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# Who Participated in School-to-Work Programs in 1998? Technical Report

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## **Abstract**

This report was prepared for the National School to Work Office pursuant to Task Order #30--Analysis of National Longitudinal Survey of Youth 1997 Data: Participants in School-to-Work Activities. The Project Officer was Sharon Belli. The findings and opinions expressed in this report do not reflect the position or policies of the School to Work Office or of the U.S. Department of Education.

## **Who Participated in School-to-Work Programs in 1998? Technical Report**

### **All Students (9<sup>th</sup> Graders and Older)**

#### **Introduction**

This report is based on a survey of 7425 students attending high school during the 1998/99 academic year that asked about recent participation in school-to-work (STW) activities. The survey is the first wave of the National Longitudinal Survey of Youth begun in early 1997 (NLSY97). Ninety-three percent of the youth surveyed in the initial wave were interviewed in the second follow up that we are analyzing here. The statistics reported below are based on weighted data and so represent the population of 15 to 19 year olds attending school during the 1998/99 academic year. Youth who graduated from or dropped out of high school before fall 1998 were not asked questions about participation in school-to-work programs and so are not included in our analysis.

The initial wave of the NLSY97 survey asked 15 and 16 year olds whether they had ever participated in one of seven different types of school-to-work (STW) activities. Since middle school and even primary school students participate in STW activities such as job shadowing, mentoring, school-based enterprises and introductory vocational courses, the responses to these questions often described activities that occurred many years earlier. From that survey we calculated that the “ever participated” rate was 19 percent for ‘career major,’ 12 percent for ‘job shadowing,’ 5 percent for mentoring, 9.3 percent for cooperative education, 9 percent for school-based enterprises, 8 percent for ‘tech prep,’ and 5 percent for apprenticeships or internships. Cumulating across all types of STW programs, we found that 43 percent of students had been involved in one-or more STW activities at some time in the past and 12 percent had visited a work site as part of that program.

The field period for the first follow up interviews was from October 1998 to April 1999. High school students were asked about their participation in specific STW activities since the

time of their baseline interview in 1997. Almost all baseline interviews were conducted between February and October of 1997, so STW participation rates refer to a period of varying length (averaging 20 months) that spans two years of school attendance. Rates of ‘recent participation’ calculated from the first follow-up survey were 17.6 percent for “career major”, 11 percent for job shadowing, 4.9 percent for mentoring, 6.6 percent for coop education, 5.5 percent for school-based enterprise, 6.4 percent for tech prep and 4.5 percent for apprenticeship. Overall 37 percent of students had recently participated in one or more STW activities and 9.7 percent visited a work site as part of a STW program.

### **Any School-to-Work Program Including Career Major**

Thirty-seven percent of high school students interviewed in 1998/99 said they had participated in one or more School-to-Work program or activity in the previous 20 months.

How do these students differ from students who do not participate? The first column of Tables 1A through 3A presents data on students who did not participate in any STW programs. The third column of these tables presents data on the students who have participated in one or more school-to-work programs. If there are no stars (\*, \*\*, or \*\*\*) after a number in column 3, the numbers in column 1 and 3 are not significantly different from each other. The number of stars indicates how significant the difference is. Three stars (\*\*\*) indicates the highest significance [if there was in fact no difference between the two population groups, the difference found in this sample’s data will be found less than 1 percent of the time]. Two stars (\*\*) indicates there is a less than 5 percent chance of erroneously concluding there is a difference between the groups when the truth is that no difference exists. One star indicates that the chance of such an error is less than 10 percent. Our discussion of the results will reference statistically significant differences only. When differences are significant but small and substantively unimportant we will refer to the difference as ‘slight.’

### Family Background is similar

In most respects the family background of students who recently participated in one or more of STW activity is similar to the background of those not participating. Average family income, receipt of welfare, percent foreign born and percent from single parent families, for example, were the same. Of 26 comparisons only 12 resulted in significant differences and most of those were of no substantive significance. What were the differences? Compared to those who do not participate, those who participate in School-to-Work programs:

- Have parents who were slightly more likely to have graduated from high school but slightly less likely to have graduated from college.
- Participants were more likely to be African-American and less likely to be Hispanic or Asian.
- Participants were slightly more likely to be Catholic and slightly less likely to be Baptist or Pentecostal Protestants.

### Type of school

- School-to-Work participants were much more likely to attend vocational high schools and less likely to attend Catholic high schools and other private high schools.
- Participants were more numerous at large high schools
- Participation rates were lower at schools with very high or very low pupil-teacher ratios.

### Neighborhoods

- Participants were much more likely to live in unsafe neighborhoods. A higher proportion reported having had their house broken-into and having seen someone shot before they were 12 years old. Gangs were more prevalent.
- Participants were slightly less likely to live in a suburb.

### School Environment

- Students participating in school-to-work programs were much more likely to live in unsafe neighborhoods. A larger percentage of their peers at school were reported to be cutting classes and slightly fewer were reported to be planning to go to college. They were considerably more likely to have been victims of repeated bullying when they were young.
- STW participants were more likely to report that cheating on tests and assignments and

student discipline were problems at their school.

- They were nevertheless equally likely to report that they felt safe at school.

Course Taking patterns were simultaneously more vocational and more academic.

Of the 11 comparisons made, 10 resulted in significant differences.

- Participants were much less likely to describe themselves as being in the general track and more likely to describe themselves as pursuing a vocational or college prep program.
- Participants were more likely to have taken algebra, geometry and lab science courses during the last 20 months.
- They were more likely to have taken shop and industrial arts classes, home economics classes and all kind of computer courses (Computer literacy, word processing, computer programming and others).

#### School Attitudes, Behavior and Achievement

- STW participants were equally likely to report that teachers were 'good' and that teachers were 'interesting.'
- They were less likely to feel that teachers were grading students fairly.
- They were more likely to believe they were in control of their fate.
- They were no different in absenteeism, rates of unexcused tardiness, hours spent doing homework and reading for pleasure and the likelihood of taking SAT or ACT tests.
- They did, however, have slightly lower math test scores and GPAs and lower scores on college admissions tests. They were slightly less likely to believe that they will graduate from college before age 30.

#### Employment

- They were much more likely to have worked for pay. Hours worked per year were 47 to 80 percent higher.
- Job satisfaction and wage rates were no different. They were slightly more likely to have worked in a sales job but otherwise the occupations were no different.

Different school-to-work programs recruit students from different backgrounds.

Participants in career major and tech prep programs, for example, tended to come from lower income backgrounds, while those who spent time shadowing someone at work were from higher income backgrounds. Thus, the findings for participation in one or more STW program just

presented cannot be extrapolated to each individual STW program. Consequently, we present below an analysis of the characteristics of participants for each STW program.

### **1. Career Major programs**

The NLS-97 surveys defined Career Major as ‘a sequence of courses based on an occupational goal.’ In the survey of schools attended by NLS-97 students, only 20 percent of the principals said their school offered career majors (Visser et al 1998). Students, however, adopted a more inclusive definition of ‘career major’ for a remarkably high 17.6 percent of high school students reported having been in career major programs in the previous 20 months. Apparently, as students define it, “career major” is a more inclusive less focused program than the one most STW professionals have in mind when they use the term.<sup>i</sup> Many more students report having participated in a career major program than any other kind of STW activity.

How do these ‘career major’ [broadly defined] students compare to other students? The fourth column of Tables 1A through 3A presents data on the characteristics of students who have participated in career major programs. When compared with other students, students say they are in a Career Major program...

Come from less well off families who were more likely to have received government transfers at some time in the past. They were less likely to be college educated and more likely to come from a single parent family. They were more likely to be African-American and less likely to be White, Asian and Hispanic. They were more likely to be members of a Baptist or Pentecostal Church and less likely to be Jewish. Their home-risk and environmental risk scales were higher.

They were more likely to live in a central city and less likely to live in a suburb. They were more likely to be attending a vocational high school and less likely to be attending private high schools. Participation rates were lower at small schools and at schools with very high or very low pupil-teacher ratios.

They were more likely to live in unsafe neighborhoods. They were more likely to report gangs in the neighborhood, having had their house broken into and having seen someone shot before reaching age 12. They were also more likely to have been repeatedly bullied



when they were young. Their peers were less likely to plan to attend college, more likely to cut classes and more likely to cheat on tests and assignments.

Students who took part in Career Major programs were much less likely to describe themselves as being in the general track and more likely to describe themselves as pursuing a vocational or college prep program. Participants were more likely to have taken algebra, geometry and lab science courses during the last 20 months. They were much more likely to have taken computer, shop/industrial arts and home economics courses.

They were less likely to feel that teachers were interesting, more likely to feel that grading was unfair and more likely to be late to school. They had lower math test scores, lower GPAs and lower scores on college admissions tests. They were slightly less likely to believe that they will graduate from college before age 30.

They were much more likely to have worked for pay. Hours worked per year were 47 to 80 percent higher. Job satisfaction and wage rates were no different. They were slightly more likely to have worked in a sales job but otherwise the occupations were no different.

## **2. Visiting Work Sites as part of a STW program**

According to the NLS-97 school survey, 84 percent of schools offer one or more kinds of work-based learning opportunities (Visser et al 1998). The student survey found that 9.7 percent of students have visited or worked at a work site as part of a STW program during the previous 20 months.

The fifth column of Tables 1A through 3A presents data on the characteristics of students who have visited work sites as part of a STW program. When compared with other students, the students who visited work sites:

Were less likely to have foreign-born parents, less likely to be Asian and were more likely to be a non-Baptist Protestant. They were more likely to attend a large high school. They less frequently reside outside metropolitan areas and tend to live in unsafe neighborhoods.

They were more likely to report gangs in the neighborhood and having seen someone shot before reaching age 12. They were also more likely to have been repeatedly bullied when they were young. Their peers were less likely to plan to attend college, more likely to cut

classes and more likely to cheat on tests and assignments. They were more likely to say discipline is a problem at their school.

Students who visited work sites were much less likely to describe themselves as being in the general track and more likely to be pursuing a vocational or college prep program. Participants were more likely to have taken algebra, geometry and lab science courses during the last 20 months. They were also more likely to have taken computer, shop/industrial arts and home economics courses.

Students who spent time at work sites were more likely to feel that grading and discipline at their school is unfair and that teachers were uninteresting. They had the same GPA but lower math test scores. They were less likely to have taken SAT and ACT tests and less likely to expect to graduate from college.

These students have more employment experience; working on average 50 to 89 percent more than students who did not visit work sites.

### **3. Job Shadowing**

According to the NLS97 school survey, 43 percent of high schools offer students opportunities to shadow workers at their job sites (Visser et al 1998). Eleven percent of high school students in 1998 reported they shadowed a worker in the previous 20 months. The first column of Tables 1B through 3B presents data on the characteristics of students who have participated in job shadowing. The number of stars (\*, \*\*, or \*\*\*) after each number indicates whether the incidence (or value) of this trait for those participating in job shadowing is significantly different from its incidence for those who have not participated in job shadow programs. Students who have done Job Shadowing:

Are more likely to be from intact two-parent high-income families who have never received welfare. Their parents tend to have above average levels of education and risk factors associated with the home were significantly below average. Their parents were also less likely to be foreign-born and less likely to be Hispanic or Asian.

They were more likely to attend a vocational high school and less likely to attend a Catholic or other private high school.

Students who recently participated in a Job Shadow program were less likely to be in the general track and more likely to be in a vocational program. Participants were more likely to have taken computer, shop/industrial arts and home economics courses at some time in their career and more likely to have taken mathematics and lab science courses during the previous 20 months. They watch less TV but in other respect their attitudes toward school and their behavior in school was no different. They were more likely to be female and had higher grade point average and higher math test scores.

They were much more likely to have worked for pay. Hours worked per year were 42 percent higher. Job satisfaction and wage rates were no different.

#### **4. Mentoring programs**

For purposes of this study mentoring was defined as “being matched with an individual in an occupation.” According to the NLS97 school survey, 25 percent of high schools offer students opportunities to be mentored (Visser et al 1998). About 4.85 percent of students said they had participated in a mentoring program through their school during the previous 20 months. While the question asks about mentoring arrangements brokered by the school, it is quite possible that mentoring experiences arranged by other community organizations were also included in the students’ responses.

The second column of Tables 1B through 3B presents data on the characteristics of students who have been mentored. Students who participated in Mentoring programs were...

More likely to be African-American and less likely to be Catholic, White or Asian. They were more likely to live in a central city. Parent’s education, family income and family structure were no different, but their neighborhood appeared to be less safe. They were more likely to report gangs in their neighborhood and to have seen someone shot when they were young.

They were more likely to be attending large high schools and schools with a vocational specialty. School environment tended to be more problematic. Mentored students were more likely to report that class cutting, cheating on tests and assignments and student discipline were problems at their school and that they did not feel safe at school. They were also more likely to have been bullied when they were young. They were less likely to

view their teachers as interesting but just as likely to think their teachers were 'fair graders' and 'good' overall.

Students who have been mentored were much less likely to describe themselves as being in the general track and more likely to describe themselves as pursuing a vocational or a college prep program. They were more likely to have taken algebra, geometry and lab science courses during the last 20 months. They were also much more likely to have taken computer, shop/industrial arts and home economics courses. They spent more time reading for fun and were less likely to be late for school. With respect to absenteeism, grades, test scores and time spent on homework, however, they were no different from other students.

They were much more likely to have worked for pay. Hours worked per year were 46 percent higher. Job satisfaction and wage rates were no different.

## **5. Cooperative Education Programs**

In cooperative education students take part-time jobs that were related to their vocational and academic studies at school. Participants in cooperative education were typically juniors or seniors. According to the NLS97 school survey, 48 percent of high schools offer opportunities to participate in a cooperative education program (Visser et al 1998). A remarkably high 6.7 percent of high school students said they had participated in cooperative education in the previous 20 months. Some say they did not spend time at a job site as part of the program, so our respondents may be using a broader definition of 'cooperative education' than most STW professionals do.

The third column of Tables 1B through 3B presents data on the characteristics of students who report participating in cooperative education. Students who have recently participated in a Coop Education program...

Had less well-educated parents and were more likely to be African-American. Family structure and family incomes were, on the other hand, no different. They spend more time in family activities than students not involved in coop education. They were more likely to live in a small city or metropolitan area.

They were more likely to live in unsafe neighborhoods. They were more likely to report gangs in the neighborhood, having had their house broken into and having seen someone shot before reaching age 12. Their peers were less likely to plan to attend college, more likely to cut classes and more likely to cheat on tests and assignments. Discipline was more likely to be a problem at the school.

Students who took part in cooperative education programs were much less likely to describe themselves as being in the general track or a pure college prep track and more likely to describe themselves as pursuing a vocational program or a program combining vocational with college prep. Participants were more likely to have taken Algebra I and geometry and other introductory math courses. They were also much more likely to have taken math and science classes during the last 20 months. They were also much more likely to have taken computer, shop/industrial arts and home economics courses.

They were less likely to feel that teachers were interesting, more likely to feel that grading was unfair and more likely to be late to school. They had lower math test scores, lower GPAs and lower scores on college admissions tests. They were less likely to believe that they will graduate from college before age 30.

They have worked nearly twice as many hours since the age of 14. Job satisfaction and wage rates on these jobs were no different.

## **6. School-Sponsored Enterprises**

School-sponsored enterprise was defined as “the production of goods or services by students for sale or use by others.” According to the NLS97 school survey, 19 percent of high schools offer students the opportunity to work in a School-Sponsored Enterprise (Visser et al 1998). In the 1998 survey of students, 5.5 percent said they participated in a school-sponsored enterprise in the past 20 months. Here again students were reporting a higher rate of participation in the program than probably many STW professionals would have expected.

The fourth column of Tables 1B through 3B presents data on the characteristics of students who have worked in a School-Sponsored Enterprise. Students who participated in a School-Sponsored Enterprise ...

Were slightly more likely to be African-American, more likely to be female and less likely to be Hispanic. They were more likely to be non-Baptist Protestants. The home-risk index developed by the National Opinion Research Corporation was lower for students working in school-sponsored enterprises. They were also more likely to do things as a family.

They were less likely to live in a small city or metropolitan area. In other respects, students working in school-sponsored enterprises live in neighborhoods that were much like the neighborhoods that other students live in.

They were more likely to attend vocational high schools and private high schools. They were more likely to report that their school had discipline problems and that their peers were not likely to go to college. But in other respects attitudes towards their school were no different.

Students who took part in School-Sponsored Enterprise programs were less likely to describe themselves as being in the general track and more likely to describe themselves as pursuing a vocational program or a program combining vocational with college prep. These students were more likely to have taken science, mathematics and computer courses in the previous 20 months. They were also more likely to have taken industrial arts and home economics courses.

Students who worked in a School-Sponsored Enterprise had higher grade point averages.

Unlike participants in other STW programs, students who work in school-sponsored enterprises were not more likely to have worked for pay.

## **7. Tech Prep**

Tech Prep is defined as “a planned program of study with a defined career focus that links secondary and post-secondary education.” Fifty percent of high schools said they offer a Tech-Prep program (Visher et al 1998). About 6.4 percent of students said they participated in such a program in the past 20 months.

The fifth column of Tables 1B through 3B presents data on the characteristics of students who participated in Tech Prep. Students who participated in a Tech prep. program...

Came from families whose incomes are about 20 percent lower than the incomes of families whose children were not in a Tech-Prep program. Their families were about 8 percentage points more likely to have received government transfers at some time in the past. Their parents were less likely to be college educated. They were more likely to be African-American and less likely to be Asian. They were more likely to be members of a Baptist or Pentecostal Church and less likely to be Jewish, Catholic or from one of the other Protestant denominations. Their environmental risk scales were higher. The family spent less time together doing fun activities and educational enrichment materials and activities were less common.

They were more likely to live in a central city and less likely to live in a suburb. They were more likely to be attending a vocational high school and less likely to be attending private high schools. Participation rates were lower at small schools and at schools with very low pupil-teacher ratios.

They were more likely to live in unsafe neighborhoods. They were more likely to report gangs in the neighborhood and hearing gunshots in the neighborhood. They were also more likely to have been repeatedly bullied when they were young. Their peers were less likely to plan to attend college and more likely to cut classes. They are more likely to report discipline problems at their school and say they do not feel safe at school.

Students who took part in Tech-Prep programs were much less likely to describe themselves as being in the general track and much more likely to describe themselves as pursuing a vocational or college prep program. Forty-four percent said they were in a college prep program. Participants were more likely to have taken algebra, geometry and lab science courses during the last 20 months. They were also much more likely to have taken computer, shop/industrial arts and home economics courses.

They were less likely to feel that teachers were interesting, more likely to feel that grading was unfair and more likely to be absent or late in getting to school. They had lower GPAs and lower scores on college admissions tests. They were also less likely to have taken a college admissions test. They were considerably less likely to believe that they will graduate from college before age 30. They were less optimistic about their future and about their ability to control their fate.

They were much more likely to have worked for pay. Time in paid employment was 58 percent higher. Job satisfaction and wage rates were no different. They were slightly more likely to have worked in an operative or laborer jobs and slightly less likely to have worked in a managerial, technical or professional occupation since age 14.

## **8. Internships and Apprenticeships**

Internships and apprenticeships were defined as “working for an employer to learn about a particular occupation or industry.” According to the NLS97 school survey, 25 percent of high schools offer internship opportunities and 20 percent offer apprenticeship opportunities (Visser et al 1998). About 4.5 percent of high school students report having interned or apprenticed with an employer in the past 20 months.

The sixth column of Tables 1B through 3B presents data on the characteristics of students who have had an internship or apprenticeship. Students who participated in an internship and apprenticeship programs...

Are from families with similar educational backgrounds, similar incomes and similar family structure to families of children who did not do an internship or apprenticeship. They were, in fact, slightly less likely to have received government transfers in the past. They were more likely to be Hispanic, more likely to be Jewish and less likely to be Catholic.

They were more likely to live in a small city or a large metropolitan area. They were less likely to be attending private high schools. Participation rates were lower at small schools and at schools with very high pupil-teacher ratios.

They were slightly more likely to live in unsafe neighborhoods. They were more likely to have seen someone shot before they were twelve. Their peers were less likely to plan to attend college, less likely to participate in extra-curricular activities and more likely to cut classes. They were more likely to report discipline problems at their school.

Students who did an internship or apprenticeship were much less likely to describe themselves as being in the general track and much more likely to describe themselves as pursuing a vocational program. Forty percent said they were in a college prep program. Participants were more likely to have taken algebra, geometry and lab science courses during the last 20 months. They were also much more likely to have taken computer, shop/industrial arts and home economics courses.



They were more likely to feel that grading was unfair and had lower math test scores. They spent above average amounts of time doing homework and reading for pleasure at home. Their GPAs were average and scores on college admissions tests were only slightly lower. Their expectations about completing college were no different but they were more likely to have taken a college admissions test.

They were much more likely to have worked for pay. Time in paid employment was double that of other students. Job satisfaction and wage rates were significantly higher. They were more likely to have worked in a clerical, craft, operative or laborer jobs in the past.

**Table 1-A**  
**Family Characteristics of Students**  
**in School-to-Work Programs in 1997 or 1998**

	Did not Participate in School-to-Work		Any School-to- Work	Career Major	Time at Work Site
	Mean	Std Dev.	Mean	Mean	Mean
Number of Students	4776		2649	1248	676
Family Income	\$50,858	\$43,158	\$49,938	\$46,134***	\$50,006
Ever Received Government Aid	.420	.50	.431	.451**	.436
Parent High School Grad [at least 1 in HH]	.872	.382	.898***	.889	.901*
Parent College Grad [at least 1 HH memb.]	.311	.436	.279***	.24***	.289
Parent yrs of schooling after HS	1.62	2.25	1.79***	1.4***	1.68
Living with both Biological Parents	.523	.5	.552**	.498***	.497**
Two Parent Family-1 biological Parent	.152	.329	.128***	.148	.155
Single Parent Family	.268	.459	.26	.299***	.281
Parents Foreign Born	.119	.368	.108	.121	.093*
Children under 18 in the Household	2.05	1.33	1.93***	1.95*	1.85***
<b>Ethnicity</b>					
White (incl. Hispanic)	.716	.491	.73	.683***	.735
African-American (incl. Hispanic)	.18	.432	.143***	.201***	.158
Asian	.016	.152	.032***	.015***	.011***
Native American (incl. Hispanic)	.006	.08	.008	.001***	.006
Hispanic	.111	.412	.129**	.122	.104
<b>Religion</b>					
Catholic	.259	.456	.278*	.259	.249
Baptist or Pentecostal Church	.233	.431	.207**	.239**	.198
Other Protestant	.333	.453	.328	.331	.377***
Jewish	.012	.105	.015	.007**	.017
Other Religion	.033	.17	.037	.033	.034
No Religion	.122	.315	.118	.122	.119
<b>Parental Style</b>					
Home Risk Scale--97	250.	234	241.	275.***	245.
Environmental Risk Scale--97	113.	141	116.	125.**	120.
Enrichment Materials and Activities-97	1.83	.77	1.85	1.82	1.85
Index of Family Routines--97	14.9	5.56	15.1**	14.7	15.1
Family does fun activity [times/week]	2.02	1.91	1.97	1.87*	1.99
<b>Neighborhood</b>					
House Has been Broken Into	.132	.344	.146*	.158**	.144
Gangs in the Neighborhood	.387	.485	.447***	.478***	.454**

Saw Someone Shot before 12 yrs old	.074	.289	.094***	.105***	.099*
Heard Gunshots in typical week--97	.176	.396	.184	.221***	.185
Live outside Metropolitan Area	.196	.380	.196	.191	.165**
Live in Central City of MSA	.252	.446	.268	.287***	.275
Live in Suburb of MSA	.489	.489	.470**	.452**	.501

**Table 1-B**  
**Family Characteristics of 9<sup>th</sup> + Graders**  
**in School-to-Work Programs**

	Job Shadow	Mentoring	Coop. Education	School Enterprise	Tech Prep	Apprenticeship
	Mean	Mean	Mean	Mean	Mean	Mean
Number of Students	776	343	464	398	461	312
Family Income	54,574**	52,354	48,506	52,279	40,943***	49,841
Ever Received Government Aid	.377***	.442	.457	.412	.498***	.370*
Parent HS Grad [at least 1 in HH]	.901*	.905	.914**	.91*	.898	.879
Parent College Grad [at least 1 in HH]	.326*	.284	.245***	.291	.205***	.272
Parent yrs of schooling after HS	1.84	1.63	1.49**	1.8	1.24***	1.59
Living with both Biological Parents	.582**	.567	.508	.538	.518	.522
2 Parent Family--1 biological	.127	.119	.154	.173**	.161	.114
Single Parent Family	.242	.246	.294	.243	.28	.267
Parents foreign Born	.084***	.119	.111	.103	.094	.103
Children under 18 in the Household	1.91**	1.91	1.99	1.93	1.87**	1.74***
<b>Ethnicity</b>						
White	.749	.655***	.706	.709	.703	.703
African-American	.164	.239***	.202***	.187*	.201***	.183
Asian	.015**	.008**	.016	.026	.006***	.01*
Native American	.01	.018**	.008	.011	.004	.005
Hispanic	.087***	.112	.099	.09**	.111	.155*
<b>Religion</b>						
Catholic	.264	.223**	.244	.258	.234*	.212**
Baptist or Pentecostal Church	.21	.25	.255**	.197	.304***	.232
Other Protestant	.347	.346	.302	.377**	.291*	.372
Jewish	.01	.012	0***	.011	.003**	.03**
Other Religion	.029	.051	.052**	.042	.031	.029
No Religion	.134	.104	.13	.114	.136	.122
<b>Parenting Style</b>						
Home Risk Scale	212.***	258.	260.	217.**	268.	250.
Environmental Risk Scale	110.	118.	119.	110.	131.*	128.
Enrichment Materials and Activities	1.93***	1.93	1.84	1.91	1.74**	1.73
Index of Family Routines	15.2	14.5	14.8	15.1	14.7	15.5
Family does fun activity [times/week]	2.07	2.04	2.23*	2.22**	1.86***	2.34**
<b>Neighborhood</b>						
House Has been Broken Into	.152	.156	.175**	.132	.147	.145
Gangs in the Neighborhood	.423	.502***	.522***	.428	.498***	.424
Saw Someone Shot before 12 yrs old	.079	.112**	.121***	.100	.101	.108*
Heard Gunshots in typical week--97	.153	.202	.206	.161	.262***	.229
Live outside Metropolitan Area	.184	.165	.141***	.163*	.250***	.143***
Live in Central City of MSA	.259	.305**	.270	.278	.261	.263
Live in Suburb of MSA	.486	.467	.512	.489	.427**	.512

**Table 2-A**  
**Courses Taken by 9<sup>th</sup> + Graders**  
**in School-to-Work Programs**

	Non-Participant In School-to-Work		Any School- to-Work	Career Major	At Work Site in School Hrs
	Mean	Std Dev.	Mean	Mean	Mean
Number of Students	4776		2649	1248	676
Female	.48	.50	.50	.49	.56***
Age	15.7	1.40	16.1	16.2***	16.3***
Victim of Repeated Bullying prior to 12	.187	.389	.210**	.215*	.219*
Grade Point Average in 8 <sup>th</sup> Grade	2.95	.843	2.89***	2.83***	2.88
Percentile in Math--PIAT	53.4	34.6	51.7*	49.5***	48.5***
# Times Late without an Excuse in 1997	1.86	5.91	1.96	2.20**	2.21
# Absences in Fall Term in 1997	4.11	5.93	4.29	4.35	4.25
<b>High School Program</b>					
General Track	.587	.488	.483	.425	.497
College Prep	.339	.463	.312	.292	.271
Vocational Program	.028	.176	.092	.124	.105
Vocational & College Prep	.027	.173	.095	.14	.106
<b>Academic Course Taking</b>					
Ever Took Algebra I	.765	.437	.812	.827	.806
Ever Took Geometry	.427	.489	.461	.471	.475
Ever Took Algebra II	.302	.448	.333	.354	.336
# Of Advanced Courses ever [Trig +]	.239	.58	.247	.256	.274
# Other Math courses ever [below Trig.]	.833	.829	.904	.93	.949
# Math Courses since 97	1.77	1.03	1.9	1.95	1.99
# Science Courses since 97	1.26	.736	1.37	1.38	1.41
<b>Computer and Vocational Courses</b>					
# Computer courses taken before 1997	1.23	1.01	1.36	1.37	1.36
# Comp. Literacy & Word Process-since 97	.691	.775	.868	.891	.926
# Advanced Computer Courses since 97	.094	.301	.138	.152	.124
Took Shop/Industrial Arts-ever	.364	.473	.450	.458	.505
Took Home Economics-ever	.417	.49	.517	.531	.55
<b>Pupil-Teacher Ratio</b>					
Pupil-Teacher Ratio less than 14	.275	.443	.252	.233	.245
Pupil Teacher Ratio between 18 & 22	.213	.411	.249	.256	.272
Pupil Teacher Ratio above 22	.151	.374	.127	.122	.111
<b>Type and Size of School</b>					
Public School	.881	.313	.887	.886	.878
Vocational High School	.009	.098	.033	.053	.042
Catholic High School	.042	.189	.027	.021	.03
Other Religion—Private High School	.025	.141	.016	.003	.022
Nonsectarian Private High School	.015	.111	.010	.009	.008
High School Larger than 1000 students	.597	.485	.641	.689	.672
High School Smaller than 500 students	.160	.349	.114	.08	.106

**Table 2-B**  
**Courses Taken by Students**  
**in School-to-Work Programs**

	Job Shadow	Mentoring	Coop Educ.	School Enterprise	Tech Prep	Apprenticeship
	Mean	Mean	Mean	Mean	Mean	Mean
Number of Students	776	343	464	398	461	312
Female	.535***	.546**	.463	.552**	.424***	.548**
Age	16.1***	16.2***	16.4	15.8	16.3***	16.6***
Victim of Repeated Bullying prior to 12	.194	.275***	.213	.199	.252***	.217
Grade Point Average in 8 <sup>th</sup> Grade	2.92*	2.97	2.85**	3.03**	2.82***	2.87
Percentile in Math--PIAT	55.4*	53.3	47.5***	53.4	52.8	45.2***
# Times Late without Excuse in 1997	1.75	1.32*	2.14	1.60	2.54**	2.27
# Absences in Fall Term in 1997	4.45	4.42	4.56	3.92	4.73***	4.49
<b>High School Program in 1998</b>						
General Track	.516*	.465***	.425***	.479***	.38***	.458***
College Prep	.339	.377	.249***	.327	.263***	.333
Vocational Program	.072***	.081***	.128***	.078***	.168***	.105***
Vocational & College Prep	.06	.068	.166***	.099***	.177***	.071
<b>Academic Course Taking</b>						
Ever Took Algebra I	.801	.862***	.863***	.787	.837***	.821
Ever Took Geometry	.421	.509***	.513***	.453	.505***	.58***
Ever Took Algebra II	.307	.393***	.341	.353	.325	.44***
# Of Advanced Courses ever [Trig +]	.26	.308	.248	.293	.176***	.404***
# Other Math courses ever [below Trig.]	.837	1.02***	.954***	.928	.96***	1.13***
# Math Courses since 97	1.91***	2.14***	2.02***	2.07***	1.95***	2.06***
# Science Courses since 97	1.40***	1.48***	1.44***	1.44***	1.41***	1.55***
<b>Computer and Vocational Courses</b>						
# Computer courses taken before 1997	1.44***	1.47***	1.42***	1.58***	1.44***	1.48***
# Comp. Literacy & Word Process-after 97	.887***	.963***	.969***	1.02***	1.01***	.978***
# Advanced Computer Courses after 97	.139***	.18***	.181	.203***	.16***	.184***
Took Shop/Industrial Arts-ever	.466***	.47***	.503***	.448***	.516***	.474***
Took Home Economics-ever	.552***	.549***	.581***	.504	.515***	.55***
<b>Pupil-Teacher Ratio</b>						
Pupil-Teacher Ratio less than 14	.253	.209**	.227	.265	.19***	.248
Pupil Teacher Ratio between 18 & 22	.278***	.289***	.237	.222	.274***	.254
Pupil Teacher Ratio above 22	.098***	.143	.158	.153	.12	.099
<b>Type and Size of School</b>						
Public School	.908**	.87	.864	.856*	.884	.88
Vocational High School	.032***	.032***	.067***	.034***	.076***	.024
Catholic High School	.023***	.041	.016***	.043	.003***	.018
Other Religion—Private High School	.011	.019	.009	.031	.019	.021
Non-Sectarian Private High School	.005***	.008	.006	.013	.014***	.018
High School larger than 1000	.632	.689***	.694***	.631	.616	.719***
High School Smaller than 500	.124	.074***	.124	.144	.105***	.05***

**Table 3-A**  
**School Behavior and Work Behavior of 9<sup>th</sup> + Graders**  
**in School-to-Work Programs**

	Non-Participant In School-to-Work		Any School-to- Work	Career Major	At Work Site in School Hours
	Mean	Std Dev.	Mean	Mean	Mean
Number of Students	4776		2649	1248	676
Homework [hours per week]	5.49	5.24	5.37	5.25	5.43
Television [hours per week]	17.5	13.70	17.4	18.4*	16.9
Reading for Pleasure [hours per week]	2.94	4.98	3.01	2.66*	3.45*
Teacher Good-97	.890	.326	.889	.879	.899
Teachers interesting-97	.882	.333	.866	.843***	.843***
Teachers grade Fairly--97	.847	.337	.814***	.808***	.773***
Discipline is Good--97	.749	.437	.710***	.694***	.691***
Feel Safe at school--97	.886	.339	.880	.861***	.881
Disruptions get in way of my learning--97	.395	.485	.377	.358**	.365
Students cheat on Tests & Assignments--97	.564	.494	.599***	.610**	.616***
Student is Optimistic--98	1.39	1.90	1.449**	1.408	1.373
% Peers participate sports & school activities	.676	.242	.674	.670	.668
% Peers plan to go to college	.666	.249	.652***	.638***	.643**
% Peers cut class in school	.309	.285	.364***	.387***	.406***
Student- % Chance College Degree by 30	79.6	28.1	76.3***	75.4***	72.6***
Parent- % Chance College Degree by 30	76.6	29.3	73.2***	71.1***	68.5***
Ever Taken SAT or ACT tests	.47	.497	.469	.445	.43
Math SAT-1 Score	542	127	510***	510***	524
Verbal SAT-1 Score	532	112	511***	493***	512
Mean ACT Score	22.6	4.72	21.9	21.5	22
<b>Work Behavior</b>					
Total Hours worked for Wages since 14	456	815	730***	749***	850***
Hours Worked for Wages in 1995	27.2	125	48.6***	43.2	60.7***
Hours Worked for Wages in 1996	62	189	101***	97***	120***
Hours Worked for Wages in 1997	137	297	216***	228***	256***
Hours Worked for Wages in 1998	233	379	343***	363***	387***
Average Wage on Jobs since 1997	\$5.54	196	\$5.58	\$5.55	\$5.52
Job satisfaction	2.76	.94	2.74	2.72	2.75
<b>Occupation</b>					
Sales occupation-Share since 1997	.211	.371	.234**	.247**	.234
Service occupation-share since 1997	.409	.457	.39	.381	.407
Laborer & Operative share since 1997	.217	.382	.212	.224	.194
Craft occupation share since 1997	.026	.142	.026	.027	.02
Clerical occupation share since 1997	.088	.264	.098	.085	.109
Manager, Professional & Technical occupation share since 1997	.044	.179	.037	.032	.029

**Table 3-B**  
**School Behavior and Characteristics of Students**  
**in School-to-Work Programs**

	Job Shadow	Mentoring	Coop. Educ.	School Enterprise	Tech Prep	Apprenticeship
	Mean	Mean	Mean	Mean	Mean	Mean
Number of Students	776	343	464	398	461	312
Homework [hours per week]	5.59	5.98	4.99	5.86	5.25	6.80***
Television [hours per week]	16.0***	16.6	18.7	16.4	18.8	17.5
Reading for Pleasure [hours per week]	2.94	4.54***	3.32	3.25	3.01	4.00**
Teacher Good-97	.90	.90	.87	.89	.88	.86
Teachers interesting-97	.89	.83***	.83***	.86	.83***	.88
Teachers grade Fairly--97	.84	.83	.77***	.81	.78***	.76***
Discipline is Good--97	.74	.693*	.643***	.686**	.653***	.682**
Feel Safe at school--97	.901	.841**	.879	.864	.859*	.868
Disruptions get in way of my learning--97	.367	.372	.363	.362	.409	.350
Students cheat on Tests & Assignments--97	.575	.625*	.636***	.562	.594	.650
Student is Optimistic--98	1.44	1.59	1.27	1.58	1.15**	1.27
% Peers participate sports & school activities	.676	.687	.653**	.698**	.650**	.628***
% Peers plan to go to college—97	.650	.659	.635**	.663	.631***	.638*
% Peers cut class in school--97	.352**	.399***	.417***	.354*	.380***	.429***
Stud.- % Chance College Degree by 30	77.4	81	73.6**	80.7	67.1***	78.6
Parent- % Chance College Degree by 30	72.6	76.8	70.9**	79.3	66***	76.4
Ever Taken SAT or ACT tests	.474	.486	.432	.55**	.433	.594***
Math SAT-1 Score	519	507	499	521	493	500**
Verbal SAT-1 Score	531	520	502	527	461***	503
Mean ACT Score	22	24.3**	20.4**	22.1	19.1***	22.8
<b>Work Behavior</b>						
Total Hours worked for Wages since 14	751***	793***	1004***	565	846***	1170***
Hours Worked for Wages in 1995	63***	55**	53**	48	60***	71.1***
Hours Worked for Wages in 1996	122***	125***	136***	77.8	102**	157***
Hours Worked for Wages in 1997	224***	232***	293***	151	264***	359***
Hours Worked for Wages in 1998	331***	366***	472***	273	400***	518***
Average Wage on Jobs since 1997	\$5.70	\$5.58	\$5.41	\$5.49	\$5.55	\$5.79*
Job Satisfaction	2.76	2.74	2.76	2.74	2.65	2.90*
<b>Occupation</b>						
Sales occupation-Share since 1997	.219	.242	.206	.247	.229	.247
Service occupation-share since 1997	.423	.386	.389	.392	.364	.35
Laborer & Operative share since 1997	.2	.205	.22	.192	.257*	.15**
Craft occupation share since 1997	.025	.032	.025	.028	.039	.053***
Clerical occupation share since 1997	.099	.093	.121*	.094	.083	.138**
Manager, Professional & Technical occupation share since 1997	.031	.035	.031	.045	.023*	.056

**Table 4**  
**Characteristics of Work Site Visits that Were Part of**  
**School-to-Work Programs**

	Non-Participant In School-to-Work		Any School- to-Work	Career Major	At Work Site in School Hours
	Mean	Std Dev.	Mean	Mean	Mean
Number of Students visiting work site					676
Visit or work at worksite	-		4.41	4.97**	6.84***
Total Hours at work site in 1998	-		80.8	81.5	83.4
Paid for work in 1998	-		.182	.197	.201**
Work Related to class work	-		.176	.26***	.2**
Employer provides Written Evaluation	-		.362	.469***	.406***

	Job Shadow	Mentor- ing	Coop. Educ.	School Enter- prise	Tech Prep	Appren- ticeship
	Mean	Mean	Mean	Mean	Mean	Mean
Number of Students visiting work site						
Visit or work at worksite	3.43***	5.81***	6.64***	3.3**	2.63***	7.99***
Total Hours at work site in 1998	53.2***	71.4	165***	49.7*	62.4	176***
Paid for work in 1998	.097***	.171	.373***	.093***	.122**	.376***
Work Related to class work	.128***	.169	.281***	.26***	.303***	.187
Employer provides Written Evaluation	.324	.413**	.519***	.329	.407	.553***

**References**

Visher, Mary and Doug Lauen, Linda Merola and Elliot Medrich. *School to Work in the 1990s*. Berkeley: MPR associates, August 1998, 1-54.



**Appendix**

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<sup>i</sup> STW Progress Measures provides data on numbers of students participating in various kinds of STW activities at the 7982 high schools that were part of STW partnerships. They estimate that in 1997 these schools had one million secondary school students in classes with a career-related curriculum.