career. The skills and
activities required of the learners are those valued in the real world—making PBL an authentic learning process.

The learning characteristically occurs in small groups, face to face, with active discussion among the learners. The combined knowledge and experience of the group, used heavily in PBL, and their concerted problem solving and research gives them the assurance and conviction needed to grow into full responsibility for their own learning. Initially, the tutor guides the students through metacognitive questioning to stimulate their problem solving, identification of what needs to be learned and from what resources, their critique of their study and resources, the application of new learning back to their problem work, their summarization of what has been learned and their self and peer evaluation (the tutor is also evaluated). As the students gain comfort and experience with the method, the tutor withdraws, commenting only when scaffolding seems indicated. More details about this method as well as references, including my own publications and resources, can be found on www.pbli.org.

It would be valuable to be able to create effective distributed PBL (dPBL), as it would enhance the value of PBL. Learners could work together from around the world. The learning of a face-to-face group could continue even though members have assignments that take them away from the group, or weather prevents them from meeting with the small group. Students who are involved in other work can be still be part of a PBL group.

I have been involved in a number of attempts to carry out dPBL and, although there have been some attractive results, the technology that was available was cumbersome and not designed for the authentic process described above. At the end of this discussion I will mention more specific concerns about what it takes to have effective dPBL.

This discussion, then, is from my point of view as a teacher, knowledgeable and experienced in authentic PBL, interested in setting up dPBL. There are attractive distributive applications described in this collection of papers, and I feel that effective PBL may be closer than I anticipated.

The Papers

“Activity and Interaction of Students in an Electronic Learning Environment for Problem-based Learning,” by Ronteltap and Eurelings: The authors based their study on POLARIS, a tool employing asynchronous communication designed to be used between face-to-face PBL sessions. In their environment there are increasingly large numbers of students in PBL curricula and the purpose of the tool is to accommodate these larger numbers and maintain small learning communities essential to PBL by allowing more group interaction time for communicating about their work, thoughts and findings. “The facility of submitting reports independent of time and place offers possibilities for additional interactions and feedback.” This should be a valuable tool in any PBL curriculum. They studied the use of this tool in terms of small-group productivity (defined as the number of recorded interactions among learners) as it relates to the learning issues that groups create in their problem work. They classified issues into practical and theoretical learning issues and felt that their data suggested that practical learning issues led to a higher level of information processing by the group. Their POLARIS experience indicated that the writing by learners (as opposed to verbal discussions) necessary for asynchronous communication “may lead to a deeper level of information processing that represents their personal knowledge based on literature study.”
“Cracking the Resource Nut with Distributed Problem-Based Learning in Secondary Teacher Education,” by Steinkuehler, Derry, Hmelo-Silver, & DelMarcelle: Finding enough teaching faculty who can be used as tutors in small groups of learners and who have the time to undergo the training necessary is a major problem for many new and existing PBL curricula. In this paper the authors give a progress report on using their online “STEP problem-based learning system” designed to allow TAs to function as tutors. To accomplish this, they have distributed many of the usual tutor tasks across the entire group, leaving the tutor with only a subset of what would normally be considered as tutors’ tasks. They also built into the system what they call “tutor wisdom,” providing tyro tutors with a resource that accumulates records of the interactions in prior groups. As they continue with this work, it will be interesting to see if they will compare the cost/effectiveness of this approach to the use of an experienced tutor.

“Supporting Online PBL: Design Considerations for Supporting Distributed Problem Solving,” by Chandra Hawley Orrill: The author calls this “inquiry-based learning” and uses asynchronous only (ACT) communication with threaded or linear messages for discussion. The study sought to determine whether the method was used mostly as a tool for organizing group tasks or for collaborative problem solving. It also looked at how engaged the students were in developing their own understanding using metacognition, as well as how well students worked with “idea units” in threaded discussion. The students found the technology cumbersome. The tutor role in this study is not clear, but the author states that some of the problems encountered by the students with the technology was felt to have been due to “differences in instructors.” This was unexplained. How this could be an inquiry method, as stated, using threaded discussion is not clear. Although the author describes the “three column board” used in authentic PBL as something only for children (it is, however, used commonly in postgraduate and professional PBL), one gets the impression that the board could have solved some of the problems, as would a well-trained tutor or facilitator.

“Action Research and Distributed Problem-Based Learning in Continuing Professional Education,” by David McConnell: The first part of the study shows that the process used in his method involves three phases; negotiation, division of work and research, and production. The second part indicates that the group sustains itself as a community of learners through achievement of milestones and negotiation of identity and knowledge. The tutor in this continuing professional education method is described as a tutor-participant and learner. This is a very appealing concept that should be valuable in all professional-level PBL. The method used is also clearly student centered, as all PBL should be. He describes the method as “action research,” similar to PBL with the exception that the problems are defined by the learners instead of presented to them in the curriculum. Problem finding is an initial step that should, but does not, occur in much of PBL. Both synchronous and asynchronous communication is used. Synchronous communication is said to help forge the learners’ identity as a group. The author finds that the professional learners bring insights from their own professional work into the group discussions, and what they learn in the group they bring into their own professional practice.

“Distributed Problem-Based Learning in Social Economy—Key Issues in Students’ Mastery of a Structured Method for Education,” by Ulric Björck: The major message in this paper is that active participation is important for learners to achieve mastery of the learning process. This is almost a truism in PBL. The author describes steps in his learning method that resemble
those in authentic PBL but a comparison is not possible from the information available. The distributed learning process used involves the use of asynchronous communication and discussion lists. The role of the facilitator or tutor is not clear. The statement that the investigation showed a decreased need for scaffolding by the facilitator as students become more accustomed to the process is well recognized in PBL. The author’s conclusion is that students take on responsibility for their learning by creating the necessary artifacts in the process and will continue such collaboration after the course is over. What those artifacts are does not seem clear.

Discussion

Many of these studies are based on small numbers of groups and only during one or two iterations. The significance of the data found and their stability require more study. In papers such as these, it would be helpful if the methods used were better described. What were the problems like, ill-structured or well-structured, were they based on actual situations and problems? How could learners inquire about the problem to fill out needed information on which to make good decisions concerning causation and management? What were the facilitators’ role and how were they prepared? How learner centered is the method? Were the learners challenged to find their own learning resources or were they provided? The term PBL is almost meaningless these days as it is attached to a myriad of differing methods. It is difficult to understand the value of something called PBL unless you know what is actually going on. A usable taxonomic classification for PBL is long overdue and would help with further research into dPBL.

To me, these are the big questions that are unanswered. Is synchronous communication necessary, requiring learners all to be online at the same time no matter where in the world they might be, or can authentic dPBL occur without it? What are the skills needed for the dPBL tutor as a facilitator, to make the method work and the learners comfortable and effective with the mediating technology? Can a communication technology be developed that will mediate PBL yet avoid distorting the PBL process as it is used in face-to-face small-group work? It would have to be able to present an ill-structured problem verbally, visually and auditorially as appropriate. It should allow for both synchronous and asynchronous discussion. There should be a whiteboard, operated by a member of the group, to facilitate and record the group’s progress, recording ideas generated, data acquired, and learning issues to be pursued.

I’m waiting with bated breath.

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Problem-based Learning: reflective coaching for teacher educators

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ABSTRACT This paper explores problem-based learning as a dimension that adds context and framework to coaching and reflection. The process for problem-based learning is described as a healthy environment for reflection, discussion and problem solving. Results illustrate how teacher candidates move from micro-reflection to self-reflection to macro-reflection as they engage in a year-long teacher education program in a professional development school. Implications from the study suggest that problem-based learning is a valid process for the enculturation of teacher candidates to schools and to the profession of teaching.

Introduction

Coaching in teacher education is critical. As teacher candidates progress through coursework and internships, they need safe environments where learning and transfer can occur. Showers (1985) suggested that coaching represents a powerful strategy for implementing instructional improvement that impacts teacher candidate learning when it is related to training, continuous and separate from supervision and evaluation. It involves theory, demonstration, practice, feedback and follow-through support. Researchers have suggested a variety of methods for assisting teacher candidates to reflect on their practice such as cognitive coaching (Costa & Garmston, 1993), peer coaching (Joyce & Showers, 1996), collaborative teaching (Fullan, 1996), and critical friends (Costa & Kallick, 1993). All noted that a collaborative
process is beneficial, creates a process for greater reflection, combats the issues of trust and individual bias and creates a positive atmosphere for learning and transfer.

The coaching process also helps teacher candidates refine their practice by creating consonance between their own practice and those of successful practitioners (Ferraro, 2000). Most importantly, if accomplished with care, collaborative observation and learning can be a catalyst for school renewal (Peters & March, 1999). However, Boud and Walker (1998) suggested that practices of reflection need some type of context or framework. In other words, how does one ensure that the reflection is a process that leads to outcomes that are healthy for both the teacher candidate and their students? How do coaches ensure that the lesson or performance being coached is not contrived for the purposes of observation? How do teacher candidates develop the depth of skills needed to recognize and solve problems on their own? One way is for teacher educators to ensure that contexts are authentic and that teacher candidates have knowledge of thinking and problem-solving strategies in addition to knowledge about instructional strategies. Boreen et al. (2000) stated that giving a beginning teacher a quick solution to a problem takes an exchange of only a few sentences and may or may not get to the root of the problem. For example, a coach visiting a teacher candidate’s classroom notices that students are often talking among themselves and do not appear to be on task. The coach quickly surmises that the teacher candidate is having a problem with classroom management and provides a couple of quick strategies for group management.

However, coaching the beginning teacher into a deeper understanding of what is happening in the classroom demands longer, structured sessions together. Learners must have rich knowledge structures with many contextual links to help them persevere with complex problems. Learning is cognitive and involves the processing of information and the constant evolution and creation of knowledge structures (Grabinger, 1996). In the example above, further conversation and observation of the teacher candidate might conclude that the problem is an instructional issue, such as students who do not understand directions, who are over-challenged, or who are under-challenged. The fact is that the students’ behavior could be attributed to any number of factors. Without a method for problem solving, sound decisions or recommendations about the teacher candidate’s practice may be incorrect. In a sense, the first way of coaching (observation, discussion and response) is reductionist in that it may limit the possibilities for action. The second (a problem-based approach) is constructivist and capitalizes on the possibilities for action. Bransford et al. (1990) recommends focusing on and making visible thinking and reasoning processes as well as content (p. 115).

Therefore, an argument could be made that coaching sessions that involve the diagnosis of a brief performance does not create teacher candidates who are effective problem solvers and thinkers. This paper examines problem-based learning as an additional strategy for teacher educators that adds context and framework for a deeper understanding of what is happening in the classroom.
Problem-based Learning

Problem-based learning is growing in popularity and gaining attention in the sciences, law, business, educational administration and architecture (Bridges, 1995; Savery & Duffy, 1996). The origins of problem-based learning stem from work conducted in the early 1970s in medical education. Philosophically, its roots can be traced back to Dewey and the practice of discovery learning (Rhem, 1998). Much has been said for this strategy as an instructional method in K-12 schools. However, it has received little attention as a curricular and instructional practice in teacher education.

Berkel and Schmidt (2000) defined problem-based learning as ‘an approach to professional education that stresses the use of real-life problems, and, in the course of discussing them, formulates goals for self-directed learning. The learning resulting from these activities is considered constructive and contextually meaningful’ (p. 252). Barrows (1996) defined problem-based learning as that which occurs in small groups, is student-centered, and involves coaches who are facilitators or guides with students (in this case, teacher candidates) eventually taking on this role themselves. Problems form the organizing focus and stimulus for learning and are the vehicles for the development of clinical problem-solving skills. These definitions have critical meaning as teacher candidates encounter problems and think about how to move from dependent to independent learners. From these definitions, one can also see the power of this instructional strategy and the richness for learners especially when they are in the classroom for the first time experiencing real students in real situations. Birch (1986) argued that problem-based learning is the most effective means of developing the general qualities of the mind, securing an integration of academic and operational approaches, and instilling a high level of motivation for active learning.

Initial Professional Teacher Education

A teacher preparation program at a large, urban university works in collaboration with 26 professional development schools. The program is post-baccalaureate, most students are changing careers, and for most of them the licensure program is completed in one year. At the time we conducted this work, teacher candidates participated in three internships over the year, one from August until October, one from October to December, and one from January to April. In the first two internships, teacher candidates were in the school two days per week—one internship at the primary level (K-2nd grade) and one internship at the intermediate level (3rd–6th grade). In the final internship, they had a choice of primary or intermediate four days per week. A full-time site co-ordinator (or teacher on special assignment) works in each school with teacher candidates and clinical teachers and is a liaison with the university. In addition, a site professor works in a designated school every Thursday and is responsible for supervising teacher candidates and providing assistance to the school in renewal efforts.

Site professors and site co-ordinators traditionally use a cognitive coaching model
(Costa & Garmiston, 1993). It consists of a pre-conference, observation and post-conference. Questions on the cognitive coaching form included questions related to specific lessons, the use of technology, integration of other disciplines, classroom management, student interactions and questioning strategies. The site professor and site co-ordinator found that this method was useful for providing feedback to teacher candidates but often felt contrived and supervisor-centered rather than teacher candidate-centered. This method seemed to limit the amount of discussion and reflection from the teacher candidate because the discussion was based on one prepared lesson. The supervisors felt that the addition of a method that was centered on unprepared events would contribute greatly to the learning of the teacher candidates and could involve the whole teacher candidate group in discussion and reflection. In addition, even with two supervisors at each school and a structure for cognitive coaching in place, it was often very difficult to observe and meet with teacher candidates as many times as one would like and really get a feel for the problems they were facing day-to-day.

At one of the partner schools, a problem-based learning approach was used to compliment this cognitive coaching process that was already in place. A plan for inquiry was created to determine: (a) whether patterns arose in the types of problems and solutions presented; (b) whether this process for coaching was beneficial to teacher candidates; and (c) how the coaches responded to their problems in order to help them stay focused and initiate further self-reflection.

Problem-based Learning as a Reflective Coaching

A variety of models for problem-based learning have been developed and described in the literature (Barrows, 1996; Birch, 1986; Bridges & Hallinger, 1996; Woods, 1994). Many similarities and differences appeared due to differences in classroom content and depth of the instructional strategy. However, all the models are based in constructivist theory and carry with them expectations of: (a) anchoring all learning activities to a larger task or problem; (b) supporting the learner in developing ownership for the overall problem or task; (c) engaging in authentic tasks; (d) designing problems or tasks that reflect the complexity of the teaching environment; (e) giving the learner ownership of the process used to develop a solution; (f) designing the learning environment to support and challenge the learner’s thinking; (g) encouraging the testing of ideas against alternative views and alternative contexts; and (h) providing opportunities and support for reflection on both the content learned and the learning process (Savery & Duffy, 1996).

As the problem-based learning facilitation process was designed, it was important to the site professor and site co-ordinator that the components were not burdensome to either teacher candidates or clinical teachers. However, each of the eight components mentioned above were incorporated into the problem-based learning facilitation process.

First, each problem was anchored to a larger task or problem, teaching effectively with their clinical teacher and adding value to student learning. Each teacher candidate filled out a form that asked the following information:
1. Clearly state the problem in your own words.
2. What are your plans for addressing the challenge?
3. List and explain resources you will use to help you address the challenge (i.e. clinical teacher, site co-ordinator, other teachers, school counselors, principal, parents, special education co-ordinator, site professor, other professors, written materials or Internet information).
4. What ideas did you get from other resources?
5. What approach did you take? How do you know if your approach worked?
6. What are your results? What are your next steps?
7. How does this affect your ideas about teaching?
8. How does this affect your ideas about how students learn?

Teacher candidates were supported in developing ownership for the overall problem. It was their responsibility to choose the problem; however, they often met weekly with their clinical teacher to determine whether the problem they chose for that week was realistic and reasonable. Choosing problems themselves directly related to the school they were working in made them authentic and reflected the complexity of the environment in which they would eventually be functioning. The next few questions about their planning and resources were very open-ended as we also wanted to give the learner ownership of the process used to develop a solution.

The subsequent question about getting ideas from others was designed to support and challenge the learner’s thinking. At weekly formal site meetings, teacher candidates were given an opportunity to share their challenge with the group and get feedback. The feedback process, however, was not just sharing ideas and brainstorming but also asking questions about what information the student had about the challenge and encouraging alternative views from alternative contexts. Stems were used such as, ‘Have you thought about …? What if …? What do you believe is [name]’s perspective?’ Students were also encouraged to use other collaborative resources to examine other approaches. For example, resources could include other staff members in the school (i.e. school psychologist, principal or Title I teacher), written materials or other university faculty. Two-hour site meetings were held that provided opportunities and support for reflection on the content learned, the learning process, and the outcome of their interventions. The site professor and the site co-ordinator typically facilitated these meetings, but the teacher candidate determined the agendas and the problems and reflections they brought to the table.

This process did not substitute for individual cognitive coaching; it simply enhanced the coaching and reflection process. Teacher candidates were receiving feedback from a number of resources, and were getting opportunities to try a variety of instructional strategies and approaches in a supportive and safe environment. In addition, teacher candidates brought problems they could not always fix. Practice interventions, as a result of the problem-based learning discussions, were always conducted with the collaboration of their clinical teacher. If a clinical teacher did not agree or feel the classroom practice was necessary or appropriate, at least the teacher candidate had a number of ideas and options of other strategies that could be used to address the issue when they had their own classroom.
Even more important, the teacher candidate had engaged in a thoughtful process of reflection about concerns that were real and that included others’ points of view. Powell et al. (1999) suggested that working with others can bring to the surface resources, ideas and strategies that make the individual efforts more productive. It is hard to imagine doctors who never consult with other physicians (or with their patients) but rather make all decisions about their patients’ prognoses and treatments on their own. Like doctors, educators also benefit from consultation with colleagues.

**Finding the Patterns of Reflection**

Twelve teacher candidates participated in this work, 10 females and two males. Each student had been at the school an entire academic year, approximately 650 hours. Teacher candidates were responsible for submitting weekly reports copies of their problem, their responses, the responses they got from others, and their reflections on what they did and what they learned.

At the end of the year, problems and solutions were gathered from each student’s problem sets and entered into NVIVO qualitative research software in order to identify themes or patterns in the data. At the end of the year, a focus group was held with the teacher candidates to obtain feedback about the process and their perception of using problem-based learning as reflective coaching. In addition, data from the faculty comment questionnaires (the university-required course feedback instrument) was used to discern whether students valued the process or not. A journal was kept of the coaches’ responses and feedback questions so that they could be analyzed for appropriateness and patterns in questioning strategies. Again, NVIVO was used to do a naturalistic inquiry of the data for emerging themes and patterns including high and low level, evaluation, problem solving, and analysis questions.

**Examining the Patterns of Reflection**

Again, there were three research questions:

1. Were there patterns in the types of problems and solutions presented?
2. Is problem-based learning beneficial to teacher candidates?
3. How did the coaches respond to teacher candidate problems in order to help them stay focused and create further self-reflection?

Results from analysis of the problem reflection documents and the facilitator’s journal illustrated a pattern in the problems teacher candidates chose over the year and the responses by the facilitators. This pattern included three primary stages of reflective development: (a) micro-reflection (reflections of the clinical teacher); (b) self-reflection (on their own practice); and (c) macro-reflection (on the overall classroom or school). These stages correlate with the level of responsibility of the teacher candidate and reflect how we believe teacher candidates view schools and teaching as they increase their own learning and experience.
Micro-reflection

At the beginning of each the teacher candidate’s school experience, problems focused on the performance of the clinical teacher. They tended to be very critical of their clinical teacher since he or she was never doing ‘what we are learning in school [the university]’. Many of the challenges in this category began with, ‘Why does my teacher …?’ Following are examples of some of the students’ challenges:

I’m concerned that students who struggle with reading are not receiving enough support from the clinical teacher.
Students are allowed out of class a lot during the day, this makes lessons hard to teach and it always seems like the teacher is allowing too much movement.
I’m not seeing where the teacher has any goals for Kindergarten.
There aren’t classroom norms in my clinical teacher’s classroom.

These examples illustrate the focus on the clinical teacher and on what the teacher candidate thinks should be happening in the classroom. In this micro-reflective view, teacher candidates are observing and seem to be judgmental of clinical teachers. Responses reflected an idealistic viewpoint of schooling and the gap that often exists between what the teacher candidate is learning at the university and what he or she sees in schools. Conversations would often begin with statements such as, ‘I learned this …’ and conclude with something like, ‘Where is it and what’s wrong with my clinical teacher?’ At this stage, problems were always statements rather than questions. Scardamalia et al. (1989) might have classified these teacher candidates as passive or immature learners focusing on surface features not the depth or complexity of their observations.

In discussions with students, the focus of the facilitators was on asking questions such as, ‘When the teacher does … What do the students do … Have you considered … or What do you want to know?’ These questions tried to reframe the situation in order to make them less negative and help teacher candidates become critical practitioners so that they could begin to see classroom experiences from a variety of perspectives. This is not to say that everything they saw was perfect, but refocusing and asking questions helped them to reflect on why the teacher might be doing what he or she was doing. It was felt that this strategy would strengthen community and bring the teacher candidate inside the situation instead of remaining an observer on the outside.

Self-reflection

The second stage of reflective development was self-reflection. In this stage, the emphasis was on teacher candidates’ own self-efficacy. They were gaining more responsibility in the classroom, focusing less on the clinical teacher, and more on their own ability to do things well. Teacher candidates described these challenges in the following examples:
My mood seems to affect the way I work with the kids. How can I clear my head or regain a positive outlook when I’m in the middle of a school day? How do I group kids to determine if they work well together? What qualities are key elements of a functional group? The noise level of the kids is too high while I’m trying to teach a lesson. How can I focus their attention? I’m grappling with entertaining kids to get their interest or being more ‘realistic’ in my teaching approach. My comfort level with math is not direct instruction, but how do I manage cooperative groups? When is it appropriate to assign small groups instead of letting the kids pick them? I have a fifth grader who constantly talks out of turn and interrupts the students and me. How can I delve deeper with questions? I’m having trouble keeping the kids’ attention during read-aloud. What can I do? I’m not sure what to with the kids during their writing time to make what I’m teaching more enjoyable. I’m looking for read-aloud material to correspond with the lesson I need to teach. How do I get kids to work together during centers? What do I do with kids who finish early while others are still working?

These questions illustrated the frustrations of novice teachers who are becoming introspective about their own work. At this stage, we see them dealing primarily with issues of what to teach, how to teach and how to manage the students. Problems at this stage were framed as questions instead of statements as in the previous stage. In discussions, the focus was on getting teacher candidates to be flexible and think about their students. They were at that stage where they were writing down everything they were going to do—trying to follow their plan without interruption—and running into the age old problems of not having enough time, having too much time or simply not knowing what the students could do or not do. Facilitators asked questions such as ‘What do you know about …? What do you know about your audience? What do you know about your students’ prior experience with …? Is the problem instructional or managerial?’

Throughout the process, the facilitators were very careful not to tell teacher candidates what to do. Only questions were asked that would help them to think deeper about the problem before suggestions were brainstormed. It was felt that this was a process that would give teacher candidates a process for reflective practice, not answers.

Macro-reflection

In this final stage, teacher candidates demonstrated that they understood the complexity of schooling and began to reflect in new ways. It appeared that their
problems became more global in nature. They were beginning to see themselves as part of the classroom and the school. They were building significant relationships with their students, and they were sincere in trying to help the classroom teacher find solutions to challenges they were both having. Teacher candidates were seeing themselves as professionals, as co-teachers, as student advocates and as leaders in the school. Candidates describe their problems at this stage:

- How do we support writing and motivate students to work on their writing on a daily basis?
- How do we develop the skill of encouraging kids instead of nagging them?
- How can we deal with inconsistent attendance and kids coming late everyday?
- What methods can we use that will make kids more accountable for completing work?
- What are ways to deal with kids who are ADD and have a hard time sitting still when you need to discuss inappropriate behavior?
- What do we do with a 6th grader who prefers to hang out with adults?
- How do you meet all the different needs of the students?
- How do we create more consistency in mathematics?
- How can we get students to start extending their writing or have more depth?
- How can we extend our reading strategies to meet the needs of a more diverse group of learners?
- How do we deal with students with learned helplessness?

At this stage, the use of ‘we’ meaning the clinical teacher and the teacher candidate as a team was used predominantly. Problems seemed to come from the teacher candidate and clinical teacher. Discussion was now broader; it was focused on the teacher candidates’ beliefs about teaching and schooling. Facilitators asked, ‘How will you take this with you? What impact does this have on your teaching? What impact does this have on your beliefs?’ These were the best conversations; they were deep, meaningful, powerful and reflected greater thought about the teacher candidates’ own learning and their students’ learning.

At year-end, a focus group of the teacher candidates was conducted to discuss the process. The teacher candidates’ perceptions of the process were generally positive and served as support for the process and for the problem-based approach as reflection and coaching. Two of the students stated that they felt empowered by the process and that it would be something they would use in the future to help them solve problems. One teacher candidate said that he liked the process because the facilitators asked good questions that redirected their thinking but did not ‘preach’ to them about what they should be thinking. Another teacher candidate said she liked this approach much better than the observations and coaching, because she always felt the observations were contrived. Students also gave us feedback about using the word ‘problem’ and felt that we should use the word ‘challenge’ instead. They also talked about how reflective the experience was. Even though they had
been asked to write reflections or keep journals in the past, this was better because they had group support and input, but most of all they always had people asking questions and extending their thinking and reflection. The reciprocal nature of the process was critical to teacher candidates.

**Implications for Using Problem-based Learning as Reflective Coaching**

Enabling teacher candidates to move and change from their entry into a teacher education program takes more than episodic or reductionist coaching. It takes a facilitator who can spend time with teacher candidates helping the teacher candidate evolve into someone that understands the complexities of schooling and can utilize resources to reflect on their own practice and solve real problems. This is not to say that problem-based learning should replace coaching as an instructional strategy for working with teacher candidates. However, because of its focus on real problems, self-direction, and active learning, it is a strategy that warrants consideration among teacher educators. Barrows and Myers (1993) stated that in problem-based learning students report on their conclusions and support them by describing how they put the problem together, how they would solve or manage the problem, and what they have learned. This report, like the problems themselves, is authentic in that it occurs just as it would in real life (p. 4). Learners bring their own needs and experiences to a learning situation. Teacher educators must incorporate those needs and experiences into instructional strategies to help students take ownership and responsibility for their own learning (Cognition and Technology Group at Vanderbilt, 1993).

The results of this study suggest that problem-based learning can help us understand the ways in which teacher candidates acclimate to schools through the use of real problems (or at least problems they perceive to be real). It takes time and patience to understand the developmental process these teacher candidates experience. Teacher candidates took an entire school year to fully understand the inner workings of a school to which they were closely related. As teacher educators (university supervisors or on-site mentors), we must continue to encourage reflection, understand what teacher candidates perceive as problems and work with them to move through this process so that they may recognize the macro-view of schooling and initiate problem solving with the ‘big picture’ in mind.

Problem-based learning can be critical for coaching and reflection. Facilitators can often pose questions that can be asked in such a way that it is easier to see what’s going on in teacher candidates’ heads. What are they challenged by? What are they thinking about? What worries them? What do they care about?

In cognitive coaching, the conversation is between the coach and the teacher candidate. In this model, the conversation places teacher candidates in a shared coaching role, asks thoughtful questions, suggests resources, and facilitates problem solving alongside their peers and others in the school community. It stretches their thinking beyond their own practice and their own questions.

Problem-based learning builds on internal mechanisms for thinking about teaching and schooling. It is the conversation, context and framework that count—it takes
them from the micro—to the macro—reflection level where they care about the students and think about how to give them the best education possible.

References


WOODS, D.R. (1994) Problem-based Learning: How to Gain the Most from Problem-based Learning (Waterdown, ON, Donald R. Woods).
REFERRAL FORM – SPECIAL EDUCATION AND RELATED SERVICES

Fill out the information for the student. Indicate your decision to refer or not refer with a check next to your group’s decision.

Group Name: ______________________

________________________  __________________________  __________________________
Role:   Role:   Role:

________________________  __________________________  __________________________
Role:   Role:   Role:

Name of student    Date of birth if known (age)    Grade Level    School

Name of Mother    Name of Father

Have you notified parent of intent to refer?    Method of notifying parent(s)    Indicate any other information about parent(s).
YES    Conference    Conference
Pending    Phone call    Phone call
Written    Written

Is an interpreter needed?    Person to serve as interpreter?

Parent’s or adult student’s native language or other primary mode of communication if other than English (specify):
Child’s native language or other primary mode of communication if other than English (specify):

Date (month/day/ year) of receipt of referral by school district/LEA (local education agency)    (note: this begins the 90-day timeline).

Decision:  REFERRAL ________  NO-REFERRAL ______

State the reason you believe this child has a disability (impairment and a need for special education) such as academic or non-academic performance and medical information; any special programs, services, interventions, used to address this student’s needs and the results of those interventions. OR If you are not making a referral, state the reason(s) why you are not referring the student for evaluation.
Publications Related to PBL Simulations


Conference Presentation


