Chapter 6

The Arc's Self-Determination Scale Norms

Sample Description

The norms in this guide are based on responses to ***The Arc's Self-Determination Scale*** by 500 students (223 males, 210 females, 67 gender not known) from schools in urban, suburban and rural districts in five States (Texas, Virginia, Alabama, Connecticut, Colorado). All students were identified by their school district as currently receiving special education services and had completed protocols from ***The Arc's Self-Determination Scale.*** However, because of difficulties obtaining adequate consent to release information from schools in Texas and Alabama, information regarding student age, racial status or specific disability category were not available for all students. Demographic data from students for whom this information was available were provided in this section.

The age distribution for the group as a whole is presented in **Table 6.1**. Age distributions by gender are presented in **Tables 6.2** and **6.3**, and descriptive statistics for the group as a whole and by gender are provided in **Table 6.4**.

Table 6.1: Age distribution for group as a whole.

Age	Frequency	Percent	Cumulative Percent
14	2	1.1	1.1
15	23	13	14.3
16	40	23	37.1
17	53	29.7	67.4
18	35	20	87.4
19	8	4.6	92
20	4	2.3	94
21	7	4	98.3
22	3	1.7	100

Table 6.2: Age distribution for males.

Age	Frequency	Percent	Cumulative Percent
14	1	1.2	1.2
15	17	20.2	21.4
16	18	21.4	42.9
17	21	25	67.9
18	19	22.6	90.5
19	4	4.8	95.2
20	1	1.2	96.4
21	2	2.4	98.8
22	1	1.2	100

Table 6.3: Age distribution for females.

Age	Frequency	Percent	Cumulative Percent
14	1	1.1	1.1
15	5	5.6	6.7
16	22	24.4	31.1
17	32	35.6	66.7
18	16	17.8	84.4
19	4	4.4	88.9
20	3	3.3	92.2
21	5	5.6	97.8
22	2	2.2	100

Table 6.4: Age descriptive statistics.

Group	Mean	Standard Deviation	Variance
All	17.08	1.99	2.52
Males	16.86	1.53	2.34
Females	17.31	1.61	2.60

The sample consisted of students with and without disabilities, including mental retardation, learning disabilities, and emotional disorders. **Table 6.5** presents the distribution for the group as a whole by disability category and **Tables 6.6** and **6.7** provide this information by gender.

Table 6.5: Disability status for group as a whole.

Type of Disability	Frequency	Percent	Cumulative Percent
No Disability	50	13.7	13.7

Learning Disability	160	44	57.7
Emotional Disorder	15	4.1	61.8
Mental Retardation	128	35.2	97
Orthopedic Impairment	1	.3	97.3
Other Health Impairment	6	1.6	99
Autism	2	.5	99.5
Speech	2	.5	100

Table 6.6: Disability status for males

Type of Disability	Frequency	Percent	Cumulative Percent
No Disability	17	10.4	10.4
Learning Disability	76	46.3	56.7
Emotional Disorder	9	5.5	62.2
Mental Retardation	59	36	98.2
Orthopedic Impairment	0	0	98.2
Other Health Impairment	2	1.2	99.4
Autism	1	.6	100

Table 6.7: Disability status for females

Type of Disability	Frequency	Percent	Cumulative Percent
No Disability	33	20.5	20.5
Learning Disability	52	32.3	52.8
Emotional Disorder	5	3.1	55.9
Mental Retardation	63	39.1	95
Orthopedic Impairment	1	.6	95.7
Other Health Impairment	4	2.5	98.1
Autism	1	.6	98.8
Speech	2	1.2	100

Students from culturally and ethnically diverse backgrounds were recruited as participants. Once again, data on racial characteristics were not available for all students, but **Table 6.8** presents the racial breakdown for those students for whom this data was available.

Table 6.8: Racial category for group as a whole

Racial or Ethnic Status	Frequency	Percent	Cumulative Percent
Native American	2	.6	.6
Asian-American	6	1.7	2.3
African-American	78	22.5	24.8
Hispanic	61	17.6	42.4
Caucasian	197	56.8	99.2
Middle Eastern	3	.8	100

Scale Descriptive Statistics

The descriptive statistics for each domain, subdomain and total scores from the sample norms are provided in **Table 6.9**. Tables **6.10** and **6.11** provide these same statistics by gender.

Table 6.9: Descriptive statistics for group as whole

Variable	Mean	SD	Min	Max	Variance
Autonomy	63.35	15.50	0	92	240.23
Self-Regulation	9.78	4.95	0	21	24.54
Psych. Empower.	13.28	2.64	4	16	6.97
Self-Realiz.	11.11	2.25	3	15	5.08
Total Score	97.52	19.43	14	138	377.52

Table 6.10: Descriptive statistics for males

Variable	Mean	SD	Min	Max	Variance
Autonomy	63.41	15.59	0	96	242.96
Self-Regulation	9.44	5.01	0	21	25.08
Psych. Empower.	12.90	2.84	4	16	8.06

Self-Realiz.	11.00	2.25	3	15	5.05
Total Score	96.75	19.30	28	138	372.61

Table 6.11: Descriptive statistics for females

Variable	Mean	SD	Min	Max	Variance
Autonomy	63.54	16.09	0	96	259.04
Self-Regulation	10.28	5.12	0	21	26.24
Psych. Empower.	13.42	2.30	5	16	6.43
Self-Realiz.	11.10	2.30	3	15	5.31
Total Score	98.35	20.43	14	134	417.31

Gender, Age and Type of Disability Effects

To examine the impact of gender, age and type of disability on total and domain scores, multiple analyses of variance were performed. These are reported below.

Statistical Analysis of Gender Differences

There were no significant differences between males and females on the overall self-determination scores, despite the fact that females scored slightly higher than did their male counterparts. Likewise, there were no significant differences by gender on the *Autonomy* subdomain scores. Females scored higher on this subscale, and individual analyses of the subdomain areas indicated significant differences between genders in the *Independence:* Self- and Family Oriented Functions subdomain [$F(1, 431) = 5.92$, $p = .01$] and the *Acting on the Basis of Preferences, Beliefs, Interests and Abilities* subdomain [$F(1, 431) = 6.08$, $p = .01$].

There were no significant differences for the *Self-Regulation* domain scores based on gender. There were significant differences on the *Psychological Empowerment* domain with females scoring in a more positive direction [$F(1, 431) = 4.06$, $p = .04$]. There were no significant differences by gender on the *Self-Realization* domain.

Summary of Gender Differences

There were no differences by gender for scale scores overall. Domain and subdomain differences existed in three areas. First, females were more likely to assume responsibility for self and family-care activities, a finding not surprising given the sex-role stereotyping of females as caregivers. There were also differences in the Personal Expression subdomain indicating that females were more self-determined regarding their personal appearance and expression. Once again, this is not surprising given the pressure on girls and young women to conform to societal standards of self-care. However, since there were no overall effects for *Autonomy* scores by gender, findings from subdomain areas need to be interpreted with caution.

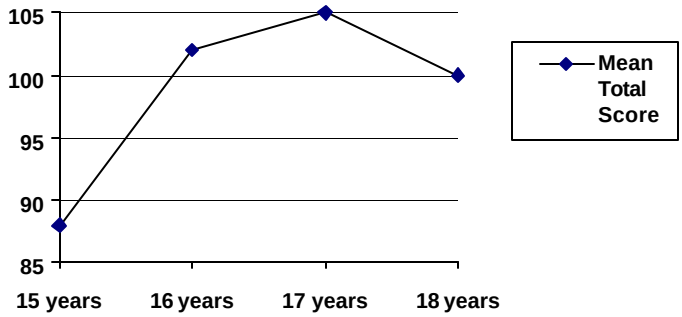
A somewhat surprising finding was that females were more psychologically empowered than males. Research has suggested that young women with disabilities are at greater risk to experience learned helplessness, a finding not necessarily supported by this sample.

Statistical Analysis of Age-related Differences

Age-related differences are more difficult to predict on *The Arc's Self-Determination Scale* primarily because essential elements of self-determination show differential developmental patterns. These will be discussed after the statistical analyses. These analyses were conducted for the group as a whole only for students between the ages of 15 and 18. Too few students were 19 or over, and since they were all students with mental retardation, age related differences were confounded with disability status.

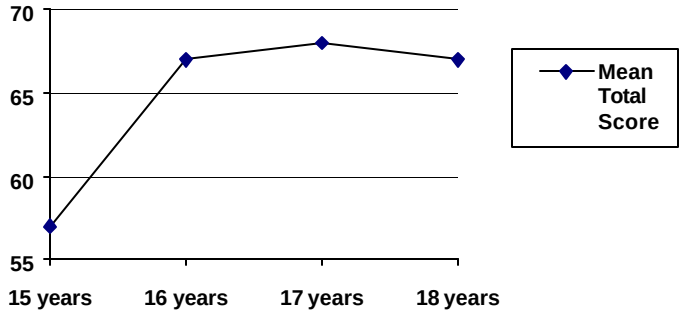
There were significant differences between groups based on age for total scores [$F(3, 147) = 5.447$, $p = .001$]. As shown in **Figure 6.1**, scores progressed generally from lower to higher based on chronological age. Posthoc analysis using Scheffe' indicated differences at the .05 level between age 15 and ages 16 and 17.

Figure 6.1 Mean scores by age for total



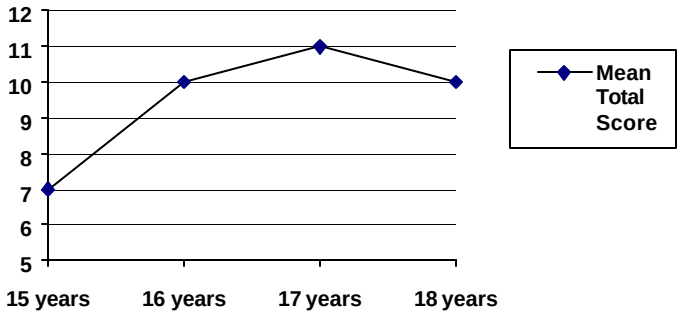
There were significant differences by age on scores from the *Autonomy* domain [$F(3, 147) = 3.72$, $p = .01$]. As seen in **Figure 6.2**, the positive correlation between age and higher scores continued. Scheffe' tests found that differences were between 15 year olds and 16 and 17 year olds.

Figure 6.2 Mean scores by age for autonomy



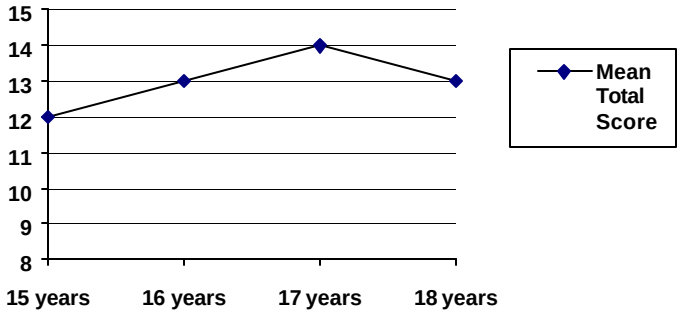
Differences between groups by age on the *Self-Regulation* domain approached significance ($p = .058$) and as shown by **Figure 6.3**, these scores indicated a similar trend of increased competence by age.

Figure 6.3 Mean scores by age for self-regulation



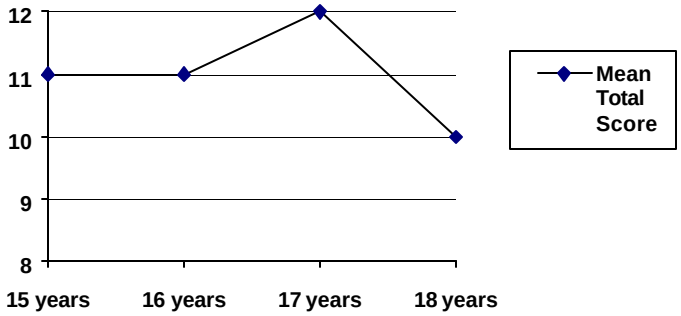
There were significant differences by age on *Psychological Empowerment* scores [$F(3, 147) = 3.58$, $p = .01$] although the trend for these scores was less noticeable than in the previous domains. **Figure 6.4** provides these scores. Scheffe' tests indicated differences between age 15 and 17 only.

Figure 6.4 Mean scores by age for psychological empowerment



There were also significant differences by age in the *Self-Realization* domain [$F(3, 147) = 3.51$, $p = .01$] and, like the *Psychological Empowerment* domain these scores did not show a strong age related trend (**Figure 6.5**). Significant differences occurred between age groups 17 and 18.

Figure 6.5 Mean scores by age for self-realization



Summary of Age-related Differences

Generally, age related changes occurred as might be predicted for each domain. Skill related domains (*Autonomy* and *Self-Regulation*) showed increased skills by age, providing one indicator of construct validity for the Scale. Domains measuring perceptual elements of self-determination did not show such trends, but this too can be expected. The development of perceptions of control and efficacy often go from unrealistically high to more realistically lower. The fact that there was no strong age-trend in the *Psychological Empowerment* and *Self-Realization* domains probably reflects changes on the part of some students who develop more realistic perceptions of control and efficacy with increased age.

Statistical Analysis of Disability-related Differences

Disability-related differences were examined for three groups: Students without disabilities, students with learning disabilities, and students with mental retardation. There were highly significant differences between these groups on total scores [$F(2, 335) = 24.02$, $p > .0001$]. **Table 6.12** shows mean and standard deviation scores by disability status. Posthoc analyses indicated significant differences between students without disabilities and students with mental retardation, and students with learning disabilities and students with mental retardation.

Table 6.12 Disability related differences for total scores

Disability	Mean	Standard Deviation
None	106.58	15.67
Learning Disability	101.87	16.04
Mental Retardation	89.02	21.92

There were significant differences on the *Autonomy* domain scores [$F(3, 352) = 6.65$, $p = .0002$]. As **Table 6.13** indicates, differences in these scores were also between students without disabilities and students with mental retardation, and students with learning disabilities and students with mental retardation.

Table 6.13 Disability related differences for autonomy scores

Disability	Mean	Standard Deviation
None	67.44	12.19

Learning Disability	65.31	13.28
Mental Retardation	60.10	18.32

There were significant differences on the *Self-Regulation* domain scores [$F(2, 335) = 27.45$, $p > .0001$] with significant differences between all three groups. **Table 6.14** provides the mean and standard deviation scores for this domain.

Table 6.14 Disability related differences for self-regulation scores

Disability	Mean	Standard Deviation
None	13.24	4.08
Learning Disability	11.18	4.45
Mental Retardation	6.95	4.71

There were significant differences in the *Psychological Empowerment* domain scores [$F(2, 335) = 27.45$, $p > .0001$] with differences between students without a disability and students with mental retardation and students with learning disabilities and students with mental retardation.

Table 6.15 Disability related differences for psychological empowerment scores

Disability	Mean	Standard Deviation
None	14.30	2.30
Learning Disability	13.84	2.25
Mental Retardation	11.81	3.06

There were also significant differences in *Self-Realization* scores [$F(2, 335) = 15.52$, $p > .0001$] with differences between students without a disability and students with mental retardation and students with learning disabilities and students with mental retardation.

Table 6.16 Disability related differences for self-realization scores

Disability	Mean	Standard Deviation
None	11.60	2.30
Learning Disability	11.54	1.95
Mental Retardation	10.15	2.48

Summary of Disability-related Differences

The trend for all scores, total and domain, was that students without disabilities scored highest, followed by students with learning disabilities and mental retardation, respectively. In all cases the scores from students with mental retardation were

significantly different from students without disabilities, as would be predicted. However, scores from students with learning disabilities did not statistically differ from students without disabilities in a number of areas. The sample size for students without disabilities was too small (n = 58) to warrant conclusions based on these results. It is probably true that for students with learning disabilities multiple factors, including a learning disability, account for problems with self-determination. These factors include the total number of failure experiences, type of classroom setting, how much autonomy they are allowed at home, and other factors.