Examining Advancement Via Individual Determination (AVID) and its Impact on Middle School Rigor and Student Preparedness

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Abstract

This study examines the impact that Advancement Via Individual Determination (AVID) in middle school has on middle school course rigor and students' high school performance and college readiness. The study compares students who took AVID in middle school and high school with students who only took AVID in high school. The changes in middle school course rigor for schools implementing AVID were also examined. Quantitative data from AVID seniors were gathered via an online data collection tool while qualitative, short-answer survey data were collected from AVID coordinators, teachers, and administrators. Responses indicated that AVID has some impact on schools' and districts' rigorous course offerings. Findings reaffirm the notion that the longer a student is engaged in college preparation activities and AVID in particular, the more prepared that student is for high school rigor and college. When compared to seniors who only participated in AVID while in high school, seniors who participated in AVID in both middle school and

high school exhibited greater academic performance, were more likely to take rigorous courses, and took, on average, more AP courses and AP exams.

Keywords: Advancement Via Individual Determination, Middle School, Rigor, College Readiness

Billions of dollars are spent on American education each year, ensuring that children are provided a free and appropriate education through the twelfth grade. After high school, some form of higher education or skills training is necessary so that graduates can succeed in an increasingly competitive job market (Bangser, 2008; Holland, 2010; Yohalem, Ravindranath, Pittman, & Evennou, 2010; US Department of Education, 2011). However, as *No Child Left Behind* and other education-reform initiatives indicate, there is no guarantee that the education received will adequately prepare students for the rigors of college (Bound, Lovenheim, & Turner, 2010; Conley, 2012).

For many American students, getting to the twelfth grade and completing high school can be a challenge. One study (Kelly, 2005) found that in the adult population (people 25 to 64 years old) only 59% completed high school; African American and Hispanic adult populations were worse off, at 49% and 53%, respectively. The latest U.S. Census Bureau (2010) data indicated that approximately 80% of young adults (18 to 24 years old) graduated from high school. These data also showed that young African Americans and Hispanics in the same age group graduated from high school at lower rates; 76% and 69%, respectively.

Concerns over academic performance and educational equity have been at the forefront of research on educational reform for decades. In the 1960s, Congress initiated efforts aimed at disadvantaged populations, thus creating a boon of college preparatory programs over that decade and into the 1970s (CPEC, 2007; Watt & Reyes, 2008). The most successful of these programs, according to Gandara and Bial (2001), Gandara and Moreno (2002), and Hooker and Brand (2009), are those that provide rigorous instruction, student support such as tutoring, and a curriculum that focuses on students' academic needs. Some of the more prominent programs to emerge over the past two decades, such as GEAR UP and AVID, provide services to students in middle school and high school to ensure that they graduate and successfully transition into higher education (Hooker & Brand, 2009; IES, 2010; Lozano, Watt, & Huerta, 2009; Watt, Huerta, & Lozano, 2007).

Researchers (Camblin, 2003; Conley, 2012; Marcos, 2003; Wimberly & Noeth, 2005) recommended that students start planning for college as early as their middle school years, often in the sixth grade.

Large portions of students that do graduate from high school are not realistically ready or prepared to enter college. Adelman (2006) proposed that rigor and high quality curriculum in secondary school, such as completing a mathematics course beyond Algebra II, is what ultimately predicts entrance and success in college. However, according to the U.S. Department of Education (NCES, 2007), only 36% of high school graduates in 2004 completed a mathematics course beyond Algebra II. Further, with reference to rigorous courses such as Advanced Placement (AP), only 30% of high school students earned AP credits before graduating (NCES, 2007). These findings suggest that approximately one-third of seniors graduate from high school with adequate academic preparation and readiness for college.

College Preparation in Middle School

In the middle grades, many students make the decision to go to college, and they must start taking steps to make that decision a reality. During middle school, students make a huge change academically, developmentally and socially. It is during these years when, in particular, underserved students shift their lives towards going to college or away from it (Cutler, 2010). During middle school, students in high poverty areas are either on the path to high school graduation or they are knocked off track (Balfanz, 2009). If students come to high school without the knowledge and skills they need to succeed in rigorous college prep classes, their chances of succeeding in high school and being prepared for college are at risk (Culter, 2010). The middle grades should be seen as the launching pad for a secondary and post-secondary education system that enables all students to obtain the education they will need to experience opportunities of the 21st century (Balfanz, 2009).

A recent report by ACT (2005) emphasized the need for college preparation as early as middle school. Middle schools can prepare students for college by "fostering academic preparation and achievement, supporting parental involvement, providing college and career planning, and helping students through the many steps of postsecondary planning" (p. viii). Radcliffe and Stephens (2008) conducted a longitudinal study of sixth graders in an effort to determine if creating a college-going culture in middle school had a positive impact on the students' education. They found that experiencing college life through college campus visits and mentoring may be linked to improvements in at-risk middle school students' perceptions of college. Research from ACT (2008) found that the level of academic achievement

students attain by eighth grade has a significant impact on college readiness. Students must be prepared in middle school to benefit from rigorous high school courses. Rigorous academic preparation is an important fact in determining students' academic success (Culter, 2010).

Reviews of college readiness, preparation, and access programs revealed that many of these programs begin in middle school and have made a difference in the preparation students obtain that is necessary for high school completion and entry to college (Bergerson, 2009; Gandara & Bial, 2001; Hooker & Brand, 2010; Slavin & Calderon, 2001; Watt & Reyes, 2008). More recently, Contreras (2011) focused on reviewing programs that help strengthen the bridge to higher education for underrepresented youth. Some of these programs, including GEAR UP, Upward Bound, MESA, and AVID, helped to build important peer and adult relationships that were significant to student success.

Advancement Via Individual Determination (AVID)

The college readiness system mentioned above called Advancement Via Individual determination (AVID) was born out of a grass roots effort in 1980. At the time, English teacher Mary Catherine Swanson implemented a support elective class for a group of students who were bussed to her recently desegregated suburban high school. The main goal was to prepare the historically underrepresented students for college (Swanson, Marcus, & Elliot, 2000). Since then, AVID has developed into an elementary through post-secondary system designed to prepare more first-generation college-goers for four-year colleges and universities (http://www.avid.org/abo_whatisavid.html).

Though AVID began in a single high school, over 4,000 middle schools and high schools are now implementing the college readiness program in 46 states and 16 countries (http://www.avid.org/abo_whereisavid.html). Middle school AVID begins as early as sixth grade in some schools and provides an elective class focused on writing, inquiry, collaboration and reading (WICR) strategies that support students in their quest to take rigorous college preparation classes. Schools implementing AVID must collect data and complete a self-study each year to ensure they are implementing AVID's 11 essentials. Included in the essentials are provisions for student selection, requirements for student enrollment in college preparation classes, professional development requirements, providing tutors, and other program requirements (Johnston et al, 2011; Mehan et al, 1996; Watt, Huerta, & Cossio, 2004).

According to Radcliffe and Stephens (2008), little is known about the long-term effectiveness of reform efforts such as AVID. This study attempts to uncover factors related to college preparation in middle school, and reveal

how those factors impact students as they navigate through high school and into college.

Purpose

The purpose of this study is to examine the impact that AVID in middle school has on (a) middle school course rigor; and, (b) students' high school performance and college readiness. In some school districts, students are enrolled in AVID sometimes as early as 6th grade, and can continue taking the elective up through high school graduation. In other districts, AVID is not offered at the middle school level, or students do not take advantage of the middle school AVID opportunity, so students might only take the elective while in high school. This study will examine student college readiness, comparing students who took AVID in middle school and high school with students who only took AVID in high school. The study also looks at changes in middle school course rigor for schools implementing AVID.

First examined was how AVID impacts rigorous course offerings and enrollment at the middle school level. To do this, a survey was distributed to AVID middle school coordinators, teachers, and administrators. The survey solicited answers about their school's rigorous coursework offerings, and whether or not the offerings have changed as a result of AVID implementation, or if existing courses were enhanced to provide more rigor. In addition, respondents explained whether or not their school had expanded access to rigorous courses by offering enough sections to serve all students wanting to enroll in the courses.

Second, to determine whether students' participation in AVID at the middle school level resulted in higher levels of academic performance and college readiness while in high school, when compared to students who did not participate in AVID at the middle school level, the following research questions were addressed:

1) Do differences in high school performance exist between seniors who enrolled in AVID only in high school and seniors who enrolled in AVID in both middle school and high school?
2) Do differences in the types of rigorous high school courses taken exist between seniors who enrolled in AVID only in high school and seniors who enrolled in AVID in both middle school and high school?
3) Do differences in the number of Advanced Placement (AP) courses taken exist between seniors who enrolled in AVID only in high school and seniors who enrolled in AVID in both middle school and high school?

Methods

Mixed methods were used to examine the impact of middle school AVID on (a) middle school course rigor, and, (b) students' high school performance and college readiness. Quantitative data from a sample of 3,143 AVID seniors were gathered via an online data collection tool while qualitative, short-answer survey data were collected from 1,192 AVID coordinators, teachers, and administrators via a paper-and-pencil survey distributed at AVID Summer Institutes. These data were analyzed using SPSS 16.0 and NVivo software.

Data Sources and Measures

Qualitative survey data. A survey titled *Rigorous Coursework Questionnaire* was distributed to AVID coordinators, teachers, and administrators who attended the AVID Summer Institutes in 2010. Open-ended questions were used to gather participant perceptions of the advanced courses offered at their school and about AVID's impact on student enrollment in such courses. A total of 797 responses from 1,192 participants serve as the basis for qualitative data in this study.

AVID senior data. In the spring of 2009, as part of their participation in AVID, 22,880 AVID seniors were asked to complete an online *Senior Data Collection Form* that gathered self-reported demographic and academic information from each student. Student high school academic performance was measured using SAT and ACT scores, as well as overall and academic GPA. High school course sequence was measured by whether or not students completed 4-year college entrance requirements, AP courses, and courses for college credit. AP course completion and test-taking information was measured by the number of AP courses students completed and by the number of AP tests students took.

Data from the online *Senior Data Collection Form* were used, representing a retrospective cohort study (Doll, 2001), to identify students who continuously enrolled in AVID over consecutive years. For the purpose of this research, data from two cohorts of students were examined: those who began AVID while in high school, and those who began AVID while in middle school. It should be noted that students who did not continuously enroll in AVID for consecutive years (approximately 3,022 seniors) were excluded from this study because such intermittent enrollment precluded membership into either cohort (Rumberger & Palardy, 2004).

AVID in HS only. A total of 11,641 AVID seniors reported being enrolled in AVID while in high school, consistently for two, three, or four years, but never enrolled while in middle school. These students only took

AVID while in the 11th and 12th grade; the 10th, 11th, and 12th grade; or, the 9th, 10th, 11th, and 12th grade. Hence, the *AVID in HS only* group consisted of students who enrolled in AVID for two, three, or four consecutive years while in high school.

AVID in MS and HS. A total of 3,986 AVID seniors reported first enrolling in AVID in middle school, either in the 7th or 8th grade, and then remained in AVID consistently after and throughout all four years of high school. These students took AVID for a total of five or six consecutive years, in 8th, 9th, 10th, 11th, and 12th grade, or in 7th, 8th, 9th, 10th, 11th, and 12th grade.

Representative sample. Combined, the two groups of AVID seniors total 15,627 and serve as the population for this research. Stratified sampling procedures and the random sample tool in SPSS were used to select a sample of approximately 20% (3,143 AVID seniors), wherein 2,355 students were from the *AVID in HS only* group and 788 were from the *AVID in MS and HS* group. Sample size was determined using a spreadsheet (http://www.research-advisors.com/tools/SampleSize.htm) derived from Krejcie and Morgan's (1970) formula, which suggests a sample of 10-20% (confidence interval = 99%, margin of error = 2.5%). To test the representativeness of the stratified samples to the population cohorts of AVID seniors, response distributions for the demographic ethnicity variable were generated for both the samples and the population cohorts. A comparison of the proportions of responses indicates that the samples are representative and viable for generalizability to the overall populations of AVID seniors.

Findings

Results are displayed in two sections. In the first section, qualitative data from open-ended survey questions are used to examine AVID's impact on rigorous course offerings in AVID middle schools. Quantitative data and analyses are explained in the second section to explore relationships between AVID participation and students' academic preparation and college readiness.

AVID and Rigorous Coursework

To determine whether or not AVID middle schools increased their number of students enrolled in rigorous coursework, such as Algebra I and other high school credit-bearing courses, two open-ended questions from the Rigorous Coursework Questionnaire were used. These questions, along with a summary of responses and selected quotes from AVID coordinators, teachers, and administrators, are posed below.

Has your school's rigorous coursework offerings changed as a result of AVID implementation?

Almost two-thirds of the responses to this question indicated that AVID has had some type of impact on schools' and districts' rigorous course offerings. This includes either adding various new courses or adding more sections and updating the curriculum of already existing courses. Numerous responses resembled what one AVID teacher/coordinator had to say, "As a result of the increased number of kids enrolled in advanced courses [primarily the AVID students] we offer more higher level courses to a greater number of students" (Middle School AVID Coordinator/Teacher, Florida). A district office administrator from Tennessee added, "Course offerings have increased in sections because of the demand from our AVID student population."

The rigor and high standards of AVID permeate throughout the schools and are evident in participant responses. "We have added Pre-AP Lang-Arts, HS studies, and Pre-AP Science. These course offerings are designed to address college readiness and the AVID criteria for potential AVID recruits" (Middle School AVID Coordinator, Texas). A middle school administrator from Texas found similar patterns in his school: "We've added more Pre-AP classes, high school credit classes are the same [just more sections], and the teachers are changing their 'definitions' of rigor to match AVID's."

Additionally, respondents noted how schools and districts have opened up access to advanced courses to all students by removing restrictions that previously limited enrollment to only certain types of students. As explained by one assistant principal from Texas, "AP courses are offered/open for more students. Academic standards have been removed from AP enrollment, so any student can enroll in an advanced class." Another assistant principal from Texas indicated that changes occur beyond the campus: "Not just my campus, but the district as a whole has taken away prerequisites for advanced classes thereby opening doors and access for more students."

Barriers sometimes limit efforts at getting more students enrolled into rigorous coursework. A middle school assistant principal from Texas, for example, identified the principal as a barrier: "We do hope that our AVID students take more than one [rigorous course] but it is not necessarily supported by our principal." The teachers of the rigorous courses were also identified as barriers. "We still do not have total support from Pre AP teachers – but we are working on this" (Middle School AVID Coordinator/Teacher, Texas).

Do you feel your school has expanded access to rigorous courses by offering enough sections?

Responses were relatively positive and affirmed that schools are expand-

ing access to rigorous courses. As one AVID teacher from Georgia stated, "After only three years, we are heading toward larger expansion of rigorous courses." Others described expanded access to rigorous courses. "We currently offer 2 Pre-AP English classes in the 7th and 8th grade. A Pre-AP Math has also been added to the 7th grade" (Middle School AVID Coordinator/ Teacher, Texas).

Even in situations where schools were not expanding access to rigorous courses, the notion of rigor was still mentioned and emphasized. "…we are slowly thinking of ways to increase rigor for AVID," stated a middle school administrator from California. Other responses highlighted the impact of the economy as reasons for not expanding. However, even though expansion was not taking place, schools still focused on course content, critical thinking techniques, and rigor. An AVID coordinator/teacher from Delaware identified a common situation in schools: "Due to budget restrictions no additional staffing is available but critical thinking and an emphasis on relevant content is stressed in all classes." A middle school AVID teacher from Washington explained that her school was "not yet making this change. The majority of our 7/8 staff has been AVID trained [methodologies / strategies] so this is helping rigor."

Impact of Middle School AVID on Student Performance

Two groups of students were examined: those who participated in AVID only while in high school (*AVID in HS only*, less exposure) and those who participated in AVID while in middle school and while in high school (*AVID in MS and HS*, more exposure). Students' academic preparation and college readiness were compared in the areas of academic performance, high school courses taken, and the number of AP courses completed and AP tests taken. Analyses were conducted at a more stringent alpha of .01 to err on the side of caution and consider experiment-wise error when conducting numerous comparisons. Results are organized by research question and displayed in the sections that follow.

Do differences in high school academic performance exist between seniors who enrolled in AVID only in high school and seniors who enrolled in AVID in both middle school and high school?

To determine whether differences in academic performance exist between the *AVID in HS only* and the *AVID in MS and HS* groups, t-tests were conducted on the groups' average SAT scores, ACT scores, overall GPA, and academic GPA. T-tests rather than z-tests were chosen because of the t-test's robustness in larger sample sizes (Fagerland, 2012; Park, 2009). No sig-

nificant differences were found between the groups' SAT scores or between the groups' ACT scores. However, the group of students who enrolled in AVID in both middle school and high school exhibited a significantly higher overall GPA (M=3.16, SD=0.47) than the group of students who enrolled in AVID only in high school (M=3.07, SD=0.51); t(3,139)=-4.380, p=0.000. Additionally, the group of students who enrolled in AVID in both middle school and high school exhibited a significantly higher academic GPA (M=3.14, SD=0.48) than the group of students who enrolled in AVID only in high school (M=3.03, SD=0.53); t(1,468)=-5.464, p=0.000. These results indicate that seniors who participated in AVID in both middle school and high school exhibited higher levels of academic performance than seniors who only participated in AVID while in high school.

Do differences in the types of rigorous high school courses taken exist between seniors who enrolled in AVID only in high school and seniors who enrolled in AVID in both middle school and high school?

To determine whether differences in the types of high school courses taken exist between the *AVID in HS only* and the *AVID in MS and HS* groups, chi-square analyses were conducted on the frequency/proportion of students in each group that completed four-year college entrance requirements, took AP courses, and took courses for college credit while in high school. Three Pearson Chi-square tests were conducted (see Table 1). Results indicate that a significantly larger portion of seniors who enrolled in AVID in both middle school and high school completed four-year college entrance requirements (93%) than did seniors who enrolled in AVID only in high school (89%). Similarly, a significantly larger portion of seniors who enrolled in AVID in both middle school and high school took AP courses (78%) than did seniors who enrolled in AVID only in high school (71%). There was no significant difference between the groups on whether or not students took a course for college credit while in high school.

Table 1. Chi-square Tests

	AVID in HS only (n=2,355)	*AVID in MS and HS (n=788)*	*df*	*Statistic Value*	*Sig (p)*
Completed 4-year college entrance requirements	2,104	729	1	6.677	.010
Took AP courses	1,666	614	1	15.263	.000
Took college courses	367	115	1	0.446	.504

Do differences in the number of Advanced Placement (AP) courses taken exist between seniors who enrolled in AVID only in high school and seniors who enrolled in AVID in both middle school and high school?

To determine whether or not there were differences in the number of AP courses taken between the *AVID in HS only* and the *AVID in MS and HS* groups, t-tests were conducted on the groups' average number of AP courses completed. Results indicate that the group of seniors who enrolled in AVID in both middle school and high school took, on average, a significantly higher number of AP courses while in high school (M=2.19, SD=2.11) than seniors who enrolled in AVID only in high school (M=1.89, SD=1.98); t(3,141)=-3.592, p=0.000. T-tests were also conducted on the groups' average number of AP exams taken. The seniors who enrolled in AVID in both middle school and high school took, on average, significantly more AP exams (M=1.72, SD=2.03) than seniors who enrolled in AVID only in high school (M=1.46, SD=1.84); t(1,247)=-3.161, p=0.002. These results indicate that seniors who participated in AVID in both middle school and high school take more AP courses and exams while in high school than seniors who only participated in AVID at the high school level.

Discussion and Conclusions

This study examined the impact of AVID at the middle school level and found that implementation of the AVID college readiness system at the middle school level is beneficial in two distinct ways. First, as evidenced by qualitative survey findings, AVID implementation is associated with an expansion of rigorous course offerings. In cases where budget limitations or other issues hinder a school's ability to increase the number of advanced courses offered, school coordinators, teachers, and administrators indicate that efforts instead focus on improving the course content, critical thinking techniques, and rigor in their schools' existing courses. According to ACT (2005), middle school students should take rigorous courses such as Algebra I, but in order to do this, the school must offer the course. In this study, schools that were unable to offer such courses provided extensive AVID professional development to teachers so that the existing curriculum would be enhanced (Huerta, Watt, & Alkan, 2008; Watt, Huerta, & Mills, 2010).

Second, findings reaffirm the notion that the longer a student is engaged in college preparation activities and AVID in particular, the more prepared that student is for high school rigor and college readiness. When compared to seniors who only participated in AVID while in high school, seniors who participated in AVID in both middle school and high school exhibited greater academic performance, were more likely to take rigorous courses,

and took, on average, more AP courses and AP exams. These findings add support to the growing body of literature (Camblin, 2003; Conley, 2012; Marcos, 2003; Wimberly & Noeth, 2005) recommending that students begin planning and preparing for college as early as their middle school years.

Limitations and Future Research

Though the benefits of implementing AVID at the middle school level were examined, this study only included students who continuously enrolled in AVID. Omitted from the sample were students who did not continuously enroll in AVID, either of their own accord or due to schedule conflicts, and thus received limited participation opportunities in college preparation programs and activities. These students were intermittent or inconsistent in their AVID enrollment; they enrolled in AVID for one or two years and then skipped a year or two before enrolling in AVID again. Future research should examine the "intermittently/inconsistently- enrolled" AVID students and incorporate a control group of students to provide a clearer picture that illustrates the minimal amount of college preparation needed to impact students' academic performance and college readiness.

Another limitation in the current study is that differences within each of the two subgroups (AVID in HS only and AVID in MS and HS) were not examined. Future research should focus on the large number of AVID students who only enroll in AVID while in high school. These students' AVID enrollment patterns of one, two, three, or four years would allow for multiple levels of comparisons and modeling to better examine the impact of college preparation over time.

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