

**A Touch of Understanding
Evaluation Report
March 2011**

Method

The ATOU Student Survey is a 27-item self report scale closely based on the well established Chedoke-McMaster Attitudes Towards Children with Handicaps (CATCH). The CATCH was developed by researchers Rosenbaum, Armstrong, and King in 1985. It is a psychometrically sound instrument and, in comparison to similar measures, it is preferred for its multi-dimensional assessment of feelings and behavioral intentions toward, and beliefs about people with disabilities¹.

CATCH Psychometrics²

Scale	Cronbach Alpha Coefficient	Test-Retest Reliability Coefficient
Overall (all three scales)	.90	.73
Affective	.91	.70
Behavioral intent	.65	.44
Cognitive	.74	.63

The test-retest reliability is considered to be a conservative estimate because of the methodology used.

Construct validity was established through confirmation of multiple hypotheses. Note that the instrument authors indicate that the affective and behavioral intent subscales may be combined into a single scale based on factor analysis.

CATCH Scales

All CATCH items include a 4 point Likert response scale ranging from Strongly Disagree (0) to Strongly Agree (3). Items cluster into three conceptually distinct subscales.

The affective scale is designed to assess a child's feeling toward a person with a disability. There are 11 items in the scale, including:

I would be happy to have a person with a disability for a friend.

I would not like a friend with a disability as much as my other friends.

I would be embarrassed if a person with a disability invited me to his/her birthday party.

I would feel good doing a school project with a person with a disability.

¹ Vignes, C., Coley, N., Grandjean, H., Godeau, E., & Arnaud, C. (2008). Measuring children's attitudes towards peers with disabilities: a review of instruments. *Developmental Medicine & Child Neurology*, 50, 182-189.

² Rosenbaum, P. L., Armstrong, R. W., & King, S. M. (1985). Children's Attitudes Toward Disabled Peers: A Self-Report Measure. *Journal of Pediatric Psychology*, 11(4) 517-529.

The behavioral intent scale is designed to assess a child's predisposition toward an action with regard to a person with a disability. There are nine items in the scale, including:

I would invite a person with a disability to sleep over at my house.

I would try to stay away from a person with a disability.

I would stick up for person with a disability to who was being teased.

I would not introduce a person with a disability to my friends.

It is possible to aggregate the affective and behavioral intent scales as factor analysis indicates that youth may not distinguish between how they feel and how they would act in these contexts.

The cognitive scale is designed to assess a child's beliefs about a person with a disability. There are seven items in the scale including:

People with a disability need lots of help to do things.

People with a disability want lots of attention from adults.

People with a disability feel sorry for themselves.

People with a disability are as happy as I am.

The CATCH survey was adapted with integrity to the original items. The term "handicap" was replaced with "person with a disability" to reflect the evolution in disability awareness concepts since 1985. In addition, the ATOU Student Survey was refined for use with high school students by substituting age appropriate terms (e.g. "play with" was replaced with "hang out with"; "birthday party" was replaced with "party").

Two subscales were added to the evaluation measures beginning in 2010 administrations. A pre/post bullying and victimization assessment (Self-Report Inventory of Bullying and Victimization Bullying behavior: current issues, research, and interventions By Robert Geffner, Marti Tamm Loring, Corinna Young Measures: Bullying & Victimization) was included. The 13 items include:

Kids make fun of me.

I get beat up.

I get called names by other kids.

Kids do mean things to me.

I get picked on by other kids.

I get hit or pushed by other kids.

Kids try to hurt my feelings.

I get teased a lot.

I make fun of people.

I hit or push others around.

If someone gets in my way I will shove them out of the way.

There are certain kids I like to bother.

When I get picked on, I don't like to fight back.

Bully & Victimization Scale Psychometrics

Scale	Cronbach Alpha Coefficient	Validity Coefficient
Bully	.87	.65
Victim	.88	n/a

A retrospective (post and follow up) empathy/compassion scale (The Colorado Trust. *After-School Initiative's Toolkit for Evaluating Positive Youth Development*. Denver, CO: The Colorado Trust; 2004 Measures: Positive Core Values) was included. The six item scale includes:

Since participating in ATOU:

I care more about other people

I care more about the feelings of other people

I am better at standing up for what I believe

I tell the truth more often even when it is hard

I am better at taking responsibility for my actions

I am better at speaking up for people who have been treated unfairly

The Positive Core Values scale has a reliability coefficient of .88.

Teacher survey. A brief teacher scale was administered at pre and post test to a subset of the sample (2009) to assess the extent to which classroom teachers provided disability awareness curricula before and/or after the ATOU event. Teacher survey is matched to class.

Protocol. The ATOU Student Survey was administered prior to student exposure to ATOU session content. This occurred in the days before the scheduled ATOU event, or on the day of but prior to participation in an ATOU event. The ATOU Student Survey was administered at post test between two and four weeks after the ATOU event; in one case, the post test was administered on the same day but after participation in the ATOU event. All survey administrations were conducted according to a standardized protocol.

Results

The total sample of 967 students included 778 matched pre/post test pairs. Of the overall sample, 54% were females; age of students ranged from eight to 17 years. Data were primarily collected from students in elementary schools (at 4th and 6th grade); resulting in a skewed distribution of age and grade. Seventy of students were 4th graders and 15% were 6th graders. Outcome analyses are presented by grade.

Table 1. School Affiliation

	Number of Students	Valid Percent	
Breen Elementary	82	8.5	
Crestmont	132	13.7	
David Luben	195	20.1	
Hiram Johnson HS	55	5.7	
Martin Luther King	33	3.4	
Ridgeview	59	6.1	
Sierra Oaks	68	7.0	
St. John's	72	7.4	
Tremont	109	11.3	
Twelve Bridges	99	10.2	
Twin Oaks	63	6.5	
Total	967	100.0	

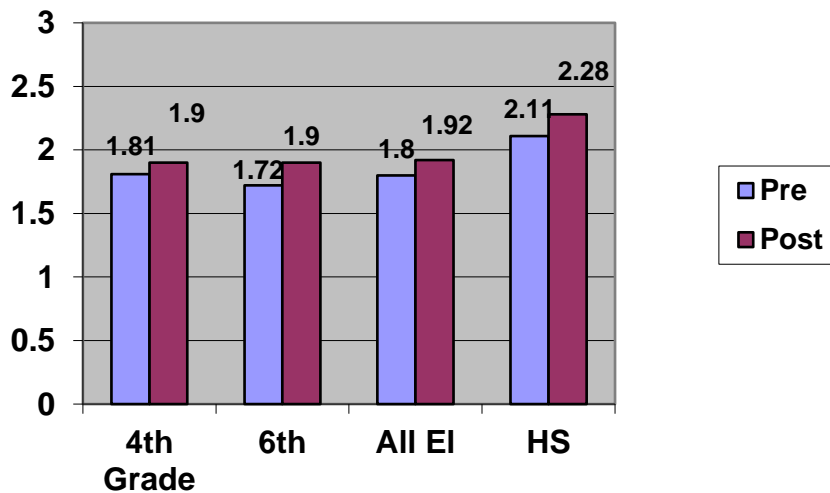
Core Outcomes

Data analyses were conducted to ascertain the impact of ATOU participation on student's affective, behavioral and cognitive attitudes toward a person with a disability. Paired sample t-tests were conducted.

Overall CATCH

4th Grade: Aggregating all CATCH items, students demonstrated a significant increase in positive attitudes towards peers with a disability ($t(508) = -7.22, p < 0.000$). Over two-thirds of students (70.1%) demonstrated overall improvement in feelings, intentions and beliefs associated with people with a disability.

Figure 1. Statistically significant increase in positive attitude



Note that though the amount of change may seem small, the statistical analysis demonstrate that the results are not a function of chance, but reflect a statistically significant³ change in positive attitudes associated with participation in ATOU.

6th graders:

Elementary School Students overall (4th, 5th, 6th): Statistically significant increase in positive attitudes towards peers with a disability $t(728) = -11.29, p < 0.000$.

High School students:

Aspects of Positive Attitudes: Affective, Behavioral and Cognitive Subscales

Table 2. Change in Mean Score Over Time by Subscale and Grade

Paired Samples Statistics – 4 th Graders				
	Mean out of 4.0	N	Std. Deviation	Change Over Time
T1 Affective	1.9524	508	.45828	
T2 Affective	2.0528	508	.52392	.10
T1 Behavioral	1.8726	507	.49336	
T2 Behavioral	1.9477	507	.55840	.08
T1 Cognitive	1.4943	507	.48721	
T2 Cognitive	1.5820	507	.54206	.09
Paired Samples Statistics – 6 th Graders				
T1 Affective	1.6792	131	.36022	
T2 Affective	1.7598	131	.47818	.08
T1 Behavioral	1.6661	131	.36593	
T2 Behavioral	1.7589	131	.39970	.09
T1 Cognitive	1.5842	131	.39931	
T2 Cognitive	1.5054	131	.43237	-.07
Paired Samples Statistics – All Elementary				
T1 Affective	1.9361	728	.43490	
T2 Affective	2.0600	728	.51061	.12
T1 Behavioral	1.8494	727	.47519	
T2 Behavioral	1.9542	727	.53709	.10
T1 Cognitive	1.5091	727	.47946	
T2 Cognitive	1.6381	727	.53132	.13
Paired Samples Statistics – High School				
T1 Affective	2.2258	46	.41959	
T2 Affective	2.3893	46	.47010	.16
T1 Behavioral	2.2010	46	.45686	

³ T-test analysis used to test statistical significance between pre and post-test mean scores. The *t-value* will be positive if the first mean (pre) is larger than the second (post) and *negative* if it is smaller.

T2 Behavioral	2.3841	46	.45884	.18
T1 Cognitive	1.7993	46	.50622	
T2 Cognitive	1.9674	46	.52008	.17

Affective Scale

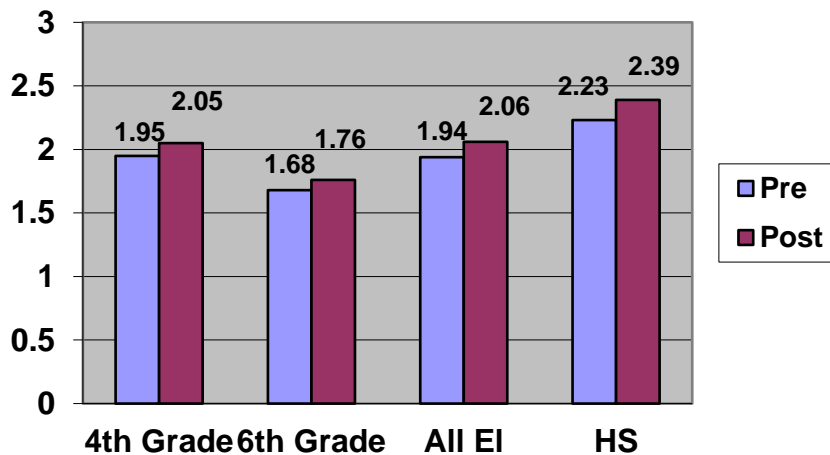
4th Grade: Results from the affective scale indicate that participation in ATOU is associated with increase positive feelings toward a person with a disability ($t(508) = -6.65, p < 0.000$). Over 56% of students demonstrated improvement in this area after participating in ATOU.

6th Grade: $t(130) = -3.01, p < 0.000$

All Elementary: $t(727) = -9.73, p < 0.000$

High School: $t(45) = -3.76, p < 0.000$

Figure 2. Statistically significant increase in positive feelings



Behavioral Intent Scale

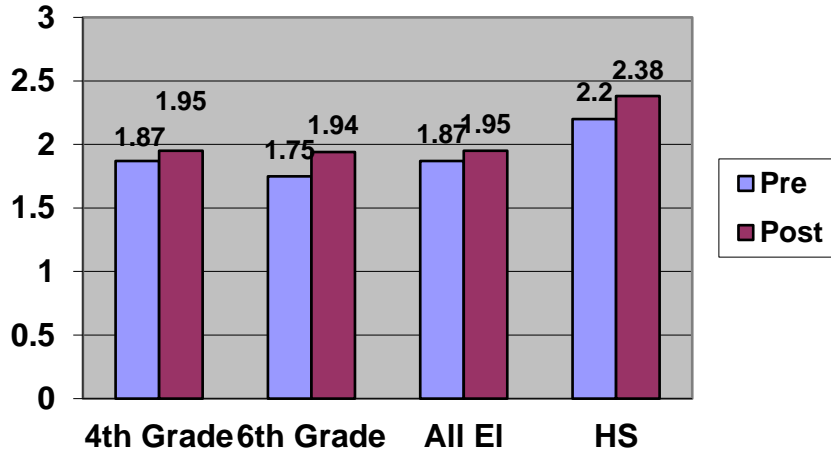
4th Grade: Results from the behavioral intent scale indicate that participation in ATOU is associated with increase predisposition toward positive actions involving a person with a disability ($t(507) = -4.40, p < 0.000$). Fifty-one percent of students demonstrated improvement in this area after participating in ATOU.

6th Grade: $t(130) = -5.67, p < 0.000$

All Elementary: $t(726) = -7.48, p < 0.000$

High School: $t(45) = -3.52, p < 0.001$

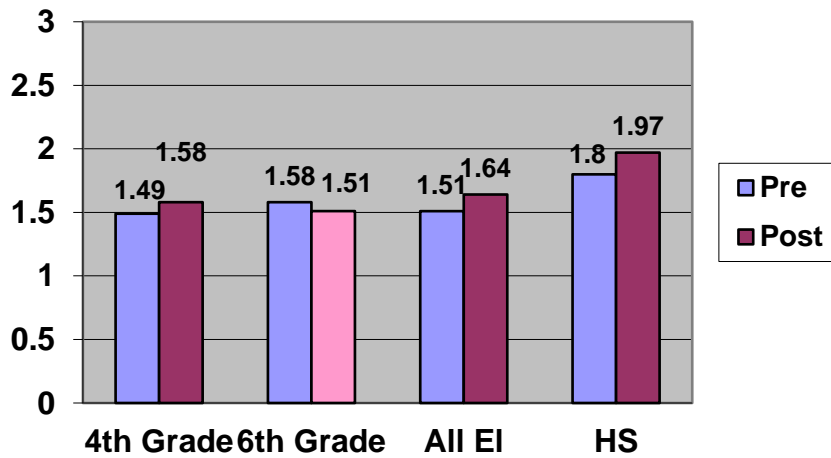
Figure 3. Statistically significant increase in predisposition to positive actions



Cognitive Scale

4th Grade: Results from the cognitive scale indicate that participation in ATOU is associated with increase positive beliefs about a person with a disability ($t(507) = -4.06, p < 0.000$). Fifty-two percent of students demonstrated improvement in this area after participating in ATOU.

Figure 4. Statistically significant increase in positive beliefs



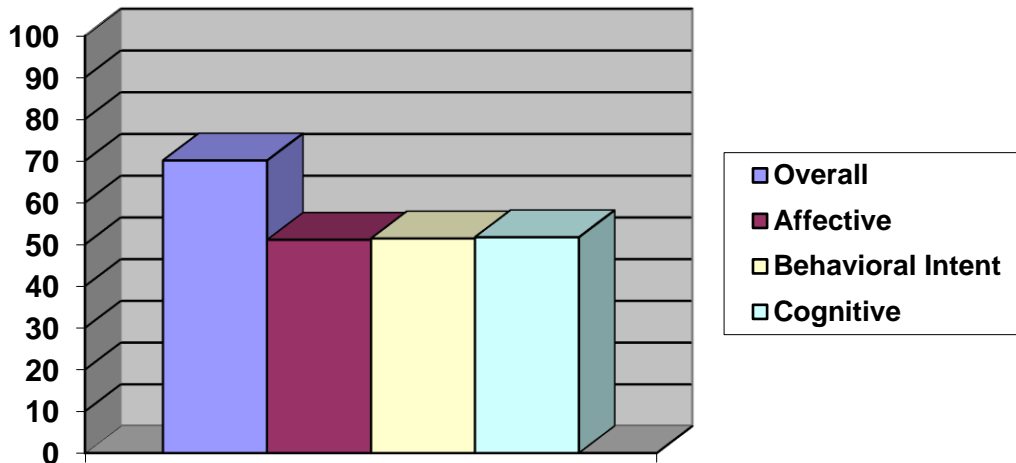
6th Grade: $t(130) = 2.3, p < 0.05^*$ (positive beliefs decrease over time)

All Elementary: $t(726) = -7.24, p < 0.000$

High School: $t(45) = -2.74, p < 0.01$

Though scores on the cognitive scale are the lowest among the subscales, the rate of improvement is the highest.

Figure 5. Percent of 4th Grade Students Demonstrating Gains By CATCH Scale



Bullying and Compassion Outcomes

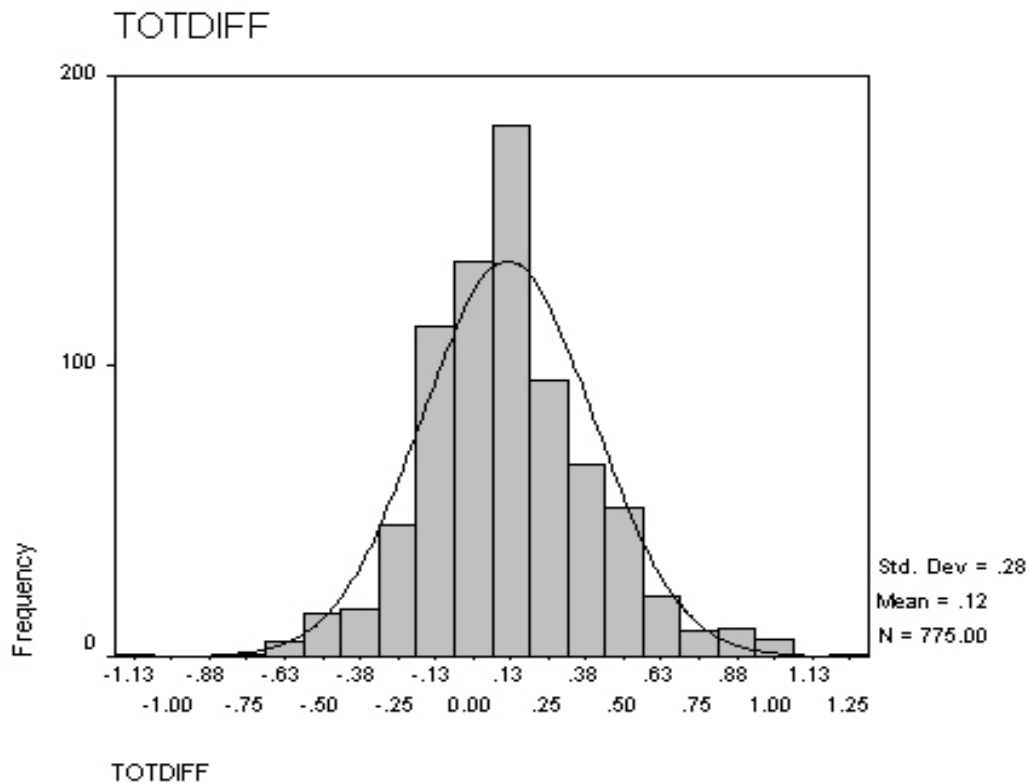
Among 4th graders, rates of bullying increased over time (2.4 to 2.5 on a 3 point scale; statistically significant). Rates remained steady among 5th and 6th graders (mean score = 2.4 on a 3 point scale). Victimization rates slightly increased among the 4th grade subsample (1.99 to 2.02 on a 3 point scale), as well as for 5th and 6th graders 1.98 to 2.02 on a 3 point scale). Research shows that these are natural developmental trends. Additional study is necessary to determine whether participation in ATOU reduces the extent to which these behaviors and experiences increase among students (currently there is not a comparison group available for analysis). Of note is that rates of bullying are reported at higher levels than rates of victimization. This may be a result of self-perception or a true difference in actual experience.

Fourth graders are not inclined to affirm that participation in ATOU increased their caring and respect for others. At the post-test, students report a mean score of 1.33 out of a possible 3.0 – this falls between the response level “not really” and “kind of” related to questions associated with compassion and empathy. The mean was only very slightly higher among 5th and 6th graders (1.38).

In general, the lack of positive outcomes associated with these dimensions is not a surprise. ATOU content is specific to increase awareness and compassion for people with a disability. While findings indicate that this specific objective is met through participation, the attitudes do not generalize to positive outcomes in more broadly defined populations. Developmentally, fourth graders (who

comprise the majority of this sample) do not have the cognitive capacity to abstract the lessons designated for specific conditions (e.g. people with a disability) to other contexts.

Characteristics of Students Who Improve Preliminary Analysis



Of the overall sample, the amount of change between pre and post test CATCH scores (total across subscales) was calculated. The chart above shows the distribution of change; negative numbers indicate higher score at pre test than at post test. The imposed normal curve line indicates that the distribution of scores falls along a standard bell curve. The standard deviation is .28, therefore students with more than this are reviewed for their characteristics (> .4).

There were 117 students with overall improvement in CATCH score at least one standard deviation above the mean score. Over half of these were girls (57.3%).

Age Distribution

Age	Number	Valid Percent	Cumulative Percent
8.00	7	6.0	6.0
9.00	60	51.3	57.3
10.00	23	19.7	76.9
11.00	25	21.4	98.3
12.00	1	.9	99.1
16.00	1	.9	100.0
Total	117	100.0	

Mean age was 9.65 years (SD = 1.1)

School

	Number of Students	Valid Percent	Cumulative Percent	
Breen Elementary	17	14.5	14.5	
David Lubin	11	9.4	23.9	
Hiram Johnson HS	1	.9	24.8	
Ridgeview	10	8.5	33.3	
Sierra Oaks	8	6.8	40.2	
St. John's	17	14.5	54.7	
Tremont	24	20.5	75.2	
Twelve Bridges	19	16.2	91.5	
Twin Oaks	10	8.5	100.0	
Total	117	100.0		

Among these students, the mean CATCH score at pre test was 1.78 (.32). The pre test scores ranged from 1.04 to 2.52. The mean does vary from the overall sample, or from those with a total change in CATCH less than .4.

Preliminary regression analysis did not suggest that pre test scores were predictive of overall improvement on the CATCH. Age and gender were not significant predictors either. Future analysis will regroup data by grade clusters and use analysis of variance to test for differences. The descriptive findings in this report suggest that the greatest gains are found among high school age youth.