



Tech Success/Tech Now Evaluation Summary February 6, 2007

Context: Six middle school sites in the Oklahoma City metro area were recruited to participate in the Tech Success program, which began activities in January 2006. These schools represent a cross-section of Oklahoma City's diverse population (Table 1). Recruitment targets students who have disabilities and Individualized Education Plans (IEPs). While some of these students were in special education classes, many were mainstreamed in regular classrooms. Most of the 6th, 7th, and 8th grade students (73%) who participated during the first 12 months of the project were diagnosed with learning disabilities by their respective school districts. Students at all sites met once weekly for approximately 90 minutes after school.

Teachers who sponsor the **Tech Success** after school program specialize in technology education, elementary special education, secondary special education, science, or math. Thus *a variety of professional perspectives is represented among the pool of teacher/trainers* who form the backbone of the program. The two special education teachers are "highly qualified" in math and science.

Middle School Sites	Project Entry Year	Average Enrollment 2005	Race/Ethnic			% Special Education	% Free/Reduced Lunch	Average Days Absent	% Parents Attended Teacher Conference
			% African American	% Native American	% Hispanic				
Bethany	1	330	3	7	5	11.8	29	7.1	85
Crooked Oak	2	259	32	10	31	17.8	89	12.8	50
Jefferson*	1	1001	16	8	39	20.8	86	16.6	50
Mayfield	2	636	29	8	19	18.7	92	11.3	60
Rogers*	2	311	84	3	3	27.6	99	14.7	25
Roosevelt*	1	849	8	8	66	16.8	100	12.0	70
State Average	--		11	19	8	15.0	55	10.0	72

The **Tech Success** curriculum is rooted in the **Tech Now** program operating in high schools across Oklahoma. Originally funded by the U.S. Department of Labor's *High School High Tech* program, Tech Now's versatile curriculum is *designed to accommodate learning styles, reward attendance, circumvent behavior problems, and improve social skills. Tech Success and Tech Now activities introduce students to metacognitive skills, wherein students develop the ability to monitor their own learning process.* For instance, students are required to reflect on their accomplishments each day and record time spent on tasks as part of an exercise in calculating profits. This is a unique process for students with learning disabilities, whom most research describes as lacking well-developed metacognitive reasoning. Metacognitive reasoning is at the heart of self-regulated learning (Sturomski, 1997), which in turn is at the core of the Tech Success/Tech Now curriculum.

8 th Grade Students	% Advanced		% Satisfactory		% Limited Knowledge		% Unsatisfactory	
	Regular Education	Students With IEP	Regular Education	Students With IEP	Regular Education	Students With IEP	Regular Education	Students With IEP
Bethany	38	18	55	77	5	6	1	0
Crooked Oak	0	0	69	19	13	50	18	31
Oklahoma City*	19	3	53	17	18	30	10	50
Mayfield	30	4	50	30	15	34	5	32

* Jefferson, Rogers, and Roosevelt Middle Schools

Students with disabilities are at high risk of under-utilizing their talents and prematurely foreclosing viable occupational options because of low expectations and unsupportive learning conditions (Brown and Lent, 2006). Virtually all of these students come from homes where supportive structures are challenged due to economic hardship, single parenting, or circumstances surrounding the student's disability. According to Brown and Lent, adolescents with difficult home environments are at risk of underutilizing their talents and prematurely foreclosing viable occupational options. However, *when alternative supportive structures of the caliber offered by Tech Success/Tech Now are firmly set in place, students' engaged interest in developing career aspirations is a likely result.* When career aspirations are developed, they are "remarkably stable and serve as strong predictors of aspirations in the 12th grade" (National Education Longitudinal Study, 2002).

Tech Success combines high expectations with skill development in a non-competitive, stimulating environment. Classroom configurations vary by school, but *all emphasize cooperative learning, partnerships, and creative problem-solving.* Evidence of high performance expectations and students' capacity to respond to those expectations is reflected in Spring 2006 state testing results. Eighth graders with IEPs at Bethany outperformed their peers in mathematics during the same time period that Tech Success was implemented at that school site. Only 6% of these students failed to meet the satisfactory benchmark during this time period (Table 2). Bethany students began the Tech Success program earlier than the other school sites and involved a higher percentage of eighth grade IEP students than the other school sites participating in the project.

Tech Success is well grounded in theory and supported by research in technology, math and science education at the middle school level. Brown and Lent in "Preparing Adolescents to Make Career Decisions: A Social Cognitive Perspective" (2006) describe career interest as a conditional predictor of academic and career choice. It's potency as a predictor rests on whether environmental conditions are supportive or restrictive. *When conditions are supportive, interest has a stronger role to play in goal-setting and career choice.* Social Cognitive Career Theory (SCCT) posits that for students' interest to blossom in areas for which they have talent, their environments must expose them to *"direct, vicarious, and persuasive experiences* that contribute to robust efficacy beliefs and positive outcome expectations" (Lent, Brown and Hackett, 2000). In order for interests and goals to produce positive outcomes in terms of career choices and academic choices, *students must have opportunities to select activities and practice their talents, abilities and skills.* These experiences reinforce self-efficacy, outcome expectations, and confidence. Tech Success learning experiences promote self-efficacy and outcome expectations because *they enable students to have successful experiences. These experiences are successful by design.* They are realistic and relevant because they are taught by individuals who currently have careers in the areas of interest. Teachers and field instructors communicate high expectations and provide challenging experiences. Student performance is weighed by criterion reference and not by normative scaling on comparisons to peers.

The **Tech Success and Tech Now** Curriculum integrates *SCANS* employability skills, student-centered instructional strategies, field experiences in science and technology, individually paced activities, and inquiry-based learning. The SCANS competencies for future employability include: learning to allocate resources; developing interpersonal skills like teamwork and negotiation; learning to acquire and use information; understanding complex relationships; and learning to use technology. The curriculum introduces students to elements of setting career aspirations and reinforces outcome expectations by tying learning to relevant life choices. *It bridges the gap between education now and career choice later in life.*