This paper calls for the collaboration of general educators and special educators as cooperative teaching teams to better serve diverse student populations. Research in Anne Arundel County (Maryland) indicating significantly higher passage rates on statewide minimum competency tests, by students (n=343) in co-taught high school classes compared to students (n=362) in similar general education high school classes without co-teaching is offered as support for this approach. (Contains 13 references.) (Author/PB)
COOPERATIVE TEACHING:

An Effective Model for All Students

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ABSTRACT

Concern regarding the ability of the general education classroom to serve a diverse group of learners, including mainstreamed special education students, has been frequently expressed in the educational community. The collaboration of general educators and special educators as cooperative teaching teams is suggested as an effective model for school improvement efforts to address this concern. Research indicating significantly higher passage rates on statewide minimum competency tests by students in co-taught classes compared to students in similar general education classes without co-teaching is offered as support for this suggestion.
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Cooperative Teaching: An Effective Model
for all Students

The ability of the general education classroom to accommodate the learning needs of mainstreamed special education students has long been questioned by concerned educators. Indeed, a recent study (Baker and Zigmund, 1990) following the progress of thirteen mainstreamed learning disabled students over one year found no "discernable progress on academic skills" in the general education classroom. By way of explanation, the authors point out that the general education classroom maintained "business as usual" during the mainstreaming period. That is, the regular classroom teacher varied little from large group instructional strategies, provided no individualization or differentiation of assignments, and emphasized conformity and not accommodation for the students with different learning needs. Success in such a classroom would certainly be questionable for the mainstreamed special education, as well as many "at risk" learners within the class.

Clearly, the return of special education students to general education classrooms for instruction must be part of much larger schoolwide improvement efforts involving fundamental changes in "mainstream" instructional practices (Zigmond & Baker 1990). Varying the size of instructional groupings based on different learning needs and integrating alternative instructional practices to accommodate different learning styles are only a few of the changes which must occur in the general classroom attempting to
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effectively instruct diverse student groups. These changes, however, are not easily made nor maintained by the typical classroom teacher who is attempting to respond to increased expectations for student achievement and unprecedented measures of school based accountability.

School system improvement efforts broadening the repertoire of instructional strategies within the general classroom to accommodate a more diverse group of learners are not likely to be achieved by simple administrative fiat, or by consultation from special education colleagues alone. Rather, a more directly supportive and assistive strategy must be employed to enable the general classroom teacher to respond successfully to this challenge. A special education service delivery model which appears to respond to this need is that of cooperative teaching. Cooperative teaching (or co-teaching) "refers to an educational approach in which general and special educators work in a co-active and coordinated fashion to jointly teach academically and behaviorally heterogeneous groups of students in educationally integrated settings (i.e. general classrooms) (Bauwens, Hourcade & Friend 1989, p. 18).

As an extension of the consultation model, cooperative teaching provides direct assistance to the general educator in adapting and modifying instruction for the mainstreamed special education student. The advantage of co-teaching, particularly in enabling the general education classroom to provide individualized instruction through the use of differentiated instructional groupings and strategies, are perhaps obvious by having two teachers in the classroom. More importantly, however, research has demonstrated that "pull in" collaborative programs such as cooperative teaching serve
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as strong vehicles for staff development in fostering increased tolerance and understanding of student learning problems (Johnson & Pugach, 1991), as well as, in increasing teacher instructional skills with diverse student groups. (Meyers, Gelzhelesser & Yelich, 1991)

Despite the apparent effectiveness of cooperative teaching as a means of enabling the general education classroom to better accommodate “at-risk” learners, the question which ultimately must be answered regarding any proposed instructional change within today’s classroom relates to academic outcomes for all students within the classroom. Although earlier research found that the special education support within the general classroom was a viable alternative to special class placement for the academic achievement of disabled students (Affleck, Madge & Lowenbraun 1988; Schulte, Osborne & McKenney, 1990; Wang & Birch 1984), more recent research (Self, Benning, Marston & Magnusson 1991) suggests that both general and special education students benefit academically from collaborative service delivery models.

The purpose of this article will be to first present data comparing student outcomes from co-taught classes with other similar general education classes without co-teaching in an attempt to add to the current research base regarding collaborative service delivery models as effective models for schoolwide improvement plans. It is hypothesized that provided the collaborative efforts of two teachers, with the combined teaching strengths in content and curriculum areas and adaptive teaching strategies and classroom modification, students in co-taught classrooms will achieve academic skills as
Cooperative Teaching well or better than students in similar general education classrooms without co-teaching.

Present research continues to support the long standing belief that the general education classroom is a less stigmatizing, more motivating learning environment for the disabled student than a special education classroom (Madge, Affleck & Lowenbraun 1990) and that special education students and their parents prefer integrated general education classrooms over special education classrooms. (Lowenbraun Madge & Affleck, 1990; Jenkins & Heinen, 1989; Walsh, 1992). In fact, previous research by this author found that special education students indicated that they enjoy school more, learn more and feel better about themselves when they receive special education in a co-taught general education classroom as compared to a separate special education class. (Walsh, 1992). Based on this research, it is also hypothesized that students in co-taught classes will be more motivated to learn and thus have less absences and less discipline problems than comparative students in general education classrooms.

METHOD

Anne Arundel County Public Schools serves approximately 68,000 students in a diverse geographic socioeconomic area south of Baltimore City, east of Washington, D.C. bordering on the Chesapeake Bay with the capitol city of Annapolis in its center. With 113 schools and a per pupil expenditure of $5,116, Anne Arundel County Public Schools are committed to the maintenance of a quality school system for all students.
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In response to the recent emphasis on regular education based initiatives for the delivery of special education services, the Anne Arundel County Public Schools have implemented a wide range of less restrictive alternatives for students in need of special education instruction. Chief among these alternatives at the secondary level has been the implementation of cooperative teaching teams of special educators and regular educators to enable mildly disabled special education students to receive their content instruction and special education support services within the regular education classroom.

In addition to responding to regular education initiatives for special education students over the past three years, the Anne Arundel County Public Schools have also participated in a state initiated assessment program designed to foster improved student performance in all public schools. Based on the premise that all students can learn, the Maryland School Performance Program established school system report cards with which student performance on a range of achievement indicators could be compared and evaluated at the school building level. In addition to student performance on a newly developed criterion referenced assessment program based on “dimension of learning” outcomes, all schools were compared with regard to attendance, promotion and dropout standards as well as performance on minimum competency tests (functional tests) in Reading, Math, Writing, and Citizenship beginning with 9th grade results.

In order to compare the academic performance of students in co-taught general education classrooms with similar content classrooms without co-teaching, this investigation utilized 9th grade minimum competency test result and classroom grades
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as comparative data. Students in the co-taught classes and the comparison classes had similar academic profiles and backgrounds as below average students.

Of the eleven county high schools using cooperative teaching as a less restrictive alternative for special education students during the 1991-92 school year, six schools representing the diverse socioeconomic population of the county were chosen for participation in the study. Within these schools, thirty classes of students representing each 9th grade academic area (Science, Social Studies, Math, and English) were randomly chosen for comparative results. A total number of 343 students from fifteen co-taught classes (n=343) were compared to 363 students from fifteen regular classrooms without co-teaching (n=363) on three functional test results as well as on course grades, absences and discipline referrals from all four academic areas. All data were obtained from the county student information management system for 1st semester of the 1991-92 school year.

RESULTS

Table 1 indicates comparative results of students in co-taught classes with students in general education classes without co-teaching. Differences of means (absences, referrals, course grades) were analyzed using analysis of variance measures. Comparisons of percentages of students passing the functional tests were analyzed using Chi-square tests.

(INSERT TABLE 1 HERE)

With regard to comparative academic outcomes, no significant differences were found on the course grades earned by both groups of students when combining performances in all four
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subject areas (Science, Social Studies, Math, Language Arts). In one content area, Language Arts, students in co-taught classes earned significantly lower course grades than the comparison group. However, in comparing the passing rate on state minimum competency tests, students in co-taught classes achieved significantly higher passing rates as a total group and in each subject area than did students in the general education classes without co-teaching.

As a measure of their motivation to learn, school attendance was not found to be a significant measure for differentiating students overall in co-taught classes from students in general education classes. Only in math classes could a significant difference be found in favor of students attending co-taught classes. Table 1 also indicates that discipline referrals of students in co-taught class were not different from students in the comparison group although there were significantly less discipline referrals from Social Studies classes which were co-taught.

DISCUSSION

Results from this analysis found that high school classes with two teachers, a general educator and special educator working collaboratively with a heterogeneous group of special and general education students, can produce significantly better results than general education classrooms in achieving academic requirements for high school graduation. In particular, a significantly greater percent of 9th grade students from co-taught classes passed statewide minimum competency tests in three different
content areas than students from content classes which did not include special education students and were not co-taught by a general educator and special educator. The findings suggest that the combined effect of two teachers' capabilities, one strong in content and curriculum knowledge, the other in adaptive teaching strategies and classroom modifications, can in fact enable the general classroom to successfully address the learning needs of a diverse group of students, including mainstreamed special education students. Moreover, the results suggest that all students within a co-taught class benefit from this service delivery model and that school improvement plans should consider such collaborative models in developing educational reform initiatives for all students.

The notion that co-taught classes would show significantly higher rates of attendance and significantly lower discipline referral rates than comparative general education classes due to more motivated and confident special education students was not substantiated by the overall results of this study. However, when considering specific content areas, significant differences were found in favor of co-taught classes in both fewer absences (Math) and fewer discipline referrals (Social Studies).

The importance of student motivation to the successful achievement of measurable student outcomes is a cornerstone of school improvement efforts. Further research demonstrating this relationship, particularly for special education students long excluded from general classrooms, is needed. Indeed, continuing effort to identify and validate instructional models which effectively serve all students in America's classroom is essential to schoolwide improvement efforts.
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TABLE 1
A COMPARISON OF 9TH GRADE CO-TAUGHT CLASSES AND GENERAL EDUCATION CLASSES - ABSENCES, DISCIPLINE REFERRALS, COURSE GRADES AND FUNCTIONAL TEST RESULTS

<table>
<thead>
<tr>
<th>GENERAL RESULTS</th>
<th>CO-TAUGHT CLASS</th>
<th>GENERAL EDUCATION CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>No. of Students</td>
</tr>
<tr>
<td>Total Absences (Days)</td>
<td>4.99</td>
<td>343</td>
</tr>
<tr>
<td>Total Referrals (Frequency)</td>
<td>0.28</td>
<td>342</td>
</tr>
<tr>
<td>Course Grades (Scale of 4(A)-0(E))</td>
<td>1.83</td>
<td>333</td>
</tr>
<tr>
<td>Minimum Competency Tests</td>
<td><strong>66.9</strong></td>
<td>148</td>
</tr>
</tbody>
</table>

BY SUBJECT AREA

| SCIENCE                          |                |                |
| Total Absences                   | 5.32           | 142            | 5.32           | 110             |
| Total Referrals                  | 0.37           | 142            | 0.28           | 110             |
| Course Grades                    | 1.75           | 140            | 1.72           | 108             |

| SOCIAL STUDIES                   |                |                |
| Total Absences                   | 4.51           | 63             | 6.73           | 96              |
| Total Referrals                  | *0.11          | 63             | 0.50           | 96              |
| Course Grades                    | 1.80           | 60             | 1.70           | 93              |
| Minimum Competency Tests         | **60.0**       | 60             | 38.7           | 75              |

| MATH                             |                |                |
| Total Absences                   | *4.29          | 84             | 5.86           | 72              |
| Total Referrals                  | 0.20           | 83             | 0.16           | 73              |
| Course Grades                    | 2.11           | 80             | 1.82           | 72              |
| Minimum Competency Tests         | **61.7**       | 81             | 37.5           | 72              |

| LANGUAGE ARTS                    |                |                |
| Total Absences                   | 5.80           | 54             | 4.80           | 84              |
| Total Referrals                  | 0.37           | 54             | 0.21           | 84              |
| Course Grades                    | *1.63          | 53             | 2.08           | 83              |
| Minimum Comparative Tests        | **100.0**      | 7              | 87.0           | 40              |

* Differences are significant (P<.05)
** Differences are significant (P<.01)