

**Written Testimony
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Section 1: Access Learning Center Mathematics Curriculum

Amarillo College, like most higher education institutions in Texas, offers traditional 16-week semester length developmental courses. At AC, these courses have high student success rates, and the institution funds a number of student support services to enhance the courses. However, Amarillo College has an additional set of developmental courses unique to the institution. In addition to structured classes, AC also offers developmental courses through an open entry/open exit Learning Center. Students, with the assistance of academic advisors may choose to enroll in developmental coursework through a structured traditional class or the Access Learning Center. The Access Learning Center should not be confused with a Tutoring Lab or a traditional Learning Center. The courses offered in the Access Learning Center are funded with tuition, fees, and contact hour reimbursement.

The Amarillo College’s Access Learning Center offers developmental instruction in reading, writing and mathematics as an alternative to structured semester length courses. The following Basic Academic Skills courses are offered:

BAS-0103	Basic Academic Skills	One credit hour
BAS-0203	Basic Academic Skills	Two credit hours
BAS-0303	Basic Academic Skills	Three credit hours
BASM-0101	Basic Academic Skills for Mathematics	One credit hour
BASM-0202	Basic Academic Skills for Mathematics	Two credit hours
BASM-0303	Basic Academic Skills for	Three credit hours

	Mathematics	
BASR-0101	Basic Academic Skills for Reading	One credit hour
BASR-0202	Basic Academic Skills for Reading	Two credit hours
BASR-0303	Basic Academic Skills for Reading	Three credit hours
BASW-0101	Basic Academic Skills for Writing	One credit hour
BASW-0202	Basic Academic Skills for Writing	Two credit hours
BASW-0303	Basic Academic Skills for Writing	Three credit hours

The Learning Center provides competency-based instruction by utilizing pre- and post-tests in each basic skill instructional area. When students enter the Learning Center, they are tested and then provided with individualized instruction in the center. Computer software is used, but instructor tracking and intervention are heavily used also. Students earn a grade in the course by completing a required number of hours and by demonstrating improved skill levels.

One unique feature of the Learning Center is that it is open 53 hours per week, and students may attend at times convenient for them. When students have a family illness or other emergency, they may alter their days and times of attendance to adapt to changing life circumstances without jeopardizing their course grade.

COURSE RE-DESIGN FOR BASIC ACADEMIC SKILLS MATHEMATICS COURSES

In the Fall 2007 semester, two mathematics instructors in the Learning Center received release-time to develop a new mathematics curriculum and pilot it. These two instructors developed a Math Flow Chart beginning with whole numbers and moving through quadratic equations and into right-angle trigonometry. In other words, the chart was designed to cover all concepts taught in 3 levels of traditional developmental mathematics courses: Basic Math, Beginning Algebra and Intermediate Algebra. For each section of the flow chart, they developed a detailed pre-test, called the Pre-review, of approximately 20-30 questions. Each student begins each section with the pre-review in order for the instructors to determine what pre-existing skills the student has. After grading of the pre-review, each section in which the student showed proficiency is marked off and initialed by an instructor. The idea is to get students to move more rapidly by focusing on deficient areas, rather than teaching them concepts they already know.

After the pre-review is scored and skill deficiencies identified, the student is given individualized instruction in each deficient skill. Several practice activities with self-checking answer sheets over the sections are completed by the student. Instructor assistance is given as needed. Once the instructor feels the student understands the concept, a post-test, called the Mastery Test, is given to the student to show his/her understanding of the concepts. All students receive one-on-one instruction from Learning Center teachers, and the Mastery Test must be passed in

order for a student to move on to the next skill. Because many math students struggle with higher level skills due to deficits in more basic skills, all students work through the flow chart from the beginning (whole numbers). Students with higher level skills spend a short time on pre-reviews and then move on. However, most students need at least some instruction in the lower level skills.

For example, in summer 2009, a student scored 45 on Accuplacer Elementary Algebra. He showed a great understanding of algebraic expressions and geometry. However, he had no idea how to add or subtract fractions. After completing the fractions section of the flowchart, he re-tested on Accuplacer Elementary Algebra and scored a 96. After the student developed an understanding of fractions and how to use them in algebraic equations, he was able to skip Beginning and Intermediate Algebra and progress immediately into College Algebra.

The two faculty members spent almost an entire year writing, piloting and revising the flow chart. A small amount of data was collected. We sought to find out how fast we could move students through levels of remediation, rather than looking at a projected increase of points on the Accuplacer or THEA Tests. Due to the significant cost of the Accuplacer Elementary Algebra Test, the new mathematics flowchart was piloted with one class section of BASM-0202 at Amarillo College's East Campus Learning Center. Students enrolled in that class were allowed to take the Accuplacer Test free of charge at the end of the course.

Of 24 students in the pilot group, 12 students became TSI Complete in mathematics.

**TEXAS HIGHER EDUCATION COORDINATING BOARD
\$75,000 ACCELERATED DEVELOPMENTAL EDUCATION PILOT
PROJECT GRANT (2009-2010)**

After completion of the initial pilot, funded by the institution, it became apparent that more curriculum revision and more data collection were needed to improve the program.

Utilizing funds from THECB, the two instructors who developed the curriculum had the opportunity to improve it. Utilizing feedback from students and instructors, they rigorously examined and revised the flowchart and each Pre-review, Worksheet and Mastery Test. They created an organizational system whereby each component was numbered and logically sequenced.

Additionally, these instructors developed computer-assisted instructional lessons for each section of the flow chart, using SoftChalk. Use of SoftChalk lessons greatly decreases the amount of time the instructors have to spend in individualized teaching with each student.

Students who complete the flowchart are well prepared for transfer-level mathematics courses for many reasons. The flowchart lets students master skills at his/her own pace. If a student is in a structured course such as Basic Math or

Beginning Algebra and doesn't understand a concept, the course doesn't stop and wait for him to grasp the material. When students progress through the flowchart, they begin to comprehend different mathematical operations and how all the skills relate to one another, creating a building block of knowledge. The students can progress faster with a better understanding of the material, making them more prepared for college level courses.

Preliminary data from this pilot project is promising. At the end of two semesters, of 112 students who completed the required number of hours for their BASM course and who took the Accuplacer Elementary Algebra Test at the end of the semester, 57 students (51%) became complete in Math for TSI purposes within one semester.

Now that the curriculum development is finished, more data on student success will be collected.

Below are some of our success stories:

(Students' names have been changed to protect their privacy.)

Paul Russell was a Nursing Major and had taken Contemporary Mathematics at a university. His grade did not transfer to Amarillo College and it had been years since he had studied Algebra. On 8/18/2008, Paul took the Elementary Algebra section on Accuplacer and scored a 28 (which would have placed him into Basic Mathematics, the lowest level in Amarillo College's developmental math

sequence). In Fall 2008, he enrolled in a BASM-0202 course and started at the beginning of the math flow chart with Whole Numbers. In Spring 2009, after completing 10 sections of the flow-chart, he enrolled in another section of BASM-0202. By 3/11/2009, he re-tested on the math section of Accuplacer and scored 75. Since it was so early into the semester, he enrolled in College Algebra in the Amarillo College's Spring II session and passed. For Paul, going through the flowchart instead of the developmental sequence saved him 2 ½ semesters of developmental mathematics and allowed him to enter the Associate Degree Nursing program a year earlier than expected.

With today's economy, we have had a number of students who have been laid off from employment at Owens Corning. James Summers enrolled in BASM-0303 during the Summer 2009 session. He had taken Accuplacer on 4/15/09 in hopes of getting into Amarillo College's Bell Helicopter Training Program. However, he wasn't accepted with his score of 32 on the Elementary Algebra section of the Accuplacer. James started working in the Learning Center in early June and on 7/08/09, he re-tested on the Elementary Algebra section of Accuplacer and scored 98. He is now enrolled in courses to pursue the program in Fall 2009. In 6 weeks, James saved a tremendous amount of money and time scoring into College Algebra and not having to complete three developmental courses.

These anecdotal stories tell the true worth of the program. Students may save one, two or even three semesters of developmental courses by participating in the Learning Center. They will be taking courses in their majors and will be entering the workforce much sooner than if they had waited to complete the required number of 16-week semesters.

Besides the benefit to individual students at Amarillo College, an important outcome of the Accelerated Developmental Education Pilot Project is the potential for sharing this exciting curriculum with other institutions, allowing them to replicate the instructional outcomes without having to develop their own courses. It is hoped that this project can be piloted in at least two other institutions of higher education and additional data can be collected.

Section 2: Background Information
Amarillo College
Developmental Education Program

This information is being provided in order to give background on Amarillo College's Developmental Education Programs because the structure of the program and the high degree of institutional support has allowed the THECB Accelerated Developmental Education Pilot Project to be successful.

Amarillo College is committed to provide a quality program to prepare students for success in college-level coursework, as indicated by its more than 35 year commitment to a strong developmental education program. In 2008, Amarillo College's Access Division was awarded Distinguished Level Certification by the National Association for Developmental Education (NADE) for its developmental coursework programs. In 2009, NADE awarded Amarillo College the John Champaign Memorial Award for Outstanding Developmental Education Program in recognition of its Developmental Mathematics Program. In 2009, the Texas Association for Developmental Education (TADE) gave its Best Program Award to Amarillo College. Also in 2009, the Mathematics Outreach Center received the Texas Higher Education Coordinating Board (THECB) Star Award.

The Access Division houses the following departments: Access Learning Center, Developmental Reading, English as a Second Language and the High School Equivalency Program. The Developmental Mathematics Program and the Developmental English Program are housed in their respective departments. The Developmental Mathematics Coordinator reports to the Mathematics and Engineering Department Chair, and the Developmental English Coordinator reports to the English Department Chair. The Access Division Chair serves as the campus liaison and coordinates the Developmental Studies Program.

Representatives from all developmental departments meet regularly to share information, coordinate services for developmental students, and ensure that best practices for developmental instruction are followed.

The Developmental Studies Program's mission statement and goals follow:

Mission Statement

The developmental studies program of Amarillo College is dedicated to providing a comprehensive educational program aimed at improving the quality of life for diverse populations. The Access Division affords students the educational opportunities to enhance and maximize their potential by building strong foundational skills and promoting lifelong learning.

Goals

- To preserve academic standards by developing competencies needed for

success in mainstream college courses.

- To enhance the retention of developmental students.
- To ensure proper placement through entry-level assessments.
- To assess and improve the effectiveness of the program through continuous evaluation of the curriculum, the instruction, and the retention efforts.

DEVELOPMENTAL STUDIES PROGRAM COMPONENTS

- **Developmental Reading Department**

The Developmental Reading Department provides 3 levels of structured developmental reading courses. Each course is taught as a 16-week, 3 semester hour (3 lecture, 2 lab) developmental course for which students receive institutional credit.

- **Developmental English Department**

The Developmental English Department provides 2 levels of structured developmental writing courses. Each course is taught as a 16-week, 3 semester hour (3 lecture, 1 lab) developmental course for which students receive institutional credit.

- **Developmental Mathematics Department**

The Developmental Mathematics Department provides 3 levels of structured developmental mathematics courses. Each course is taught as a 16-week, 3 semester hour (3 lecture, 1 lab) developmental course for which students receive

institutional credit.

- **Access Learning Center**

The Access Learning Center provides open entry individualized instruction for students who prefer a more flexible instructional setting. These courses are taught as 1 credit hour (1 lecture; requires 14 clock hours of attendance), 2 credit hour (2 lecture, 1 lab; requires 40 clock hours of attendance), or 3 credit hour (2 lecture, 2 lab; requires 60 clock hours of attendance) developmental courses for which students receive institutional credit. The Access Learning Center differs from traditional classes in that students may attend at times convenient for them, rather than a scheduled class time. The Learning Center is open 53 hours each week.

UNIQUE PROGRAM FEATURES

Many features make Amarillo College's Developmental Studies Program unique, including:

1. Exceptional institutional and administrative support

Amarillo College has maintained its commitment to the needs of developmental students for more than 35 years. Since 1980, the Access Division has been designated as one of eight Academic Divisions at the institution. The Access Division Chair is a permanent member of the Vice President's Council along with the Division Chairs for Allied Health, Nursing, Language Communication and Fine Arts, Business, Sciences and Engineering, Industrial and Transportation

Technology, and Criminal Justice.

An institutional standing committee, the Testing and Remediation Committee, meets regularly to oversee the Developmental Studies Program, ensure that all TSI statutes are being followed, and ensure that the needs of developmental students are being served.

2. Unique organizational structure

The Access Division houses the Reading Department and the Access Learning Center. Developmental Mathematics and Developmental English report within their respective departments, which strengthens their ties to transfer level courses and eases the students' transition from developmental coursework. Yet, they also work together with the Access Division to create the Developmental Studies Program and to ensure consistency of purpose and support between developmental departments. This linear pathway from developmental studies to transfer courses within the home departments in combination with the over-arching bridge of the Access Division fosters an effective and efficient working environment that is unique.

Strong cooperation exists between all developmental departments. A developmental ad hoc committee consists of the Access Division Chair and the department coordinators from Developmental Reading, Developmental Writing, Developmental Mathematics, the Access Learning Center, and ESL. This ad hoc

committee has met regularly since 2000 and as a group authored Amarillo College's application for NADE Certification. Five of the original six members of this ad hoc committee, including the Access Division Chair, are still at Amarillo College and are actively involved in developmental education.

3. Professional Development Opportunities

Strong institutional support exists for Professional Development for developmental educators. Four current developmental faculty members have attended the Kellogg Institute and are certified as Developmental Education Specialists by the National Center for Developmental Education. Each year, developmental faculty members receive funding to attend professional conferences such as NADE, CASP, TIDE and CRLA. In 2004, Dr. Hunter Boylan served Amarillo College as a consultant, providing faculty training as well as additional insight into the developmental program and recommendations for program improvements. The ad hoc committee actively studies learning theory and best practices for developmental education and seeks to incorporate relevant research into course content and delivery systems. Amarillo College holds institutional memberships in both TADE and NADE.

4. Instructional decisions driven by data and best practices

Amarillo College has a long history of using data and researched best practices to improve instruction. Over the past 3 years, several instructional practices have changed as a result of data analysis. The Developmental English Department

determined that Study Skills were lacking in their students and added formal study skills instruction to their curriculum. After implementation, student success (grades of A-C) improved by 2%, and a decision was made to continue study skills instruction.

The Developmental Mathematics Department implemented its Math Outreach Center and also added daily quizzes to the curriculum in order to meet identified needs of students. Data gathered indicates that these practices are working, with success rates up by 6%.

The Reading Department has implemented pre-testing of all students placed into developmental reading to ensure that students are placed appropriately. In many cases, students are able to demonstrate higher level skills than those identified on the Accuplacer or THEA test. Data indicates that these students are able to move successfully to a higher level class and thus spend less time in developmental courses.

INSTRUCTIONAL DELIVERY SYSTEMS

One of the most unique program features of the Amarillo College developmental studies program is the quality and variety of instructional choices for developmental students seeking to improve their basic skills. When students first enroll at the college, they take placement tests as mandated by TSI and the institution's Developmental Education Plan. All developmental students must then

see an advisor who assists them in selection of appropriate developmental courses. The advisor also assists students in selecting the appropriate delivery system which will allow the student the greatest chance for successful completion of required remediation. They may choose from the following:

1. Face-to-face Structured Classroom

The majority of students choose to attend traditional, structured developmental courses. The enrollment in face-to-face classes is capped at 20 students per section for writing, 25 for reading, and 25-30 for mathematics.

2. Access Learning Center Basic Academic Skills Courses

For students who are unable to attend a structured class at a set time or who prefer a non-structured setting, the Access learning Center offers open entry/open exit classes. The Learning Center is open 53 hours per week, and students may choose the hours they attend. Students may select 1, 2 or 3 credit hour classes to meet their individual needs. Qualified instructors (with Bachelor's or Master's degrees) for reading, writing and mathematics are available at all times. In order to earn a grade in the BAS classes, students must meet a minimum attendance requirement and must demonstrate progress in their designated subject area. For the Spring 2010 semester, 476 students were enrolled in Basic Academic Skills classes.

3. On-line Classes

All online classes offered at Amarillo College must go through a rigorous process of development and review to ensure that all courses offered online comply with best practices and are based on appropriate learning theory.

- Reading students may take Reading Techniques I (RDNG 0321) and Reading Techniques II (RDNG 0331) online.
- Mathematics students may take Beginning Algebra (MATH 0302) and Intermediate Algebra (MATH 0303) online.
- Writing students may take Basic Grammar and Writing II (ENGL 0302) online.
- Students enrolled in Basic Academic Skills for Math (BASM 0202) may also take the course online. This course is designed as a beginning point for students who score into Basic Mathematics (MATH 0301).

4. Learning Communities

Reading Techniques II (RDNG 0331) and Nutrition (HECO 1322) form a Learning Community for students who will be entering the fields of Nursing or Allied Health. Reading skills taught are applied to the reading required in the Nutrition class.

Reading Techniques II (RDNG 0331) and Grammar and Writing II (ENGL 0302) are offered as a Learning Community for students needing remediation in both areas. The unique relationship between reading and writing is emphasized.

5. Fast-track classes

Prior to taking a placement test or prior to enrolling in a developmental course, students may choose to enroll in a Continuing Education class, which allows the student to purchase clock hour increments of time to work in the Access Learning Center. For as little as a \$20 investment, students receive 5 hours of structured review for the Accuplacer or THEA tests. Students are able to increase their initial placement scores, thus bypassing lower levels of developmental courses.

In developmental mathematics courses, students may opt to take one of the fast-track options. Combinations of Beginning Algebra/Intermediate Algebra and Intermediate Algebra/College Algebra for completion in one semester are available.

In developmental reading courses, students who have high scores on a placement test may opt to take a fast-track reading course taught by the Reading Center Coordinator. Students in this class receive one-on-one teaching and are able to finish the course when they demonstrate mastery of reading skills, usually prior to the end of the semester.

Developmental writing students may take 8-week courses, rather than full semester length courses.

6. Mathematics Outreach Center and Testing Lab

The Mathematics Department provides an Outreach Center, open 60 hours per week free of charge to its students. The center employs a full-time mathematics specialist, three part-time learning specialists, ten to twenty student peer tutors, and 2 part-time senior citizen assistants. Developmental Mathematics students who score below 70% on any chapter test must receive tutoring in the Outreach Center prior to re-testing over the same material. Student scores improve by 14-23 points, and student success rates in developmental mathematics have increased by approximately 6%.

Developmental mathematics students take their tests outside of class time, allowing them unlimited time to test. The Testing Center environment reduces stress for students and allows them flexibility in their testing times.

7. Reading Center

The reading department provides a Reading Center which employs a full-time Reading Specialist. This center assists students with required lab assignments and homework from their reading courses. Any student who is having difficulty in a reading course may receive free assistance here. The Reading Specialist also provides Fast-track Reading Classes for students who qualify.

STAFFING

Amarillo College's strong commitment to developmental education is evident in the staffing provided for developmental courses. All developmental faculty members are highly qualified to teach developmental students. Although space does not allow a listing of each one, it is important to note the outstanding credentials of the developmental faculty.

Credentials of Full-time Developmental Faculty Members

- 2 hold Doctorates (Rhetoric and Nuclear Engineering).
- 11 hold Master's Degrees.
- 3 hold Bachelor's Degrees.
- 4 have been awarded certification as Developmental Education Specialists by the National Center for Developmental Education, Kellogg Institute.

In addition, several full-time transfer-level faculty members choose to teach developmental courses each semester. This practice helps to streamline the curriculum and allows a unique opportunity to ensure correct vertical alignment of developmental course content.

Percentage of classes taught by full-time faculty

Amarillo College's commitment to its developmental students is also reflected in the staffing of its developmental courses. The percentages of sections taught by full-time faculty are:

Developmental Reading--78% Developmental Writing--94%

Developmental Mathematics--46% Access Learning Center—100%

Credentials of Access Division Chair

The Access Division chair holds a Master's Degree in Education and the rank of Associate Professor at Amarillo College. In 2006, she attended the Kellogg Institute and is a Certified Developmental Education Specialist. In her 20 year tenure at Amarillo College, she has served as Coordinator of Disability Services, Developmental Reading Instructor, Developmental Reading Coordinator, and Coordinator of the Access Learning Center. She has been Division Chair since 2004.

PROGRAM EVALUATION CRITERIA

The Developmental Studies Program at Amarillo College is evaluated each year as part of Amarillo College's ongoing evaluation of all academic programs, and more than 25 years of data has been collected. Additionally, extensive data on the program was gathered as part of the NADE Certification process. The program has consistently produced outstanding student outcomes. Two key pieces of the ongoing evaluation are: student success rate in the first transfer-level course after completing remediation and student graduation rates after 4 years. In both areas,

developmental students perform as well as or better than those students who did not require remediation for basic skills.

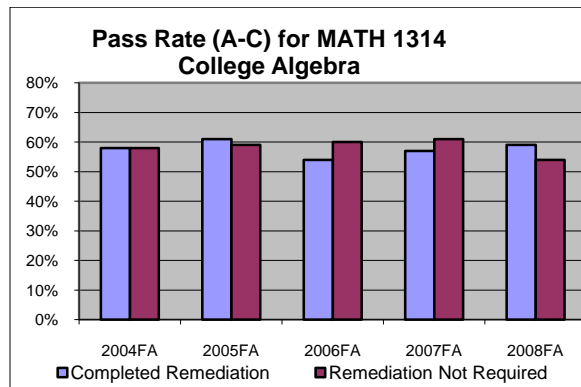
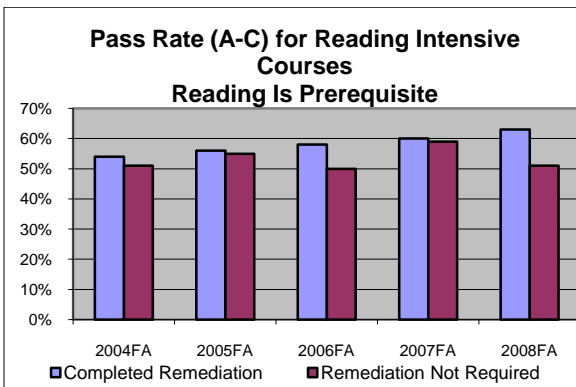
Students Served

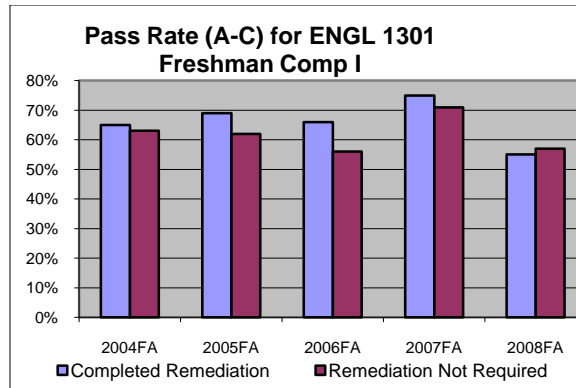
Based on best practices and TSI statutes, Amarillo College has a mandatory assessment and placement policy for students needing remediation. The Developmental Studies Program serves approximately 30% of students enrolled in the college each semester.

	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008
Developmental Students	3006	2834	2446	2452	2505
Total Students (excl. dual credit)	9260	9012	8516	8337	8215
% of Students Served	32%	31%	29%	29%	30%

Student success rate in the first transfer-level course after completing remediation

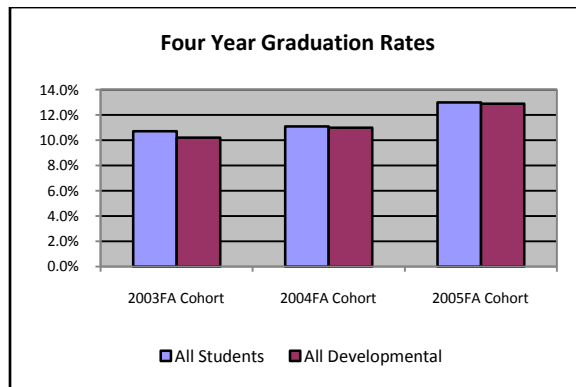
Data on student success has been collected for more than 25 years and shows that students who complete developmental coursework do well in their first transfer-level course. After completion of Developmental Reading, students successfully complete reading intensive courses such as History, Government and Psychology at a rate equal to or higher than students who did not initially need remediation in reading. After completion of Developmental Writing, students successfully complete Freshman Composition (ENGL 1301) at a rate equal to or within 2% of students who did not initially need remediation in writing. After completion of Developmental Mathematics, students successfully complete College Algebra (MATH 1314) at a rate equal to or within 6% of students who did not initially need remediation in mathematics.





Student graduation rates after 4 years

Students who begin with developmental courses are able to catch up with their non-developmental peers and graduate within 4 years at the same rate as all students.



PARTNERSHIPS WITH OFF-CAMPUS AGENCIES

THECB Demonstration Project

Amarillo College has just begun a partnership with the Texas Higher Education Coordinating Board to share its outstanding individualized mathematics curriculum used in the Access Learning Center. The Coordinating Board awarded Amarillo College funds necessary to make the program replicable for other institutions. We are excited to share this innovative program.

Faith City Ministries

Amarillo College has partnered with Faith City Ministries, a shelter for homeless men, women, and families. Students enroll in “Success University” and attend the Access Learning Center to prepare for college-level courses. Participants have gone on to complete technical program certificates.

Panhandle Community Services

This non-profit agency partners with Amarillo College to provide scholarships for students who could otherwise not afford to attend college. The funds are particularly helpful to students who are waiting on financial aid approval.

P-16 Council and College Readiness Vertical Team

Amarillo College is involved in the local efforts to align curriculum P-16. Additionally, the Access Division Chair (Judy Johnson) served on the College Readiness Vertical Team for English Assignments, and two Developmental English faculty (Dr. Judith Carter and Patricia Maddox) will be piloting the assignments in the Spring 2010 semester.

Amarillo Independent School District

- **Early College**

Students from Amarillo Independent School District's Early College Program have attended developmental courses on both their high school campuses and the Amarillo College campus. These students have completed significant amounts of developmental coursework prior to leaving high school.

- **Summer Bridge**

In Summer 2009, Amarillo College offered a Summer Bridge Program for high school students. The program was provided at no cost to the students and without grant funding. Of the 26 students who completed the program, all made progress (based on Accuplacer scores), and one student completed all 3 areas of remediation, skipping 6 developmental courses (18 credit hours).

- **Diplomas and Certificates Program**

High school dropouts up to age 25 have the opportunity to complete high school credits and/or TAKS tests while also enrolling in college courses leading to a certificate. The program began in October 2009, and 20 students have received high school diplomas.