Evidence of Quality Preparation and Impact on P-12 Student Learning: A Collaborative Endeavor Between the Field and the Campus

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Gestalt psychological principles of visual perception, demonstrably robust and ubiquitous, can and should inform both teacher education and general educational practice. While perhaps inconvenient, these principles nevertheless accurately describe some of the inherent biases and flaws in visual information processing. However, their association with educational practice rarely is made manifest. Recent work in the cognitive psychology of the development of expertise helps explain why these principles matter to learning and performance. Together, these two strands of psychology can assist educators in properly structuring their visual presentations of information so as to maximize student learning. This understanding is especially important as education continues to move to an increasingly visual-type format for instruction via computers, the internet, CD’s, DVD’s, and PowerPoint. Teachers need to understand how the biases inherent in visual information processing work so as to mitigate their negative effects, take advantage of their positive effects, and thus improve student retention and use of knowledge.

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Making an impact on P-12 student learning has recently become a central focus in national accreditation standards for teacher preparation programs (NCATE, 2002). The attention to this area of endeavor has been shaped by the standards-based call for performance assessments and for concentration on candidate and student learning outcomes (Salzman and Denner, 2002).

The evidence to support teacher education candidates’ impact on P-12 student learning has been linked most heavily to the internship component of the teacher
education program. Some programs and organizations have even developed as critical evidence in this domain what they call “teacher work samples” (McConney, Schlock & Schlock, 1998).

However, little attention has been paid to the contribution of the social foundations of education in this area. Since the foundations of education has been traditionally tarnished with the perception of its not contributing to the practical side of teacher development (Pietig, McCormack & Grinberg, 1996), it is no surprise that the literature is almost silent with respect to candidates in social foundations of education courses, especially those that come early in teacher preparation programs, contributing to the development of P-12 student learning while in those courses.

If helping teacher education candidates to make sense of the world of teaching and thereby increase the possibility of their improving that world should command a certain priority in teacher preparation programs, then social foundations of education courses are well suited to contribute to such endeavors as making an impact on P-12 student learning.

The purpose of this paper is to describe the impact on student learning in a 5th grade elementary class by teacher education pre-service candidates in a social foundations of education undergraduate course. The paper will also highlight critical collaborative relationships between P-12 school faculty, teacher candidates, and foundations of education faculty, and the subsequent evidence of student performance on the New Jersey Test of Reasoning Skills, a test of the ability to reason in language.
Background Context

While some have brought attention to the need to enhance the thinking skills of teacher education candidates (Clabaugh, 1997; Eggen & Kauchak, 1988; Thompson, 1995), and others have focused on assessing the impact of teacher candidates on P-12 student learning (Fredman, 2002), there is a dearth of literature on the use of critical thinking skills by pre-service teacher candidates in social foundations of education courses to directly impact student learning in field settings.

On the other hand, the literature is replete with examples of partnerships among communities, and higher education institutions (Benson & Harkavy, 2002; Kirschenbaum & Reagan, 2001). In fact, the focus on professional development schools has energized the idea of university-school collaboration (Chirichello, Strasser, Feola, & Rosenfeld, 2001). While studies have been done with pre-service candidates in foundations of education courses (Bryde, 2001), and with pre-service candidates in foundations courses and their related field experiences (Burant & Kirby, 2002; Strickland & O’Brien, 1991), the literature is limited with regard to showing how social foundations of education content might be used to enhance P-12 student learning, and to making early field experiences more than introductory observations (Ridgway, 2000). Ridgway’s work about early field experiences revealed that field placement coordinators view candidates in foundations courses doing a field experience as being less intrusive for the classroom teacher, and as such teachers are more willing to accept those candidates in their class since all they, the teachers, have to do is find a space for the candidate from the foundations class to sit and observe (Ridgway, 2000).
Attention to the impact on P-12 student learning by teacher education candidates has been brought to the fore in the accreditation standards for teacher education programs promulgated by the National Council for Accreditation of Teacher Education (NCATE). The impact on student learning is clearly identified in Standard 1 of the NCATE Standards (2002) and highlights the need for pre-service candidates to among other things develop “… meaningful learning experiences for students based on their developmental levels and prior experience” (p. 16). This attention by a national accrediting agency has been the catalyst for such developments as “teacher work samples” (Schalock, et al., 2002).

Attention to P-12 student learning has also gained momentum from the process required to gain National Board Certification (Castor, 2002). The National Board for Professional Teaching Standards (NBPTS) is committed to improving the quality of teachers in order to improve student learning as its mission states: “To establish high and rigorous standards for what accomplished teachers should know and be able to do; to develop a system of voluntary assessments to identify teachers who can meet those standards and to advance related education reforms that will improve student learning” (Kelly, 2000).

The Project

The authors’ desire to link campus and P-12 classroom learning is motivated by one co-author being a National Board Certified Teacher and by the other co-author being intimately involved in national accreditation for teacher education; being a Unit Accreditation Board member of the National Council for the Accreditation of Teacher Education (NCATE). The desire is also manifested in the authors’ 2001 publication
Enhancing Effective Thinking and Problem Solving for Pre-service Teacher Education Candidates and In-service Professionals. The authors have, therefore, orchestrated different experiences in which teacher education candidates in one of the co-author’s university pre-service teacher education classes worked in limited ways with students where the other co-author was located.

This paper describes the experience the authors organized in the fall semester of 2002. The author who was teaching the Philosophical and Foundations of Education undergraduate course for teacher education majors at Florida International University built the field experience for candidates in the course to be at North Glade Elementary where the other author is a curriculum specialist and National Board Certified Teacher. The Principal at North Glade Elementary, Dr. Ruthann Marleaux, approved the collaborative effort, and organized the schedule so that the experimental 5th-grade class would have the opportunity, once a week over a six-week period, to work with 6 pre-service teacher candidates.

The Campus Component

The course, Philosophical and Historical Foundations of Education, was part of an initial teacher preparation program at the large southeast urban Research 1 institution. It was a required course for all teacher preparation candidates, and was offered at the junior level of the preparation program.

In the fall of 2002, the course had been phased out, and only candidates admitted prior to the phase out were permitted to take the course. Six female candidates registered for the course. Their majors included elementary education, early childhood education, physical education and dance/theatre education.
The course was designed in an interdisciplinary fashion along the lines of the “professional literacy” idea of Jonas Soltis (1990), and the within the foundations of education definitional context suggested by Steve Tozer (1993).

In other words, Soltis argues for foundations of education from an interdisciplinary focus vis-à-vis “… the broad historical, social, psychological, and philosophical dimensions of professional literacy…” (Soltis, 1990, p. 315).

Tozer on the other hand argues that “Foundational study can help teachers construct meaning more adequately, and …[if] more adequate construction of meaning is important to better teaching, then we will have a clearer sense of both how to select our instructional content and processes for the benefit of the teacher” (Tozer, 1993, p. 14).

The authors’ interpretation of Tozer (1993), and the Standards for foundations promulgated by the Council of Learned Societies in Education (1996) (now the Council of Social Foundations of Education) suggests that foundations of education courses should offer teacher and other school personnel candidates an interdisciplinary application of various foundations fields (philosophy, history, sociology, anthropology, comparative and international education, educational policy studies) to the purposes of their professional preparation.

Learning by Guided Questions

Nel Noddings gives credence to framing units of study in foundations of education around essential questions when she states: “understanding does not have to tied to the basic nature of the discipline. Rather it is properly defined with respect to legitimate purposes, capacities, and interests” (Noddings, 1992). As a result, three major questions guided the course content and learning: (1) how should teaching and learning
be approached? (2) can problem-based learning serve as a means of resolving difficult ethical issues and conflicts in the classroom? and (3) are there valuable lessons from the forces of history for schools and classrooms? It was the initial question that framed the field experience in the course, and that guided the instructor’s goal to get candidates to organize information, explore the learning environment, conduct learning activities, and monitor their own learning.

One of the major pre-requisite knowledge and skills candidates were asked to acquire were critical thinking knowledge and skills. The focus was on basic logic and how to analyze arguments. The candidates were then asked to use their learning of critical thinking skills to help the 5th grade students at North Glade Elementary to improve their reasoning abilities. The realization for this focus came after the instructor made candidates aware that some of the standards in language arts in the Florida Sunshine State Standards called for knowledge and skills that were directly linked to knowledge and skills in critical thinking (for example, identifying conclusions in arguments and finding the main idea in reading passages). Since the Sunshine Standards are the basis for the critical Florida Comprehensive Assessment Test (FCAT), then it was deduced that helping P-12 candidates to enhance their reasoning skills should contribute, directly or indirectly, to their success on the FCAT.

Preparation for the Field Experience

Candidates in the course on the university campus were introduced to a working framework to guide their learning and work in the field experience. The guiding framework, constructed around the teaching and learning process promulgated by the National Board for Professional Teaching Standards, and mirroring the Teacher Work
Sample work done by the Renaissance Group and others (O’Neal, M.R., McLean, J.B.,
Pankratz, R., & Craig, J., 2000) is intended to help candidates demonstrate their ability to
engage in planning, managing instruction, and assessing learning. The guiding
framework for the candidates’ field work modeled the Teacher Work Sample
components: (a) contextual information and learning environment adaptations (b) unit
learning goals and objectives (c) assessment plan (d) instructional design and
implementation (e) analysis of learning and results and (f) reflection on teaching and
learning. As a result, the candidates’ field experience guiding outline asked them to focus
on the following aspects:

1. To learn about their students (academic backgrounds, socio-cultural
   backgrounds, skill levels, content understanding, etc.) and determine how
   what they learned would or should affect their planning of the unit of learning.

2. To identify the unit’s organizing theme, the question(s) that will serve as the
   focus for student learning; the knowledge, skills, and dispositions to be
   acquired; the plan for assessing student learning; and the connection between
   the present learning and past and future learning.

3. To delineate each lesson through (a) the teacher’s role and (b) student
   activities. In delineating the teacher’s role for each lesson, the content, skills,
   etc. to be learned would be related to standards, in this case, the Florida
   Sunshine State Standards; a description of what would be done to facilitate the
   lesson would be outlined; and how the teacher would interact with students, in
   particular, bilingual, LEP and/or special education students. Attention to
   student activities in the lesson would highlight how students would be
grouped; the types of content activities in which students would engage; and
the materials students would use, including any to meet the needs of LEP
students, etc.

4. To reflect on the effectiveness or lack thereof of each lesson and the unit
overall.

It was decided that the assessment of students’ critical thinking abilities would be
measured by using the New Jersey Test of Reasoning Skills (NJTRS). This test of
reasoning skills was developed by Virginia Shipman and measures understanding of and
skills in (a) rules and standards (b) reasoning through sentences (c) making inferences
from sentences (d) relationships and contradictions (e) kinds of arguments (f) rules for
analyzing arguments and (g) informal fallacies.

The four lessons in the six week unit were thus designed to work on some of the
foregoing knowledge and skills: Lesson 1 (Figuring Things Out); Lesson 2 (Making
Inferences – figuring things out, making inferences from sentences, rules and standards
and relationships and contradictions); Lesson 3 (Making Inferences – figuring things out,
reasoning through sentences, and identifying arguments); and Lesson 4 (Making
Inferences – figuring things out, reasoning through sentences and identifying arguments).

Class members and the professor used class time during the week prior to the
lesson to plan and organize the lesson, in particular, the teacher’s and students’ roles.
These plans were written out, and shared with the national board certified teacher and the
classroom teacher of the experimental group at North Glade Elementary. The intent was
to solicit feedback from these field experts prior to the actual lesson by pre-service
candidates.
The class instructor on campus also worked with the instructional technology personnel to have all of the students in the experimental class be put in the database for the WebCT web-assisted course EDF 3515 Philosophical and Historical Foundations of Education. EDF 3515 class members instructed the students in the experimental class on how to access, read and post their communications on the WebCT course e-mail and bulletin board.

The North Glade principal and national board certified teacher visited the university campus to meet the campus instructor’s class and extended a personal invitation to the pre-service field experience students to come to the public school to work with a fifth grade class. The campus instructor then shared a copy of an overview of the collaborative project, the course syllabus, and the teacher work sample with the principal and national board certified teacher at a pre-planning session.

The Project: The Field Component

The authors’ intention for the field component of the collaboration effort was to provide an experience in which teacher education candidates could take an active role in demonstrating mastery of the content they had learned in their foundations of education course while they came to know a group of fifth grade students and the dynamic nature of teaching and classroom life. As the teacher education candidates learned how to think critically and analyze arguments on campus, for example, they could then be given an opportunity to help fifth grade students improve their thinking by sharing the content learned on campus during each visit of the field component. In so doing, the teacher education candidates would be mirroring a process of performance based-assessments which parallels the National Board for Professional Teaching Standards, in which not
only the knowledge a teacher possesses is important but also the actual demonstration of skills and professional decision making applied continuously in the classroom (NBPTS, 1997).

The duration of the field component was six weeks in length, with two hour sessions on consecutive Fridays in a fifth grade classroom at North Glade Elementary School. Instead of proceeding directly to the fifth grade classroom, the national board certified teacher-leader, the foundations of education professor and the teacher education candidates met to discuss the content of the day’s lesson, the various methods of instruction and assessments to be implemented and any other concerns.

On the first visit to North Glade Elementary, the campus instructor and the pre-service candidates received a tour of the school, reviewed sign-in procedures, and met the teacher/fifth grade class with whom they would be working. The national board certified teacher engaged the pre-service candidates in brainstorming best practices for getting to know their students. The field experience students discussed how or if to divide the fifth grade class of 33 students.

On the second and remaining visits, the six teacher education candidates determined how the fifth grade students would be grouped for instruction. At times, sessions were held inside a classroom, in the media center or outdoors at the picnic tables, depending on the activities planned. Field experience students became familiar with many different teaching and learning styles during each of their two hour sessions.

After each session ended, teacher education candidates were invited to reflect on the experience with the lead teacher and the university professor. Topics of discussion included what worked in the lesson, what did not seem to work, why certain things
worked last week but not this week, special academic, social and emotional needs of students, and in particular, what would be done differently if one had the opportunity to redo and improve the lesson.

Results

Thirty students in the experimental class, and twenty-eight in the control class were given the New Jersey Test of Reasoning Skills as a pre-test by the national board certified teacher. There are fifty items on the test that assess students’ understanding of reversibility, relationships, standardization, hypothetical reasoning, deduction, inductive reasoning, assumptions, equivocation, contradictions, problem identification, offering reasons, and informal fallacies. Because of regular schooling factors such as students missing the day for the post-test, and general attrition, the population for the study became twenty-eight students in the experimental class, and twenty-one in the control class.

The results of an unpaired t-test performed on the pre-test scores revealed no significant difference in the performance of the two groups on the pre-test.

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Control Group</th>
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<tbody>
<tr>
<td>N=28</td>
<td>N=21</td>
</tr>
<tr>
<td>Mean = 22.9</td>
<td>Mean = 20.1</td>
</tr>
<tr>
<td>Standard deviation = 8.85</td>
<td>Standard deviation = 5.82</td>
</tr>
<tr>
<td>Median = 21.0</td>
<td>Median = 20.0</td>
</tr>
</tbody>
</table>

\[ t = 1.24 \]
Standard deviation = 7.71

Degrees of freedom = 47

The New Jersey Test of Reasoning Skills was again used by the national board certified teacher as a post-test at the end of lessons and unit of study conducted by the pre-service teacher education candidates. The results of an unpaired, one-tailed t-test performed on the post-test scores revealed significant difference between groups.

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=28</td>
<td>N=21</td>
</tr>
<tr>
<td>Mean = 24.2</td>
<td>Mean = 20.6</td>
</tr>
<tr>
<td>Standard deviation = 7.11</td>
<td>Standard deviation = 5.52</td>
</tr>
<tr>
<td>Median = 21.0</td>
<td>Median = 19.0</td>
</tr>
</tbody>
</table>

\[ t = 1.94 \ (p < .05) \]

Standard deviation = 6.48

Degrees of freedom = 47

The results of the reasoning skills test clearly demonstrated that the special instruction provided by the pre-service teacher education candidates contributed significantly to the enhanced performance by P-12 fifth grade students on the reasoning skills test.

To ascertain connections between the students’ reasoning scores, and their subsequent performance in the spring of 2003 on the Florida Comprehensive Achievement Test, the Pearson Product-Moment Correlation Coefficient was applied to
the reasoning skills post-test scores of the control and experimental groups and the FCAT scores in reading and mathematics.

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Correlation between Reasoning Skills Scores and FCAT Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=27</td>
<td></td>
</tr>
<tr>
<td>* Scores on the FCAT were not available for one student in the original population.</td>
<td>Standard deviation Reasoning = 7.155</td>
</tr>
<tr>
<td></td>
<td>Standard deviation FCAT Reading = 247.709</td>
</tr>
<tr>
<td></td>
<td>r= 0.662</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Correlation between Reasoning Skills Scores and FCAT Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=27</td>
<td></td>
</tr>
<tr>
<td>* Scores on the FCAT were not available for one student in the original population.</td>
<td>Standard deviation Reasoning = 7.155</td>
</tr>
<tr>
<td></td>
<td>Standard deviation FCAT Reading = 203.84</td>
</tr>
<tr>
<td></td>
<td>r= 0.581</td>
</tr>
</tbody>
</table>

The experimental fifth grade class showed a positive correlation between their reasoning skills scores and their scores on the reading and math portions of the FCAT. The higher correlation was evidenced between reasoning and reading.

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Correlation between Reasoning Skills Scores and FCAT Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=19</td>
<td></td>
</tr>
<tr>
<td>* Scores on the FCAT were not available for two students in the original population.</td>
<td>Standard deviation Reasoning = 5.71</td>
</tr>
<tr>
<td></td>
<td>Standard deviation FCAT Reading = 176.963</td>
</tr>
</tbody>
</table>
The fifth grade control group also showed positive correlations between the group’s reasoning scores and scores on the reading and math portions of the FCAT. However, the correlation for the control group between reasoning and reading was significantly lower. On the other hand, the control group showed a higher correlation between reasoning and the math portion on the FCAT.

Discussion

The collaborative project first and foremost enabled the six pre-service candidates to actually live out the core propositions of the National Board for Professional Teaching Standards:

1. Teachers are committed to students and their learning.

2. Teachers know the subjects they teach and how to teach those subjects to students.

3. Teachers are responsible for managing and monitoring student learning.

4. Teachers think systematically about their practice and learn from experience.

5. Teachers are members of learning communities.
Collaborative Benefits

The critical commitment from and involvement of the school principal in making the experience more than a simple field experience reinforced the current trend in having early field experience more meaningful. The principal, Dr. Ruthann Marleaux, enabled pre-service candidates to enjoy the roles of classroom teachers engaging in real problem solving activities in collaboration with school personnel with the goal of impacting P-12 student learning. The collaborative endeavor provided a value-added dimension as well. Attendance improved for the fifth grade students on Fridays since they anxiously anticipated visits from their supportive teachers/mentors/friends from campus. The project was thus a win-win for all involved...collaboration in the truest sense.

Conclusions

The thinking skills of students in a Title 1 school can be enhanced significantly. *The No Child Left Behind Act of 2001* focuses very directly on Title 1 schools. More specifically, the Act emphasizes student achievement. Since the FCAT plays a critical role in student achievement in Florida, the ability to enhance students’ reasoning skills that are correlated with specific FCAT domains, especially in reading/language arts, should be seen as quite useful. This University-School collaborative endeavor resulted in 5th graders making significant gains in their reasoning abilities as measured by the New Jersey Test of Reasoning Skills. Consequently, the field component of a social foundations class not only provides practical classroom experience to university students but also improves fifth grade students’ thinking and reasoning skills, which can then be applied to enhance student achievement during the FCAT and other classroom experiences.
The university-school collaboration enriched the experience of pre-service teacher education candidates, and more particular, a professor in social foundations of education. Reflective comments by the pre-service candidates support the foregoing claim:

Jensise – “I learned that you will find a variety of different levels in the same classroom, and constantly have to worry about teaching everyone.”

Ileana – “I learned that being a teacher requires a lot of work and endurance. I also learned that kids are much more imaginative than adults. They are creative, knowledgeable, and are eager to learn.”

Doris – “I never knew that improving one’s self would be so time consuming.”

Lori – “I think that the project was a great way to introduce us to lesson planning and creative teaching. I also think that what we taught the kids will be very useful to them. I think lessons in critical thinking, sentence analyses, and argument analyses will be beneficial to their future education. I feel I learned a lot from them. They helped me to examine good teaching strategies as well as good behavior management.”

Victoria – “The entire experience forced me to spend more time reflecting on what I did at each lesson and how I could make it better for the next. I have rarely had to do so much altering of my mind set on how to teach.”

Pietig et al. (1996) cautions “foundations faculty should not distance themselves from the practical elements of teacher preparation and the goal of effective practice in schools” (p. 21). The project thus provided the requisite opportunity for a foundations of education professor to cultivate contacts and experiences with school faculty, and thus
sharpen the connection and relationship between university classroom and P-12 schoolroom.

This university-school collaborative effort brought to the fore the question about how early field experiences should be organized. Having control over P-12 classes is an experience usually reserved, in most teacher education programs, for student teaching. Early field experiences usually adhere to an observation mode for candidates. The benefits derived by pre-service candidates from this experience in which they were given opportunities for early control of a classroom bring to mind the question raised by Burant and Kirby:

We wonder if, contrary to popular practice, teacher education should avoid classroom-only early field experiences altogether, especially if they occur in anonymous ways. Partly because experience itself is such a robust construct, field experiences that are arranged with programmatic or administrative convenience in mind—and take place in isolated classrooms with unknown practitioners—provide potential for individualized indoctrination (Burant & Kirby, 2002, p.572).

The national board certified P-12 school personnel can be a critical catalyst in improving field and campus endeavors. Specifically, the National Board Certified Teacher Handbook (1999) suggests that, “…National Board Certified Teachers create dialogue between institutions of higher education and preK-12 schools.” On the one hand, communication before the field sessions helped the national board teacher better understand the content so that multiple paths to learning could be explored and additional resources prepared, if needed. On the other hand, communication after the sessions provided opportunities to get to know the university and fifth grade students better and,
therefore, facilitated the providing of resources between field visits. In order to provide an effective field component for both university and elementary students, open and ongoing communication between the fifth grade homeroom teachers, the media specialist, the ESE teacher, the principal and the university students and professor were necessary throughout the collaboration.

As a result of thoughtful and ongoing planning, communicating, teaching and learning which occurred throughout the semester, the roles of teachers and students overlapped and the interactions between campus and field components connected and merged as a single community of learners.
References


Chirichello, M., Strasser, J., Feola, D., and Rosenfeld, B. (Fall, 2001). Beginning, building, and enhancing partnerships. Kappa Delta Pi Record; v38 n1 pp. 32-34.


meeting of the Mid-South Educational Research Association.


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