A study investigated whether differences exist in the freshman-level course grades between the "high-risk" college freshmen enrolled in a linked-course developmental program and the other freshmen who were not required to participate in the developmental program. Subjects, 286 "non-developmental" freshmen and 71 freshmen identified as either "high developmental" or "low developmental" through a combination of test scores and a written essay, all took the same three Freshman Studies Module Exams during a fall semester at St. Edward's University in Texas. Semester grade point averages (GPAs) were based on all courses taken, while cumulative GPAs were based on degree-credit-bearing courses only—developmental course grades were not included. Exam grades, final course grades, semester GPA, and cumulative GPA were used as variables in an analysis of variance. Results indicated no significant differences between the groups for the final course grades; and the "high risk" students successfully completed their first semester of course work, although their level of success did not always equal that of non-developmental students. Implications of these findings are important to any college or university with a flexible admission policy in support of a commitment to serving a diverse student body. (Three tables of data are included.) (RS)
Linking College Developmental Reading and English Courses to General Education Courses

a paper presented at the

National Reading Conference
December 3, 1992
San Antonio, Texas

by

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ABSTRACT

Objective
My aim in this research was to investigate whether differences exist in the freshman-level course grades between the "high-risk" college freshmen enrolled in a linked-course developmental program and the other freshmen who were not required to participate in the developmental program.

Related Literature
The current and future need for college-level developmental reading and writing courses is clear, even at prestigious private as well as public universities. Because of the inequities that have existed and continue to exist in America's public schools, students graduate from high school with wide-ranging levels of preparation for college. And the number of underprepared students entering college is significant; estimates range from 21-28%. In response to this alarming demand, developmental programs in U.S. colleges have become widespread (Wyatt, 1992).

The developmental program model investigated in this study is characterized by the 10 recommendations for teaching high-risk college students made by Stahl, Simpson and Hayes (1992) on the basis of their synthesis of research, theory and experience. Their second recommendation, "Use a course model that stresses transfer," specifically describes the one involved in the current study, which I have termed the linked-course model. The idea for such a model is not new, but research validation has been difficult because of the diverse labels and program variations associated with it. For example, Tomlinson and Green (1976) described adjunct reading and study classes; Garfield and McHugh (1978) described the learning counseling model; Martin (1980) described supplemental instruction; Sartain, et al. (1982) described the language study model; Mailéry and Bullock (1985) described adjunct or paired courses; Snow and Brinton (1988) described the adjunct model for ESL students; and Davis (1990) described co-listed reading classes in high school.

The common element in all these models is the linking of instruction in reading and learning strategies with credit-bearing general education courses. The reading instructor then uses the content course readings, writing assignments and lectures to model for and supervise the development of processes and strategies necessary to succeed in college-level courses. The
ultimate aim is to equalize the students' chances for success by helping them become active, self-directed learners who are skilled in a variety of strategies and tactics for meeting the demands of college work (Stahl, Simpson and Hayes, 1992).

Background

St. Edward's University is a private four-year liberal arts institution with approximately 3,000 full-time equivalent students. The St. Edward's Mission emphasizes teaching over research and is committed to a diverse student population from widely-varying backgrounds. As a result of this commitment to diversity, a significant number (approximately 70 out of 280, or 25%) of "high-risk" students are accepted each year as traditional freshmen. Students are identified as "high-risk" using an algorithm containing these scores: SAT or ACT composite, SAT or ACT verbal, TSWE and an essay. These "high-risk" students are considered to have demonstrated potential for success in college because of high-level performances in high school (sometimes even in honors courses). However, their college entrance examination and essay scores suggest that they need support in English writing and reading to equalize their chances for success in college courses.

St. Edward's has had a developmental program in place for over 25 years. Originally, it took the form of reading, writing, and listening "labs." However, within the last 10 years, the developmental program has been transformed from a "deficit model" (diagnostic/prescriptive model assessing skill mastery with a standardized test) to a "cognitive-based" model which, according to Stahl, Simpson and Hayes (1992), has proven to be an effective alternative by focusing on the development of students who are active participants in control of their own learning. The aim of the curricular reforms was to provide more direct instructional support for the actual general education courses the students are required to take. During the last three years, as part of a Title III federal grant project, the developmental curriculum has been almost completely redesigned to mainstream students in the developmental program into the general education curricula as much as possible.

The Linked-Course Model

Five years ago, as a pilot project, developmental reading and English courses were linked to general education courses in biology, political science,
criminal justice, and history. When developmental reading and English courses were linked to biology, for example, the primary focus of instruction in the developmental courses was on the biology reading and writing assignments. In other words, instruction in reading and English writing was done in the context of completing actual course assignments and preparing for tests in biology.

At that time, although students were allowed to take most general education courses along with their developmental courses, they were not allowed to take Freshman Studies until their sophomore year. Freshman Studies is a six-hour course which includes three hours of Humanities and three hours of Freshman Composition. Students required to take developmental English and reading had to postpone Freshman Studies until they had completed their developmental requirements.

Beginning in the Fall of 1991, however, the developmental program was revised and integrated into Freshman Studies. Now, all first-semester freshmen take the Humanities portion of Freshman Studies during the Fall semester, but instead of Freshman Composition, students in the developmental program take developmental English and reading. These developmental courses provide direct support for helping students succeed in the Humanities portion of Freshman Studies.

The three-hour Humanities is divided into three five-week modules, each being taught through a large group lecture by a different professor:

(1) "The Human Person: Search for Self" (The content spans psychology and religious studies; the readings include Thomas Merton's New Seeds of Contemplation and James Finley's Merton's Palace of Nowhere.)

(2) "The Human Person as Decision-Maker" (The content spans political science and philosophy; the readings include Alex Haley's Malcolm X and Thomas Hobbes' "Of the Natural Condition of Mankind as Concerning Their Felicity and Misery.

(3) "The Human Person and the World Community" (The content spans cultural studies and literature; the readings include Franz Kafka's The Metamorphosis and Yukio Mishima's Patriotism.)

The developmental reading and English course instructors and student mentors (undergraduate teaching assistants who have themselves completed developmental courses) provide support by modeling for the students and
guiding them in the development of metacognitive awareness, study skills, reading strategies, critical thinking and essay writing. Students develop varied skills, tactics and confidence as they are supervised and guided in completing the reading and writing assignments, taking lecture notes and preparing for tests.

University faculty and administration believe that without this developmental support, the "high-risk" students would have difficulty succeeding in the Humanities portion of Freshman Studies, which is a very rigorous and demanding course. Therefore, it is hoped that the support provided by the developmental courses provides these "high-risk" students with an equal opportunity for success. The objective of the study reported here was to determine the extent to which students in the developmental courses succeeded in general education courses as compared with their classmates who were not considered "high-risk."
Methods

Subjects:
The subjects included 71 developmental students and 286 non-developmental students all enrolled in Freshman Studies. The developmental students were divided into two groups: low developmental (those required to take two semesters of developmental courses) and high developmental (those required to take only one semester of developmental courses).

Procedures:
All subjects took the same three Freshman Studies Module Exams during the Fall, 1991 semester; their final grade for the course was an average of those three exams. Semester grade point averages (GPA's) were based on all courses taken, including developmental courses. Cumulative GPA's were based on degree-credit-bearing courses only; developmental course grades were not included.

Data Analysis
For the analysis, the following groups were established:
(1) low developmental (N=37)
(2) high developmental (N=34)
(3) all developmental (N=71))
(4) non-developmental (N=286)

The groups were compared, using one-way ANOVA'S, on the following variables:
(1) Freshman Studies Humanities Module 1 Exam Grade
(2) Freshman Studies Humanities Module 2 Exam Grade
(3) Freshman Studies Humanities Module 3 Exam Grade
(4) Freshman Studies Humanities Final Grade
(5) Semester Grade Point Average (includes developmental courses)
(6) Cumulative GPA (does not include developmental courses)
### Table 1
Mean SAT and ACT Scores by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>SAT Verbal</th>
<th>SAT Composite</th>
<th>ACT Verbal</th>
<th>ACT Composite</th>
</tr>
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<tbody>
<tr>
<td>low dev</td>
<td>329</td>
<td>748</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>N=19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high dev</td>
<td>364</td>
<td>767</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>N=24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>all dev</td>
<td>349</td>
<td>759</td>
<td>16</td>
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<tr>
<td></td>
<td>N=43</td>
<td></td>
<td></td>
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<tr>
<td>non-dev</td>
<td>447</td>
<td>927</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>N=241</td>
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<tr>
<td>Group</td>
<td>Module 1</td>
<td>Module 2</td>
<td>Module 3</td>
<td>Course</td>
</tr>
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<td>------------</td>
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<td>----------</td>
<td>----------</td>
<td>--------</td>
</tr>
<tr>
<td>1 (low dev)</td>
<td>2.57*</td>
<td>2.35</td>
<td>2.53*</td>
<td>2.83</td>
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<tr>
<td>2 (high dev)</td>
<td>2.82</td>
<td>2.00</td>
<td>2.62</td>
<td>2.68</td>
</tr>
<tr>
<td>3 (all dev)</td>
<td>2.69*</td>
<td>2.19</td>
<td>2.57**</td>
<td>2.76</td>
</tr>
<tr>
<td>4 (non-dev)</td>
<td>3.03</td>
<td>2.29</td>
<td>2.85</td>
<td>2.92</td>
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</tbody>
</table>

* p < .05
** p < .01
Table 3
Comparison using One-Way ANOVA's of Semester GPA's and Cumulative GPA's (Semester GPA's include developmental course grades and Cumulative GPA's do not.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sem GPA</th>
<th>Cum GPA</th>
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</thead>
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<tr>
<td>Group 1</td>
<td>2.87</td>
<td>2.53*</td>
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<tr>
<td>low dev</td>
<td></td>
<td></td>
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<tr>
<td>Group 2</td>
<td>2.74</td>
<td>2.66</td>
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<tr>
<td>high dev</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td>2.81</td>
<td>2.59*</td>
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<tr>
<td>all dev</td>
<td></td>
<td></td>
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<tr>
<td>Group 4</td>
<td>2.79</td>
<td>2.84</td>
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<tr>
<td>non-dev</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .01
Results

For the first and third module exams, the performance of students in the high developmental group was not significantly different from that of students in the non-developmental group. Although the non-developmental group scored significantly higher than did the low developmental group and the two developmental groups combined, the average grade for the developmental students was still a C on both exams. For the second module exam and the final course grade, no significant difference was found between any of the groups.

The extent to which the developmental students were successful overall at the end of their first semester can be seen in the comparison of groups on semester and cumulative GPA's as presented in Table 3. No significant difference was found between the groups on the semester GPA; however, the semester GPA does include developmental course grades, which might inflate the GPA (assuming that students would make higher grades in developmental courses than in general education courses).

For the cumulative GPA, no significant difference was found between the high developmental and non-developmental groups. And, although the mean GPA for the non-developmental group was significantly higher than that for the low developmental group and both developmental groups combined, the average GPA for the developmental groups was still a C. It should also be noted that since the cumulative GPA does not include developmental course grades, the calculation is based on only two or three course grades for the developmental students and as many as four or five course grades for the non-developmental students.

Summary of Conclusions and Interpretations

If college entrance examination scores are accepted as valid predictors of success in college, then, as can be seen by the SAT and ACT scores presented in Table 1, students placed into the developmental courses began the semester at a significant disadvantage. Efforts to equalize these students' chances for success took the form of developmental reading and English courses linked to their Humanities general education course. The results of these supportive intervention efforts for the Humanities course can be seen in the module exam and course grades presented in Table 2. No significant differences were found between the groups for the final course grades. In other words, the students
identified as "high risk" completed their first general education course with success equal to that of their freshmen classmates who were not considered "high risk."

It was hoped and assumed that the supportive intervention efforts provided by the developmental courses would improve the students' chances for success in their other courses as well. The effect on the students' overall success in their first semester can be seen in the semester and cumulative GPA's presented in Table 3. Although some of the group differences were significant, none of the group means was lower than a C. In other words, the "high risk" students successfully completed their first semester of course work, although their level of success did not always equal that of the non-developmental students.

Expecting the developmental students to perform equally with their non-developmental counterparts during their first semester is probably not a realistic goal. In fact, by virtue of our assumption of the predictive validity of SAT and ACT scores, we would expect the non-developmental students to outperform their developmental classmates. However, the results of this study indicate that, with supportive intervention, students placed into developmental courses can be expected to succeed in general education courses with a C or better, and possibly even as well as their non-developmental classmates.

The implications of these findings are important to any college or university with a flexible admission policy in support of a commitment to serving a diverse student body. With adequate and appropriate support, students demonstrating "marginal" potential with weak college entrance examination scores can, in fact, be expected to succeed, at least through their first semester. Of course, these findings are only generalizable to other similar institutions with similar developmental and general education curricula. But, the results provide good news for institutions faced with the ethical dilemma of accepting marginally-prepared students.
References


Tomlinson, B.M. and Green, T. (1976) Integrating adjunct reading and study classes with the content areas. In R. Sugimoto (Ed.) *Proceedings of the Ninth Annual Conference, College Reading and Learning Association*, (pp. 199-203).