At the University of Central Florida student portfolios have been required in the College of Education for many years. Student journals are reviewed and graded by faculty. All departments require students to submit portfolios before their senior teaching internship. The portfolios illustrate who the student is now and how he or she wants to be as a teacher and are meant to reflect the student's emerging self. A teaching guideline, "Writing for Reasoning in Teachers of Education" (WRITE), was developed to assist students. WRITE uses a constructivist theory base, with mental models and stages of critical thinking drawn from "How We Think" (Dewey, 1993). Since WRITE was implemented to develop students' reflective writing skills, a study examined the performance and changes observed when implementing such an innovative approach. The teacher/researcher's goal was to see if she could motivate reflective writing in the two undergraduate special education courses she was teaching. A random sample consisted of 10 students from each class for either the control or treatment group. Twenty reflections were required from each student during the semester. Important findings were: (1) the majority of students exposed to different styles attempted to write with higher order thinking and more thoughtful reflection; (2) more students interacted in discussion groups; (3) more students gained writing skills; and (4) students continued using their journals when class ended. (Includes a table of data.) (NKA)
Widening the Lens of Diversity: Motivating Reflective Journal Writing

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American Education Research Association
Annual Meeting, San Diego, CA, April 13-17

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Widening the Lens of Diversity: Motivating Reflective Journal Writing

Introduction
Student portfolios have been required of education majors in our college for many years, and student journals are reviewed and graded by faculty. The staff members of our College of Education created a reflective culture in their school through journal writing. We developed a teaching guideline to assist students titled "Writing for Reasoning in Teachers of Education" (WRITE).

WRITE uses a constructivist theory base, with mental models and stages of critical thinking drawn from "How We Think" (Dewey, 1993). We implemented WRITE for students to develop their reflective writing skills, and continue to assess its effectiveness by continuous research. This study examined the performance and changes observed when implementing an innovative approach to assisting students in their reflective writing. In two undergraduate courses in special education, I sought to learn if students could increase their effectiveness and writing skills. My goal as the teacher/researcher was to see if I could motivate reflective writing in the courses I was teaching. My initial experience was that few students in class were motivated to write about topics in special education; in addition, those same students demonstrated the most inquisitiveness in pedagogical practices. I wanted also to encourage others to take an interest in their journals, to begin thoughtful examination of the teaching profession they were about to enter. Students were encouraged to model and implement writing practices proven effective, and our focus was centered on content rather than the form of their writing.

Important findings were:
1. The majority of students exposed to different styles attempted to write with higher order thinking and more thoughtful reflection.
2. More students interacted in discussion groups.
3. More students gained writing skills.
4. Students continued using their journals when class ended.

Overview of Content
Under the leadership of the Dean of our College of Education, all departments require students to submit portfolios before their senior teaching internship. The portfolios illustrate who the student is now and how he or she wants to be as a teacher, and are meant to reflect the student's current and emerging self. They contain entries that illustrate evidence of accomplishment and performance in the form of an Autobiography, Resume, and nine other areas of evidence and reflection which will illustrate: Collaboration, Commitment, Communication Skills, Diversity, Ethical Standards, Knowledge of Content, Pedagogy, Reflective Practice, and Technology. The students' reflections also include explanation as to why the document was included in their portfolio and how it fulfilled their goals. As the portfolio is generally constructed while the student is taking their course work, most faculty members implement a reflective writing component in their courses. Our teaching guidelines (WRITE) include, in addition to journal writing, opportunities for group dialog sessions, modeling, and professional
readings. Giving students the chance to interact and reflect on their work is one of the practices supported by the Florida Improvement and Accountability Act. It is then expected that teachers will leave their preservice education with skills of reflective practice and habits of mind in fulfillment of Florida Accomplished Practices. Research has also shown that teachers will teach as they themselves were taught, and it is hoped that student teaching interns will carry on the practices of teaching reflective writing in their own classrooms.

Assisting students in quality reflective writing has been a challenge, for both students and faculty. Students anticipate the writing task with frustration and feel generally unprepared to perform and fear taking risks where they may be graded or criticized on the basis of their personal selections. Many faculty members are unsure how to encourage students to think and write critically, how to assess their writing, or how to find the time to read all of the students reflections. The most common complaint from faculty is that teaching and giving comments on students' writings is time consuming. One faculty member commented "Constructively commenting on each student writing following each class is like giving individual instruction to 240 students twice a week! What's wrong with this picture?" Comments like this, and other faculty frustrations were increasingly heard, and we predicted high casualty rates, fearing that the program would not be workable, or that reflective writing would not get the students in each class produced good narrative inquiries, and the same students entered the course with motivation and asked leading and thoughtful questions. I felt that our system could be improved by providing appropriate modeling from the teacher's own portfolios. Some students required concrete examples of critical thinking, others found the opportunity to ask questions about journal writing from the author to be valuable in formulating their own thoughts. I also provided a broad opportunity for students to collaborate and learn from one another by creating a Listserv that allowed them the chance to "dialogue". These opportunities were well received. Students learned from one another that they shared the same anxieties, which allowed a collective consciousness to emerge where the students were helping one another succeed rather than strictly competing with one another. Students shared information on new experiences, asked questions of one another, adopted suggestions from others, broadened their topics, and increased their writing skills.

Theoretical Basis
Since educators and the public began depending on large scale standardized tests in the 1950s, direct assessment of student writing and consequently teaching writing has been neglected. This conclusion was also reached in a Carnegie Foundation study (Boyer, 1983) in which writing was considered the most important skill taught in school, but difficult to accomplish well and often neglected. Based on the belief that modeling and inquiry play a powerful role in learning, these tools were emphasized and introduced as essential components to developing a student's critical thinking. We assessed their effectiveness and impact on the students' writing as the developed during their teaching internships. The primary function of modeling reflective writing is to transmit information to the observer (Bandura, 1973). Modeling it for the students and questioning them in their internship experiences developed critical awareness. We engaged the students in a kind of
intellectual role-playing that highlighted the assumptive base of analysis; this proved to be highly effective in motivating the students before their actual writing. We allowed students to receive exposure to different writing forms and observe several patterns, as students experiencing difficulty in attaining certain academic skills can improve their performance after observing the teacher (Schunk and Hanson, 1985). Reflection occurs in the mind of the thinker, and cannot be measured directly; we felt that if students were to have reflective thinking and writing truly modeled, they needed to see what the teacher is writing in their own works, and have opportunities to engage the teacher in discussion and ask questions.

From a constructivist paradigm, learning involves building meaning by connecting and adopting new information into existing frames of knowledge (von Glasefeld, 1995). As students develop in their internships, they assimilate knowledge in relation to their pedagogical schema. The student journals act as an instrument that logs their progress during this period. The writings can reveal descriptions of critical thinking and provide the student with data for subsequent pedagogical evaluation (Burke and Littleton, 1995). Students may learn more from writing about an experience than they otherwise would (Posner, 1993). As a teacher, facilitation of this learning process is felt to be crucial. Constructivism should not be seen as disparaging teaching, but demanding to see what works and what does not; it asks us to focus less on the content of what we are teaching and more on what our students are learning. A framework for students to write what they experience and learn was created in our WRITE model.

**Reflective Development**
WRITE's basic critical thinking strategies are as old as Aristotle, but more directly focused toward the reflective writing process. There are several ways in which we think, but only one is productive: reflective thinking (Dewey, 1933). Reflective thinking is thought that gives or tries to give objective truth. This occurs when some event stimulates an idea, and suggests that this idea may possibly be true and involves taking steps to determine if in fact the idea is true. These steps are nonlinear, consisting of consideration, suggestion, verification, and resolution. The thought generally leads beyond the original one to new questions. One discovery leads to another. Thinking consists of two limits: Pre-Reflective, and Post-Reflective. Pre-Reflection is the confused or perplexed situation at the beginning, from which thinking grows. Post-Reflection occurs afterwards as a clear, unified resolution of thought. In between these reflective states are the five stages of thinking, which Dewey describes as suggestions, intellectual clarification, collection of data, mental elaboration and testing the hypothesis. For purposes of assessment, this study defined Dewey's critical thinking stages and added two stages at each end of the continuum (Describe and Resolution).

1. **Describe:** A pre-reflective stage consisting of chance thoughts, unguided streams of thought, beliefs, or secretarial note taking; taking words, ideas, and evidence at face value. Writing at this stage is clearly not at the questioning level.
2. **Relate:** The nature of the problem becomes defined. Questions and thoughts are connected, perplexity remains but demands solution.
3. Hypothesis: The writer forms suggestions that will solve the problem, leaping forward with possible solutions. This is analytical writing carried with a set of assumptions.

4. Testing: The writer directly breaks down the experience to its constituent elements in order to better understand its nature. The writer, by direct action, or by imagining an action or consequence of the hypothesis, reveals a genuine determination to get at the truth of the hypothesis.

5. Hypothesis: Students systematize what the experience and develop a critical awareness of the limitation of the classification schemes.

6. Reasoning: The writer considers a new conclusion in light of other tested conclusions, and then tries to find relationships between them. It is a methodical examination of one event or observation or theory in relation to another. Comparing points of view may be an example of this kind of writing.

7. Suggestion(s): The writer proposes possible solutions in which one reasons about the problem by considering the evidence.

8. Resolution(s): A post-reflective stage consisting of learning from one's failures, or successes. The full meaning of the experience. The writer summarizes the clear connections or arguments of the paper. Synthesis of ideas and refutation of others is evident and leads the writer to further activity, discoveries and new interests.

Real reflection then is alert, careful, thorough, definite, and accurate in achieving its products. When we examine the ideas we have formed at the end of a careful and formal thought process, we can organize them into a logical arrangement.

Supported by empirical research, our faculty members decided to share our own reflective journals with our students. Student reactions were mixed at first. Many students read the teacher's reflections to see if they were singled out, or see if anyone else had been. Others read to see how the teacher wrote, taking note of their form and tone, while others did not indicate any interest. Reading the teacher's reflective journal was not obligatory for the students. The purpose of presenting the personal writings was for the students to observe writing frameworks, in an effort to provide a model for each student to find the writing strategies that work for them. This was led by the belief that "Teachers need to provide lots of instructional support while students are writing" (Willis, 1997). We explained to students the critical thinking process, and provided a lot of time for students to talk and write, and created a safe environment for students to acquired the language, take risks, and increase difficulty in their journal writings.

The fear of failure has a tremendous negative effect on development of reflective writing skills. Concentrating on the proper use of particulars of language tremendously restricts the scope of what language use is all about (Rose, 1989). Students need to be immersed in experiences, to talk about their experiences and write about them in order to develop the ability to write critically and they need to gain confidence in themselves as systematic thinkers. To accomplish this goal, there was little focus on correcting students' grammar. Writing complex thoughts forces students away from the protected syntax of simple sentences. Error that comes up because a student is trying something new is a valuable kind of error, a sign of growth. Assessing grammatical errors may restrict the
writing, make the student feel at risk, and possibly drag the student backward in the critical writing process. "Give students the sense that grammatical correctness is only one of the concerns of a writer, not the only one, and certainly not the force that brings pen to paper" (Rose, 1989). Essentially implementing harsh grammatical guidelines may rob writing of its joy. The focus was on the reflection process. Students picked up rules of grammar as they experienced them in their reflective writings. The WRITE process became easier for the teacher over time in that students took over the teaching of other students. The teacher would provide some context, work with the whole class, break them into groups, and try to involve everyone. We allowed the students to see what they collectively knew by bringing them into groups, and they began to work together, generate new questions, find meaning and make connections. The learning took on a domino effect. One student's knowledge helps another understand that bit of knowledge. The second student helps a third by asking questions that had remained ill formed in their mind. The teacher would help clarify details, repeat, question, and occasionally link one observation with another; the students would talk and write their way toward understanding.

Research Method
Two classes of the same course in special education, taught by the same instructor were examined. The survey course introduced a gamut of special education topics in which the students wrote reflections. The sample size included twenty students from both classes. The random sample consisted of 10 students for either the control or the treatment group. The teacher classified the student's reflections as predominantly belonging to any of the stages previously described as pre-reflective descriptive narratives, one of the critical thinking phases defined by Dewey or a post-reflective stage.

Despite the stages identified, they are not clearly defined from one another, and any particular writing may combine elements from several stages. In those instances, the writing was categorized into that stage which represented the higher order of critical thinking. Students were noted to assimilate new writing and critical thinking styles in a progressive fashion. The process of learning writing is not linear, but recursive (Willis, 1997). The reflective writing stages could be combined, students could jump dramatically from a descriptive phase to a more advanced hypothesis forming or testing phase to problem solving very quickly.

Twenty reflections were required from each student during the semester. Ten students (labeled the treatment group) had access to modeling and the rubric design for reflective writing; the other group of ten students (the control group) received the usual handouts on portfolio writing requirements from the College of Education. The reflections were judged and categorized by their predominant theme without prior knowledge of their group assignment by the author. All students continued to receive individual comments on their writing, and all students incorporated approaches to writing with the guidance of the WRITE process. Students did what adept writers do, such as brainstorm on ideas, organize their thoughts, write a first draft, solicit feedback, revise their work, edit and proofread. Moreover, both classes included that instruction identified as best practices: a
safe environment, respect for the student, adequate coaching, opportunity for discussion with the faculty and their student peers, and motivation. This attitude was felt to be a necessary feature that would allow students to develop their writing skills, try something new, and take risks with less fear of failure. The differences between mean number of reflections by category for each group (control and treatment) were examined by the non-parametric Mann-Whitney U tests for independent samples. This model was chosen because normality and equality of variances could not be assumed for several categories with small numbers of observations per group.

Results

Table 1 lists the mean number of reflections in each of the seven categories described, with standard deviation and range (minimum and maximum) for the control and treatment group. The total number of reflective writings by category for all students combined in the control and treatment groups is also listed as a percentage of the two hundred essays reviewed in that group. The significance level of the differences in mean number of reflections by category between control and treatment group using the non-parametric Mann-Whitney U test is listed in the last column.

<table>
<thead>
<tr>
<th>Category</th>
<th>Group</th>
<th>Mean per Student</th>
<th>Standard Deviation</th>
<th>Range Min-Max.</th>
<th>Sig.</th>
<th>Total %</th>
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<tbody>
<tr>
<td>Describe</td>
<td>Control</td>
<td>12.3</td>
<td>4.1</td>
<td>4-18</td>
<td></td>
<td>61.5</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>1.9</td>
<td>1.4</td>
<td>0- 4</td>
<td>&lt;0.001</td>
<td>9.5</td>
</tr>
<tr>
<td>Relate</td>
<td>Control</td>
<td>4.1</td>
<td>2.6</td>
<td>1-9</td>
<td></td>
<td>20.5</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>3.0</td>
<td>1.6</td>
<td>1-6</td>
<td>0.339</td>
<td>15.0</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Control</td>
<td>1.5</td>
<td>2.1</td>
<td>0-6</td>
<td></td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>4.7</td>
<td>2.1</td>
<td>1-8</td>
<td>0.006</td>
<td>23.5</td>
</tr>
<tr>
<td>Test</td>
<td>Control</td>
<td>1.2</td>
<td>1.4</td>
<td>0-4</td>
<td></td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>4.3</td>
<td>2.8</td>
<td>0-8</td>
<td>0.011</td>
<td>21.5</td>
</tr>
<tr>
<td>Reason</td>
<td>Control</td>
<td>0.5</td>
<td>1.3</td>
<td>0-4</td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>2.3</td>
<td>2.1</td>
<td>0-7</td>
<td>0.005</td>
<td>11.5</td>
</tr>
<tr>
<td>Suggest</td>
<td>Control</td>
<td>0.3</td>
<td>0.1</td>
<td>0-2</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>1.6</td>
<td>1.4</td>
<td>0-4</td>
<td>0.011</td>
<td>8.0</td>
</tr>
<tr>
<td>Resolve</td>
<td>Control</td>
<td>0.1</td>
<td>0.3</td>
<td>0-1</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>2.2</td>
<td>2.1</td>
<td>0-6</td>
<td>0.005</td>
<td>11.0</td>
</tr>
</tbody>
</table>

In the control group, 123 of the 200 total essays submitted were categorized as Describe (61.5%), and 41 of 200 were categorized as Relate (20.5%). There was only minor representation in the other categories, with only a few students submitting reflections in more advanced categories. By contrast, in the treatment group, the reflections for all students included broader and more advanced thought in all categories. Students in the treatment group submitted a mean number of 1.9 reflections in the Describe category, compared with a mean of 12.3 for the control group, and this difference is significant (p < 0.001). In all, 9.5% of the reflections were judged to be in the Describe category for the treatment group. There was no difference in the number of
reflections in the Relate category between treatment and control group, 3.0 vs. 4.1 (p = 0.339), 15% of the essays in the treatment group were in this category. There were significantly more reflections in the other five categories for students in the treatment group; in the Hypothesis category, students submitted a mean of 4.7 essays compared to 1.5 for the control group (p = 0.006). In the Test category there were a mean of 4.3 reflections compared to 1.2 for the control group (p = 0.011). For the Reason category there were 2.3 per student compared to 0.5 for the control group (p = 0.005), for the Suggest category there were 1.6 per student compared to 0.3 for the control group (p = 0.011), and for the Resolve category 2.2 per student compared to 0.1 for the control group (p = 0.005). Students in the treatment group moved further and more quickly into additional critical writing and advanced stages of reflection than students in the control group.

Conclusions and Recommendations

The teacher's modeling of reflective writing was a vital component in the advancement of students' critical writing development. More reflections were submitted, therefore, with higher order levels of thought (Hypothesis, Test, Reason, Suggest, and Resolve) with significantly fewer reflections of the purely descriptive nature. Students who had access to, and made use of, the modeling and experience of the teacher made more intellectual progress in their writing skills. This progress is not routinely measured in the ordinary course of the curriculum, as all students "pass" by fulfilling their writing and portfolio requirements.

The internship experience and curriculum coursework provided students with the background knowledge to begin to make connections between theories, observations, and experience. However, the student writings in both the control and treatment groups at the start of this study indicated that most students were unable to generate meaning and make connections when they began the WRITE process. Our program has allowed students to analyze, and synthesize their learning, to practice and articulate what they know, and assisted them in their critical writing skills. One student intern wrote: "Putting my thoughts into words has helped me make sense of what's happening (sic) with my kids in class. I go back and try something a little different the next day because I've been able to think it through logically in my writings." WRITE offers a methodical way for students to develop metacognitive writing skills.

Few colleges require critical reflection as a component of what it means to be a best practicing teacher. In addition, this formative work is significant as it demonstrates congruence between what was and is taught in a college of education. This study was conducted with student interns in a special education class only; research with different content areas, and larger groups needs to be conducted. Additional inquiry into how the writing frameworks are used by students is welcome.
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WIDENING THE LENS OF DIVERSITY: MOTIVATING REFLECTIVE JOURNAL WRITING

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