

EXECUTIVE SUMMARY
EQUALS MATH CURRICULUM STUDY
YEAR FOUR

The four-year study of the Equals math curriculum at the Developmental Learning Program (DLP) has recently been completed. Of the 72 students who started using Equals in 2011, 38 have continued to participate for four consecutive years in this project. These students were in grades k-8 (ages 5-15). The disabilities of the participating students included cognitive disabilities (mild, moderate, and severe), autism, emotional disorders, multiple disabilities, and other health impairments.

There were 21 teachers took part in the study during the 2011-15 term of the project. Equals math instruction was provided to participating students each day for 40 minute sessions in groups of 3 to 8 students from September through May. Students were tested in September of 2011 and then in May in each succeeding year using the Equals assessment protocol. May scores were compared to the previous year's scores to determine the level of progress for each participating student and for the group as a whole. For the fourth consecutive year, every student in the project demonstrated progress in Math as measured by the Equals math assessment.

Among students participating there were four subgroups that have continued to make progress at a rate higher than the mean average of all students in the study: (1) students with autism, (2) students with low socio-economic status (as defined by participation in the school's free lunch program), (3) students from African-American backgrounds, and (4) male students.

The Equals Math Curriculum is presented on three levels which generally correspond to levels of intellectual disability: Level 1 (severe), Level 2 (moderate), and Level 3 (mild). Over the four years of the project level 2 and level 3 students achieved greater progress than all students as a whole. While it is statistically accurate to observe that level 1 students achieved to a lesser degree, it should not be overlooked that these students made significant progress (306.26% improvement in scores on the Equals math assessment) in relation to where they started. The fact that students engaged in Level 1 and Level 2 instruction made steady progress in the Equals curriculum four years is itself remarkable. The students in these levels are generally those with moderate to severe intellectual disabilities and those our schools have struggled to connect to the general education curriculum. They are often given alternative assessments instead of standardized testing in the school setting. To have a systematic math curriculum that can support effective direct instruction with measureable outcomes for these students is truly noteworthy.

Taken as a group, students in their fourth year continued to progress, making greater progress than in year three, but not as great as in years one and two. The variation in the pace of progress was partially attributed to the fact that the concepts encountered are more challenging as students advance through the Equals curriculum.

Early in the project, participating teachers were surveyed to learn how using Equals impacted their math instruction. Teachers praised the Equals curriculum's spiraling design. Teachers also noted how Equals

helped increase their confidence and effectiveness at teaching these students across a range of math skills and concepts.

Several teachers remarked that the Equals curriculum simplified lesson planning and made them feel more productive. One teacher noted:

“The planning is very simplified. It is awesome to have a curriculum that is already modified for so many levels.”

Other teachers commented upon the success experienced by their students.

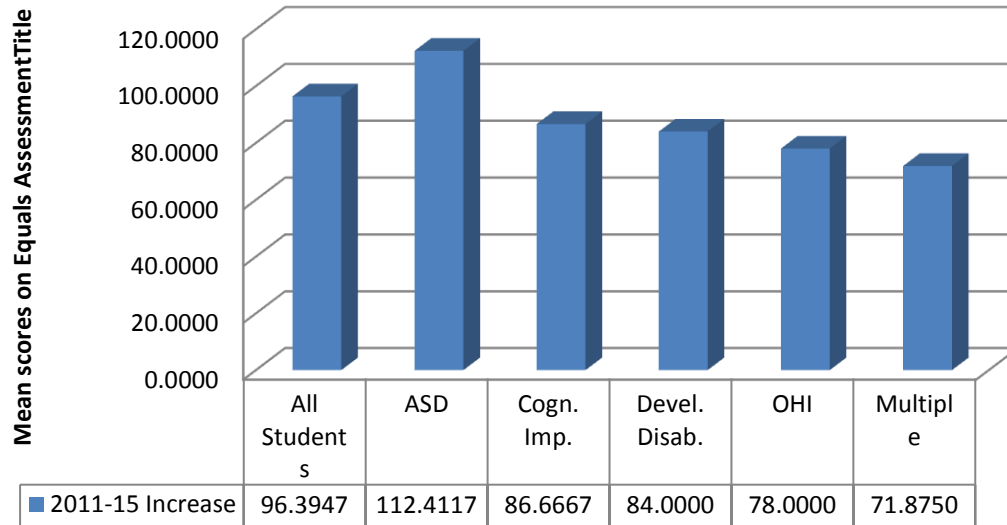
“The curriculum has allowed our students the opportunity to learn important concepts and skills which they wouldn’t necessarily be exposed to... the students’ ability to articulate math concepts has been outstanding.”

Others at the DLP have remarked upon the Equals manipulatives and supporting materials that engage students in learning math and allow them to build upon skills and strengths. The new online *Equals Tech Center* provides teachers more ways to make math more visual and concrete:

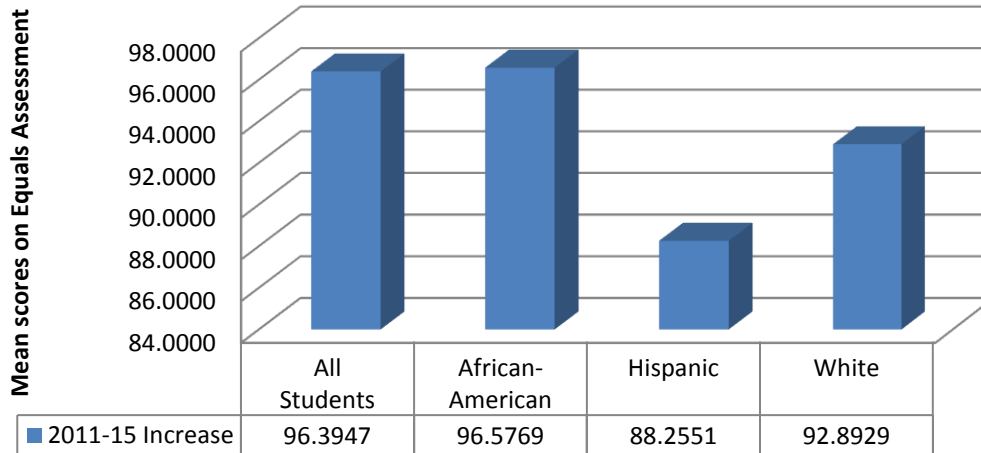
“Equals Math has been a great addition to the curriculum at DLP. I have been able to teach my students concepts that I never thought I could because of the way the lessons build on top of each other. More importantly the students have been able to retain these concepts and build on their skills.”

The results from this four year study indicate that regular, year-over-year progress has been made by students participating in this prescribed instruction using the Equals Math curriculum. It is remarkable that every student in this study has demonstrated such progress in each year in the program. Teachers’ reports of gaining a sense of empowerment, with regard to math instruction using Equals with students with significant cognitive and physical challenges, adds credibility to the perception that Equals is an effective math curriculum for our most challenged learners.

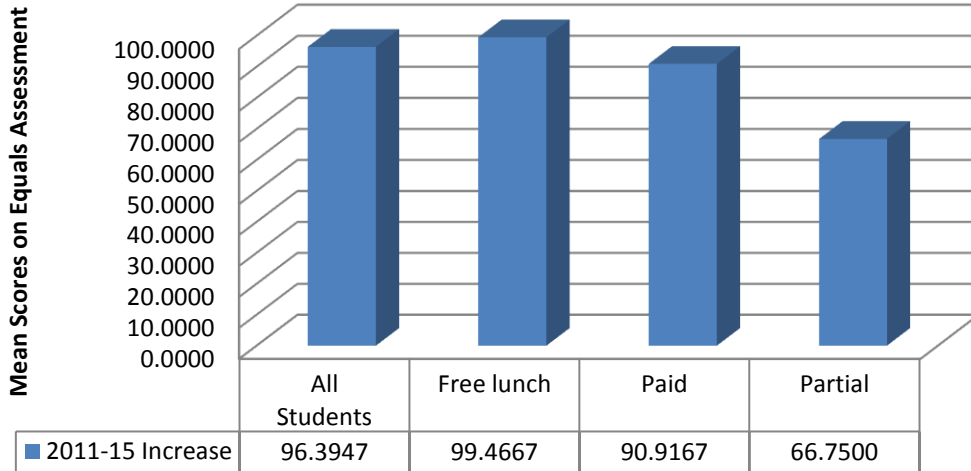
Equals DLP Project 2011-15 Increase by Disability Group



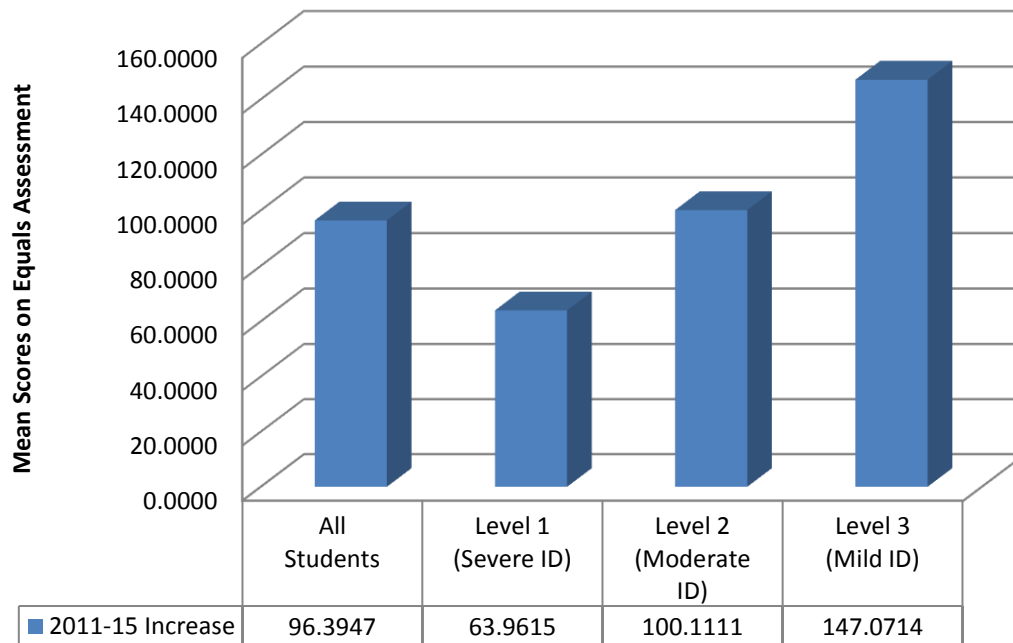
Equals DLP Project 2011-15 Increase by Race



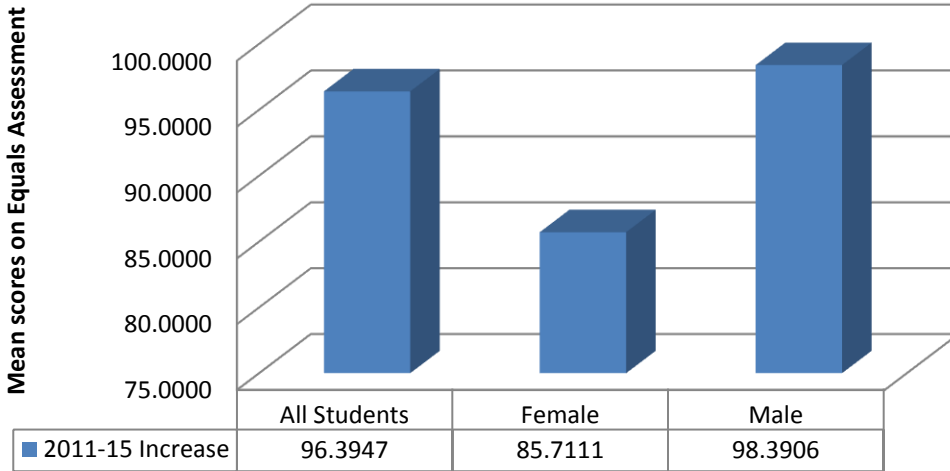
Equals DLP Project 2011-15 Increase by Socio-Economic Status



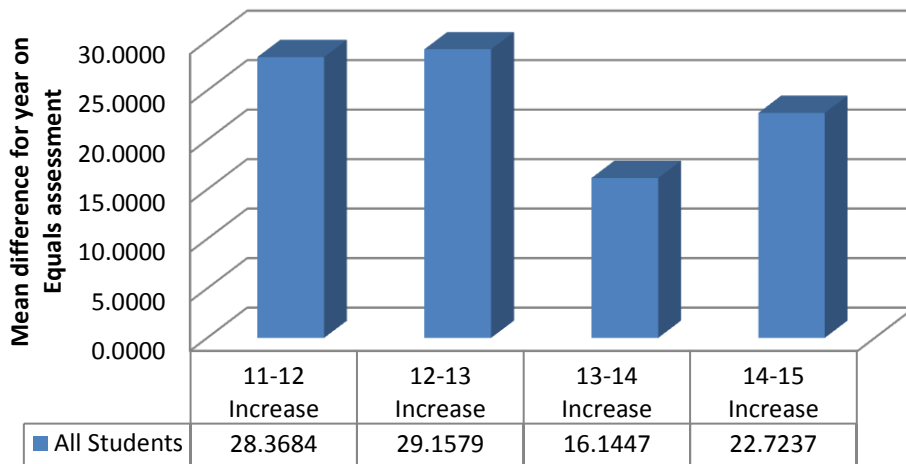
Equals DLP Project 2011-15 Increase by Level



Equals DLP Project 2011-15 Increase by Gender



Equals DLP Project Progress for All Students 2011-2015



**EQUALS DLP STUDY
2011-2015**

	N	Sept. 2011	Apr. 2012	11-12 Increase	Apr. 2013	12-13 Increase	April 2014	13-14 Increase	Apr. 2015	14-15 Increase	11-15 Increase	% Increase
All Students	38	59.6447	88.0132	28.3684	117.1711	29.1579	133.3158	16.1447	156.0395	22.7237	96.3947	161.61%
Levels	N	Sept. 2011	Apr. 2012	11-12 Increase	Apr. 2013	12-13 Increase	April 2014	13-14 Increase	Apr. 2015	14-15 Increase	11-15 Increase	% Increase
Level 1	13	20.8846	43.9615	23.0769	60.7692	16.8077	72.6154	11.8462	84.8462	12.2308	63.9615	306.26%
Level 2	18	64.3056	87.4444	23.1389	120.2222	32.7778	139.4722	19.2500	164.4167	24.9444	100.1111	155.68%
Level 3	7	119.6429	171.2857	51.6429	214.0714	42.7857	230.2143	16.1429	266.7143	36.5000	147.0714	122.93%
Category	N	Sept. 2011	Apr. 2012	11-12 Increase	Apr. 2013	12-13 Increase	April 2014	13-14 Increase	Apr. 2015	14-15 Increase	11-15 Increase	% Increase
ASD	17	60.3824	96.0294	35.6470	125.6765	29.6471	143.7353	18.0588	172.7941	29.0588	112.4117	186.17%
Cogn. Imp.	15	64.1000	89.2333	25.1333	119.2667	30.0334	133.1333	13.8666	150.7667	17.6334	86.6667	135.21%
Devel. Disab.	1	22.0000	40.0000	18.0000	66.0000	26.0000	88.0000	22.0000	106.0000	18.0000	84.0000	381.82%
OHI	1	76.0000	93.0000	17.0000	117.0000	24.0000	132.0000	15.0000	154.0000	22.0000	78.0000	102.63%
Multiple	4	45.1250	60.1250	15.0000	86.0000	25.8750	101.3750	15.3750	117.0000	15.6250	71.8750	159.28%
Demo- graphics	N	Sept. 2011	Apr. 2012	11-12 Increase	Apr. 2013	12-13 Increase	April 2014	13-14 Increase	Apr. 2015	14-15 Increase	11-15 Increase	% Increase
African- American	13	67.4231	96.1154	28.6923	124.1154	28.0000	140.1154	16.0000	164.0000	23.8846	96.5769	143.24%
Hispanic	10	55.8384	79.0838	23.2454	106.3431	27.2593	123.0598	16.7167	144.0935	21.0336	88.2551	158.05%
White	15	59.5702	85.6279	26.0577	113.9465	28.3186	130.3721	16.4256	152.4631	22.0911	92.8929	155.94%
Socio-Econ Status	N	Sept. 2011	Apr. 2012	11-12 Increase	Apr. 2013	12-13 Increase	April 2014	13-14 Increase	Apr. 2015	14-15 Increase	11-15 Increase	% Increase
Free lunch	30	63.7500	94.2500	30.5000	125.4667	31.2167	141.0000	15.5333	163.2167	22.2167	99.4667	156.03%
Paid	6	47.5000	67.4167	19.9167	88.5833	21.1667	109.0833	20.5000	138.4167	29.3333	90.9167	191.40%
Partial	2	34.5000	56.2500	21.7500	78.5000	22.2500	90.7500	12.2500	101.2500	10.5000	66.7500	193.48%
Gender	N	Sept. 2011	Apr. 2012	11-12 Increase	Apr. 2013	12-13 Increase	April 2014	13-14 Increase	Apr. 2015	14-15 Increase	11-15 Increase	% Increase
Female	6	66.2500	83.6667	17.4167	115.7500	32.0833	131.2500	15.5000	152.0000	20.7500	85.7111	129.38%
Male	32	58.4063	88.8281	30.4219	117.4375	28.6094	133.7031	16.2656	156.7969	23.0938	98.3906	168.46%