

NADE Digest

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NADE Digest

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EDITORIAL COMMENTS

This issue of the NADE Digest is the result of many hours of collaboration between the authors, the editors, and the Editorial Advisory Committee, and, as with all of the preceding issues, it came to fruition by virtue of the enlightened supervision of the NADE Executive Board. Perhaps the most exciting aspect of the six articles found here is the wide range of topics that are so capably discussed. Developmental educators from each discipline will find methods, materials, and advice that are practical as well as contemplative.

Hunter R. Boylan's "The Mistakes We Make and How We Correct Them: What I've Learned as a Consultant," is a straightforward treatise that pinpoints errors in the delivery of developmental education that he has observed during his visits to over 200 community colleges. The various aspects he addresses range from attendance policies to instructor training to reaching out to the most educationally needy students. In the tradition of a veteran educator, he offers suggestions to remedy these problems. His mission? To help instructors and administrators to make their programs the best that they can be for the benefit of their students.

"Integrating Mathematics with Writing," by Jo Ann Tong, addresses the age-old dilemma of trying to get students to truly understand their math problems so they can be successful in solving them. Her ingenious approach utilizes an acrostic poem and a vocabulary assignment, and she includes detailed narratives on how these methods play out in her classroom. The article includes references to research on the benefits of writing across the curriculum, a teaching methodology that supports her thesis.

The atypical method of teaching two different levels of developmental English in the same classroom at the same time is the topic of Diane Flanagan Pireh's "The Co-Sat Class: Strategies for Teaching Combined Levels of Developmental English." This method integrates reading and writing using the same topics but different objectives for each level. The instructors involved developed and used a "custom textbook" and students worked independently as well as in groups and as a class. The article includes a table that illustrates how the author coordinates groups and activities, since classroom management and organization are integral components of this intriguing method.

"Predicting Bachelor's Degree Attainment for Developmental Math Students," by Hansel Burley, Bonita Butner, Connie Wilson Anderson, and Kamau Oginga Siwatu, addresses what is perhaps the most important objective of developmental education, i.e., equipping students with the skills necessary to succeed in college level courses so that they can persist to graduation. The authors present a convincing argument -- that many

developmental students have great difficulty passing college algebra, and that this situation negatively impacts on their ability to earn a college degree. The authors present possible solutions for developmental math instructors such as integrating developmental and college math courses, remaining with their students through their first college level math course, and/or developing and implementing a math-intensive semester. The impact of poverty and behavioral patterns on bachelor degree attainment are also discussed.

“Utilizing Reading Conferences in Developmental Reading Courses,” by Laurie Bauer, supports the theory that an individualized approach to helping students become better readers can best be implemented in conferences held outside of class time. During the conferences, the instruction is complemented by having students identify their educational goals and discuss their level of motivation where reading is concerned. The author concludes that these 20-minute reading conferences afford the opportunity for educators to provide individual reading instruction for students as well as build strong student-instructor relationships.

Roberta Karstadt and Victoria M. Rey, co-authors of “Introducing Newspapers in Developmental Reading Classes,” believe that newspapers are the key to motivating developmental students to read and to increase their comprehension skills. Noting that students are not often familiar with newspapers, they emphasize the importance of first reviewing the components of newspapers (the various types of columns and articles, for example) and illustrating how newspaper articles can expand and enrich students’ knowledge and mastery of a host of academic courses.

The interesting variety of topics in this Spring 2009 issue of the NADE Digest is sure to appeal to developmental educators on many levels. Hopefully, these articles, which the authors have so generously shared with us, will inspire those who read them to try some of the methods presented here in their own classrooms. And, as always, we hope that many of you will consider sharing your knowledge and expertise by writing an article for a future issue of the NADE Digest. We look forward to hearing from you!

Laura Villarreal, Editor
Camille Belolan, Assistant Editor

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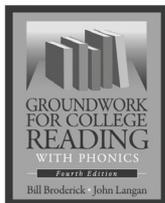
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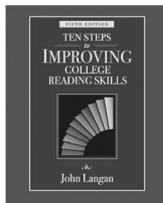


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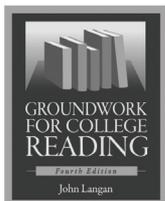


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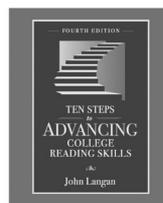


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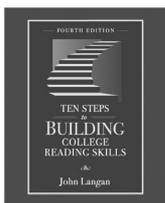


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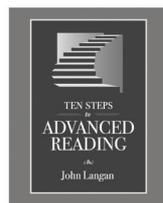


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The Mistakes We Make and How We Correct Them: What I've Learned As a Consultant

HUNTER R. BOYLAN

NATIONAL CENTER FOR
DEVELOPMENTAL EDUCATION,
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This manuscript describes five of the most common mistakes made in developmental education programs based on the author's experiences, which include consulting at over 200 community colleges. These mistakes include failing to create a seamless transition, failing to train adjunct instructors, failing to coordinate developmental programs, failing to enforce attendance policies, and failing to ensure that the students who need the most help get it. Each mistake is discussed and followed by a description of what community college developmental programs can do to correct these mistakes.

During my career, I have had the opportunity to visit over 200 community college campuses as an observer or a consultant. Some of the developmental programs I observed were outstanding, most were mediocre, and a few were truly awful. Among those that were mediocre or worse and even among some of the outstanding programs, I noticed that they tended to make the same mistakes. Most of these mistakes represented errors of omission rather than commission. It was not that they did the wrong things so much that they failed to do things right.

The purpose of this article is to describe the most common mistakes that I have observed in developmental programs. Obviously, this is not a research article. The sample of institutions and programs I have visited represents only about seventeen percent of the nation's community colleges. The sample is certainly not random nor is it organized in any scientific manner. Nevertheless, the observations provided here may enable developmental educators to learn from the mistakes of others, or maybe their own, and use this learning to improve the quality of their programs.

Mistake # 1 – We do not ensure a seamless transition.

A seamless transition in developmental and college level courses requires that the exit standards of one level course are con-

sistent with the entry standards for the next level course. In other words, the standards for completing the lowest level developmental mathematics course should be the same as those required for entry into the next level developmental mathematics course.

Similarly, the exit standards for the highest-level developmental writing class should be the same as those required for entry into the first college level writing class. Roueche and Roueche (1999) discuss this and call for community colleges to ensure that a seamless transition exists between all levels of developmental courses as well as between developmental and college level courses.

In situations where the same instructors teach both the developmental course and the college level course in a particular subject, the instructors are likely to provide this consistency of standards. These instructors know what is required to be successful in developmental and college level courses and usually make sure that students who leave their developmental course are ready for their college level course.

Such an arrangement, however, is atypical of most community colleges. Instead of having the same instructor teach both the developmental and the college level course, large numbers of adjuncts are used to teach both levels. A 2001 study by Shults reported that on the average, only 35% of developmental courses at community colleges are taught by full-time faculty. The fact that so many developmental courses are taught by part-time faculty who usually have only limited involvement in their departments or programs makes it difficult to ensure the consistency of standards in developmental courses.

Some colleges address this situation by standardizing the syllabi, textbooks, and assessment instruments used by adjunct faculty. Others address it by requiring a standardized exit test for all students moving from one level of courses to another regardless of whether the instructors are adjunct or full-time. Still others address it by having annual articulation meetings of full and part-time instructors teaching developmental and college level courses to share syllabi, review tests, and identify any inconsistencies in exit and entry standards.

Mistake # 2 – We do not train adjunct faculty teaching developmental courses.

As noted earlier, the vast majority of community college developmental courses are taught by adjunct faculty. Unfortunately, relatively few of the colleges I have observed make a concerted or systematic effort to train adjunct instructors. Those selected as adjunct instructors may be well trained through graduate programs in their discipline but this disciplinary training is unlikely to include any course work on college teaching in general or teaching developmental students in particular. Colleges may provide an orientation program, a handbook, or a standardized syllabus for adjunct instructors but they rarely provide training in adult learning or techniques for teaching developmental students. As a result, many adjunct instructors teaching developmental students do so without the knowledge of how to teach them most effectively.

This may be one of the reasons why recent studies show that completion rates in developmental courses are disappointingly low (Bailey, Jeong, & Cho, 2008; Calcagno & Long, 2008). Although there are many exceptions, the majority of these courses are taught by adjunct instructors who have little time available to work with students who are having difficulty, little training in how to work with these students, and little incentive to do either. The good news is that many community colleges are beginning to address this problem. Some are developing on-line training programs for adjunct instructors teaching developmental courses and providing incentives for adjunct instructors to participate in these programs. Some provide well-designed training manuals for adjunct instructors teaching developmental courses. These manuals provide background information on developmental students, tips for teaching them, and articles related to teaching and learning. Other colleges engage in various efforts to integrate adjunct instructors into the mainstream of teaching and learning at the institution. They invite and encourage adjunct instructors to attend all departmental or program meetings and events, they provide mentors for adjunct instructors, they offer incentives for them to participate in campus professional development workshops, and they send adjunct instructors to professional conferences.

Mistake # 3 – We do not coordinate the developmental education effort.

Experts in the field have consistently advised that developmental courses and support services should be housed in a single department or program and integrated into the campus administrative mainstream centralized (Keimig, 1983; McCabe, 2000; Boylan, 2002). However, few community college leaders appear to have taken this advice. According to a report from the American Association of Community Colleges (Shults, 2001), only forty percent of community college developmental programs are centralized.

One of the main benefits of having a centralized approach to developmental education is that it is much easier to coordinate developmental education activities in a centralized program. In fact, Boylan, Bliss, and Bonham (1997) suggest that centralized programs are more effective than decentralized programs primarily because of the coordination and communication that result from centralization. A centralized program, however, does not necessarily ensure that everyone who works with developmental students is “singing from the same sheet of music.”

Those developmental educators who report to the dean of instruction and dean of student services rarely get together to identify program issues and problems that cut across the two divisions and seek collaborative solutions to them. Similarly, instructors of mathematics rarely meet with the instructors of English or reading to identify and resolve common problems. As a result, problems in the design or delivery of developmental education are rarely addressed in a collaborative manner and there is little synergy in the developmental education effort.

Those colleges that have strong coordination of developmental education do so in a variety of ways. Many develop a well-thought-out and widely distributed philosophy statement for the campus-wide developmental education effort. This contributes to a common understanding of the values that should be reflected in establishing policies for and working with developmental students. Having a similarly well-thought-out and widely distributed statement of goals and objectives for the campus-wide developmental education also contributes to coordination. It contributes

to a common understanding of what the developmental program is designed to accomplish. Having a single administrator in charge of the campus-wide developmental education effort also contributes to coordination as does finding areas for collaboration between different campus units serving developmental students.

Mistake # 4 – We do not establish and enforce attendance policies.

One of the major complaints that I hear from developmental instructors is that their students miss too many classes. There are few people who would argue with the notion that attending class is particularly important for developmental students. As Gabriel (2008) points out, “Underprepared students who are already academically behind their classmates are even more at risk if they are not in class from the start” (p. 28). Given this, I am always surprised by the number of developmental programs that do not have stringent and consistently enforced attendance policies for their students.

Many of the faculty members I have interviewed indicate that they adopt the institution’s stated attendance policy for their developmental classes. Frequently, however, this stated attendance policy describes how many courses students are allowed to miss before some sanction is applied. These policies contribute to the impression that absenteeism is acceptable as long as it is not excessive. Other faculty members teaching developmental courses do not have a stated attendance policy. They believe that their students are adults and they should decide for themselves whether or not to attend class.

Programs that address this issue do so with a strict attendance policy for students enrolled in developmental courses. The policy usually states that there is no such thing as an excused absence. All students are expected to attend all classes except in the case of emergencies that are clearly described in the syllabus. For instance, “The fact that your car didn’t start in the morning is no excuse for missing class. Find some other way to get to campus on time.” Students who miss class are still responsible for learning the material covered. They may do this through additional assignments, through individual learning activities in the laboratory,

or through reviewing video clips of class sessions. The message in such programs is that absenteeism is not an option and that students are accountable for all the material covered in class through either attendance or make up work, not just through tests. These sorts of policies may be difficult to implement at first but once they have been in place for a while, students will get used to following them.

Mistake # 5 – We fail to ensure that those who need the most help get it.

Most community colleges assess students upon entry to determine placement and, depending upon local policies, either advise or require students to take the courses into which they place. According to Attewell, Lavin, Domina, and Levey (2006), 58% of entering community college students place into one or more developmental courses. A recent study by Bailey, Jeong, and Cho (2008), however, reports that only 30 to 40% of those placing into a sequence of developmental education courses actually enroll in the entire sequence. This suggests that whatever advising, placement, and monitoring procedures we use for course placement do not work very well.

Similarly, most colleges offer an array of tutoring and other learning assistance services. But few colleges have any systematic procedures in place for ensuring that those who are most in need of these services actually participate in them. The most common refrain I hear from tutoring coordinators is “The students who participate most regularly are those who currently have a B and want to get an A in a class.” It appears that students enroll in developmental courses and participate in learning assistance services more or less randomly. Few systematic efforts are made to make sure that the students most in need of developmental courses and services actually get them.

Colleges that avoid this problem identify students who are most likely to be at risk at the outset. They look at the historical profile of students who drop out of the institution during the first semester and target students who fit that profile for early and continuous intervention. Such interventions may include mandatory advising and placement, monitoring student behavior, and ongo-

ing academic advising during the first semester. Often a success plan is developed that includes participation in both courses and support services and students meet regularly with counselors or advisers to ensure that the plan is followed. Implementing some of these options will, no doubt, require retraining of academic advising personnel as well as developing and implementing programs to monitor what students are actually doing. However, the effort involved is likely to be rewarded by increased retention of some of the students most at risk.

Conclusion

Albert Einstein once said, “The definition of insanity is doing the same thing over and over again and expecting different results” (Tangredi, 2005, ¶ 1). One of my criticisms of those who manage developmental education programs is that they continue to make one or more of the mistakes described here and then wonder why their students are performing poorly.

There is nothing wrong with making mistakes as long as we learn from them and do not repeat them. As developmental education faces increasing criticism from policy makers and the media it is more important than ever for us to avoid repeating our mistakes. This is a necessary step in justifying the rather substantial amounts of public funding devoted to developmental education during a time when resources are scarce and policy makers will be forced to make difficult choices.

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Hunter R. Boylan is a Professor of Higher Education and Director of the National Center for Developmental Education at Appalachian State University in Boone, NC. He is the founder of the Kellogg Institute for the Training and Certification of Developmental Educators, the former Director of Grambling State University's Doctoral Program in Developmental Education, the founder of Research in Developmental Education, a past-President of the National Association for Developmental Education, a founder and former Chairperson of the American Council of Developmental Education Associations, and a Fellow of the American Council of Developmental Education Associations. He has written, consulted, and spoken widely on the topics of research, best practices, evaluation, instruction, and administration in learning assistance and developmental education.

Integrating Mathematics with Writing

JO ANN TONG

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PARKSIDE

Since the learner is actively engaged when composing writing assignments, integrating math through various writing modes can enhance and strengthen students' understanding of math concepts. Two expository writing assignments, an acrostic poem and a vocabulary activity, are demonstrated. Writing can have a positive effect on learning as students synthesize, analyze and evaluate course content in an organized schema. Assigning writing activities to mathematics students will encourage them to read their math textbook and other material such as math websites on the Internet in greater depth.

Researchers in active learning strategies have focused on writing as “an essential activity to create order from chaos, sense from nonsense, meaning from confusion: as such it is the heart of creative learning in both the arts and sciences” (Blair, 2006, p. 54). Since the 1980’s writing across the curriculum has been an outcome for many school programs not only to improve writing skills but also to improve students’ understanding of content (Romberger, 2000). Writing-across-the-curriculum (WAC) programs have been steadily increasing. According to Panici and McKee (1997), “Forty-six percent of all Ph.D. granting institutions and 48 percent of all BA/MA granting institutions have a WAC program” (p. 47). These institutions have incorporated WAC programs on the basis that integrating writing supports and strengthens learning. As reported by Panici and McKee, research conducted by Barr indicates “the use of summary writing in a senior seminar in mathematics and computer science was beneficial for students in pulling together important ideas from their previous course work and in expanding their understanding of mathematics” (p. 47).

Studies have shown that writing has a positive effect on math anxiety, increases problem solving skills, and results in an improved use of cognitive and metacognitive processes (Taylor & McDonald, 2007). In this study conducted on group writing in a first year university mathematics course, students were given non-

routine type problems to solve such as finding the area of uneven shapes, constructing a soft drink can to hold 375 ml of liquid using the least amount of aluminum, and determining how long it would take for bacteria to multiply so that its weight is equal to the mass of the Earth. In each instance, the students were asked to write the aim of the problem, to specify the problem solving process, and to solve the problem. There was no conclusive evidence that the writing in groups produced correct solutions at a higher rate than a think-aloud process, but there was some evidence that the students' overall performance was better, especially in their mathematical communication skills and the solving of non-routine type problems. Students thought that communication, critical thinking, and writing skills learned in the group writing activities were transferable to other courses. Taylor and McDonald concluded, "The successful introduction of group writing into non-routine problem solving classes for first year university mathematics supports the premise that the formal introduction of writing skills into the mathematics curriculum is both possible and effective" (p. 653).

A study was conducted at Central Oregon Community College to determine the effects of writing and problem solving across disciplines. The institution provided 12 writing assignments for students in an Introduction to Contemporary Mathematics course and a Calculus I course. A sample writing assignment for the Contemporary Mathematics students consisted of constructing and labeling in detail a Venn diagram from the data provided. In addition, the development of the construction of the diagram was to be explained. An assignment completed by the Calculus I students was to explain a Gauss problem and to provide an example that was not shown in class. Agatucci, McCown, Sequeira, and Emerson (1994) found that the majority of the students thought writing in their mathematics course was helpful. Some testimonials from students in regard to writing were as follows: putting math symbols into words was difficult but worth the effort; writing helped in understanding problem-solving and enhanced memory. Also, the students recognized writing as a necessary life skill. Overall, the students gained critical and creative thinking skills and learned through authentic discovery.

In a study conducted by McFarland (1999), students major-

ing in secondary education who were taking their Content Area Reading and Writing in Secondary Education course were surveyed to obtain their input on how to integrate writing into various disciplines. The students' specific majors ranged from agriculture to math to theater. Students used their knowledge to design teaching methods to include writing in the curriculum. Mathematics students decided to include more essay exams to encourage higher order thinking, short research papers to aid in understanding math concepts, book reports to get students interested in mathematics, and journals to reinforce learning. A suggested daily journal entry by the students would be to write one new concept learned in math each day or to write something every day using a vocabulary word from the chapter that they were studying. The students who were surveyed believed that "writing assignments that involved higher order thinking, problem-solving, new knowledge, and student interest will make learning more meaningful and relevant" (McFarland, p. 15).

Because writing is a tool used to transform knowledge and aid critical thinking skills, integrating writing into a mathematics course can be an invaluable method for strengthening and building a deep understanding of math concepts. This strategy can produce three learning outcomes for mathematics students: understanding relationships of mathematical concepts and making connections, synthesis of various math components into a logical and systematic schema, and internalization of mathematical procedures (Blair, 2006).

A writing assignment provided by Agatucci, et al. (1994) that allowed students to understand mathematical relationships and make connections involved analyzing an article from a newspaper. The article provided statistics on banning assault weapons. The students were to determine if the statistics were used correctly and if the conclusions formed in the article were accurate. Long-term implications were to be explained based on their own conclusions. The purpose of this assignment was to challenge the students' thinking, to apply mathematics to a real-life situation, and to encourage students to write detailed explanations. The instructors expected the students to write clear and specific explanations of their analyses of the article so a person who is not knowledgeable

in math would be able to understand. Very few mathematics students understood that writing should be well-explained in order for anyone to understand their interpretations.

Huang and Normandia (2007) observed 51 lessons in a secondary mathematics course in which the teacher was an advocate of written and oral communication in the classroom. One of the writing assignments included in this study was to solve the standard form of a quadratic equation using the completing the square technique. They were to explain each of the steps in paragraph form and show the algebra separately. This assignment encouraged students to synthesize various math components in a logical and systematic schema and to internalize math procedures. The analysis of the students' writing by Huang and Normandia showed a relationship between the construction of knowledge and semantic relations. The semantic relations noted in the study of the quadratic equation assignment were as follows: taxonomic, means-end, condition-result, cause-effect, sequential, and evaluative. The more semantic relations expressed, the greater the conceptual knowledge.

Flesher (2003) noticed a similarity between learning mathematics and learning a foreign language. Mathematics has its own specific language and knowing math vocabulary is crucial to understanding mathematical concepts. Furthermore, there are many formulas in mathematics such as the Pythagorean Theorem, quadratic formula, etc., and Flesher believes mathematical formulas should be translated in writing for of the following reasons: writing can allow students to organize their thoughts, writing is a visual motor skill that allows people to see mistakes easier, writing allows students to review and revise activities or compositions, and "many people have dominant visual and motor memory, which means they learn written words more easily than words they just hear or read" (p. 38).

Writing enhances the understanding of mathematical concepts and aids in retaining information. There are many ways to incorporate writing into a mathematics curriculum and to use strategies that allow students to comprehend the relationships of mathematical concepts, synthesize various math elements into a logical schema, and internalize the sequence of math procedures.

Some writing activities that I have used in my classrooms are one-minute papers at the end of class, word puzzles, vocabulary assignments, and poetry (acrostic, cinquain, haiku, etc.). Two assignments that I have found to be successful are the vocabulary and acrostic poem assignments.

I implemented the vocabulary and acrostic poem assignments for the geometry unit for my developmental algebra classes. Using a Constructivist Learning Theory approach, students were given the assignment before I taught the geometry unit. Students randomly chose a geometry vocabulary word from a list of 25 words. The students were to use their textbook, Internet, and/or other sources to complete the assignment. The first writing assignment that I created was a vocabulary word assignment. The directions with a modeled example of the assignment were given to the students. The assignment with the directions and an example follows:

Vocabulary Word Assignment

1. Define the vocabulary word and give the properties of the word.
2. Write a proof or explain the properties.
3. Write a math problem and solve it using the vocabulary word.

Example: Square

1. Square – Rectangular polygon with four equal sides.
2. Proof (1st option):
 - In an isosceles right triangle, the angles measure 45° - 45° - 90° .
 - Place two identical isosceles right triangles (figure 1) opposite each other meeting at the hypotenuse to form a rectangular shape as shown in figure 2.

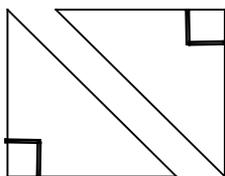


Figure 1

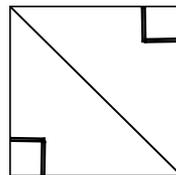


Figure 2

- The 45° angles meet to form 90° angles. Therefore, there are four right angles in the rectangular shape.
- Since the sides of an isosceles triangle are equal, all sides of the rectangular shape formed are equal.
- Thus, the shape is a square.

Properties (2nd option):

- The opposite sides are parallel.
- All angles are right (90°) angles.
- The diagonals are congruent.
- The diagonals bisect each other and form four isosceles right triangles.
- The diagonal bisect the angles.
- The diagonals are perpendicular bisectors of each other.
- Any pair of consecutive angles is supplementary.

3. Problem: The square polygon in figure 3 has equal sides of five inches. Find the area and perimeter of the square.

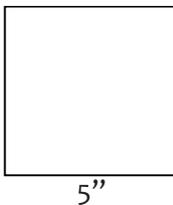


Figure 3

$$\begin{aligned} \text{Area} &= 5 \times 5 \\ &= 25 \text{ square inches} \end{aligned}$$

$$\begin{aligned} \text{Perimeter} &= 5 + 5 + 5 + 5 \\ &= 20 \text{ inches} \end{aligned}$$

Since the area of a square is the number of square units within the figure, the area is found by multiplying the sides ($5 \times 5 = 25$ square inches). The perimeter of a square is the distance around the figure. Therefore, the perimeter of the square is found by adding all of the sides ($5 + 5 + 5 + 5 = 20$ inches). The unit of measure for the perimeter is in inches because the perimeter is one-dimensional.

Another writing activity that I have found to enhance students' learning and understanding of math concepts is the acrostic poem. This type of poem has a title that is a word, motto, short phrase or short message. The title or message is written in a vertical column with the first word of each line in the poem beginning

with a letter from the title. Each line can be a word, phrase, or sentence with each line indicating something about the title. A student example follows:

Radius

Radius \times pi \times 2 = circumference

Always found within a circle

Determined by dividing diameter by two

Is always half of the diameter ($d/2=r$)

Usually associated with geometry

Segment from the center of the circle to a point on the circle

The following is a rubric for grading students' acrostic poems.

Accurate description	6 points completely accurate	5 points 1-2 errors in description	4 points 3-4 errors in description	0 points 5 or more errors in description
Clarity of concept	6 points very clear	5 points clear	4 points somewhat clear	0 points student did not show understanding of concept
Grammar	5 points 0-1 errors	4 points 2-3 errors	3 points 4 errors	0 points more than 4 errors
Spelling	3 points 0-1 error	2 points 2 errors	1 point 3 errors	0 points more than 3 errors
Creativity	5 points very novel in presenting concept	4 points novel in presenting concept	3 points somewhat novel in presenting concept	0 points no creativity

In the acrostic poem assignment I was more concerned with students' understanding of math concepts. Therefore, more points were assigned for the accuracy of the description of the math concept and the clarity of the concept. Math is like a foreign language and the translation of the mathematical meaning must be clearly stated. The student's example provided a very clear and accurate description of the concept assigned, showed creativity, and had correct grammar and spelling. A perfect score (25 points)

was awarded to the student.

I conducted quantitative research with my Elementary Algebra students for each of the assignments described above to determine if students who had a writing assignment (the experimental group) would perform better on a geometry vocabulary quiz than the students who did not have a writing assignment (the control group). The experimental group was given the writing assignment which was due before the unit was taught. After completing the geometry unit, a vocabulary quiz containing 25 geometry words was given to these students. There was a matching section of the vocabulary words with the definitions and a matching section with the vocabulary words with pictures. Each section of the quiz was worth 25 points. The class average for the assignments and difference in scores of the experimental group and control group are shown in Table 1 and Table 2.

Table 1. Geometry Vocabulary Quiz Scores – Vocabulary Word Assignment

	Experimental Group (EG)	Control Group (CG)	Difference in Scores EG – CG
Fall 2007 Average Scores			
Pictures	22.65	20.63	+2.02
Definitions	21.80	19.56	+2.24
Spring 2008 Average Scores			
Pictures	20.69	20.00	+0.69
Definitions	19.62	19.30	+0.32

Table 2. Geometry Vocabulary Quiz Scores – Acrostic Poem

	Experimental Group (EG)	Control Group (CG)	Difference in Scores EG – CG
Fall 2007 Average Scores			
Pictures	21.81	19.91	+1.90
Definitions	21.29	20.79	+0.50
Spring 2008 Average Scores			
Pictures	21.18	20.23	+0.95
Definitions	20.73	19.13	+1.60

One could hypothesize that the experimental groups' average quiz scores would be one point higher than the control groups since the students in the experimental groups would be very knowledgeable about their assigned vocabulary word and would get their vocabulary word correct on the quiz. The data indicate that the experimental groups scored better than the control groups each semester, and the differences in the average scores range from 0.32 to 2.24. A possible discrepancy of the expected outcome is that many of the vocabulary words were familiar to many of the students before the unit was taught. But there does appear to be a positive correlation between writing and the understanding of mathematical concepts.

The vocabulary word and acrostic poem writing assignments can help students gain more in-depth understanding of mathematical concepts. It appears that integrating mathematics with writing can promote active learning and aid in critical thinking skills. In order for students to organize their thoughts and to create one of these activities in a coherent manner, they may be encouraged to read their math textbook and other material such as math websites on the Internet more intensively. It may also encourage more critical thinking since a deep understanding of various math concepts is necessary to complete the assignments.

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The Co-Sat Class: Strategies for Teaching Combined Levels of Developmental English

DIANE FLANEGAN PIREH

DEVRY UNIVERSITY,
ADDISON CAMPUS

This article presents strategies for teaching a co-sat class, a class wherein students who place into two different levels of developmental English are taught concurrently in one classroom with one instructor. The article describes organizing the course on a framework of shared topics, includes a model for managing classroom activities, and gives practical suggestions for attending to the affective domain of students in a combined class.

Introduction

To meet the needs and abilities of students who place into developmental English at DeVry University, the developmental English program was expanded from one course to two: Developmental Writing and Reading and Intermediate English, herein referred to as Level One and Level Two, respectively. Some sections of Level One and Level Two are offered as separate classes while other sections are offered with the two levels combined in one class, thereby accommodating more students without increasing the number of faculty.

A review of the literature on the topic of teaching combined classes leads primarily to two areas: (a) the subject of multi-grade classes in grammar school (Russell, Rowe, & Hill, 1998), and (b) the subject of the multi-level ESL course (Shank & Terrill, 1995). The research on these particular subjects covers a wide spectrum of issues, as can be imagined, though not closely analogous to the subject of this article. Teaching two separate levels of developmental English concurrently is a topic that seems to be absent in the literature, perhaps because the practice is unusual.

The purpose of this article is to share strategies for teaching a developmental English class that is a co-sat class—two courses combined, meeting in the same classroom concurrently with one instructor. When I, as a sole instructor, piloted the first co-sat developmental English class at the DeVry Addison Campus, I focused

on three objectives: (a) to plan the content and prepare schedules for each level in which weekly units mesh course-specific objectives with shared topics; (b) to develop a basic and flexible plan for managing classroom activities; and (c) to structure activities with special consideration of the affective domain. The remainder of this article describes the original strategies that I used in the pilot class and have continued to use in successive terms, along with the inclusion of an update regarding the textbook.

Planning the Content

An integrated approach to reading and writing is basic to each of the two pre-standard English courses, Level One and Level Two. Although each course has separate, level-appropriate objectives within its curriculum, both levels share central topics. The scope of topics includes reading as a process, writing as a process, the reading-writing connection, strategies for building vocabulary, understanding stated and implied main ideas, essay-writing skills, and critical reading. This common ground provides the framework for structuring content in the co-sat class.

The materials are critical to the implementation of a topic-coordinated class that meets the objectives for two levels of instruction. It was not until sometime after the pilot class that a colleague and I were able to select materials for a custom textbook (College Reading and Writing, 2007, Pearson Custom Publishing) that is being used system-wide at DeVry University. It is a single textbook with two parts: Part I for Level One and Part II for Level Two. With full consideration for teaching the co-sat sections of developmental English, we arranged the chapters in each half of the book to correspond to one another. Thus, the first chapter in Part I and the first chapter in Part II focus on metacognitive reading strategies. The second chapter in Part I and the second chapter in Part II address the writing process. Each “side” of the book has corresponding chapters throughout, with the content in Part II at a higher academic level than Part I.

Having the topics line up, whether in a custom textbook or with other selected materials, is instrumental in effectively delivering the co-sat class. This type of framework, guided by the curricula and supported by the reading materials, enables the instructor to teach common topics to both levels while providing different text

and different writing assignments according to each course's objectives and level of difficulty. For example, when I teach the unit on summarizing, the students read a chapter in the textbook (in Part 1 or Part 2, according to their level) on the topic of the reading-writing connection. Discussion, activities, and assignments are all developed from this common base.

Table 1. The Co-Sat Class: Alignment of Shared Topics and Activities in a Given Week

Topics and Readings for Level One and Level Two		
<p>Students read the level-specific chapters on the reading-writing connection and level-specific essays/articles. Topics covered:</p> <ul style="list-style-type: none"> • Active Reading • The Reading-Writing Connection • Idea Maps • Summary Writing • Source Documentation 		
<p>Combined Groups for Whole-Class Activities that Address the Shared Topics for the Week</p> <ul style="list-style-type: none"> • Discuss the process of how to write a summary. • Discuss a previously assigned short reading. • Use an Idea Map to list the main topics and primary details of the reading. • Practice paraphrasing the main topics and primary details, with each small group assigned a section of the reading. • Model the process of combining each group's paraphrases to create a summary of the reading. 		
Separate Activities and Assignments	Level One	Level Two
As a group with the instructor	<ul style="list-style-type: none"> • Discuss a level-specific essay or article. • Create an Idea Map to discover and record the main topics and primary details in the level-specific essay or article. 	<ul style="list-style-type: none"> • Discuss a level-specific essay or article.
Individually and with instructor assistance	<ul style="list-style-type: none"> • Draft a summary of the level-specific essay or article. • Revise the summary. 	<ul style="list-style-type: none"> • Create an Idea Map to discover and record the main topics and primary details in the level-specific essay or article. • Draft a formal summary of the level-specific essay or article. • Revise the formal summary.

Additional Assignments	<ul style="list-style-type: none"> • Write a Reaction Journal on one of the week's essays/articles. • Complete Vocabulary Log entries of "new" words from the week's readings. 	<ul style="list-style-type: none"> • Write a Reaction Journal on one of the week's essays/articles. • Complete Vocabulary Log entries of "new" words from the week's readings.
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Managing Classroom Activities

As a natural outgrowth of the concept of aligning the content according to shared topics, I developed a viable plan for managing the classroom of combined levels of developmental English students. The plan centers on organizing classroom activities based on a structure of grouping students for whole-group, small-group, and independent learning, with the goal of establishing an active environment with a familiar rhythm. Shank and Terrill (1995) recommend similar grouping strategies for effectively teaching in the multi-level adult ESL classroom, involving students in activities as a whole group, in small groups, and with partners, in order to meet the needs of students at their various levels. Whether teaching to multi-levels or two-levels, grouping strategies can be instrumental in the efficient use of class time for learning.

The coordination plan that I devised for the co-sat class includes blocks of time for covering shared topics with the whole class, time for discussing level-specific material with separate groups, and time for students to work independently each day that we meet, which at the Addison Campus is typically for three hours and fifty minutes, twice a week. For example, in a given week when the shared topic is the reading-writing connection, I manage the flow of the class by beginning with a whole-class segment. I lead a discussion on paraphrasing and summarizing, I model the skills, and then the students practice applying the strategies to related activities. Within this time frame, students in Level One and Level Two work together in small groups or with partners to practice summarizing parts of a short reading. The whole group then reconvenes to share their work and participate in further discussion.

In the second and third segments of the class, I alternate between Level One and Level Two as the separate groups work on their respective tasks and assignments related to summarizing. In the fourth segment, I meet again with Level One to check progress

and answer questions. In the last segment, I work with individual students as needed. This variety of interactions in the co-sat classroom creates a dynamic environment.

Table 2 illustrates this plan for coordinating the groupings and activities. It can be easily modified to suit various purposes and time constraints. (Note: To facilitate the variety of activities, the co-sat classes are held in teaching labs with computers.)

Table 2. Coordination Plan for a Co-Sat Class

Segment 1: Combined Levels

- Shared time on shared topics with Level One and Level Two combined; this may include explanations, modeling, discussion, small-group or partnered activities.

Segment 2: Separate Groups

- Instructor engages with Level One for discussion, explanations, etc.
- Students in Level Two work in sub-groups, with partners, or individually.

Segment 3: Separate Groups

- Instructor engages with Level Two for discussion, explanations, etc.
- Students in Level One work in sub-groups, with partners, or independently.

Segment 4: Separate Groups

- Instructor re-engages with Level One to monitor progress and answer questions.
- Students in Level Two continue working.

Segment 5: Individual Attention

- Instructor works with individual students as needed.

It is important to note that in the whole-class segment and in the separate-group segments, students frequently work in sub-groups and with partners. In the whole-class segment, students work in groupings that include mixed levels. Shank and Terrill (1995) discuss grouping students across levels in the multilevel ESL classroom. They explain that heterogeneous groupings are beneficial to students involved in activities where different skills are complementary; whereas, other activities are suited for homogeneous groupings—when the tasks can be accomplished successfully by students with similar skill abilities. Grouping students across levels has a further potential implication in the co-sat classroom because while students in Level One who earn a B or C advance to Level Two, the students in Level One who earn an A are not required to take Level Two. They, in fact, leapfrog over Level Two and advance directly to English 112/Composition, just as students in Level Two who successfully complete their course with a grade of A, B,

or C also progress to English 112/Composition. Even though the A students in Level One bypass Level Two, those who have been in a co-sat section of developmental English have had some exposure to the Level Two course and the opportunity to share learning experiences with students in Level Two before progressing to English 112/Composition, a required course for all students at DeVry University.

Attending the Affective Domain

Liff (2003) addresses the importance of social and emotional learning at the post-secondary level: “In higher education, the affective domain has been recognized as a component of the learning process, at least in theory, especially for the underprepared or at-risk student” (p. 29). In the co-sat developmental English classroom, there is an extra challenge related to the affect in that there is the potential for students in Level One to feel less competent than students in Level Two, and for students in Level Two to feel held back by students in Level One. Thoughtful planning and proactive measures can help to create an environment where all students feel that their participation is valued. A primary effort in that regard is the frequent heterogeneous grouping of students. Each weekly unit, as delineated in Table 2 and discussed earlier, involves plans for students to actively participate in large group, small group/partnered, and individual activities. These grouped activities encourage cooperative harmony while diminishing the line that might otherwise separate the two levels.

Other measures can also build cohesiveness. I began using the following techniques in the pilot class and continue to use them in each co-sat section. I begin the first class meeting as follows:

1. I use the same color of paper for the two syllabi to avoid “blue bird, red bird” stigmata.
2. As I introduce the course to the whole class, I cover the identical elements in the two syllabi and leave the different elements (course objectives, evaluation of work, and progression to the next level of English) for a later time when the students are not in the large group.

3. Having one textbook to preview, though not essential, also helps to convey the impression of a “regular” class.
4. The ice-breaker on the first day requires students to write general information on an index card (name, major, interests, etc.) and exchange cards with someone sitting nearby (who may or may not be in the same level). After becoming acquainted, each partner introduces the other. After each introduction, we all recite the student’s name with the goal of learning all of the first names by the end of the activity, setting the tone and planting seeds for cross-level alliances.
5. All of the activities in the first class meeting involve the whole class.

Attending to the affective domain is important throughout the term with the objective of unifying the class. Liff (2003) has found that “by including interactions, responses, and lesson-design and management strategies that are sensitive to and inclusive of objectives in the social and emotional domains, faculty can make a significant and meaningful difference in the overall college experience of their students” (p. 29).

At the end of each term, all students at DeVry University are encouraged to evaluate each of their courses by completing a standard online form and submitting it anonymously. It is noteworthy that in the past three years during which I have taught ten co-sat sections of developmental English, not one student has typed in a comment—positive or negative—regarding the fact that the class was co-sat. This seems to indicate that when the students reflected on the course, the co-sat nature of the delivery was a non-issue. Perhaps this positive result can be attributed to the attention given to the affective domain.

Conclusion

The developmental English program at DeVry University has continued to evolve, always with the steadfast goal of preparing our students for academic success. Offering two levels of developmental English has increased our ability to meet the needs of our students, even when practical matters necessitate combining the

two levels.

The strategies that I use and that have been presented in this article focus on three components for successfully delivering a combined developmental English class: organizing the course on a framework of shared topics, establishing a model for effectively managing classroom activities, and attending the affective domain by fostering alliances within and between the two levels of students.

Love and Love note (1996) that in higher education, “a growing literature base reinforces the fact that cognitive... social, and emotional processes are inextricably linked” (p. 2). Thus, learning is enhanced when activities are designed to include social interactions that strengthen the connections among students and with the instructor. Intrinsic to the strategies for teaching in the co-sat developmental English classroom is the goal of providing opportunities for positive cooperative learning experiences that knit the fabric of a cohesive class as a community of co-sat learners.

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Predicting Bachelor's Degree Attainment for Developmental Math Students

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UNIVERSITY OF MISSOURI,
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ANDERSON
TEXAS TECH UNIVERSITY

KAMAU OGINGA SIWATU
TEXAS TECH UNIVERSITY

This study used the National Educational Longitudinal Study: 88 /2000 (NELS 88: /2000) dataset to explore characteristics associated with college degree attainment. The study was informed by Ajzen's Theory of Planned Behavior. The sample size was 6,832 postsecondary students. The findings revealed that developmental math students were less successful in obtaining a degree than students not taking developmental math. However, a relatively large percentage of developmental math students were successful in obtaining a degree. In addition, factors including 10th grade math competence, socioeconomic status, and 10th grade beliefs about the ability to control life events were key predictors of degree attainment.

McCabe (2000) reported that 62% of all developmental education math students are in need of improvement in math skills compared to approximately 38% in reading and 45% in writing. A study conducted by the Conference Board of Mathematics found math enrollment up in all pre-college courses except for arithmetic and basic skills (Lutzer, Rodi, Kirkman, & Maxwell, 2007) an indication that basic algebra and intermediate algebra are where developmental math enrollments are increasing. In fact, for the last two decades, the effort to articulate the high school math curriculum with college standards appears to have failed; students appear to be less prepared than ever to successfully complete college algebra or college math (Crist, Jacquart, & Shupe, 2002). For these students, college algebra can become the gateway to a bachelor's degree. Additionally, students' high school course selection was described by Crist, et al. (2002) as "floating" (p. 4) with still too many students not taking the courses that would increase their chances for postsecondary academic success. For these students, developmental math is critically important.

The best predictor of college math performance is high

school math performance, and college math performance can determine access to upper division courses and bachelor's degree completion. Trusty and Niles (2003) found an association between rigorous high school math courses and degree attainment. Adelman (1999) also found that the highest math course taken was an excellent predictor, with students taking math beyond Algebra II doubling their chances of degree attainment. This finding was true for all students, including students from low income families. Additionally, Adelman (1999) found that high school transcripts ($r=.54$) were a better predictor of degree completion than SAT or ACT ($r=.48$) scores. However, high school grades are subject to inflation and contain multiple confounding factors, such as teachers teaching out of discipline (Cizek, 2000). To exacerbate the problem, grade inflation interacts with poverty. Ziomek and Svec (1997) reported that when in college, those students from public schools with 75% participation in free or reduced lunch and who received A's in core subject areas performed the same as students from more affluent school districts making C's and D's in the same core subject areas. The conclusion is that students' high school math achievement is critically important to later math study, and the rigor of the high school academic experience shapes the college experience.

Conceptual Framework

The Student Integration Model (Tinto, 1988) and the Student Attrition Model (Bean, Partanen, Wright, & Aaronson, 1989) have dominated studies of students' attitudes about postsecondary study and the postsecondary experience. According to Burley's (2008) ideas about the Developmental Education Innovative Research Imperative (DEIRI), more robust social psychological theories are worth examination. Bandura (1997) theorized that the thought processes that precede and lead to human behavior (or performance) are mediated by perceptions of capability. This means that a person's attitudes about his or her behavior or performance could be a better predictor of future performance than past actual performance. Similarly, Ajzen's Theory of Planned Behavior (2002) suggests that behavior is the result of two factors: intention to do the behavior and actual behavioral control. Intention is

mediated by perceived behavioral control, subjective norms (feelings of significant others about the behavior); and attitudes about the behavior. A good example of behavioral control is the notion that if one works hard, he or she can learn a difficult math task. Therefore, positive attitudes about math performance, positive attitudes from significant others concerning math performance, and positive attitudes about controlling the outcome of the math learning context can be better predictors than actual past math achievement.

In fact, negative attitudes about math performance can suppress math scores. For example, math anxiety and other apprehensions about math performance can significantly reduce math performance, specifically when speed is introduced as a factor (Cates & Rhymer, 2003). Additionally, Cates and Rhymer found that students who performed math operations more slowly and less accurately than a comparison group were less apt to choose additional math work, had difficulty with higher math concepts, and presented significantly more math anxiety. Perhaps the most pernicious example of the power of attitude in math study and testing is stereotype threat, where students' internalize ideas about racial and gender stereotypes. This can cause students' math achievement to suffer (Steele & Aronson, 1995). Therefore, poor math achievement can be much more complex than a skill deficiency.

An underlying principle for many psycho-social theories is that an examination of past social, psychological, and cognitive behaviors can be used to predict future behavior. In the case of developmental math students, an improved understanding of their psycho-social pasts should lead to more effective early interventions before students enroll in college. Also, the practice of developmental education could be informed by a better understanding of developmental education students beyond what is ascertained from diagnostic tests.

For this study, we chose variables that represent students' attitudinal state, math skill, and socioeconomic status (SES) as predictors of student success. All were assessed before students entered college. Included with these variables as part of the students' past profile was whether they had enrolled in developmental math at any time during their collegiate programs of study. The research

question for this study is as follows: Will the linear combination of the attitudinal, skill, and contextual (SES and developmental math) variables predict student success?

Methods

Procedures

A correlational research design was used to examine the relationships among the predictor variable and the criterion variable (Gay, Mills, & Airasian, 2006). The data for this study came from the National Educational Longitudinal Study: 88/2000 (NELS: 88 /2000) dataset (public data) released by the National Center for Education Statistics in 2001. These data were collected at the behest of the U.S. Congress and released in public and restricted forms for use by educational researchers. The subjects in this study were a national sample of 8th graders who were surveyed in person or by phone in 1988, 1990, 1992, 1994, and 2000, using a multi-stage sampling technique, rather than simple random sampling. The data in this study come from the 1990, 1992, 1994, and 2000 survey waves. The sample size for the 2000 survey wave was 12,144; however, only 6,832 of these students attempted college by 1994, the year students were surveyed about developmental education. This sample is representative of 1,610,536 U.S. citizens who were in the 8th grade in 1988.

Variables

The first group of predictors includes attitudes of parents, teachers, and peers concerning earning a college degree (as reported by the student); 10th grade locus of control, and 10th grade self-concept. All of these predictors were gathered during the 1990 survey wave. These variables represent key features of the Theory of Planned Behavior and are based on self-report. The socioeconomic status (SES) variables were the second group of predictors in the study, including, percentage of students on free lunch in each high school in the study, income of parents, and the number of years of schooling students' mothers had completed. Other predictors include whether a student took developmental math, urban nature of the high school attended, high school math graduation requirements, and a math competence variable. This was a

standardized math test created by the Educational Testing Service (ETS) for the National Educational Longitudinal Study and administered during students' 10th grade year. The criterion, the measure of success for this study, was whether students received a bachelor's degree. This type of criterion was also suggested by the DEIRI. The data were analyzed using SPSS (v12) and AM (Beta) statistical software packages. (AM is statistical software specially designed for data derived from multistage (complex) sampling techniques.)

Results

In this dataset, 18.6% of students self-reported taking developmental math, while 81.4% reported not taking such a course. However, 40% of students' transcripts listed a developmental education course, with 73.3% needing math remediation. By the year 2000, 41% of those who self-reported taking a developmental education math course had completed a degree compared to 55.7% of those who reported not taking a developmental course.

It is interesting to note that developmental math students reported higher postsecondary grades than those not needing developmental math. For example, 20.5% of developmental math students reported having earned mostly B's and C's compared with 12.9% of students not taking developmental math. Further, when it came to lower grades, 26.9% of developmental math students reported mostly C's and D's, while 30.4% of non-developmental math students reported these grades. More non-developmental education students reported the lowest grades (15%) than developmental math students (7.2%). A review of GPA's reported on transcripts indicated that non-developmental education students had GPA's of about 2.8 versus 2.3 for developmental education students. The authors do plan on exploring this finding further because these discrepancies may reflect on students' metacognitive awareness, self-confidence, and feelings of stereotype threat, all potential sources of grade suppression.

In a descriptive analysis of a key predictor, the 10th grade math standardized math score (year 1990), those students taking developmental math four years later or less ($M=53.28$, $SD=15.80$) scored much lower (on the 10th grade test) than those who did not take developmental math ($M=59.11$, $SD=13.72$). This test was based

on a scaled score, which listed scores ranging from 31 to 72.

The final predictor variables were students' 10th grade standardized math test scores, socio-economic level, mother's education, percent of students on free or reduced lunch at the respondents' high school, locus of control, and whether students took developmental math. These variables were entered in the analysis in the order of the strength of their correlations with degree attainment. Other variables were omitted because of weak relationships with the criterion of degree attained.

Using an Adjusted Wald Test (The Adjusted Wald Test is a test of significance used with complex samples), the analysis produced a significant multiple R ($R=.49$), $F(6,973)=273.13$, $p<.001$. Cohen (1988) calls a correlation of .49 on the borderline between a medium and large correlation. Both R^2 and r^2 represent the criterion variance accounted for by the predictors. In this case, the model accounts for 24% of the variance in degree attainment, which is a significant amount of the variance in human performance to be explained. The best predictor of degree attainment for this group was the 10th grade math standardized score, followed by SES, percent of students on free or reduced lunch, locus of control, and mother's education level. Whether or not a student took developmental math was not a significant contributor to this regression model. However, this may be due to the presence of the strongest predictor in the model, the 10th grade math test score. Essentially, the developmental math participation variable and 10th grade math test score are measuring the same thing. If the student had weak math skills in the 10th grade, the chances of earning a bachelor's degree were diminished.

Two more analyses were run with degree attainment as the criterion variable, one analysis for those who had math remediation and the other for those who did not have math remediation. For those in developmental education, the best predictors were the 10th grade standardized math score, SES level, their mothers' years of education completed, locus of control, and urban nature of the high school ($R=.403$, $R^2=.163$). For those students who did not need remediation, the predictors were simpler-- 10th grade standardized math score, SES level, and locus of control ($R=.402$, $R^2=.162$). These subgroup analyses are also similar to the main re-

gression analysis, indicating stability in the primary findings.

Discussion

Can a model based on the Theory of Planned Behavior help explain developmental math students' degree attainment in a national dataset? The answer is a qualified yes, with locus of control (a proxy for behavioral control) being the third best predictor of those selected. While we expected 10th grade math competence to be a strong predictor, the presence of three SES variables (a composite of parental income and education, the number of years of education parents had completed, and the percent of students receiving free lunch at school) is as eye-opening as it is troubling. The model that degree attainment = 10th Grade Math score + SES composite + Parents' Education + Free Lunch + Locus of Control is nuanced and will be discussed below following a discussion of the descriptive analyses.

It is clear that developmental math students' skill deficiencies start early. Despite skill deficiencies that must have started prior to the 10th grade, 122,570 students (41% of all developmental math students) overcame these deficiencies to earn college degrees. This figure is impressive when viewed from a national perspective and is a measure of the practical significance of the developmental education experience, particularly when one considers that these students would not have had the chance to earn a degree without the benefits derived by taking developmental education courses.

Early math skill is still the best predictor of future success, as suggested by the literature (Adelman, 1999; Trusty & Niles, 2003); however, the power of poverty cannot be ignored. It is helpful to note that a review of the SES quartile data in the NELS dataset indicated a skew with students in the highest income quartiles being overrepresented. This is due in part to the fact that wealthier students are more inclined to attend college (Walpole, 2003). Developmental math students were more inclined to be in the lower two quartiles, had mothers with less education than the upper two quartiles, and tended to come from high schools where larger percentages of students were eligible for free or reduced lunch. Also, we fully expected that only one of the SES variables would

remain in the final model; we were surprised to find three in the final model. Even though negative issues associated with SES can be difficult to overcome, developmental math instruction has clearly demonstrated success.

Next, the strong showing of locus of control in the regression model, in part, supports the findings of Hall and Ponton (2005) who reported that academically stronger students had a stronger sense of self-confidence. Though self-confidence and locus of control are different psychological constructs, they are closely related. In our examination of NELS: 88/2000 locus of control scores, developmental math students tended to have a more external locus of control, making them more apt to attribute life's successes and failures to concepts like luck; whereas those with stronger internal locus of control attribute success and failure to their own efforts. This observation is supported by the work of Grimes (1997).

Finally, this model hints at a framework for developmental education intervention. To change behavior, the developmental education programs must be directed at the determinants of behavior. According to the above findings, the determinants are raw math skill, the influences of poverty, and perceptions of behavioral control—together accounting for 24% in the variance of degree attainment.

Colleges, universities and state governments need to intervene early and work in tandem with school districts and communities to address the lack of readiness to undertake rigorous course work at the postsecondary level. Developmental math students may be affected and distracted by the issues of poverty long before they become developmental math students: financial problems, values and beliefs different from that of the postsecondary institution, weak or non-existent home and postsecondary support systems, and negative self-fulfilling prophecies are just a handful of the potential areas for intervention and future study.

Issues of poverty affect students' cultural perspectives, which form the foundations of their belief systems about the world and about themselves. In a study on the transition to college titled "Betraying the College Dream," researchers found that high school students, in general, had misunderstandings about what it takes to succeed in college, with low-income students and students of

color having deep misunderstandings about college (Kirst & Venezia, 2004). For example, nearly all college-bound students, despite subgroup, tend to be more focused on gaining access to college, rather than on college success. This belief causes many high school students to take easier math classes in high school in order to get better grades; in contrast, the research indicates that even lower grades in rigorous classes lead to better chances of college success. As a rule, if the problem starts early, so should the solution. Therefore, developmental education programs should be partners in efforts to introduce algebra early to local secondary students, with 7th grade algebra after school projects or algebra summer camps.

Developmental education programs should integrate the best instructional practices with parallel material and attitudinal support systems for students and faculty. Developmental education programs need to cocoon students in a culture of success with significant peer and mentor support. Mentors can be powerful models of metacognitive problem solving. In terms of developmental education teachers, Vasquez (2004) described a similar program for instructors that included mentors, journaling, and help with pedagogical decision-making.

In many postsecondary institutions, once a student successfully completes intermediate algebra, he or she is deemed “ready” for college algebra. However, according to our findings, even with developmental education experiences, developmental education math students have a lower chance of success. An extended developmental education program could provide skill support for these students while they are taking college-level courses. Also, since time is an important factor in learning, typical semester/quarter systems may not always work. Developmental education researchers must experiment with new ideas such as formally intertwining developmental education math with college algebra or looping and having the same developmental math instructor travel with a cohort of students through the sequence of developmental education math courses and the first college level math course. Developmental education researchers may also want to study an intensive math semester, a kind of math boot camp that focuses on math skill, math related courses, self-concept and nothing else.

Conclusion

Developmental education is at the nexus of a complex problem. At the macro level, developmental education is effective; however, developmental education researchers and practitioners must work harder to tell the developmental education story. They must continue to develop a science for developmental education that informs practice. This science includes enriching the educational psychology that informs developmental education pedagogy. Finally, the NELS dataset took 14 years to complete; more developmental education researchers need to explore this rich resource.

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Utilizing Reading Conferences in Developmental Reading Courses

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Implementing individual reading conferences to enhance developmental reading courses is an effective way to get to know students as readers. These twenty-minute conferences (individually held outside of the typical class session) are a way to individualize instruction while using a personalized approach to investigate the reading goals and motivation of developmental college students. This article describes the reasoning, the content, and the effectiveness of these conferences.

Some of the best readers are overwhelmed by the challenges faced in post secondary academic settings, which suggests that developmental readers have a long road ahead of them. A study conducted by ACT (2006) indicates that half of the students entering college are ready for college-level reading. This makes the work of a developmental reading instructor challenging. After two years of teaching college developmental reading courses at a four-year public institution, I found myself questioning my pedagogical approaches in trying to meet individual student needs. I was reluctant to spend a considerable amount of time with individual assessment because of the short time frame I had with each student. In addition, I did not feel I had the luxury of spending the first few classes getting to know my students as readers. In an 11-week quarter I had fifteen students in four different classes, which met two days a week for 75 minutes. I planned reading conferences, meetings with individual students that focused on reading process and ability during the middle of the quarter, but often found that I did not have enough information about each student to make these conferences worthwhile. Previously, I was a primary teacher, so I knew the value of having individual interaction with each student. I was sure that developmental college students could benefit from this type of conference meeting as well. This led to my decision to revamp my reading conferences and try to make them more meaningful for my students and myself.

Developing the Reading Conference

The first step was to try and find resources to use during the reading conferences --those that would utilize time effectively. To my surprise, I came up empty-handed. Many books and articles for and about reading conferences were geared toward primary and elementary classrooms. However, the objectives and goals that I wanted to achieve were very similar to those of primary and elementary school teachers. Because I knew how individual reading conferences worked in those classroom settings from my past instructional experiences, I decided that I would use those experiences and build upon them. Previously, I used this individual time to work one-on-one with students and offer support as they negotiated new texts. This allowed me to recognize the reading strategies they use and/or need to be using and provided time for modeling these strategies. According to Hiles (2005) reading conferences are a way to scaffold or support students as they reach reading goals and become independent readers. Developmental students need this additional support system as many of them are being required to read longer, more challenging texts. Developmental students are underprepared for college level reading and unsure of what their reading goals are. Therefore, I feel that putting emphasis on individual reading goals is necessary during conference time.

Routman (2003) discussed the need for reading conferences to incorporate teaching and goal setting activities. Incorporating both of these elements strengthens the need and purpose for reading conferences at the developmental level. Being able to have 20 minutes or more of one-on-one time with a developmental student is rare and needs to be taken advantage of. This requires explicit instruction that is individualized by the needs of each student. I decided to hold the conferences during the fourth week of the quarter, so students would be able to benefit from the instruction received during their conference and apply it to their reading class as well as to their other academic courses.

From past experiences, I knew that motivation was a topic that I wanted to discuss throughout the reading conference. I have many students who come into the developmental reading classroom unmotivated and unwilling to read. Mealey (2003)

suggested that developmental students' "academic motivation and self-concept are low, contributing to their poor academic performance" (p. 209). Through class discussions and lessons I provided many strategies that were intended to improve reading, but these are ineffective if students are not motivated to read. A primary goal was to talk to students about their reading abilities and habits and see if I could find a way to help increase their reading motivation. Gill (2000) identified that "individual reading conferences can provide opportunities for increasing students' interest and motivation" and I was sure that, by implementing individualized sessions for every student, I would be able to increase their interest and motivation as well (p. 502).

Pre- Conference Assignment

Moving forward with my conferences, I planned to address my students' goals, provide individualized instruction, and increase students' motivation to read. I required the students to complete a Reading Conference Questionnaire prior to their conferences. I was counting on this assignment to provide vital information about each student in regard to his or her reading characteristics. In addition, this could also act as a prompt if a student was not open to talking about his or her reading needs. The following questions were included:

1. What are your goals as a reader for the remainder of the quarter?
2. How can you achieve these goals?
3. What is an overall goal you have for yourself as a reader (not just for this particular class or quarter)?
4. How will you reach your goals?
5. How can I, as your instructor, help you reach your goals?
6. How have you been using your reading time in school or at home?
7. How often and what do you read for pleasure?

Since the questionnaire was due at the conference, I anticipated that this would also help with attendance issues. In the past, there were many occasions when students did not show up,

or they arrived late, or at a different time, which would create a backup and cause me to rush through a conference with another student. Since this assignment was about the reading conference, students could only turn it in at their scheduled time.

Conducting Reading Conferences

The students' goals, instructional needs, and motivation were the main components of my reading conferences. I planned 20-minute conferences with each student and he or she was required to fill out the Reading Conference Questionnaire prior to attending his or her conference. The conference began by discussing the questionnaire and focused on the students' goals, their plans for achieving them, and how I (the instructor) could support them. This conversation often went directly into a discussion about their motivation or lack thereof.

An additional component of the reading conference included a discussion of summary writing, which is a way to address instructional need for individual students. During the quarter, students are required to write three formal summaries based on different classroom readings. By week four, summary writing had been taught and their first assignment was collected. I decided to focus on their summary assignment during the conference in order to provide one-on-one instruction. This allowed me to discuss not only comprehension and their reading process, but also to build confidence in their writing ability as well.

Goals and Motivation

One goal that many students mentioned was that they wanted to pass the class and exit the developmental program. Furthermore, most students who answered this way had similar responses as to how they could achieve these goals, which included keeping up with the course readings. Students were willing to admit that they often failed to complete required readings and did not use reading strategies when reading alone. They had a difficult time reading for meaning and comprehending the text. Again, I was not surprised, but this knowledge illustrated that my in-class instruction needed to address these needs more directly and consistently.

In addition, I had this time with individual students to offer suggestions for improvement based on their previous reading habits.

These questions about their goals often led to a discussion about motivation. I found that the majority of these students did not read outside of class. They said that they did not enjoy reading and, therefore, it was not a priority. In 2007, the National Endowment for the Arts (NEA) released a report entitled *To Read or Not to Read: A Question of National Consequence*, which focused on pleasure reading in today's society. This report found that nearly half of all young adults surveyed, aged 18 to 24, read no books for pleasure. The report emphasized that there is a strong correlation between reading for pleasure and academic achievement, and showed that students who read for pleasure performed better on reading and writing tests than non-readers or infrequent readers. During conferences, those students who enjoyed reading and were able to discuss some of their favorite novels were the same students who participated in class and seemed to be having an easier time with assignments. Although I probably could have predicted this, I would not have seen the correlation between reading habits and reading ability if I had not discussed this in the conference. Equally important, I shared this information with the students and, when indicated, I shared with them the evidence in the NEA report. For those students who did not read outside of class, we discussed the types of books they might like to read, and I used this time to suggest some genres, authors, or titles they might enjoy.

Further, I found that many of my students had a very negative attitude toward reading. Throughout the conference we spoke about this and their beliefs as to why they felt this way. Having the students discuss their feelings about reading made them more aware of how their attitude contributed to their success. Bray, Pascarella, and Pierson (2004) emphasized the relationship between proficiency and attitude, which strengthened my desire to have students realize how motivation drives their academic performance. They can change their levels of motivation; however, changes can only be made once they are aware of their historically negative attitudes (Mealey, 2003). Discussing the reasoning behind these negative attitudes helped my students see the direct impact it was having on their academic success.

Instruction

Providing time for one-on-one instruction proved to be a valuable asset to my developmental reading courses. Focusing the instruction on summary writing allowed for a variety of mini-lessons as well as larger metacognitive issues to be addressed. I realized that students appeared to have problems with one or two components of summary writing such as deciphering between main ideas and details and using their own words to state the author's purpose. Instead of addressing all of the components again as a whole class, I was able to pinpoint exactly what each student struggled with and discuss it individually. Time was also provided for the students to receive praise and encouragement for their hard work and to ask any individual questions that they may not have felt comfortable asking in front of their peers. Although the instructional aspect of the reading conference focused on their comprehension and summary of a particular text, it did not end there. Much time was spent on prediction and questioning strategies as well as discussing the rhetorical aim and the different components of each text.

Effectiveness

These revamped reading conferences proved to be very effective for me and for my developmental students. First, the time spent enabled me to get to know my students as individual readers by discussing their reading and academic habits. Furthermore, time was allotted for forming a positive instructor/student relationship with each of the students, which Lerner (2005) emphasized as a goal for conferencing. After only a short time with them, I got an idea of their strengths and weaknesses and built lessons on those discoveries. Having the opportunity for more individualized instruction proved successful, since not all students learn at the same rate. Learning about the students' reading habits and interests was equally important. Unfortunately, the majority of my students did not read outside of class or for pleasure. However, many could identify their favorite genre or a favorite author, which provided valuable insight that would be useful when planning for

future courses. Pitcher et al. (2007) conclude “by acknowledging students’ reading interests and building on them, teachers can help students expand those interests to related topics over time” (p. 395). In my future courses, I will use this information and try to choose a variety of texts that attract the interest of more students in hopes that they will apply this interest and knowledge to other areas of their academic pursuits.

Second, I was able to clarify assignments and/or answer questions that students may have had about the material covered in class. The goals that most of my students made for themselves were easy to attain if they completed all assignments and readings, and utilized all of the resources that were available to them. If students did not have a goal for themselves, we came up with one together, which gave them something to strive for and accomplish. Students had the opportunity to ask individual questions and spend some time discussing their first four weeks as college students. Many students asked for help with time management skills or needed information about the tutoring services provided on campus. These questions did not necessarily pertain to our reading course, but lack of information in these areas had the potential of holding a student back in other aspects of academics and/or college life.

Third, I made my office location and hours explicitly clear on my course syllabus. Students were encouraged to utilize my office hours if additional instruction was needed. Prior to the inclusion of reading conferences this information was repeated numerous times throughout the quarter; however, few students took advantage of the resource. Reading conferences got the students into my office, so they knew where they could find me if needed; thus increasing the number of students who stopped by for help or to ask a quick question.

Lastly, my personal satisfaction in holding reading conferences has improved ever since I made them more structured and gave them a purpose. There is a lot that needs to be covered in twenty minutes, but the more I meet with students for conferences, the easier I find it to discuss all of their needs in that amount of time. Hiles (2005) stated “time is an essential component for success with reading conferences” which demonstrates that a lack of

structure can cause a great idea to fail (p. 8). Structured reading conferences provided students with the much needed one-one-one instruction and they benefited from the open discussion of their goals and academic motivation. Equally important, I was able to provide my developmental students with individualized instruction and get to know them as readers. For all of the foregoing reasons, I have concluded that reading conferences are beneficial to developmental education students and their instructors.

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Introducing Newspapers in Developmental Reading Classes

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Newspapers are an effective educational and motivational tool in developmental reading classes. However, many students are unfamiliar with newspapers and read them infrequently. In order to foster newspaper reading and familiarize the college freshmen enrolled in their developmental reading classes with newspapers, the writers of this article developed and successfully used the seven strategies presented in this article.

“I hate my textbook!” Jason’s (not his real name) face clouded when asked how he was progressing in his psychology class. Unfortunately, Jason is not unique. Many of the college freshmen enrolled in the developmental reading classes taught by the writers of this article share his negative reaction to the textbooks they use in both their academic and developmental reading courses. Our students frequently complain that their textbooks are boring and hard to comprehend.

We reviewed pertinent literature to identify a better means of engaging our students. The literature suggested that newspapers are an effective educational tool and identified several psychological and cognitive factors that make them appealing to students. Based on our findings, we decided to incorporate newspaper reading in our developmental reading classes.

Academic Benefits

The literature suggests that newspaper reading enhances students’ academic growth. Several researchers found that newspaper reading helps students build their knowledge base and acquire the background information they need to succeed in school while preparing them for their future roles as workers and citizens (DeRoche, 2004; Knowlton, 2004; Pescatore, 2007).

A number of researchers also reported that newspaper reading strengthens students’ literacy skills (Braunger and Lewis, 2006;

Davis, 1997; Vockell and Cusick, 1995) and their achievement in academic courses (Allan and Miller, 2005; Newspaper Association of America, 2007). Robinson (2004) adds that newspaper reading enables many students to see timely applications of principles they study in their academic courses. McGrath and Hamer (2007) suggest that educators can facilitate transfer by having students compare and contrast two short newspaper articles that present two sides of an issue that is relevant to them.

The Appeal of Newspapers

It has been suggested that newspapers appeal to students for a variety of reasons. Street (2002) observes that choice is inherent in newspaper reading, noting that students relish the opportunity to select items that interest them. Worthy (1998) adds that newspapers can accommodate students' rapidly changing interests and tastes. Cheyney (1992) concludes that students find newspapers motivating because they present information and introduce issues that are relevant to their own lives. He notes, "Poor readers are more apt to carry newspapers—and read them—than textbooks written at their reading level" and that newspapers motivate students "to find out about events in the world and how they might be affected by what's going on" (p. IX).

Street (2002) also contends that the reading levels of newspapers are generally below those of college textbooks, thus making them "a less intimidating source of information" (p. 131) for struggling readers. Researchers assessing the readability of a broad spectrum of newspapers support Street's contention. Stasz and Schlagal (1994) report that many newspapers are written at about the sixth grade level. McCormick (2007) notes that readability levels vary from newspaper to newspaper and also from section to section within the same newspaper, ranging from approximately sixth to twelfth grade. After assessing a variety of business news articles, Jung (2003) reported an 11.8 grade level for the *New York Times* and a 10.5 level for the *Wall Street Journal*.

Allan and Miller (2005) contend that many students like the writing style and format used in newspapers, noting that students generally prefer the short selections characteristic of newspaper articles. The authors add that students find the graphics, photo-

graphs, and interviews presented in newspapers both interesting and useful in helping them gain a fuller understanding of the content. McCormick (2007) agrees that students respond positively to the shorter selections found in newspapers. In addition, she contends that many struggling students do not associate newspaper reading with the past failures many of them have encountered with their textbooks.

There is substantial agreement among researchers that students regard newspaper reading as a prestigious, adult activity (Belzer, 2006; Erickson, 1995; Harvey, 2002; Kortner, 1988; Nickse, Speicher, and Buchek, 1994; Taylor, 2006). The widespread perception of newspaper reading as an adult activity predisposes students at all levels of reading ability to accept the use of newspapers in both their reading classes and academic courses. This positive reaction is especially true for struggling, academically underprepared students who experience difficulty with their textbooks but are often embarrassed to read simplified textbooks or materials intended for younger readers.

Lack of Familiarity

Despite substantial agreement that newspapers are an effective educational tool, several surveys and reports analyzing the public's newspaper reading habits indicate that many college-age students are unfamiliar with newspapers and read them infrequently. In a national survey of 1800 randomly selected subjects, Patterson (2007) found that only 16% of the 18 to 30 year old subjects claimed to read newspapers on a daily basis. In another survey, Edmonds (2007) reported that only 35% of the 18 to 24 year old subjects claimed to read a newspaper during an average week. A survey conducted by the Newspaper Association of America (2007) reported that newspaper reading by 18 to 24 year olds has declined steadily since 1964. After reviewing pertinent literature, the National Endowment for the Arts (2007) also noted a steady decline in newspaper reading among teens and college-age Americans. In light of students' widespread lack of familiarity with newspapers, McCormick (2007) warns that certain students may find it difficult to read them without help. Brandes (2008) and Stein (2004) agree that many students must be introduced to newspapers and taught

how to read them in order to use them effectively.

Strategies for Incorporating Newspapers in Reading Classes and Academic Courses

When we first introduced newspapers in our developmental reading classes, our students' reactions supported the findings in the surveys. Although they expressed positive reactions, it soon became obvious that many of our students had limited experience with newspapers and needed guidance to acquire basic familiarity with them. The remainder of this article describes seven strategies we developed and used throughout the semester that were successful in familiarizing our students with newspapers and fostering newspaper reading in our classes.

Newspapers and Me

The following strategy helps students examine and articulate their feelings about newspaper reading. Introduce this strategy by pointing out that people have different interests and experiences with newspapers. Describe one of your own early experiences with newspapers and encourage your students to share some of their experiences orally.

Point out that there are many other aspects of newspaper reading to examine. List the following suggestions as examples of areas they may want to explore. Explain that they may examine any area of newspaper reading that interests them, including, but not limited to, the items on the list.

1. Early newspaper reading experiences
2. How often they read newspapers
3. Which newspapers/sections they like to read
4. What they expect to learn by reading newspapers
5. How reading newspapers can help them academically
6. How reading newspapers can help them in their personal lives
7. Where and how they obtain newspapers
8. What they particularly like or dislike about reading newspapers

Have your students briefly freewrite about their own personal experiences and reflections. Emphasize that they will not be graded and encourage them to express their true reactions, negative as well as positive. When your students are finished writing, invite them to share their responses.

Have a Good Laugh: Read the Newspaper

Unfortunately, many students suffer from the misconception that all newspaper articles are dry and boring. To counter their negative mindset, collect and share a variety of humorous articles and encourage them to do the same. Articles about “dumb” criminals who lose their driver’s license or other forms of identification at crime scenes are perennial favorites, and students can sharpen their critical thinking skills by examining the factors that led to the perpetrators’ ultimate downfall. In addition to finding humorous articles in newspapers, students can obtain a variety of brief comical articles by keying in Strange News in their internet browser.

What’s In It for Me?

Use this strategy to demonstrate how newspaper reading can fulfill a variety of purposes. Begin by having students identify and discuss their current academic goals along with some of their personal and practical needs and interests. Point out that newspapers contain information that will be of value to them. Next, distribute copies of What’s In It for Me? (Appendix) and encourage students to identify items of interest. As a follow-up assignment, have them self-select and examine newspapers in order to collect articles and other features of value to share in class.

When and Where Can I Find It?

Bring in one week’s worth of daily editions of a particular newspaper. Have students examine the newspapers, noting how they are organized by section and day of the week. Point out that many newspapers print special-interest sections, such as science, health, decorating, cooking, weekend events, or expanded sports coverage on given days of the week. Explain that these sections frequently include items which can satisfy individual academic or

personal interests. As an example, explain that the Tuesday edition of *New York Times* includes a science section appropriate for students who are enrolled in science classes or who have a strong interest in the subject.

Have students (individually or in groups) choose newspapers of interest and track their content and organizational patterns for one week. At the end of the week, have them create charts or graphic organizers to show the type of information included in each section on a daily basis.

Types of Articles

Many students mistakenly assume that all newspaper articles are objective, factual accounts of important, timely situations and events as they are actually breaking or developing. While this may be true of many news articles, students can improve their critical thinking and comprehension skills by learning how to identify different types of articles.

List the following types of articles on the board and inform students that they can improve their reading skills and their performance in academic classes by learning how to identify and analyze each article type:

1. News Articles
2. Feature Articles
3. Studies
4. Profiles
5. Obituaries
6. Editorials
7. Columns
8. Letters-to-the Editor

Divide the class into groups. Have each group discuss what they already know about each type of article and then freewrite on the topic. Point out how articles differ according to their timeliness, the purpose for which they are written, the writer's objectivity or subjectivity and the characteristic writing pattern used to create them. After students have become familiar with the characteristics of each type of article, present each group with a packet of newspaper articles that include samples of each type of article. Have

students analyze and identify each type of article in their packet.

Going Beyond the Textbook in Academic Classes

The following strategy helps students expand their knowledge base and performance in academic classes. Prepare by building a collection of articles relevant to various academic areas. Since newspapers are virtual treasure troves of information relevant to different content areas, educators can easily build collections of articles by simply clipping and filing potentially useful articles whenever they read newspapers.

Introduce this strategy by pointing out that newspapers can supplement the information contained in textbooks and presented in academic classes. Emphasize the specific benefits to be gained by reading articles relevant to academic courses. Indicate that newspapers often

1. Are easier to understand than textbooks;
2. Present timely, up-to-date information;
3. Offer readers the opportunity to self-select items of interest;
4. Frequently present and develop ideas more fully than textbooks;
5. Present interesting, unusual topics;
6. Present opportunities to explore different points of view and examine controversial issues;
7. Introduce noteworthy people;
8. Expose readers to multicultural perspective on issues;
9. Present practical, as well as theoretical, information.

Bring in various types of newspaper articles which are relevant to your students' academic courses for them to examine. For a follow-up assignment, have them collect and share articles related to their own academic courses.

Preposterous Articles

Far too many students believe that everything printed in newspapers is the absolute, unvarnished truth. Build on the popularity of tabloids to develop students' critical reading skills. Dis-

tribute copies of an absolutely ridiculous tabloid article and have them identify statements and claims that fly in the face of common sense and their own prior knowledge of the subject. After students identify the outlandish statements in the article, encourage them to articulate the reasons the statements they selected are illogical.

Conclusion

Newspapers add excitement to the teaching of developmental reading and enable students to sharpen their reading and thinking skills. Unfortunately, many developmental students lack experience and familiarity with newspapers. The strategies for introducing newspapers presented in this article were successful in providing our students with the prerequisite background knowledge they needed to use newspapers to acquire information in their academic courses and personal lives.

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Appendix: What's In It for Me?

1. Find an article about something that happened close to where you live. (local news)
2. Find an article about something that happened far away from where you live. (state, regional, national, or international news)
3. Find an article with information that is relevant to one of your classes.
4. Find an article that deals with a controversial issue.
5. Find an article dealing with crime.
6. Find an article about people who live outside of the United States of America.
7. Find an article that makes you feel good.
8. Find an article that makes you angry.
9. Find an article that makes you sad or deals with a topic that worries you.
10. Find an article that deals with a topic that affects your life now or might affect your life in the future.
11. Find an article about education.

12. Find an article about health or safety.
13. Find an article that offers advice about getting or keeping a job.
14. Find a profile of somebody with an interesting or important career.
15. Find an article that is relevant to young adults.
16. Find an article about family life or raising children.
17. Find an article that children would enjoy reading.
18. Find an ad for a place where you would like to live.
19. Find an ad for furniture or items for your home.
20. Find information about home decorating or repairs.
21. Find an article about animals or pets.
22. Find a recipe or an article about food.
23. Find an article dealing with money or finances.
24. Find an ad for a car or an article that gives advice for buying or maintaining a car.
25. Find an ad for something you would like to buy.
26. Find information about bank or mortgage rates.
27. Find an article about sports.
28. Find a comic strip or humorous article.
29. Find your horoscope.
30. Find a review of a movie, television show, or restaurant.
31. Find a profile of someone who did something worthwhile.
32. Find an obituary of someone who led a life you admire or who made a contribution to the world.
33. Find an editorial or column that deals with a relevant topic.
34. Find a letter written to the editor.
35. Find the results of a study or survey.
36. Find an interesting photograph or picture.

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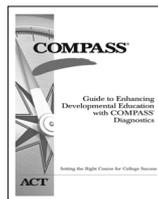
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