Assessment of Fall 2007 Achieving the Dream Cohort Evaluation Report

DRAFT

Doña Ana Community College
Institutional Effectiveness & Planning
Assessment of Fall 2007 Achieving the Dream Cohort Evaluation Report

Introduction

Doña Ana Community College (DACC) has been a participant in the Achieving the Dream (AtD) initiative through the Lumina Foundation since 2005. As part of this initiative, the college established an AtD cohort, which included all students taking developmental mathematics courses at DACC Gadsden and Sunland Park centers. The Institutional Effectiveness and Planning Office (IEPO) conducted an evaluation of the Fall 2007 AtD cohort and interventions. IEPO investigated the demographics and backgrounds of the cohort students and evaluated intervention strategies used.

In an effort to improve learning, several interventions were applied to cohort students. These included case managers, in-class tutors, EducoSoft Math Software, and the Fast Track Workshop. Case managers were hired in summer 2007 to monitor Fall 2007 cohort students’ class attendance and academic achievement in their developmental math courses, and students who were absent frequently and low-performing students were contacted. In-class tutors were hired to assist cohort students with assignments and questions during developmental math class sessions. EducoSoft, multi-media software that provides electronic math lectures and tutorials for students, was required to be used by Beginning Algebra (CCDM 114) students outside of class. Finally, the Math and Physical Sciences Department offered a Fast Track Workshop, a one-week review course targeted at students with sufficient backgrounds to prepare them to exempt out of Prealgebra (CCDM 103) and enter directly into Beginning Algebra (CCDM 114).

Methods

A profile of cohort student demographics and grades was created through analysis of student information from the Amigo Information Warehouse. In addition, the ACT/AACC Faces
of the Future survey was given to all students in the cohort and a random sample of all DACC students who were not in developmental math courses at DACC Gadsden and Sunland Park centers. In previous years, the survey was administered only to a random sample of all DACC students. Therefore, substituting all students in the AtD cohort for some of the randomly selected students in the sample resulted in an overrepresentation of developmental math students in the Faces of the Future survey sample. The results were analyzed and used to compare AtD cohort student demographics and backgrounds with DACC students who were not in the AtD cohort. In addition, eight supplemental questions were included with the Faces of the Future survey when it was administered to all students in the cohort. The results of the supplemental questions are summarized in Appendix A. One AtD cohort Beginning Algebra class did not complete and return the Faces of the Future surveys and was not included in the analysis.

At the end of Fall 2007, a survey regarding the intervention strategies was sent by mail to all students in the cohort. A follow-up postcard, which reminded students to return the survey, was sent two weeks later. The survey contained questions regarding students’ frequency of use and perceived helpfulness of each intervention.

The final exam scores of cohort students who took the Fast Track Workshop, passed, and were promoted to Beginning Algebra (CCDM 114) were compared to the final exam scores of cohort students who placed into Beginning Algebra with their Compass scores. Correlation analyses were conducted to assess the relationship between intervention strategies applied to students in the AtD cohort and their final exam scores. The interventions evaluated were case managers, in-class tutors, and Educosoft Math Software. T-tests were also conducted with a subgroup of cohort students who were first-time DACC students. In addition, pass rates were
computed for cohort students who were first-time DACC students and compared with first-time DACC students who took the same class at a different location.

In Spring 2008, a focus group was conducted to examine the experiences of cohort students during their developmental mathematics courses in Fall 2007. Five male and five female students from each of the Sunland Park and Gadsden centers were selected randomly from the Fall 2007 cohort and invited to participate. The group was conducted by a moderator from IEPO, and a note taker from IEPO was present as well. The session was also tape recorded.

Results

Student Demographic and Background Information

The majority of students in the AtD cohort were female (Table 1). In addition, students in the AtD cohort were mostly between 18 and 21 years of age (Table 1). AtD cohort students tended to be younger than DACC students who were not in a developmental math course at DACC Gadsden and Sunland Park centers (i.e., not in the cohort; Faces of the Future). Sixty-four percent of students in the AtD cohort reported that they were 20 years old or younger compared to only 37.3% of students who were not in the AtD cohort.

Students in the AtD cohort were mostly Hispanic (Table 1). In fact, 91.5% of students in the AtD cohort reported that they were Hispanic compared to 68.1% of students who were not in the cohort (Figure 1; Faces of the Future). Also, a larger percentage of students in the AtD cohort reported that English was not their native language (Figure 2; 48.7%) than students who were not in the cohort (Figure 2; 32.9%).

It appeared that AtD cohort students were more frequently supported by their parents than students who were not in the cohort (Faces of the Future). Students in the AtD cohort lived with their parents more frequently (68.4%) than those who were not in the cohort (32.2%). In
addition, students in the AtD cohort more frequently reported that their parents were the major wage earners in their household (63.2%) than students who were not in the cohort (35.1%). In fact, the majority of students who were not in the AtD cohort reported that they were the major wage earners in their household (41.3%), while only 27.4% of students in the AtD cohort reported that they were the major wage earners in their household.

Students in the AtD cohort tended to come from families with less education than those who were not in the cohort (Faces of the Future). The percentage of students who reported that their mother had less than a high school diploma was 40.2% for those in the AtD cohort and 30.7% for those not in the AtD cohort. In addition, only 0.9% of students in the AtD cohort reported that their mother had a graduate or professional degree compared to 4.9% of students not in the cohort. AtD cohort students’ fathers also tended to have less education than students not in the cohort. Forty-one percent of students in the AtD cohort reported that their father had less than a high school diploma compared to 29% of non-AtD cohort students. Only 1.7% of students in the AtD cohort reported that their father had a graduate or professional degree compared to 6.6% of students in the non-AtD cohort.

**Mail Survey**

Twenty-five students completed and returned the mail surveys, which was a 14% return rate (surveys were mailed to 173 students). The results suggested that interventions were well utilized and students’ perceptions of the interventions were generally positive. The majority of students reported that they met with an in-class tutor (22 students; 88%; Figure 3), and 95% of those students reported that the tutor was helpful or very helpful. Sixty-two percent of students reported that they used Educosoft math software (15 students; Figure 4); however, although only Beginning Algebra (CCDM 114) courses used Educosoft in Fall 2007, the mail surveys were
sent to all students. The responses were kept anonymous, and therefore, it was uncertain whether responses about Educosoft were given by Beginning Algebra or Prealgebra students. Eighty three percent of students who reported using Educosoft rated the software as helpful or very helpful. Thirty-six percent of respondents reported that they met with a case manager (9 students; Figure 5), and 55% rated case managers as helpful or very helpful.

**Effects of Interventions**

- **Fast Track Workshop**

  The mean final exam score of cohort students who took the Fast Track Workshop, passed, and were promoted to Beginning Algebra (CCDM 114) was 51.5 and was similar to the mean score of cohort students who placed into Beginning Algebra with their Compass scores (51.6; Figure 6). However, the median final exam score of cohort students who took the Fast Track Workshop was higher (58.5) than cohort students who did not participate in the workshop (50.0). These results suggested that students who participated in the Fast Track Workshop were at least as well prepared for Beginning Algebra as those who placed into the course with their Compass scores.

- **Case Managers**

  There was not a significant correlation between the final exam scores and number of contacts cohort students in Prealgebra (CCDM 103) had with case managers ($N = 77, r = -0.078, p = 0.499$) or the number of minutes spent with case managers ($N = 77, r = -0.116, p = 0.314$). Results were similar for cohort students in Beginning Algebra (CCDM 114). Neither the number of contacts nor the minutes spent with case managers were significantly correlated with final exam scores ($N = 78, r = -0.089, p = 0.439$ and $N = 78, r = -0.112, p = 0.329$, respectively) of Beginning Algebra cohort students.
It is interesting to note that correlation coefficients between final exam scores and variables relating to case managers were negative for all tests conducted. This suggested that students served by case managers did not score as high on the final exam as students who were not served by case managers. One possible explanation could be that students who needed case management tended to be less successful students than those who did not need case management. Another explanation could be that case managers were more likely to reach out to at-risk students.

The pass rate for cohort students who were first-time DACC students in Prealgebra and utilized the case managers was 66.7% (N = 2). The pass rate for non-cohort students who were first-time DACC students in Prealgebra (taken at a different location) was 78.7% (N = 181), which is considerably higher than the first-time DACC cohort students. However, the sample size of cohort students who were first-time DACC students in Prealgebra was very small (N = 2), making this comparison problematic.

The results were relatively similar for cohort students who were first-time students in Beginning Algebra and utilized the case managers. Their pass rate was 71.4% compared to 81.8% for non-cohort students who were first-time DACC students in Beginning Algebra at a different location. However, the sample size of cohort students who were first-time DACC students in Beginning Algebra was very small (N = 5), which made this comparison problematic.

- In-class tutors

The results generally suggested that in-class tutors positively affected student success. There was a significant positive correlation between minutes of tutoring received by cohort students in Beginning Algebra (CCDM 114) and their final exam scores (N = 77, r = 0.263, p = 0.019). There was also a positive (non-significant) correlation between minutes of tutoring
received by cohort students in Prealgebra (CCDM 103) and their final exam scores ($N = 77$, $r = 0.045$, $p = 0.695$).

The mean final exam score for cohort students who were first-time DACC students in a Prealgebra class that had an in-class tutor was slightly higher than first-time DACC students taking the class at a different location, although the difference was not significant (mean = 67.79 and mean = 63.38, respectively; $N = 24$ and $N = 230$, respectively; $T = 1.09$, $p = 0.284$). In addition, the pass rate for cohort students who were first-time DACC students in a Prealgebra class that had an in-class tutor was slightly higher (83.3%) than first-time DACC students taking the class at a different location (77.6%).

The results were mixed for first-time DACC students in Beginning Algebra. The mean final exam score for cohort students who were first-time DACC students in a Beginning Algebra class that had an in-class tutor was slightly lower than first-time DACC students taking the class at a different location, although the difference was not significant (mean = 59.32 and mean = 66.59, respectively; $N = 22$ and $N = 110$, respectively; $T = -1.28$, $p = 0.212$). However, the pass rate for cohort students who were first-time DACC students in a Beginning Algebra class that had an in-class tutor was slightly higher (83.3%) than first-time DACC students taking the class at a different location (78.7%).

- **Educosoft**

  There was a positive relationship between the use of Educosoft Math Software in Beginning Algebra (CCDM 114) and student final exam scores. A significant positive correlation was found between minutes of Educosoft use by cohort students in Beginning Algebra and their final exam scores ($N = 78$, $r = 0.518$, $p < 0.001$). This suggested that cohort students who used Educosoft earned higher scores on the final exam.
When examining only first-time DACC students in Beginning Algebra, however, the results did not suggest a positive relationship between the use of Educosoft and student performance. The mean final exam score for cohort students who were first-time DACC students in a Beginning Algebra class that was supported by Educosoft was slightly lower than first-time DACC students taking Beginning Algebra at a different location, although the difference was not significant (mean = 62.09 and mean = 66.58, respectively; \( N = 23 \) and \( N = 110 \), respectively; \( T = 31.5, p = 0.409 \)). In addition, the pass rate for cohort students who were first-time DACC students in a Beginning Algebra class that was supported by Educosoft was lower (73.9%) than first-time DACC students taking the class at a different location (81.8%).

**Focus Group**

In January 2008, a focus group was conducted at the Sunland Park center with three female cohort students who took Prealgebra in Fall 2007 to examine their experiences in the course, especially with regard to interventions. All three students had passed the course and were taking Beginning Algebra in Spring 2008 when the focus group was conducted. The number of participants was much smaller than anticipated. Ten cohort students (five male and five female) from each the Gadsden center and the Sunland Park center were invited to participate in two separate focus groups, but due to a lack of response, only one focus group was conducted with a smaller assemblage of students.

The students reported that the in-class tutor was very helpful. They seemed to appreciate that their tutors were proactive, asking if they needed help and providing assistance before students experienced difficulties. One student indicated that this approach was different and much better than the approach employed by an in-class tutor she had in a previous semester. The
students said, in addition to working with them in class, the tutors would also stay after the class session ended to answer questions and were willing to meet them outside of class to help as well.

The students reported that the case managers were accessible and beneficial. They indicated an appreciation for having a person who would take notice if they were struggling and offer to help. One student commented that one of the case managers would sometimes attend her math course to “sit in and ask you if you need help.” Another student said that one of the case managers would sometimes be available in the computer lab while students were working.

The students indicated mixed feelings about Educosoft Math Software. They were using it for the Beginning Algebra courses that they were all taking during Spring 2008 when the focus group was conducted. However, the group was held during the beginning of the semester, and the students did not have much experience with it at that point. One student said that she did not like it. Another student said that she was having difficulty getting logged in. The third student said that she both liked and disliked the software. One difficulty she reported was that it was an online application, and she did not have internet access at home, which meant that she had to come back to school to use it.
Table 1. Demographic profile and grades of Fall 2007 AtD Cohort

<table>
<thead>
<tr>
<th></th>
<th>CCDM 103 N 100 Students</th>
<th>CCMD 114 N 93 Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>62 (62%)</td>
<td>53 (57%)</td>
</tr>
<tr>
<td>Male</td>
<td>38 (38%)</td>
<td>40 (43%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>92 (92%)</td>
<td>88 (95%)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (6%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>White</td>
<td>2 (2%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td><strong>Gender &amp; Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic Females</td>
<td>58 (58%)</td>
<td>51 (55%)</td>
</tr>
<tr>
<td>Hispanic Males</td>
<td>34 (34%)</td>
<td>37 (40%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 18</td>
<td>1 (1%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>18-21</td>
<td>67 (67%)</td>
<td>66 (71%)</td>
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<tr>
<td>22-24</td>
<td>11 (11%)</td>
<td>10 (11%)</td>
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<td>25-30</td>
<td>11 (11%)</td>
<td>5 (5%)</td>
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<td>31-36</td>
<td>4 (4%)</td>
<td>4 (4%)</td>
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<td>37-49</td>
<td>6 (6%)</td>
<td>7 (7%)</td>
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<tr>
<td>50 or Over</td>
<td>0 (0%)</td>
<td>1 (1%)</td>
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<tr>
<td><strong>Grade Received</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passing</td>
<td>62 (62%)</td>
<td>45 (49%)</td>
</tr>
<tr>
<td>Failing</td>
<td>8 (8%)</td>
<td>16 (17%)</td>
</tr>
<tr>
<td>Other</td>
<td>14 (14%)</td>
<td>28 (30%)</td>
</tr>
<tr>
<td>Withdraw</td>
<td>16 (16%)</td>
<td>4 (4%)</td>
</tr>
</tbody>
</table>
Figure 1. Comparison of Ethnicity of the Fall 2007 AtD Cohort and students who were not in the AtD Cohort (DACC students who were not in a developmental math course at DACC Gadsden and Sunland Park centers; Source: Faces of the Future Survey)
Figure 2. Comparison of native English speakers in the Fall 2007 AtD Cohort and students who were not in the AtD Cohort (DACC students who were not in a developmental math course at DACC Gadsden and Sunland Park centers; Source: Faces of the Future Survey)
Figure 3. Use and helpfulness of in-class tutors (Source: Mail Survey)

22 (88%) Met with the In-Class Tutor

- Very helpful: 63%
- Helpful: 32%
- Not at all helpful: 5%
15 (62%) Used Educosoft Math Software

- Helpful: 75%
- Very helpful: 8%
- Not at all helpful: 17%

Figure 4. Use and helpfulness of Educosoft Math Software (Source: Mail Survey)
Figure 5. Use and helpfulness of case managers (Source: Mail Survey)

9 (36%) Met with a Case Manager

- Very helpful 22%
- Helpful 33%
- Not at all helpful 45%
Figure 6. Box plot showing a comparison of final exam scores for cohort students who participated in the Fast Track Workshop, passed, and were promoted to Beginning Algebra (CCDM 114) and cohort students who placed into Beginning Algebra based on their Compass scores. Final exam scores of the control group, students who took Beginning Algebra at a different location, are also shown for comparison. Mean scores are denoted by a red “X” for each group.
Appendix A. Results of supplemental questions included in ACT/AACC Faces of the Future survey when administered to students in the Fall 2007 AtD cohort

**How many other family members are currently enrolled in college?**

- No Other: 47.41%
- One: 27.59%
- Two: 8.62%
- Three or More: 6.90%
- Blank: 9.48%

**Did any of your grandparents ever attend college?**

- Yes: 6.03%
- No: 84.48%
- Blank: 9.48%
Not including in-class time, how many times have you met with your instructor about this class?

- Never: 51.72%
- 1: 15.52%
- 2: 14.66%
- 3: 2.59%
- 4 or more: 6.03%
- Blank: 9.48%

In an average week, how many hours do you study for this class?

- Less than 1: 13.79%
- 1-3: 59.48%
- 4-6: 12.93%
- More than 6: 4.31%
- Blank: 9.48%
How does the effort you are currently making to succeed in college compare to what you thought before you enrolled?

- Easier to succeed: 11.21%
- About what I thought: 52.59%
- Harder to succeed: 26.72%
- Blank: 9.48%

If you received financial aid, was it sufficient to cover the cost of tuition and books?

- More than adequate: 17.24%
- About right: 40.52%
- Not enough: 10.34%
- Did not receive: 22.41%
- Blank: 9.48%
Providing care to a family member reduces the amount of time I have to study.

- True: 56.03%
- False: 34.48%
- Blank: 9.48%

The amount of time spent in the classroom for this class/course is:

- Not enough: 5.17%
- About right: 79.31%
- Too much: 6.03%
- Blank: 9.48%