

### III. Descriptive Data and Teacher Effectiveness

#### A. Descriptive Characteristics

Descriptive data were collected in the beginning of each school year on profiles of each school and system, principal, teacher, and teacher aide participating in Project STAR (See Appendix C for profile instruments.) This section contains information obtained from descriptive data collected across the four years of the study.

#### 1. School and System Profile Data

Completed STAR school and system profiles contain information on school enrollment, average daily attendance (ADA) and average daily membership (ADM), Chapter I eligibility, percent of free/reduced lunch, percent of students bussed, percent of race, grade span, system enrollment, total expenditure per pupil and location in the state. STAR schools were located in the eastern (n=21), the middle (n=33), and the western (n=25) portions of the state. Support for STAR was provided by four universities in Tennessee: University of Tennessee, Knoxville personnel worked with 21 schools in East Tennessee, Memphis State University with 25 schools in West Tennessee, Tennessee State University with 20 schools and Vanderbilt University with 13 schools in Middle Tennessee. The project schools were in school systems of all sizes. Table III-1 shows the STAR schools classified by system size. ADA figures for kindergarten through third grade are shown in Table III-2. ADM figures are shown in Table III-3.

Out of a total of 79 schools in STAR kindergarten, 64 were eligible for Chapter I and 15 were not. Out of a total of 76 during the STAR first grade year, 63 were eligible for Chapter I and 13 were not. Out of 75 in the second grade year, 66 were eligible and 9 were not. In the third grade year, out of a total of 75, 62 were and 13 were not eligible for Chapter I.

**TABLE III-1**

**Number of Schools by System Size (Number of Students) and by Grade  
Project STAR (1985-89)**

	Number of Schools			
	Kindergarten	1st Grade	2nd Grade	3rd Grade
System Size (Student Enrollment)				
Under 1,000	1	1	3	2
1,001 - 5,000	27	26	24	27
5,001 - 10,000	18	16	16	14
10,001 - 100,000	13	14	13	13
100,001 - 107,000	20	19	19	19
<b>Total Number of Schools</b>	<b>79</b>	<b>76</b>	<b>75</b>	<b>75</b>

**TABLE III-2**

**STAR Average Daily Attendance (ADA) of Students  
by Number of Schools and by Grade\* (1986-89)**

ADA	Number of Schools		
	1st Grade	2nd Grade	3rd Grade
Under 400 Students	11	10	9
401-500 Students	21	16	14
501-700 Students	31	34	38
701-1,000 Students	13	15	14
<b>Total Number of Schools</b>	<b>76</b>	<b>75</b>	<b>75</b>

\*This information was not collected during Kindergarten (1985).

**TABLE III-3**

**STAR Average Daily Membership (ADM) of Students  
by Number of Schools and by Grade\* (1986-89)**

ADM	Number of Schools		
	1st Grade	2nd Grade	3rd Grade
Under 400 Students	10	8	7
401-500 Students	16	13	12
501-600 Students	15	22	24
601-700 Students	20	17	17
701-1,000 Students	15	15	15
<b>Total Number of Schools</b>	<b>76</b>	<b>75</b>	<b>75</b>

\*This information was not collected during kindergarten (1985).

The percentage of students on free/reduced lunch was divided into two categories: 1) schools with 50 percent or less of their students on free/reduced lunch and 2) schools with more than 50 percent of their students on free/reduced lunch. The percent of students on free/reduced lunch for each year of the study is shown in Table III-4.

**TABLE III-4**  
**Percent of Students on Free/Reduced Lunch**  
**by Number of Schools and by Grade**  
**Project STAR (1985-89)**

Percent of Students on Free/Reduced Lunch	Number of Schools			
	Kindergarten	1st Grade	2nd Grade	3rd Grade
50% Or Less	55	46	49	44
More Than 50%	24	30	26	31
<b>Total Number of Schools</b>	<b>79</b>	<b>76</b>	<b>75</b>	<b>75</b>

In the Project STAR kindergarten year, 32 schools had 50 percent or fewer students bussed and 47 had over 50 percent bussed. Out of a total of 76 schools in the first grade year, 33 had 50 percent or fewer students bussed and 43 had over 50 percent bussed. In second grade, out of a total of 75, 30 schools had 50 percent or fewer students bussed and 45 had over 50 percent bussed. In third grade, 29 schools had 50 percent or fewer students bussed and 46 had over 50 percent bussed.

The percent of race by school was reported according to white students, black, Asian, Hispanic, American Indian, and "Other." In the kindergarten year, out of 79 schools, 19 had 50 percent or fewer white students, and 60 had over 50 percent; 60 had 50 percent or fewer black students and 19 had over 50 percent; all schools had less than 2 percent Asian, Hispanic and American Indians. In the first grade, out of 76 schools, 18 had 50 percent or fewer white students and 58 had over 50 percent; 58 had 50 percent or fewer black students and 18 had over 50 percent; and all had 3 percent or less Asian, 1 percent or less Hispanic, no American Indians and 1 percent or less "Other." In the second grade, out of 75 schools, 20 had 50 percent or fewer white students and 55 had over 50 percent; 56 had 50 percent or fewer and 19 had over 50 percent black students; and all had 2 percent or less Asian, 6 percent or less Hispanic, 1 percent or less American Indians, and 3 percent or less "Other." In the third grade, out of 75 schools, 19 had 50 percent or fewer white students and 56 had over 50 percent; 56 had 50 percent or fewer black students and 19 had over 50 percent; and all had 3 percent or less Asian, 5 percent or less Hispanic, 2 percent or less American Indians, and 1 percent or less "Other."

The grade span for the majority of STAR schools ranged from kindergarten through sixth grade for all four project years, although some schools had a grade span of kindergarten through ninth grade. The average total expenditure per student for the STAR kindergarten year was \$2,035.07; for the first grade year, \$2,218.40; for the second grade year, \$2,356.56; and for the third grade year, \$2,641.71.

## 2. Principal Profile Data

All Project STAR principals completed principal profiles: 79 in kindergarten (1985-86), 76 in first grade (1986-87), 75 in second grade (1987-88) and 75 in third grade (1988-89). Principal profiles included information on principal sex, race, college or university attended, teacher certification, teaching experience, administrative experience and career ladder level.

The number of female principals in the kindergarten year was 18 and male was 61 out of a total of 79. In first grade, female principals numbered 21 and males 55 out of 76. Female principals in second grade numbered 22 and males 53 out of 75. During the third grade year, 23 principals were female and 52 principals were male out of 75.

Out of a total of 79 principals in kindergarten, 18 were non-white (NW) and 61 were white (W). Sixteen principals were NW and 60 were W out of 76 in the first grade. In both the second and third grades, 17 were NW and 58 were W out of a total of 75 principals.

Principals' college/university degrees earned included bachelor's (B.S./ B.A.), master's (M.A./ M.S./ M.Ed.), second master's, specialist (Ed.S.) and doctorate (Ph.D./ Ed.D.). All principals had earned at least a bachelor's degree. Out of 79 principals in the kindergarten year, 17 reported having earned an Ed.S. or Ph.D./Ed.D. Sixteen STAR principals in the first grade reported having received an Ed.S. or Ph.D./Ed.D., 19 in the second grade, and 16 in the third grade year. The colleges/universities having five or more STAR principals as graduates were LeMoyné-Owen College, Memphis State University, Middle Tennessee State University, Tennessee State University and Tennessee Technological University.

All STAR principals were certified to teach. In the kindergarten year, 26 principals had from 0 to 10 years of teaching experience; 28 had from 11 to 20 years; 18 had from 21-30; and 6 had over 30 years. Forty-one STAR principals in the first grade year reported having 0 to 10 years of experience; 27 had 11 to 20 years; 5 had 21 to 30 years; and 3 had over 30 years. In the second grade year, 36 principals had 0 to 10 years of teaching experience; 36 had 11 to 20; and 2 had 21 to 30 years. Thirty-nine principals in third grade had 0 to 10 years of teaching experience; 29 had 11 to 20 years; 5 had 21 to 30; and 1 had over 30 years.

All STAR principals were certified as administrators except for one in the kindergarten year. In kindergarten 34 principals had from 0 to 10 years of administrator experience; 32 had 11 to 20 years; 12 had 21 to 30 years; and 1 had over 30 years. Thirty-seven principals in first grade had from 0 to 10 years of administrator experience; 28 had from 11 to 20 years; and 11 had from 21 to 30 years. In second grade, 39 principals had 0 to 10 years of administrator experience; 27 had from 11 to 20 years; 8 had from 21 to 30 years; and 1 had over 30 years. Thirty-four STAR principals in third grade had from 0 to 10 years of administrator experience, 27 had from 11 to 20 years; and 14 had 21 to 30 years.

STAR principal participation in career ladder was categorized as follows: not on career ladder; on level one; on level two; on level three; and pending. In the kindergarten year, 13 principals were on level one, 2 were on level two, and 31 were pending. Fourteen first grade principals were not on career ladder, 31 were on level one, 4 were on level two, 20 were on level three, and 7 were pending. In second grade, 12 principals were not on career ladder, 29 were on level one, 4 were on level two, and 30 were on level three. In the third grade year, 9 principals were not on career ladder, 30 were on level one, 7 were on level two, and 29 were on level three.

### **3. Teacher Profile Data**

Each STAR teacher completed a teacher profile. Self-reported data included class type, teacher sex, race, college or university attended, degree(s) earned, certification, teaching experience, in-service training (within the last two years), and career ladder level. Table III-5 shows the number of teachers in school types by class types. A total of 339 teachers in kindergarten, 350 in first grade, 344 in second, and 334 in third grade completed teacher profiles.

Table III-6 shows the number of teachers by sex and class type for each year of the study. In kindergarten, there were no male teachers. There were 348 females and 2 male teachers in the first grade, 341 females and 3 males in the second grade, and 323 females and 11 males in the third grade.

In STAR kindergarten, of 339 total teachers, 55 were non-white (NW) and 284 were white (W). In first grade, 64 were NW and 286 were W out of a total of 350 teachers. In second grade, 72 teachers were NW and 272 were W out of a total of 344. In the third grade year, 71 teachers were NW and 263 were white out of a total of 334. The number of STAR teachers by race and class type is shown in Table III-7.

Every STAR teacher had at least a bachelor's degree. Table III-8 shows the number of STAR teachers holding degrees compared to class size. Table III-9 shows the number earning a bachelor's degree from colleges or universities that had ten or more graduates teaching in STAR.

All teachers, during each year of the study, were certified to teach at the appropriate grade level. Project STAR teachers reported from 0 to over 40 years of teaching experience. Table III-10 shows the total number of years of teaching experience by class type.

STAR teachers reported which types (TIMS, reading workshop, math workshop, classroom management, career ladder, taking college courses) of in-service training they had or had not completed during the past two years. The number of teachers completing selected in-service training sessions by class type is shown in Table III-11.

Some STAR teachers (K-3) reported having completed career ladder level one, level two, level three or other. Teacher career ladder levels by class types are shown in Table III-12.

**TABLE III-5****Number of Teachers by School Type, Class Type and Grade  
Project STAR (1985-89)****Kindergarten 1985-86**

School Type	Small	Regular	Regular/Aide	Total
Inner City	28	27	23	78
Suburban	31	20	23	74
Rural	59	52	44	155
Urban	13	8	11	32
<b>Total</b>	<b>131</b>	<b>107</b>	<b>101</b>	<b>339</b>

**First Grade 1986-87**

School Type	Small	Regular	Regular/Aide	Total
Inner City	25	27	23	75
Suburban	28	29	24	81
Rural	62	51	50	163
Urban	12	9	10	31
<b>Total</b>	<b>127</b>	<b>116</b>	<b>107</b>	<b>350</b>

**Second Grade 1987-88**

School Type	Small	Regular	Regular/Aide	Total
Inner City	27	22	24	73
Suburban	31	25	26	82
Rural	64	47	48	159
Urban	13	6	11	30
<b>Total</b>	<b>135</b>	<b>100</b>	<b>109</b>	<b>344</b>

**Third Grade 1988-89**

School Type	Small	Regular	Regular/Aide	Total
Inner City	26	19	22	67
Suburban	32	22	25	79
Rural	69	42	48	159
Urban	13	6	10	29
<b>Total</b>	<b>140</b>	<b>89</b>	<b>105</b>	<b>334</b>

Note: Number of teachers exceeds the number of classes because there were changes of teachers during the year.

**TABLE III-6**

**Number of Project STAR Teachers by Sex and Class Type (1985-89)**

**Kindergarten 1985-86**

Class Type	Female	%	Male	%	Total	%
Small	131	38.6	0	0.0	131	38.6
Regular	107	31.6	0	0.0	107	31.6
Regular/Aide	101	29.8	0	0.0	101	29.8
<b>Total</b>	<b>339</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>339</b>	<b>100.0</b>

**First Grade 1986-87**

Class Type	Female	%	Male	%	Total	%
Small	125	35.9	2	0.0	127	36.3
Regular	116	33.3	0	0.0	116	33.1
Regular/Aide	107	30.7	0	0.0	107	30.6
<b>Total</b>	<b>348</b>	<b>99.4</b>	<b>2</b>	<b>0.6</b>	<b>350</b>	<b>100.0</b>

**Second Grade 1987-88**

Class Type	Female	%	Male	%	Total	%
Small	135	39.6	0	0.0	135	39.2
Regular	99	29.0	1	33.3	100	29.1
Regular/Aide	107	31.4	2	66.7	109	31.7
<b>Total</b>	<b>341</b>	<b>99.1</b>	<b>3</b>	<b>0.9</b>	<b>344</b>	<b>100.0</b>

**Third Grade 1988-89**

Class Type	Female	%	Male	%	Total	%
Small	135	41.8	5	45.5	140	41.9
Regular	85	26.3	4	36.4	89	26.6
Regular/Aide	103	31.9	2	18.2	105	31.4
<b>Total</b>	<b>323</b>	<b>96.7</b>	<b>11</b>	<b>3.3</b>	<b>334</b>	<b>100.0</b>

Note: Number of teachers exceeds the number of classes because there were changes of teachers during the year.

**TABLE III-7**

**Number of Project STAR Teachers by  
Race and Class Type (1985-89)**

**Kindergarten 1985-86**

Class Type	Non-White	%	White	%	Total	%
Small	17	30.9	114	40.1	131	38.6
Regular	22	40.0	85	29.9	107	31.6
Regular/Aide	16	29.1	85	29.9	101	29.8
<b>Total</b>	<b>55</b>	<b>16.2</b>	<b>284</b>	<b>84.0</b>	<b>339</b>	<b>100.0</b>

**First Grade 1986-87**

Class Type	Non-White	%	White	%	Total	%
Small	22	34.4	105	36.7	127	36.3
Regular	19	29.7	97	33.9	116	33.1
Regular/Aide	23	35.9	84	29.4	107	30.6
<b>Total</b>	<b>64</b>	<b>18.3</b>	<b>286</b>	<b>81.7</b>	<b>350</b>	<b>100.0</b>

**Second Grade 1987-88**

Class Type	Non-White	%	White	%	Total	%
Small	27	37.5	108	39.7	135	39.2
Regular	23	31.9	77	28.3	100	29.1
Regular/Aide	22	30.6	87	32.0	109	31.7
<b>Total</b>	<b>72</b>	<b>20.9</b>	<b>272</b>	<b>79.1</b>	<b>344</b>	<b>100.0</b>

**Third Grade 1988-89**

Class Type	Non-White	%	White	%	Total	%
Small	31	43.7	109	41.4	140	41.9
Regular	18	25.7	71	27.0	89	26.6
Regular/Aide	22	31.4	83	31.6	105	31.4
<b>Total</b>	<b>71</b>	<b>21.0</b>	<b>263</b>	<b>78.7</b>	<b>334</b>	<b>100.0</b>

Note: Number of teachers exceeds the number of classes because there were changes of teachers during the year.



**TABLE III-8****STAR Teachers' Highest College/University Degrees Earned  
by Class Type and by Grade (1985-89)\*****Kindergarten 1985-86**

Degree	Small	Regular	Regular/Aide	Total
Bachelor's	87	71	63	221
Master's	41	36	38	115
Specialist	3	0	0	3
Doctorate	0	0	0	0
<b>Total</b>	<b>131</b>	<b>107</b>	<b>101</b>	<b>339</b>

**First Grade 1986-87**

Degree	Small	Regular	Regular/Aide	Total
Bachelor's	82	79	63	224
Master's	44	37	42	123
Specialist	1	0	1	2
Doctorate	0	0	1	1
<b>Total</b>	<b>127</b>	<b>116</b>	<b>107</b>	<b>350</b>

**Second Grade 1987-88**

Degree	Small	Regular	Regular/Aide	Total
Bachelor's	90	67	63	220
Master's	43	32	44	119
Specialist	1	1	1	3
Doctorate	1	0	1	2
<b>Total</b>	<b>135</b>	<b>100</b>	<b>109</b>	<b>344</b>

**Third Grade 1988-89**

Degree	Small	Regular	Regular/Aide	Total
Bachelor's	89	51	51	191
Master's	50	37	52	139
Specialist	1	1	2	4
Doctorate	0	0	0	0
<b>Total</b>	<b>140</b>	<b>89</b>	<b>105</b>	<b>334</b>

Note: Number of teachers exceeds the number of classes because there were changes of teachers during the year.

**Table III-9**

**Colleges/Universities Attended by Ten or More STAR Teachers  
by Project Grade and by Class Type**

<b>Kindergarten 1985-86</b>	<b>Small</b>	<b>Regular</b>	<b>Regular/Aide</b>	<b>Total</b>
Austin Peay State Univ.	5	4	2	11
LeMoyne-Owen College	3	11	7	21
Memphis State Univ.	16	9	11	36
Middle Tenn. State Univ.	15	7	13	35
Tenn. Tech. Univ.	18	7	8	33
UT - Martin	6	4	3	13
East Tenn. State Univ.	6	7	2	15
UT - Knoxville	12	14	9	35
<b>First Grade 1986-87</b>	<b>Small</b>	<b>Regular</b>	<b>Regular/Aide</b>	<b>Total</b>
LeMoyne-Owen College	9	5	6	20
Lincoln Memorial Univ.	2	3	5	10
Memphis State Univ.	9	12	5	26
Middle Tenn. State Univ.	19	12	14	45
Tenn. State Univ.	2	3	5	10
Tenn. Tech. Univ.	11	10	12	33
UT - Knoxville	11	12	9	32
UT - Martin	7	6	11	24
<b>Second Grade 1987-88</b>	<b>Small</b>	<b>Regular</b>	<b>Regular/Aide</b>	<b>Total</b>
Austin Peay State Univ.	4	1	5	10
Carson-Newman College	5	2	4	11
East Tenn. State Univ.	8	4	6	18
LeMoyne-Owen College	11	9	8	28
Memphis State Univ.	6	10	11	27
Middle Tenn. State Univ.	20	5	15	40
Tenn. State Univ.	4	3	4	11
Tenn. Tech. Univ.	14	9	10	33
UT - Knoxville	13	7	5	25
UT - Martin	6	7	6	19
<b>Third Grade 1988-89</b>	<b>Small</b>	<b>Regular</b>	<b>Regular/Aide</b>	<b>Total</b>
East Tenn. State Univ.	6	7	4	17
LeMoyne-Owen Univ.	11	6	8	25
Memphis State Univ.	8	5	8	21
Middle Tenn. State Univ.	15	8	12	35
Tenn. State Univ.	3	4	4	11
Tenn. Tech. Univ.	14	11	6	31
UT - Knoxville	12	8	7	27
UT - Martin	4	3	3	10

**TABLE III-10****STAR Teachers' Total Years Teaching Experience  
by Project Grade (1985-1989) and by Class Type**

Years Experience	Kindergarten*			First Grade		
	Small	Regular	Regular/Aide	Small	Regular	Regular/Aide
0-9	72	59	48	57	61	46
10-19	50	42	45	47	38	37
20-29	9	6	7	15	12	18
30-39	0	0	0	8	4	6
40+	0	0	0	0	1	0

Years Experience	Second Grade*			Third Grade		
	Small	Regular	Regular/Aide	Small	Regular	Regular/Aide
0-9	50	40	37	53	35	30
10-19	59	42	45	58	30	52
20-29	18	11	15	19	21	15
30-39	8	6	10	10	3	8
40+	0	1	0	0	0	0

\*One kindergarten and 2 second grade teachers did not provide this information.

**TABLE III-11****Number of Teachers Completing Selected In-service Training by Grade and by Class Type****First Grade 1986-87**

In-service Choices	Small	Regular	Regular/Aide	Total
TIMS	80	68	69	217
Math Workshop	48	41	40	129
Reading Workshop	67	55	52	174
Classroom Management	60	54	57	171
Career Ladder Workshop	51	47	47	145
Taking College Courses	57	45	45	147

**Second Grade 1987-88**

TIMS	71	50	55	176
Math Workshop	66	51	57	174
Reading Workshop	71	60	56	187
Classroom Management	67	61	62	190
Career Ladder Workshop	63	44	52	159
Taking College Courses	59	47	43	149

**Third Grade 1988-89**

TIMS	55	37	43	135
Math Workshop	69	41	44	154
Reading Workshop	83	45	55	183
Classroom Management	86	54	61	201
Career Ladder Workshop	45	41	40	126
Taking College Courses	69	33	48	150

**TABLE III-12**

**STAR Teacher Career Ladder Levels by Class Type  
and by Grade (1985-89)**

**Kindergarten 1985-86**

	Small	Regular	Regular/Aide	Total
Level I	96	70	80	246
Level II	2	2	2	6
Level III	1	2	0	3
Non-Career Ladder*	19	20	11	50
<b>Total</b>	<b>118</b>	<b>94</b>	<b>93</b>	<b>305**</b>

**First Grade 1986-87**

	Small	Regular	Regular/Aide	Total
Level I	87	73	72	232
Level II	2	0	4	6
Level III	8	4	3	15
Non-Career Ladder*	30	38	28	96
<b>Total</b>	<b>127</b>	<b>115</b>	<b>107</b>	<b>349**</b>

**Second Grade 1987-88**

	Small	Regular	Regular/Aide	Total
Level I	92	64	81	237
Level II	3	1	2	6
Level III	6	5	1	12
Non-Career Ladder*	33	30	23	86
<b>Total</b>	<b>134</b>	<b>100</b>	<b>107</b>	<b>341**</b>

**Third Grade 1988-89**

	Small	Regular	Regular/Aide	Total
Level I	92	59	68	219
Level II	7	3	12	22
Level III	10	7	7	24
Non-Career Ladder*	31	20	18	69
<b>Total</b>	<b>140</b>	<b>89</b>	<b>105</b>	<b>334</b>

\*Includes all teachers who were apprentice, probationary, pending, or not on Career Ladder.

\*\*Thirty-four kindergarten, 1 first grade, and 3 second grade teachers did not provide this information.

Note: Number of teachers exceeds the number of classes because there were changes of teachers during the year.

#### **4. Teacher Aide Profile Data**

Self-reported descriptive data were collected from aides on background characteristics such as age, race, sex, experience as an aide, and educational level. Ninety-nine STAR kindergarten, 105 first grade, 106 second grade, and 106 third grade teachers were assigned full-time aides. All STAR aides were female with the exception of one male aide during third grade. Out of a total of 98 kindergarten aides, 30 were non-white (NW) and 68 were white (W). Out of a total of 105 first grade aides, 29 were NW and 76 were W. Out of 106 total second grade aides, 32 were NW and 74 were W. Out of a total of 106 third grade aides, 33 were NW and 73 were W.

During kindergarten, 97 teacher aides reported receiving a high school diploma. One hundred three aides in first grade had graduated from high school or received a GED, and only 1 had not. Out of 106 second grade aides, 104 had graduated and 2 had not. All 106 third grade STAR aides had graduated from high school.

Ten kindergarten aides had a bachelor's and 6 had associate degrees. Six first grade aides had bachelor's degrees and 1 had a master's degree. In second grade, 11 aides had bachelor's and 2 had master's degrees. Seven third grade aides had bachelor's degrees.

Out of 98 total kindergarten aides, 9 were and 89 were not certified to teach. Out of a total of 105 first grade aides, 3 were and 101 were not certified to teach. Four second grade aides were certified and 101 were not. Two third grade aides were certified and 103 were not.

In first grade 95 aides had 5 or fewer years of experience as an aide and 9 had from 6 to 21 years of experience. Ninety-three second grade aides had 5 or fewer years of experience and 13 had from 6 to 26 years of experience as an aide. Ninety-one third grade aides had 5 or fewer years of experience and 12 had from 6 to 26 years of experience as an aide.

During the STAR kindergarten year, 81 aides had no teaching experience, 5 had one year and the remaining 12 aides had between two and eight years of teaching experience. In the first grade year, six aides reported between one and three years of teaching experience. No STAR aides had over eight years of experience in the second grade year. During the STAR third grade year, seven aides had under 10 years of teaching experience and one aide had 19 years.

## B. Teacher Effectiveness

### 1. Distribution of Top 10% of Classes in K-3

The question of small class effectiveness was also evaluated by looking at the class size of the top 10% of classes each year (Table III-13).

**Table III-13**

**Number of Top 10% Classes from Project STAR  
Kindergarten through Third Grade: Stanford Total Reading Achievement**

Grade	Small	Regular	Regular/Aide	Total
Kindergarten	18	10	5	33
1st Grade	22	5	7	34
2nd Grade	23	5	6	34
3rd Grade	25	2	5	32

The number of small classes in the top 10% increased each year. Eighteen of the top 33 kindergarten classes were small; 22 of the 34 first grade classes were small; 23 of the 34 second grade classes and 25 of the 32 third grade classes were small.

The scaled score average for the top ten percent small third grade classes was 649.3 which was 27 points above 622.3, the average scaled score for all of the third grade small classes.

The kindergarten top ten percent classes which included 18 small classes had scaled scores which ranged from 463 (75th percentile) to 494 (90th percentile). (See Table III-14.) The top percentile rank increased to the 93rd percentile in first grade and to the 96th percentile in second grade. It dropped back to the 90th percentile in third grade.

**Table III-14**

**Scaled Scores and Percentile Ranks for Top 10 Percent Classes:  
Stanford Total Reading Achievement**

Grade	Scaled Score	Percentile Rank*
Kindergarten	463 to 494	75th to 90th
First Grade	564 to 599	81st to 93rd
Second Grade	616 to 663	79th to 96th
Third Grade	642 to 669	76th to 90th

\*Percentile Ranks Based on Multilevel Norms

## **2. First Grade Effective Teachers**

The teaching practices, the materials used, and professional and personal characteristics of forty-nine effective teachers were studied to determine what effective teachers do to promote learning in reading and mathematics.

Did the classes with the highest scores make the greatest gain? In order to identify the classes with the greatest gains at the end of first grade the following procedure was used. Average student gains were computed by class type and in terms of scaled scores. (See Table III-15)

a. The outcome measures were the Stanford Achievement Tests, administered at the end of kindergarten (SESAT II) and first grade (Stanford Primary I). Composite scores for calculating scaled score gains for the 338 classes were derived as follows:

- (1.) The SESAT II Total Reading scores were averaged to obtain a class reading mean score. The SESAT II Total Math scores were averaged to obtain a class math mean score.
- (2.) The same procedures were used to calculate a class reading mean score and a class math mean score for the Stanford Primary I test administered at the end of first grade.
- (3.) The SESAT II class reading mean score was subtracted from the Primary I class reading mean score to provide a scaled score average gain in reading for each class. The same procedure was repeated for math.
- (4.) In order to obtain a scaled score average gain for each class, the reading mean gain and the math mean gain were averaged.
- (5.) The scaled score average gains were ranked within each school type category.
- (6.) The top 15% of each category was selected for this study.
- (7.) Teachers were chosen for observation /interview whose classes ranked in the top 15% of scaled score average gains for each of four school types: rural, urban, suburban, inner city.
- (8.) The distribution of class types taught by the effective teachers were 23 small (13-17); 8 regular (22-25); and 12 regular plus a full time instructional aide (22-25). Seven teachers' classes did not meet the specified requirements and are identified as Not in Design (18-21).



**TABLE III-15****Average Class Gains in Scaled Scores by Class Type  
Project STAR Grade One (1987-88)**

Total Reading	Top 15%			Other 85%		
	Kindergarten	Grade 1	Gain	Kindergarten	Grade 1	Gain
Class Type						
Small (13-17)	444	564	120	443	527	84
Regular (22-25)	443	554	111	439	515	76
Regular/Aide (22-25)	438	556	118	438	522	84

Total Math	Top 15%			Other 85%		
	Kindergarten	Grade 1	Gain	Kindergarten	Grade 1	Gain
Class Type						
Small (13-17)	444	564	120	443	527	84
Regular (22-25)	443	554	111	439	515	76
Regular/Aide (22-25)	438	556	118	438	522	84

**b. Characteristics of Effective Teachers**

For the teacher characteristics, the interview guide drew on personal characteristics summarized by the Educational Research Service. The characteristics included: preparation, certification, experience, in-service education, and family background.

The sample consisted of 50 females, of which 41 were white and 9 were black. The teachers' ages were in the following ranges: 25 to 34 (N=11), 35 to 44 (N=24), 45 to 54 (N=8), 55 to 64 (N=3), unknown (N=4) resulting in a median age of 38.5. Data collected on teacher preparation included BA/BS degree (N=32), MA/MS degree (N=18), full primary certification (N=50), teaching experience at the first grade level: less than 1 year (N=8), 1 to 5 years (N=12), 6 to 10 years

(N=12), 11 to 15 years (N=9), 16 to 20 years (N=5), 21+ years (N=4); total years of teaching experience: less than 1 year (N=2), 1 to 5 years (N=10), 6 to 10 years (N=13), 11 to 15 years (N=13), 16 to 20 years (N=5), 21+ years (N=7). In addition, in-service training completed within the past two years was reported as follows: Tennessee Instructional Model (N=36), Reading Workshop (N=23), Math Workshop (N=18), Classroom Management (N=23), Orientation to Career Ladder (N=16), College Courses (N=26). See Table III-16.

Thirty percent (N=19) chose teaching as a career when they were in elementary school 27% (N=13) made this choice in high school. While 18% (N=9) chose teaching during their college training, only 16% (N=8) made career changes in order to become teachers.

Fifty-seven percent (N=28) have other teachers in their families. Twenty-nine percent (N=14) are children of a teacher. Thirty-three percent (N=16) have one or more siblings who are in the teaching profession. Eight percent (N=4) are married to educators.

Eighty-six percent (N=42) of the effective teachers belong to a professional association, and 45 percent (N=22) work actively in the association.

### **C. Teaching Practices and Materials used by Effective Teachers**

A procedure was established for documenting the effective teachers' teaching practices and use of materials. The procedure included both observation and interview.

An interview guide was designed based on the adaptation of Concepts of Effective Teaching delineated in "A Synthesis of Effective Schools Research" compiled by the Northwest Regional Educational Laboratory (Appendix D). Observer reliability was achieved by using paired observers who checked each other's independent judgement. Teachers were rated poor, fair, good, or excellent on each of the 12 criterion included in "A Synthesis of Effective Schools Research".

Six categories were developed to describe the practices used by effective teachers:

- A. Preplanned Instruction
- B. Expectations
- C. Strategies for Accomplishing Expectations
- D. Organization and Classroom Management
- E. Personal Interaction
- F. Family Involvement

#### **(1) Preplanned Instruction**

Instruction is guided by a preplanned curriculum which is adapted to the needs of students. The teachers use a broad range of resources and activities. Eighty-two percent of the effective teachers were rated excellent and 18% were rated good.

**Table 4**  
**Professional and Personal Characteristics of Teachers**

Characteristics	Top 15% (N=50)	Other 85% (N=288)
Race: White	41 (82%)	238 (83%)
Black	9 (18%)	50 (17%)
Age: 25-34	11 (22%)	NA*
35-44	24 (48%)	
45-54	8 (16%)	
55-64	3 (6%)	
Missing	4 (8%)	
Preparation:		
B.A. or B.S.	32 (64%)	187 (65%)
M.A. or M.S.	18 (36%)	101 (35%)
Certification:		
Full Primary	50 (100%)	288 (100%)
Years of Teaching Experience at First Grade Level:		
Less than 1	8 (16%)	48 (17%)
1 to 5	12 (24%)	99 (34%)
6 to 10	12 (24%)	58 (20%)
11 to 15	9 (18%)	36 (13%)
16 to 20	5 (10%)	24 (8%)
21 or more	4 (8%)	23 (8%)
Total Year of Teaching Experience:		
Less than 1	2 (4%)	11 (4%)
1 to 5	10 (20%)	74 (26%)
6 to 10	13 (26%)	58 (20%)
11 to 15	13 (26%)	58 (20%)
16 to 20	5 (10%)	44 (15%)
21 or more	7 (14%)	43 (15%)
In-service Training Completed Within Last Two Years:		
Tennessee Instructional Model (TIM)	36 (72%)	173 (60%)
Reading Workshop	23 (46%)	145 (50%)
Mathematics Workshop	18 (36%)	105 (36%)
Classroom Management	23 (46%)	142 (49%)
Orientation to Career Ladder	16 (32%)	124 (43%)
College Courses	26 (52%)	116 (40%)

\*Project STAR did not collect data on age.

## (2) Expectations

The observer/interviewers (O/Is) determined that effective teachers had high expectations for student learning. O/Is ranked eighty percent of the 49 teachers excellent at setting expectations and twenty percent above average on a scale of 1-4 with 4 being the highest. On a scale of below average, average and above average, the majority of teachers stated that their class was either average (n=27) or above average (n=18).

Effective teachers set and maintain quality standards consistently. These teachers use a variety of strategies to assure that all students will be at the level of learning necessary to be successful in the next grade. The strategies mentioned most often were: parent involvement (n=18), individualization (n=18), use of teacher assistant where available (n=15), peer tutoring (n=12), and praise and encouragement (n=10).

## (3) Strategies For Accomplishing Expectations

Effective teachers use a variety of teaching strategies which fall within the following general areas:

- (a) Orientation
- (b) Clear and focused instruction
- (c) Monitoring
- (d) Grouping
- (e) Reteaching
- (f) Incentives and Rewards
- (g) Learning Centers
- (h) Manipulatives

## (4) Organization and Classroom Management

All of the teachers have a scheduled time for each subject and concentrate on using class time for learning. Ninety-four percent (N=46) of the teachers were evaluated as excellent on the efficiency of their classroom routines. Eighty-four percent (N=41) of the effective teachers have excellent standards for classroom behavior. These effective teachers who demonstrated excellent organizational skills had almost an hour more of teaching time per week for each math and reading.

## (5) Personal Interaction

Eighty-four percent (N=41) maintained excellent personal interactions with the students. An additional 10% had good interactions with students. When asked how they let the students know that they really cared, through pats and hugs, group sharing time, one-on-one sharing time, and praise and other positive comments.

## (6) Family Involvement

Effective teachers believe that the families of their students should be involved in the students' continuous learning process. These teachers believe in open communication between home and school by either telephone, notes, conferences, or quick chats when someone in the family comes to pickup the student after school. These teachers' beliefs are evidenced by the fact that 95% of them said that they encourage the families of their students to keep up with their progress in school.

Effective teachers involve the families of their students in other important ways. They invite the families to serve as volunteers at school. These teachers are able to explain to the families of their students the necessity of becoming involved in their learning in a variety of ways:

- Listening to the students read at home.
- Helping them with math by using flashcards or other manipulatives.
- Checking their homework.
- Eating lunch with them at school.
- Various activities to keep them involved.

When these teachers were asked "What kinds of things do you do in order to prevent a student in your classroom from experiencing failure?", 37% said they involve the families of their students in the learning process in order to try to prevent failure.

It is often said that a child's parents are the first and foremost teachers. It appears that effective teachers believe this premise to be true.

## E. Profile

A profile of the effective first grade teacher in this study reveals the following:

- median age - 38.5 yrs.
- education - BA/BS
- median years of teaching experience - 10.5
- median years of teaching experience at first grade - 8.0
- K-3 certification
- TIM trained
- taking college courses
- Level I of Tennessee Career Ladder
- other educators in the family

These teachers consistently displayed similar affective qualities. Enthusiasm in the form of "acting", demonstrating, and role-playing activities on the part of the teacher was prominent. Having positive attitudes toward children, emphasizing positive behavior and praising success were observed as common. Having and using a sense of humor to promote learning and motivate students were often observed. Finally, "a love for children" seemed to permeate the entire professional repertoire in nearly all of the observations.

In addition to these common characteristics, class size appears to have been a contributing factor to the success of these fifty effective teachers. Only 8 (16%) had a regular class (22-25). Twenty-three (46%) had small classes (13-17); 7 (14%) had a class of 18-21 and 12 (24%) had a full time instructional aide. Additional material on first grade effective teachers and the complete findings on second and third grade effective teachers are reported in appendix D.