

**LINKING THEORY AND PRACTICE  
THROUGH WRITING**

**JENNIFER WINDSOR**

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**CENTER FOR INTERDISCIPLINARY STUDIES OF WRITING**

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**UNIVERSITY OF MINNESOTA  
MINNEAPOLIS, MN**

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BY

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**LINKING THEORY AND PRACTICE  
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## Preface

Linking theory and practice is a particularly important pedagogical goal for courses in professional programs, whose students are required to apply research and theory as they solve real-life problems in their careers. The goal of this study was to design, implement, and evaluate a series of writing activities in a course for students majoring in communication disorders, and to compare the results of these writing activities with students' performance on examination questions that were relevant to the writing activities. The results indicate that carefully designed writing activities can provide an excellent link between theory and practice; they can also improve students' performance on examinations. The study also provides an excellent model for "writing-intensive courses" in technical fields.

Projects such as this one, together with ongoing Center projects, should result in improved undergraduate writing, the Center's primary goal. Along with colloquia, conferences, publications, and other outreach activities, the Center annually funds research projects by University of Minnesota faculty who study any of the following topics:

- characteristics of writing across the University's curriculum;
- status reports on students' writing ability and the University;
- the connections between writing and learning in all fields;
- the characteristics of writing beyond the academy;
- the effects of ethnicity, race, class, and gender on writing; and
- curricular reform through writing-intensive instruction.

We are pleased to present this technical report as part of the ongoing discussions about writing-to-learn and writing-to-communicate. One of the goals of all Center publications is to encourage conversations about writing; we invite you to contact the Center about this publication or other Center publications and activities.

Lillian Bridwell-Bowles, Series Editor

Kim Donehower, Editor

June 1996



## **Linking Theory and Practice Through Writing**

Increasingly, educators are using writing activities and written materials with secondary and college students to enhance students' comprehension and retention of course material (Snapp & Glover, 1990), to operate as a medium for group problem solving (Sharborough, 1988), and to demonstrate the practical application of theoretical information (Liss & Hanson, 1993). The implementation of writing activities may place an additional burden on course instructors in evaluating students' responses (Liss & Hanson, 1993; Rieber, 1993.) However, writing activities, such as essays, paraphrases, and freewriting, appear to be beneficial in that they propel deeper thought and the generation and organization of ideas (Ambron, 1987; Durst, 1987; Matasuhasi, 1982). Thus, writing has become to be seen as a process rather than primarily as a product (Hayes & Flower, 1980).

This paper focuses on the use of writing activities to help undergraduate college students link theoretical and practical information. Linking theory and practice is important for all students, but may be particularly important for students in professional programs, in fields such as medicine and health, education, engineering, and business. To be competent in these fields, students must know how to apply information learned in the classroom to being "experts" with immediate real-world problems. Students need to have a breadth and depth of theoretical knowledge, to apply this knowledge to assessing practical situations, to plan appropriate interventions, and to communicate assessment and intervention strategies in an appropriate manner to professionals and nonprofessionals.

In the course of teaching several courses at different institutions, I have found that many students become frustrated because they perceive professional courses to emphasize theoretical information at the expense of practical information that appears directly applicable to their later careers. On the other hand, many instructors have become frustrated because they perceive that students devalue the role that synthesizing theoretical information plays in establishing an individual as a competent professional. The purpose of this study was to evaluate the effects of a series of writing activities implemented in an

undergraduate course on language impairments designed for students training for careers as speech-language pathologists. Speech-language pathologists are health professionals who assess and treat individuals with communication disorders in educational, medical, and private-practice settings. The writing activities were implemented to enhance students' understanding of course material, to enable them to address applied problems, and to enhance their satisfaction with the relevance of the course to their later careers.

## **METHOD**

### **Subjects**

The 43 students enrolled in a ten-week course on language assessment and intervention for school-age children (Spring 1993) in the Department of Communication Disorders at the University of Minnesota participated in the writing activities. The course, titled "Language Assessment and Intervention: Later Stages" (CDis 6-607), has the purpose of facilitating students' ability to work as speech-language pathologists in school settings. Most of the students (26) in the course during 1993 were junior- and senior-year undergraduates majoring in communication disorders; the remainder (17) were graduate communication disorders students. The responses of ten undergraduate students to each of four writing activities were examined in detail. These students were chosen randomly at the beginning of the course.

### **Writing Activities**

The four writing activities were incorporated throughout the course. Activity 1 was introduced in the fourth week of the course, Activity 2 in the fifth week, Activity 3 in the ninth week, and Activity 4 in the tenth week of the course. In Activity 1, each student was requested to paraphrase a 500-word textbook summary in nontechnical terms. The summary was taken from Wallach and Miller's (1988, pp. 43-44) description of Blank's (1986) analysis of teachers' language directed to students. In this analysis, comments and questions (i.e., *obliges*) that teachers (and other educators) use in classroom settings are coded at one of four levels of complexity. The form of the paraphrase was not specified for students (see Figure 1). Rather, students were encouraged to rewrite the summary in a way that was informative for each individual (e.g., as prose, a semantic map, a chart).

In Activity 2, students created a language intervention technique for school-age children after the instructor and other students gave spoken and written presentations

about several example techniques. Students were provided with a specific format with which to structure the components of the intervention technique (see Figure 2). However, the type and level of language skill targeted for intervention was created by the students. Students worked in small groups to complete this activity.

In Activity 3, students individually completed a checklist (see Figure 3) summarizing a student debate about the relative value of two different forms of language intervention (i.e., classroom-based and pullout intervention). The checklist was created by the students who participated in the debate. Students were requested to check which intervention better addressed each of 23 issues raised in the debate, to state the importance of each issue, and to decide which intervention was better supported in the debate.

In Activity 4, students worked in small groups to create a letter to a child's parents describing the child's language skills and recommendations for intervention. Prior to writing the letter, students saw a videotape of the child communicating with his teacher and friends and listened to a brief presentation about the child's language. In the presentation, the child was described as performing above average academically, as having no grammatical or speech errors, as often being the respondent rather than the initiator in conversations with peers, and as frequently being dysfluent (with no indication of true stuttering behavior).

Students were given feedback from the instructor and other students about the form and content of their responses to the writing activities. However, for the purpose of the course, students were not required to revise or edit responses.

### **Analysis**

The students' responses to the writing activities were evaluated in three ways: a) a satisfactory-unsatisfactory evaluation of the written responses provided by the subgroup of 10 of the 26 undergraduate students, b) an examination question related to each activity answered by all students, and c) a questionnaire about the perceived value of the activities administered to all students.

### **Evaluation**

Each writing activity that the subgroup of 10 students completed was evaluated by two judges (the instructor and a teaching assistant) as being either a satisfactory or unsatisfactory response to the activity. This dichotomous measure was used because it

circumvented some of the ambiguities inherent in grading students' writing (Elbow, 1993) and because it provided a useful level of feedback to the students.

To be judged as satisfactory, responses for Activity 1 had to make reference to and example Blank's (1986) four levels of analysis and include no incorrect information. A satisfactory response for Activity 2 involved a complete and specific outline for an intervention that was appropriate for the skill level of potential clients. A satisfactory response for Activity 3 involved completion of all major components of the checklist in a logically consistent manner. To be judged as satisfactory, responses for Activity 4 had to provide specific, appropriate information and make infrequent use of technical terms. Thus, evaluation of responses to the activities depended on the form and content of the students's responses.

### **Examination Questions**

A question relevant to each of the four writing activities was included in one of the two class examinations. The questions relevant to Activities 1 and 2 were included in the mid-quarter examination held in the fifth week of the course. The questions are shown in Figures 1a-4a in the Appendix.

### **Questionnaire**

At the end of the course, students were requested to anonymously complete an eight-item questionnaire summarizing their perceptions of the writing activities. The first five items in the questionnaire, respectively, asked students to rate the overall value of the writing activities and the value of each separate activity in aiding the application of theoretical information to practical situations. Students responded to these items using a five-point rating scale (i.e., "not useful," "somewhat useful," "fairly useful," "very useful," and "extremely useful"). Respectively, the sixth and seventh items asked students to indicate the one activity they found the most useful and the one activity they found the least useful. The eighth item elicited reasons for the responses to the sixth and seventh items and an overall opinion of the writing activities.

## **RESULTS**

### **Evaluation of Writing Activities**

All ten undergraduate students completed Activities 1 and 2; nine students completed

Activity 3; and seven students completed Activity 4. Based on their performance on the two examinations (including multiple-choice and short-answer questions) and an oral presentation, these ten students' overall scores for the course ranged from 77% to 92%. The evaluation of each student's satisfactory or unsatisfactory performance on the writing activities is shown in Table 1. The instructor and teaching assistant agreed in their satisfactory-unsatisfactory evaluations of the writing activities in 34 of 36 (94.44%) instances. Disagreements were resolved after discussion. As shown in Table 1, five students (50%) responded satisfactorily in Activity 1; seven students (70%) did in Activity 2; five (56%) did in Activity 3; and four (57%) did in Activity 4.

To illustrate the range of student responses, two responses (one satisfactory, one unsatisfactory) are shown for Activities 2 and 4. Three responses (two satisfactory, one unsatisfactory) are shown for Activity 1. In the two satisfactory responses shown for Activity 3 (all students provided satisfactory responses), a range of expertise is demonstrated.

**Table 1: Students' Performance on the Writing Activities**

Student	Activity 1	Activity 2	Activity 3	Activity 4
1 (92%)	U	S	S	*
2 (92%)	U	S	S	S
3 (91%)	U	S	S	S
4 (90%)	S	S	U	U
5 (90%)	S	S	S	S
6 (89%)	U	U	*	S
7 (89%)	S	S	U	U
8 (86%)	S	U	U	*
9 (84%)	S	U	U	U
10 (77%)	U	S	S	*

**Note.** In Tables 1-2 and Figures 1-4, students are identified by number and their overall percentage score for the course is given in parentheses.

S indicates a satisfactory response, U an unsatisfactory response, and \* indicates that a student did not complete the writing activity.

### Activity 1

Nine of the ten students chose to rewrite the technical summary in prose. One student used a semantic map to capture key concepts of the summary. As illustrated in Figure 1, students' responses ranged from very detailed summaries that explicated the general tenets of Blank's (1986) analysis and provided an example for each of the four analysis levels (Figure 1a) to summaries that focused on the four levels only (Figure 1b) to brief, general summaries that did not describe or exemplify the four levels and also contained some incorrect information (Figure 1c).

### Figure 1: Responses to Writing Activity 1

#### 1a. Student 4 (90%) - Satisfactory

##### Teacher-Child Interactions + Discourse Levels

##### Discourse

- 1) Encouraged to assess level of reasoning required by discourse demands made by teachers
- 2) Urged to consider teacher-student interaction

##### —> 4 levels of Discourse

- 1) Matching Perception

Focus on immediate environment - here and now

ex 'Tell me what this is?'

- 2) Selective Analysis

focus on more salient aspects of environment

ex 'What color is the pencil?'

- 3) Reordering Perception

- Thinking beyond immediate situation

ex 'Show me the ones that are not red.'

ex 'Tell me what I put in the bowl before the eggs.'

- 4) Reasoning about Perception

- must think about what could happen or what might happen + cause-effect relations

ex 'Why is the boy wearing a raincoat?'

##### Discourse analyzation

- 1) - must expose kids to complete language to help them acquire it

- 2) - Oblige - Comment distinction

require a response

ex 'Why did Chris.

Columbus sail the world?'

statements that accompany actions without

requiring a response

ex 'Chris. Columbus sailed from Spain.'

- exposes students to more sophisticated lang.,

but not in an immediate failure situation

—> no response required

—> Observe ratio of obliges to comments in classroom lesson

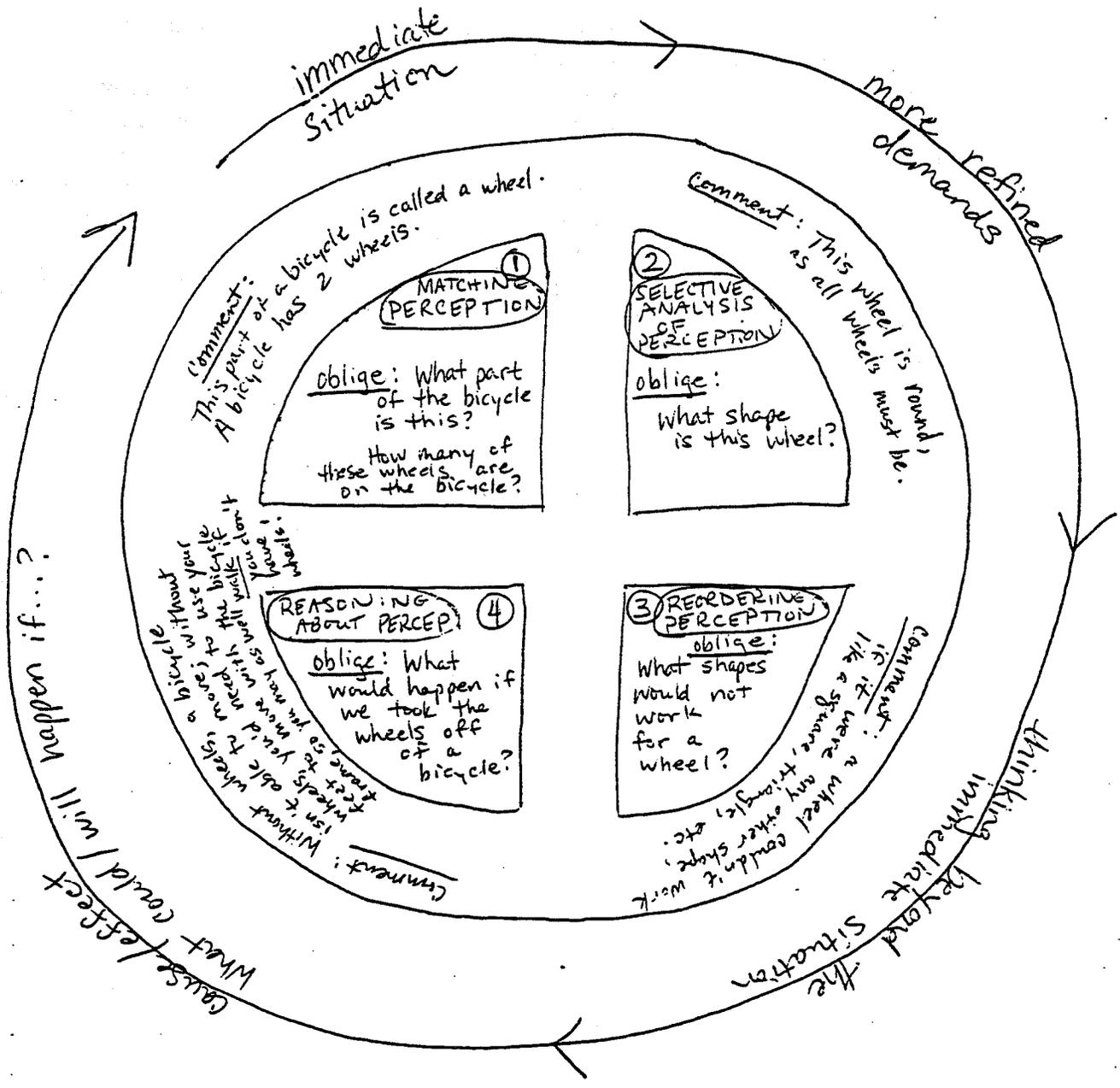
- Is there a balance between teachers obliges + comments, etc.

- expose students to higher levels through comments

1b. Student 5 (90%) - Satisfactory

Re: Teacher-Child Interactions and Discourse Level (Blank 1986)

Lesson: "WHEE Love to Ride"



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**1c. Student 6 (89%) - Unsatisfactory**


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- 2 - How does clinicians lang. level affect students?
- 1st - clinicians could be lowering their lang. level to a place where the child can perform at its best.
- this way there is no extension of learning taking place.
  - the teacher is not going beyond the child's level a little to get him to exceed his potential learning more.
  - The child needs to have as many challenging opportunities about the lesson as he does knowledgeable moments about the subject.
  - > There needs to be a sufficient amt. of questions asked that make him think or find new info as the questions he already has an answer for plus more info to volunteer.
  - Maybe if there is some questions given he can't answer a comment question will be good for him to express his knowledge already acquired, plus give him the desire to learn more so he can comment more.
- 

Note. In Figures 1-5, and Figures 1A-4A, students' responses are in a small type size. Instructions and the framework for the response that students did not create (e.g., titles provided by the instructor) are in a normal type size. The spelling, grammar, punctuation, and abbreviations used by the students are preserved in the figures.

### Activity 2

As shown in Figure 2, students' responses to Activity 2 ranged from very detailed and systematic intervention strategies (Figure 2a) to brief descriptions with few details (Figure 2b). Also, unlike the intervention described in Figure 2a, the response in Figure 2b was evaluated as unsatisfactory because the proposed intervention would be of dubious value to most school-age children with language impairments. (Unless children of this age had very severe social-communicative impairments, it is unlikely that they would require intervention for greeting skills). Also, it is unlikely that the type of group responding proposed in the intervention would facilitate individual children's greeting skills.

### Activity 3

The nine of the ten students who completed the checklist summarizing the student debate did so in a logical manner (although students came to different conclusions about the efficacy of the two types of intervention discussed in the debate). As shown in Figure 3, most checklists were completed in full (Figure 3a) while a few were incomplete in some respects (Figure 3b). Several students indicated that the format of the checklist was confusing (see questionnaire results).

**Figure 2: Responses to Writing Activity 2**

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**2a. Student 3 (91%) - Satisfactory**

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**Task:** Expressive Morphology - reg. past tense (ed) items w/in context of child driven incidental teaching procedure (Hart & Risley)

**Materials:** Kitchen Items to Bake a Cake (Bowl, Spoon, Oven, Box of Batter, Mixer, Milk, Eggs, etc)

**Number of stimulus items:** 5-10

**Example instruction:** 1) Clinician approves/acknowledges child's interest in Baking Cake Activity  
2) Occasional use of (Ed) marker in expressive lang. & correct syntax indicates child is good candidate for an incidental procedure

3) Clinician involves child in activity (ie.

a) mix batter in Bowl, mix ingredients, pour batter into mold, Bake cake in oven, Spread frosting w/ knife)

b) Clinician takes pictures of activities - individual task so items to elicit task cue child but are out of reach

4) Clinician uses focused attention

a) If child elicits response w/out verbal prompt (Initiates to clinician what he/she did in picture) then continue w/ "task-related" pictures & see if (ed) form has generalized across tasks - ie of Response - "look I frosted the cake"

b) If no response: Clinician provides verbal prompt: "What did you do here?" "How did you do this" etc.

- If child passes then reinforce with similar model "That's right, you frosted it!"

c) level of Intrusion (If child fails to respond to verbal prompt)

ie. - request For target response - C: "You need to tell me what you did here"

- request for partial Imitation "I was baking the cake. I \_\_\_\_\_ the cake"

- request for complete Imitation. say - "I baked the cake"

5) If child fails - still provide child with the desirable object to reinforce activity

**Example response:** "Look at this picture. I baked the cake"

**Reinforcement:** confirmation "That's right, you baked the cake in the oven!"

**Strategies to improve skills:** I level of intrusion relative to success of child's response

**Rationale for assessment:**

**Intervention domain(s) :** Generalize past tense (ed) markers to daily life situations - Focus is based on topic stimulus that child is interested in to likelihood that child participates & is motivated to learn.

Overgeneralization of past tense forms is acceptable until child can gain control over a variety of contexts w/ regular past tense.

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**2b. Student 6 (89%), with two other students - Unsatisfactory**


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**Task:** Develop social skill of greeting using in-class intervention

**Materials:** Students (same age), clinician, teacher

**Number of stimulus items:** 2 students and 1 teacher

**Example instruction:** When stimulus encounters child greet w/ 'Hello'.  
Teacher greets whole class w/ 'Hello' and class responds back

**Example response:** Child will greet back

**Reinforcement:** Verbal reinforcement - good job - I'm glad to see you saying  
-- Maybe gives stars each time they greet back

**Strategies to improve skills:** Add new people to greet from his environment

**Rationale for assessment:** Lack in greeting skills

Ex: a person greets the child & the child just stares at the person

**Intervention domain(s):** Pragmatic

starts out clinician centered & hopefully moves to child centered = hybrid

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#### **Activity 4**

As in the other writing activities, the seven students who participated in Activity 4 provided a range of responses in this activity. As Figure 4 demonstrates, even in the satisfactory responses, some students used several technical terms (e.g., "cognitive skills," "adaptive skills") to describe the child's behavior to the parents and provided few details about the scope of language intervention (Figure 4a). In unsatisfactory responses, students tended to use a less formal style with colloquial and/or nonspecific terms (e.g., "doing pretty fine," "some kind of language intervention") to describe the child's behavior. The intervention plan in the unsatisfactory responses was weak or nonspecific (Figure 4b).

### **RESPONSES TO EXAMINATION QUESTIONS**

#### **Example Responses**

In order to obtain a gross estimate of the value of each writing activity, a question relevant to each activity was included on either the mid-quarter or final examination. Each examination included a series of multiple-choice and short-answer questions. The four examination questions and an example of an appropriate (i.e., correct content) response and inappropriate or less appropriate response (i.e., missing or incorrect content) are given in Figures 1a-4a in the Appendix.

**Figure 3: Responses to Writing Activity 3**

**3a. Student 1 (92%) - Satisfactory**

**Pullout vs. In-Class Intervention Models**

Use this sheet to track points & make your own judgments.

CHECKLIST: Choose which model best addresses each point. An example is provided.			
	Pullout	In-class	Importance (1-10) Remarks
Example: Better for LEP child		X	8 CHILD NEEDS CONTEXT
See more children		X	6
Individualized Attention	X		9 - some groupwork
Helping child keep up with pace		X	6
Generalization		X	9
Learning Communicative skills/Functions		X	7
Cost-Benefit (Administrative policy perspective)		X	8
SLP's expectations for the child	X		8
Coordination with curriculum		X	9
Isolation beneficial/harmful	X		9
Least Restrictive/more naturalistic environment		X	9
Visibility/promotion of profession		X	9
Value of isolated environment for child	X		9
Value of SLP in classroom generally		X	8 - compete w/ teachers
"Turf", teacher threatened or skeptical?		X	8
Glorified teacher's aide/assistant		X	5
Teacher's duty to manage group		X	5
Accomodate increasing caseloads		X	9
(Importance of) class noise/distraction		X	9
Addresses child's learning style	X		9 main reason as
Child more candid, open, less threatened	X		9 a benefit
Addresses PL94-142 better		X	9
Addresses problem of missing class		X	10

REMARKS:  
 I prefer the classroom method because the stigmatizing aspect of pulling a child out of the room seems to be great among peers. The child seems to learn the same amount as in pullout.

KEY: SLP = Speech-Language Pathologist  
 LEP = Limited English Proficiency

**3b. Student 8 (86%) - Less Satisfactory**

**Pullout vs. In-Class Intervention Models**

Use this sheet to track points & make your own judgments.

CHECKLIST: Choose which model best addresses each point. An example is provided.

	Pullout	In-class	Importance (1-10) Remarks
Example: Better for LEP child		X	8 CHILD NEEDS CONTEXT
See more children		X	2, not enough attention
Individualized Attention	X		10, focused on needs
Helping child keep up with pace	X	X	5, both work
Generalization	X	X	
Learning Communicative skills/Functions	X	X	8, individual & peer learning
Cost-Benefit (Administrative policy perspective)	X		7, money shouldn't matter over need
SLP's expectations for the child	X		7, focus on individ, not normed
Coordination with curriculum	X	X	10, help keep up
Isolation beneficial/harmful	X		
Least Restrictive/more naturalistic environment	X		not totally natural in class
Visibility/promotion of profession	X	X	
Value of isolated environment for child	X		learn more
Value of SLP in classroom generally			
"Turf", teacher threatened or skeptical?			true!?
Glorified teacher's aide/assistant			
Teacher's duty to manage group			
Accomodate increasing caseloads	X		have specific class
(Importance of) class noise/distraction			6
Addresses child's learning style	X		10
Child more candid, open, less threatened	X		10
Addresses PL94-142 better		X	7
Addresses problem of missing class	X		not problem

REMARKS:

KEY: SLP = Speech-Language Pathologist  
LEP = Limited English Proficiency

**Figure 4: Responses to Writing Activity 4**

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**4a. Student 3 (91%), with one other student - Satisfactory**

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Matthew demonstrates above-average cognitive skills and performs above grade-level academically. His emotional, social and adaptive skills are age-appropriate. However, he appears to hesitate when expressing himself orally.

Matthew would benefit from working in a small group within the classroom. Activities could emphasize sequencing of events, word recall, focusing on relevant details, expressing the main idea, and staying on topic. Speaking situations can be structured from least difficult to more difficult. For example, Matthew had more difficulty expressing himself in front of a large group than in the small-group turn-taking activity.

By focusing on expressive language skills, Matthew's speech may become less hesitant and more cohesive.

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**4b. Student 9 (84%), with two other students - Unsatisfactory**

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All the educators in our school check the progress of all the children on a quarterly basis and we'd like to tell you what we think about your child. He seems to be functioning above average intellectually, doing extremely well academically and above all doing pretty fine. But one thing we've repeatedly noticed is that your son is a little less self assured and does not display adequate conversational skills. We did not bring this to your attention earlier because we did not want you to be unduly concerned about this matter. However, while the educators do suspect slight dysfluency, we would like to have more information about his conversational skills outside classroom situations. So we would like you to tell us if you have noticed any dysfluencies in his speech such as faltering for words, longer than usual pauses, having trouble conveying main ideas, etc.

Keeping the best interests of the child in mind, we feel that if this persists we would like to start him on some kind of language intervention which would focus on improving conversational and in general language skills. We would like your input regarding what you feel is best for your child.

---

**Examination Accuracy of the Subgroup of Ten Students**

As shown in Table 2, for the most part, the ten students answered each of the four examination questions with complete accuracy. However, participation in a writing activity did not ensure accuracy on an examination question (e.g., Student 10's performance on Question 1) and not participating in an activity did not preclude accuracy on a question (e.g., Student 6's response to Question 3). Moreover, satisfactory or unsatisfactory performance on an activity (see Table 1) was not always associated with high or low accuracy on an examination question. For example, Student 1 gave an unsatisfactory response to Activity 1 but answered Question 1 accurately. Similarly, Student 2 gave a satisfactory response to Activity 4 but was not completely accurate on Question 4.

**Table 2: Students' Performance on the Examination Questions**

Student	Question 1 (out of 8)	Question 2 (out of 8)	Question 3 (out of 12)	Question 4 (out of 8)
1 (92%)	8	8	12	7*
2 (92%)	7	8	12	5.5
3 (91%)	4	8	11.5	6
4 (90%)	8	8	12	8
5 (90%)	6	8	12	8
6 (89%)	8	8	12*	7.5
7 (89%)	8	8	12	7.5
8 (86%)	8	8	12	7.5*
9 (84%)	8	8	12	4
10 (77%)	0	8	12	8*

**Note.** Question 1 relates to Activity 1, Question 2 to Activity 2, Question 3 to Activity 3, and Question 4 to Activity 4.

As indicated in the table, three questions had a total possible number of points of 8 and one question had a possible number of points of 12.

\* indicates that a student did not complete the writing activity associated with the examination question.

### Examination Accuracy of All Students

The mean accuracy for the class of 43 students on each question relevant to a writing activity was compared with the students' performance on the other short-answer examination questions. The students' total accuracy on the short-answer section of the mid-quarter examination (i.e., 11 questions, not including Questions 1 and 2) ranged from 60% to 96% ( $M = 82.4\%$ ,  $SD = 10.8\%$ ). The students' accuracy on Question 1 ranged from 75% to 100% ( $M = 97.0\%$ ,  $SD = 6.9\%$ ). Their accuracy on Question 2 ranged from 0% to 100% ( $M = 87.2\%$ ,  $SD = 26.4\%$ ). The students' accuracy on the short answer section of the final examination (i.e., eight questions) ranged from 83% to 100% ( $M = 99.5\%$ ,  $SD = 2.6\%$ ). Their accuracy on Question 3 ranged from 85% to 100% ( $M = 98.0\%$ ,  $SD = 3.7\%$ ) and their accuracy on Question 4 ranged from 50% to 100% ( $M = 92.3\%$ ,  $SD = 10.3\%$ ).

A one-way analysis of variance (ANOVA) with repeated measures was used to determine the effect of questions on students' accuracy on the mid-quarter examination. Arcsine transformed values of the percentage accuracy for each question were used in the

ANOVA. The ANOVA indicated that there was a significant main effect of question type ( $F(2, 126) = 15.91, p < .0001$ ). Tukey's Studentized Range (HSD) Test (Tukey Test) was used post hoc to determine specific differences. This test indicated that students showed significantly higher accuracy on Question 1 than on Question 2. In turn, students showed significantly higher accuracy on Question 2 than on the other short-answer questions ( $HSD(84) = 7.3902, \alpha = .05$ ).

A separate one-way ANOVA was used to determine the effect of questions on accuracy on the final examination. This ANOVA indicated a significant main effect of question type also ( $F(2, 126) = 20.70, p < .0001$ ). The Tukey Test indicated that Question 4 was answered with significantly lower accuracy than Question 3 and the other short-answer questions ( $HSD(84) = 3.7374, \alpha = .05$ ).

### Responses to the Questionnaire

Forty-two of the 43 students completed the questionnaire for the writing activities in which they participated. Thirty-one students completed all four writing activities; seven students completed three activities; and four students completed two activities. The results of the five rating scales on the questionnaire, including the number of students who completed each question, are summarized in Table 3.

As shown in Table 3, 25 students (61%) indicated that, overall, the activities were very or extremely useful. Activity 1, the paraphrase in non-technical terms of a textbook summary, was rated as very or extremely useful by 20 students (51.3%). Activity 2, the creation of a language intervention technique, was rated as very or extremely useful by 40 students (75%). Activity 3, the checklist summarizing a student debate, was rated this way by 24 students (64.9%). Activity 4, the group-authored letter to a child's parents, was rated this way by 25 students (67.5%).

Students' comments about the overall value of the writing activities are exemplified in Figure 5. Students who felt that the activities were at least very useful often mentioned the benefits of working with peers, receiving feedback from the instructor, and having opportunities to think more deeply about issues. Students who felt the activities were less useful (somewhat to fairly useful) often mentioned limitations in the way in which the writing activities had been implemented. Time constraints and the need for additional examples of appropriate and inappropriate responses were stated as limitations.

There was a total of 44 responses for the sixth item, which asked students to indicate

**Table 3: Questionnaire Results**

Activity	Not Useful	Somewhat Useful	Fairly Useful	Very Useful	Extremely Useful
Overall (N = 41)	0 (0.0%)	2 (4.8%)	14 (34.2%)	21 (51.2%)	4 (9.8%)
1 (N = 39)	1 (2.6%)	6 (15.4%)	12 (30.8%)	17 (43.6%)	3 (7.7%)
2 (N = 40)	0 (0.0%)	2 (5.0%)	8 (20.0%)	19 (47.5%)	11 (27.5%)
3 (N = 37)	1 (2.7%)	3 (8.1%)	9 (24.3%)	17 (46.0%)	7 (18.9%)
4 (N = 37)	0 (0.0%)	1 (2.7%)	11 (29.7%)	15 (40.5%)	10 (27.0%)

Note. The number of students who completed the activity or item about each activity is given in parentheses for each activity.

the activity they found most useful. (Two students indicated that two activities were equally useful). Fourteen students (31.8%) indicated that Activity 2 was the most useful activity and 14 indicated that Activity 4 was the most useful. For the seventh item (asking students about the least useful activity), one student indicated that all activities were useful and three students did not respond. Thus, there was a total of 42 responses for this item. As expected, the results coincided well with the results of the sixth item. Thirteen students (34.2%) indicated that Activity 1 was the least useful activity; fourteen students (36.8%) indicated that Activity 2 was the least useful; five students (13.2%) indicated that Activity 4 was the least useful.

The students' comments for the eighth item revealed that Activity 2 was felt to be most useful for two general reasons: First, it helped students realize the complexity of designing a valid intervention procedure, how to begin designing such a task, and also provided a practical intervention task that could be used later in their careers. Second, the activity encouraged both individual creativity and collaboration with other group members. For example, one student commented: "It was very practical. It provided me with something I could use in therapy, not only with an actual activity, but also with an

**Figure 5: Questionnaire Comments**

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Students Rating the Activities as Very or Extremely Useful

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- Good idea, took active part in what I was learning. Able to receive feedback on how I was perceiving information.
  - Thought they were useful and highly practical. Allowed us some concrete idea of what its really like "out there" in the clinical world.
  - Overall, I think the writing activities were beneficial. It especially helps to do them in groups so that you can receive input from your peers. - Writing to Matt's parents was also very helpful but I don't think this should be a group project. Writing styles are too different. Providing feedback on how others worded their responses would have been helpful. I would have liked to see the intervention technique design be more specific. EX: "Write a program to teach negation in the present tense." Then everybody could do this, (alone or in groups) and again we could see what people came up with. I'm sure the variety would be astounding.
  - Writing activities are always good in that they demand your undivided attention in thinking about and applying information that you might otherwise only think about minimally.
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Students Rating the Activities as Somewhat or Fairly Useful

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- All in all they were fairly helpful. I just don't particularly enjoy in-class writing assignments. I feel the lectures were more pertinent and taught me more.
  - It might have been helpful to get examples (more than one) of how others have written the paragraph to the parents. To have been presented incorrect ways to write the paragraph to parents with corrections discussed or written in (corrected) would have been helpful also.
  - Generally, too much time was spent or too little was allotted, as I always -felt pressured to hurry but eager to spend more time and get more information. - I like the activity [Activity 3] but this one in particular was too easy, pretty obvious. Add some challenge to it! - I though the writing activities were a nice break in class, and gave us an option to think on our own instead of just being a "sponge" and soaking up lecture after lecture.
- 

outline of how to create an activity in the future." There were few students who felt Activity 4 was the least useful activity. All comments were related to students' prior experiences and expertise and the subsequent ease of activity. A typical comment was: "I've done the same thing in a couple other classes."

Activity 4 was felt to be most useful for one major reason: It was practical and related directly to students' later professional life. For example, one student commented, "It made you actually have to think of what you might say to a parent of a child with a communication disorder. You never really think how technical everything is, words, terms, etc. Helpful to be able to write it out once—to get a general idea." As for

Activity 2, there were few students who felt Activity 4 was the least useful activity. Again, the comments related to students' prior experiences. One student wrote: "It seems as though I've had to do that writing exercise in several English classes. It doesn't seem like a very difficult task."

For those students who felt Activity 1 was the most useful activity, the most often cited reason was that the task aided comprehension of the material and thus, was a useful study technique. One student wrote: "It forced me to really comprehend what I was reading and sift through unimportant data. It also made me take technical terms down to a level that was much more accessible and useful." However, many students felt that this was the least useful activity, either because they felt it was not of practical value and/or because it did not facilitate their long-term memory of the material. As one student wrote: "Right now I could not tell you the information learned on that activity. I don't know if I'll use it in practice especially since I can't remember it now."

For those students who felt Activity 3 was the most useful, the most often cited reason was that the task facilitated their understanding of the advantages and disadvantages of pullout and classroom-based interventions. One student wrote: "It provided the opportunity to stop and think about the possible situations out there which I will have to make well-reasoned judgments and decisions about." Those students who felt this activity was the least useful consistently referred to the ambiguity of the checklist used in this activity. One student wrote: "I understood the content of both sides of the student debate—this [the checklist] was not something that helped me organize positional issues because I wasn't certain how to fill it out."

## DISCUSSION

This report provides qualitative and quantitative information about the implementation of writing activities with college students. The study yielded three major findings. First, although students performed with a range of expertise on the writing activities, most students provided satisfactory responses to each activity. There was no clear-cut link between participation in a writing activity or performance of an activity and accuracy on an examination question related to the activity.

Second, as a group, students performed with high accuracy on each of the examination questions related to the writing activities. Their accuracy on Questions 1 and 2 was higher than their mean accuracy on other examination questions; their accuracy

on Question 3 was similar to other questions; and their accuracy on Question 4 was somewhat lower than their accuracy on other questions. This comparison of students' accuracy across questions is clearly a very global measure of the influence of the writing activities on students' performance. However, these results suggest that the writing activities enabled students to accurately grasp the concept or skill of interest equally as well as did other forms of classroom instruction.

Third, the results of the questionnaire indicated that many students perceived the writing activities to be useful in linking theory and practice. At least half of the students felt that each writing activity was very or extremely useful, with Activities 2 and 4 being perceived as more useful than Activities 1 and 3. Two key features differentiated these two sets of activities: Activities 2 and 4 were completed in small groups while Activities 1 and 3 were completed individually. Also, Activities 2 and 4 were practical intervention tasks that a speech-language pathologist performs, while Activities 1 and 3 related more to understanding the concepts behind assessment and placement choices.

Overall, the writing activities were an excellent addition to the class. Such activities appear to be a valuable avenue through which to link theoretical and practical information for students in professional programs.

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**APPENDIX**

The following figures (Figures 1A-4A) exemplify an appropriate response and an inappropriate or less appropriate response to each of the four examination questions. These examples are drawn from the class of 43 students (not just the 10 students highlighted in the report). Note that in Figure 1A, the inappropriate response does not coincide with the increasing levels of complexity described by Blank (1986) and confuses comments and obliges. In Figure 2A, the less appropriate response is limited in that the stated age range for the task is inappropriately high. (Unless children have severe communication impairments, in which case plural markers would probably be a low priority concern, children will have mastered plurals long before 9 years of age). The answer redundantly describes an advantage of pullout intervention in the less appropriate response in Figure 3A and several technical terms are used without explanation in the less appropriate response in Figure 4A.

**Figure 1A: Examples of Responses to the Examination Question Assessing Activity 1**

QUESTION 1. Write down questions/statements as examples of a teacher's comments and obliges in each of the 4 discourse levels described by Blank (1986) (cited in Wallach & Miller, 1988). Give 1 example of a comment and 1 example of an oblige at each level.

**APPROPRIATE RESPONSE**

Level 1 (lowest level)

Comment: "Here's the apple."

Oblige: "Where's the apple?"

Level 2

Comment: "Here is the blue pencil."

Oblige: "Which is the blue one?"

Level 3

Comment: "We crack the egg before we add it to the cake mix."

Oblige: "What do we have to do before we add the egg to the cake mix?"

Level 4

Comment: "Christopher Columbus sailed to America and discovered it by accident!"

Oblige: "Why did Columbus sail to America?"

**INAPPROPRIATE RESPONSE**

Level 1 (lowest level)

Comment: "Where is the truck?"

Oblige: Child points to truck (nonverbal response).

Level 2

Comment: "Where is the truck?"

Oblige: Child points and responds "truck."

Level 3

Comment: "Where is the truck?"

Oblige: Child picks up truck and responds "Here is the truck."

Level 4

Comment: "Where is the black truck?"

Oblige: Picks up the truck and says "This is the black truck."

**Figure 2A: Examples of Responses to the Examination Question Assessing Activity 2**


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QUESTION 2. Create your own non-standardized language assessment task (not one created in class). The task should include the purpose of the task, the domain or component of language to be assessed, mental/chronological age of children for whom the task is appropriate, brief description of the task, example instruction to the child, and an example of an expected response.

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**APPROPRIATE RESPONSE**

Purpose: A probe to assess "Wh" questions receptively  
 Domain: Receptive semantics  
 Age: 5 - 9  
 Description: A list of 60 questions: 10 How questions, 10 Why questions, 10 What questions, 10 Which questions, 10 Who questions, + 10 Where questions all mixed up. Begin w/ #1 and ask each question. Record the response as correct, incorrect, or no response.  
 Instruction: What is your mom's name?  
 Response: Betty (recorded in the column of correct responses)

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**LESS APPROPRIATE RESPONSE**

Purpose: To assess receptive knowledge of plural markers  
 Domain: Morphology  
 Age: 6 - 9  
 Description: The child is given a booklet with pictures of objects. The objects are each represented in a box singularly, and a box with 2 or more. The child's task is to determine if the examiner is indicating one or several objects.  
 Instruction: "Put an X on the picture I am talking about."  
 Response: The child must draw an X on either the singular or plural representation of the word, depending on the sentences.

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**Figure 3A: Examples of Responses to the Examination Question Assessing Activity 3**

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QUESTION 3. Give 3 possible advantages of pullout intervention and 3 possible advantages of classroom-based intervention.

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**APPROPRIATE RESPONSE**

Advantages of pullout intervention:

- a. The interaction can be geared to the child's individual learning style.
- b. The pullout setting is usually quieter and less distracting than the classroom setting.
- c. The child may feel less conspicuous and freer to talk away from other classmates.

Advantages of classroom-based intervention:

- a. The child does not miss important curricular information while receiving speech-lang. services.
  - b. The clinician is better equipped to serve a large number of children.
  - c. The clinician gains a clearer perspective of "normal" language performance at each grade level through exposure to non-identified children.
- 

**LESS APPROPRIATE RESPONSE**

Advantages of pullout intervention:

- a. The clinician is able to structure the environment to meet the needs of intervention.
- b. Intervention is better suited to meet specific goals for each individual child.
- c. The clinician is not "invading the teachers' territory" or making the teachers feel uncomfortable.

Advantages of classroom-based intervention:

- a. Generalization is more likely to occur if intervention is done in a natural environment (classroom).
  - b. Other children who are "at risk" may benefit from the intervention.
  - c. Students do not have to miss classroom lessons, and risk falling further behind peers.
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**Figure 4A: Examples of Responses to the Examination Question Assessing Activity 4**

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QUESTION 4. In class, you wrote a paragraph to “Matt’s” parents indicating your (the speech-language pathologist’s) impression of Matt’s communication skills and possible intervention strategies. Below, write a similar paragraph to Matt conveying your impression of his communication skills and what (if any) intervention he will receive. This question will be graded on (a) use of appropriate nontechnical terminology, (b) conciseness, and (c) informativeness. Remember that (1) Matt is 8 years old, (2) his fluency appears to be most related to his wordfinding skills during conversation, and (3) his overall academic and language skills (except for the wordfinding) are above average.

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**APPROPRIATE RESPONSE**

Hi Matt. My name is Miss [Name] and I help children who have trouble with their speaking or language skills. Do you remember taking two language tests last month? The results of those tests and what your teacher has told me about your speech in class lead me to think that you need extra help in some of your speaking skills, such as in remembering the right word to say or telling the main points of a story you’ve read in class. Therefore, I am going to work with you in a group of four other children in the back of the classroom every day during language period for two weeks. After this time, I’ll be better able to decide if you need my help in improving the speech skills I’ve just mentioned or if these skills will improve on their own without my extra help. Okay? Do you have any questions?

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**LESS APPROPRIATE RESPONSE**

Matthew demonstrates above average language, academic & social adaptive skills. He is cooperative, bright & willing to learn. As an SLP, I wish to harness every child’s potential to be the best communicator possible. Working w/ M. to facilitate his wordfinding skills is important in maximizing his conversational ability. His fluency can increase if we work on activities that can place him in smaller group settings. Facilitating turntaking skills, maintaining topics, starting & ending conversations are areas of focus. Establishing topics of interest to Matthew & providing opportunities for him use spoken language in smaller settings w/ peers can provide teaching opportunities to facilitate fluent sp & word finding ability. Overall Matthew is a very bright, intelligent boy who would be an excellent candidate, responding well to strategies mentioned above.

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