



New York City Center for Economic Opportunity Independent Evaluation

Follow-up Evaluation of the CEO Young Adult Literacy Program: July 2009–December 2010

2013

Westat®

Prepared for:
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Economic Opportunity (CEO)
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Foreword

The Center for Economic Opportunity (CEO) is committed to evaluating its programs and policies and has contracted with Westat and Metis Associates in order to inform decision making within CEO and the sponsoring agencies. Westat and Metis have developed a collaborative team approach in the planning, design, and implementation of various types of evaluations including impact, outcome, and implementation studies. This study was conducted by Westat staff.

The principal authors for this report are Allison Meisch, Nancy Thornton, and Jennifer Hamilton at Westat. Invaluable support was also provided for data collection, data management, and consultation from staff at Westat. In particular we would like to acknowledge the efforts Luis Romero.

We would like to acknowledge the cooperation of the study respondents, especially the program sites that compiled extensive program data dating back over 2 years. We also appreciate the help provided by the staff of CEO, especially David Berman, who facilitated relationships with the literacy sites and has served as an invaluable resource during the project. We would also like to recognize the efforts of the staffs of the New York City Department of Youth and Community Development, the New York Public Library, the Brooklyn Public Library, the Queens Public Library, and the Youth Development Institute who assisted with gaining access to the sites and data.



CEO Response to the Young Adult Literacy Program Westat Evaluation

2013

Addressing the educational needs of young people who are out of school and out of work is a key priority of the Center for Economic Opportunity (CEO) and collaborating City agencies. Without a High School Diploma or equivalent degree, young adults cannot compete in the labor market, resulting in higher unemployment and lower wages.¹ To meet the educational needs of young adults (16-24 year olds) that read at a pre-GED level (4th-8th grade level), CEO and the Department of Youth and Community Development (DYCD) created the Young Adult Literacy program (YAL)- an initiative that provides literacy and numeracy instruction, coupled with social supports, job readiness and internships.

Unlike many programs with a predetermined length of engagement, YAL is designed so that participants can stay as long as they need until they can reach a 9th grade reading level and can enter a GED course. To measure success, CEO focuses on literacy and math gains, rather than program completion, in order to avoid incentivizing sites to only serve those that are already reading close to a GED-level. Given that students entering the program often need a lengthy commitment to reach this grade level, the program provides an array of supports to promote attendance and educational gains.

This evaluation covers data from an 18-month period of YAL and looks at retention, attendance and educational gains. The report is a follow-up to an earlier Westat study that measured the impact of adding education-conditioned paid internships to the literacy services. That study found that program participants overall were making significant education gains during the program, and that adding internships had positive effects on participants' attendance.

Based on the findings of the first evaluation, CEO added paid internships to all YAL sites. When extra resources became available through the City's Young Men's Initiative in FY2012, the City added five additional YAL sites at libraries and community based organizations, bringing the total number of sites up to 17 in August, 2012.²

This evaluation report shows that the average participant in the program increased their grade level in literacy by 1.4 grade levels, and by 1.1 grades in math. Interestingly, those

¹ Sum, Andrew; Khatiwada, Ishwar; and McLaughlin, Joseph, "The consequences of dropping out of high school: joblessness and jailing for high school dropouts and the high cost for taxpayers" (2009). Center for Labor Market Studies Publications. Paper 23.

² This evaluation focused only on the original 12 sites of the YAL program.

who entered with the lowest education levels made the most gains- nearly two grade levels in literacy and two grades in math. Those who entered at lower reading and math levels also had better attendance than those that entered at higher levels. These findings suggest that the program is effectively tailored to the instructional needs of the target population (those at the 4th-6th grade level).

Based on the success of YAL, the program was not only expanded through the Young Men's Initiative, but new program models were also developed. One example of a next generation model is Project Rise- a cohort-based initiative supported by a federal Social Innovation Fund (SIF) grant that provides education conditioned paid internship opportunities to low-income youth who are out of work and school.

It is a long journey to GED completion for a young person reading at a 4th grade level. Overall, 40% of YAL participants are reaching the point where they could transition to a GED class. Given the poor educational backgrounds and multiple barriers that participants face, this shows that program is having a positive effect. Graduates of the program were also found to have higher retention and participation rates, again suggesting the importance of keeping students in class.

CEO is now undertaking a new evaluation of the program that is conducting a qualitative assessment of high performing YAL sites in order to identify best practices that drive success. We remain committed to continually improving the program, and will continue to work with DYCD and other partners toward the goal of increasing educational and employment impacts on disconnected young adults.

David S. Berman, MPA, MPH
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Executive Summary

The Center for Economic Opportunity (CEO) Young Adult Literacy Program (YAL) seeks to improve the literacy skills, math skills, and job readiness of disconnected youth in New York City. The program is one of the few in New York City that specifically address the literacy needs of young adults who read at the pre-GED level. This report presents the findings from a study of YAL participants enrolled in 12 sites between July 2009 and December 2010.

YAL

YAL evolved out of conversations with many stakeholders and is modeled heavily on the Community Education Pathways to Success (CEPS) model developed by the Youth Development Institute (YDI). CEO and the Department of Youth and Community Development (DYCD) expanded on the CEPS model and developed YAL in partnership with YDI, and the Library partners. YDI now provides technical assistance to all sites to assist in the development and implementation of the internship component. DYCD oversees community-based providers as well as the Brooklyn Public Library, New York Public Library, and Queens Public Library..

At the time of data collection for this study, CEO supported 12 YAL sites operated by libraries and community-based organizations.³ The program's curriculum and instructional approach are designed to meet the needs of young adults, ages 17 to 24, who

read at a fourth to sixth grade level. The program offers approximately 15 hours of literacy and math instruction each week, paid internships for 6-8 hours per week, work readiness workshops, modest participant incentives, and case management services to support sustained participation and educational goals. Sites serve cohorts of approximately 20 participants and are expected to engage them as long as necessary to reach an eighth grade reading level and/or transition to a GED program. Most participants need to advance several grade levels before entering GED programs or to realistically compete in the job market. Therefore, a program goal is to retain students over an extended period of time. In the spring of 2009, CEO and DYCD became particularly concerned that many participants would drop out of the program and not return after the summer break, so they worked with YDI to design a paid summer work experience program aimed at promoting class attendance, improving job readiness, and providing much needed income for participants.

In the summer of 2009, the impact of adding this summer internship program to YAL literacy classes was evaluated. The final report, detailing the study results, can be found on the CEO website:

http://www.nyc.gov/html/ceo/downloads/pdf/yal_final_report_011211.pdf.

After the early evaluation demonstrated the promise of the summer internship initiative, CEO was interested in learning more about the longer term educational gains of participants who enroll in YAL. As a result, the current study was initiated to capture participant information and to track attendance and gains over time in literacy and math skills.

³ In FY12, the program was expanded through the Young Men's Initiative, which supported the additional of five new sites. In addition, the program is being expanded through the Young Men's Initiative to serve young adult probationers at seven sites.

Study Overview

The goal of the current study was to examine attendance, enrollment, retention, and literacy and math achievement outcomes for participants enrolled in 12 YAL sites between July 2009 and December 2010. Participants' internship participation and program exit reasons were also examined. Finally, Westat compared participants in the library sites to participants in the sites run by community-based organizations (CBOs) to determine if there were any differences in academic achievement.

Description of Participants

Sites provided individual participant data for 985 total participants. Participants were predominantly African American or Hispanic and were, on average, 19 years old. Most participants had dropped out of high school after completing their freshman year. Prior to beginning the program, on average, participants were reading at the sixth grade level,⁴ and had a fifth grade level in math.⁵

Results

- Participants attended an average of 56 percent of the possible class hours.⁶

- Older participants, who were enrolled for shorter lengths of time and had completed more years of school, had higher attendance rates.
- Participants who entered reading between the fourth and sixth grade level on the Test of Basic Adult Education (TABE) had higher attendance rates than those who entered reading at eighth grade level or above.
- On average 67.6 percent of participants remained in the program long enough to take a pre-test and post-test TABE.
- Participants remained enrolled for an average of 5 months (ranging from 6 days to 2 years).⁷
- Participants made gains of over 1.41 grade levels in literacy.
 - Participants who had lower pre-test reading scores and those with longer time elapsed between test dates made greater gains in literacy.
- Participants made gains of 1.07 grade levels in math.
 - Participants with lower math pre-test scores made greater math gains than those who entered with higher scores.

⁴ Literacy pre-test scores ranged from first to 12th grade.

⁵ Math pre-test scores ranged from first to 12th grade.

⁶ Participant attendance was calculated by determining the percentage of possible days of the literacy class that participants could have attended. For example, if a participant attended half of the possible days for the literacy classes offered while he or she was enrolled; his or her attendance rate was 50 percent. CEO requested that only participants who were enrolled for a more than a week be included in analyses because those enrolled for fewer than 5 days were unlikely to have any meaningful exposure to the literacy classes. Sites recorded the enrollment date and the last date

participants attended and provided the total number of possible dates within that time period the participant could have attended the literacy classes.

⁷ Enrollment was calculated by subtracting participants' date of enrollment from their last day of attendance in days. Only participants enrolled for more than a week were included in these analyses. CEO requested that only participants who were enrolled for a more than a week be included in analyses because those enrolled for fewer than 5 days were unlikely to have any meaningful exposure to the literacy classes.

- Approximately 22 percent of participants took part in the internship component, attending an average of 71 hours.⁸
 - Individual internship participation ranged from 3 to 372 hours.
 - Internship participants did not have significantly different gains in literacy or math compared to non-internship participants.
 - Additional analyses revealed that number of hours worked were also not a significant predictor of literacy or math change.
 - Participants who worked more internship hours did have higher attendance rates than those who worked fewer or no internship hours.
 - Internship participants had significantly higher attendance rates (65%) compared to non-internship participants (53%).
 - Internship participants were enrolled for significantly longer (over six months) than non-internship participants (over four months).
- Forty-one percent of participants graduated from the program during the assessment period. Six percent left the program for employment.
 - Like the other exit reasons, “graduation” was not universally defined by the sites, but generally meant that participants moved on to a GED program, or took and passed the GED.
 - Participants who entered the program with higher literacy and math scores were more likely to graduate.
 - Participants who graduated had a higher attendance rate on average (66%) than those who did not graduate (53%).
 - Internship participants were more likely to graduate than non-internship participants.
 - There was no significant difference in length of program enrollment for participants who graduated compared to those who did not graduate.
- No significant differences between growth in literacy or math or in attendance rates, enrollment, or retention were found between library and CBO sites.

Conclusion

This study provides evidence that YAL participants are making progress while enrolled in the program—making substantial literacy and math gains. Typical length of enrollment is just over 5 months, and within that time, participants gain more than a grade level in both literacy and math skills.

In terms of attendance, participants attended 56 percent of the possible literacy class hours. Furthermore, although there are no significant differences in literacy and math gains between internship and non-internship participants, internship participants do have a significantly higher rate of literacy class attendance and are enrolled for longer than the non-internship participants. It is important to keep in mind that participation in the internship is tied to attendance in the literacy classes; participants have to attend 75 percent of the literacy class hours to be eligible to participate in the internship. The internship continues to be a valuable addition

⁸ Sites varied in the number of internship hours offered to individuals. The sites did not provide data on the number of possible internship hours participants could have attended. Therefore, the internship participation rate could not be calculated.

to the YAL model in regard to attendance rates and length of enrollment.

Participants exit the program for a variety of reasons. Sites report that of the participants who have exited, 40.9 percent are graduates. An additional 6.4 percent left to pursue employment opportunities. However, 22.7 percent exit the program without providing a reason, so the percentage of youth leaving for positive reasons may be an underestimate. Other reasons sites report for participants leaving the program include dropping out (13.8 percent), medical/personal issues (3.3 percent), court or criminal justice issues (2.6 percent), and moving or relocation (2.5 percent). An additional 7.7 percent of participants exit for other unspecified reasons.

Additionally, internship participants were more likely to graduate than non-internship participants.

Finally, this study found no differences between CBOs and library sites. Participants in CBOs were no different in literacy or math changes, attendance rates, or length of enrollment than participants in the library sites.

Although the analyses conducted are correlational and do not indicate causality, taken together, the findings presented in this report indicate that the program is having a positive influence on the population it serves. Further implications and possible explanations for findings can be found in the body of the report. Additionally, these findings provide valuable information which can guide programs as they continue to recruit and enroll new participants as well as indicate directions for future research.

I. Overview of the Young Adult Literacy Program

I.1 Goals and Objectives

I.1.a. Center for Economic Opportunity Program Goals

In an effort to break the cycle of inter-generational poverty in New York City, Mayor Bloomberg established the Center for Economic Opportunity (CEO) in 2006. CEO's approach to poverty reduction is innovative, in that it includes both significant financial commitments and highly targeted, performance-based interventions (Center for Economic Opportunity, 2009). CEO's strategy involves the following:

1. Breaking the cycle of intergenerational poverty by investing in human capital development.
2. Giving the working poor a toolbox of programs and supports that will help them move up the economic ladder and out of poverty for the long term.
3. Offering youth who are out of school and unemployed, and those who have a history of incarceration, better chances to gain the skills and work experience they need to succeed.
4. Intervening early in the lives of children ages 0–5 years to break cycles of poverty.
5. Breaking down silos within government to promote new ways of collaborating, increasing efficiency, and making better use of limited resources.
6. Using data and evaluation to improve programs and allocate resources based on measurable results.
7. Sharing lessons learned and advocating on a national level for strategies shown to make a difference.

CEO has funded approximately 50 programs for young adults, the working poor, and families. One such program, the Young Adult Literacy Program (YAL), was designed jointly with the Department of Youth and Community Development (DYCD) specifically to improve the literacy, math, and work readiness skills of disconnected youth at low education levels.

I.1.b. YAL Goals

In every borough of New York City other than Staten Island, at least 25 percent of adults are functionally illiterate, meaning they do not have the skills necessary to perform basic tasks such as signing a form or reading medical instructions (National Center for Education Statistics, 2003). In addition, 21 percent of New York City residents do not have a high school diploma or GED (U.S. Census Bureau, 2009). The low skill level of these individuals makes it difficult for them to find and maintain employment and achieve economic security. These individuals are disproportionately African American, Latino, and young (Fischer & Reiss, 2010). Approximately 200,000 residents of New York City between the ages of 16 and 24 are disconnected, meaning they are neither employed nor in school (U.S. Census Bureau, 2009). Half of these disconnected youth lack a high school diploma and have extremely low literacy skills, lack of work experience, and lack of soft skills including communication, teamwork, and leadership abilities (Levitan, 2005).

In order to ensure that these disconnected youth have the opportunity to access education, find employment, and achieve economic security, basic skills programs designed to assist young adults in earning a GED and to provide them with early work opportunities must be available (Levitan, 2005).

YAL therefore seeks to improve the literacy skills, math skills, and job readiness of disconnected youth. By improving these skills, the program aims to re-engage young adults in school and their communities, prepare them for employment, improve their productivity, and reduce their risk for long-term poverty. Participants are encouraged to remain in the program until they have reached approximately both an eighth-grade reading and math level and can then graduate to a GED preparation class.

1.1.c. Study Goals

Over the summer of 2009, a new internship component was added to the standard YAL model and evaluated by Westat and Metis Associates.⁹ The evaluation provided some evidence that the internship increased attendance and resulted in math gains. Based on these findings, CEO expanded the internship component to all sites year-round.

To build on the knowledge learned in the first YAL evaluation, CEO contracted with Westat to conduct a Follow-up evaluation. This report details the findings of the Follow-up evaluation, describes YAL participants, and will answer the following research questions:

- What is the average attendance rate of participants in literacy classes?
 - Are there differences in attendance between participants entering with lower levels of academic achievement and those with higher levels?
- How long does the average participant remain enrolled in the program?
 - Are there differences between participants who entered with lower levels of academic achievement and those with higher levels?
- What is the average growth in literacy made by participants?
 - Are there differences between participants entering with lower levels of academic achievement and those with higher levels?
- What is the average growth in math made by participants?
 - Are there differences between students who entered with lower levels of academic achievement and those with higher levels?
- How many participants took part in internship activities and for how long?
 - Are there differences in outcomes between participants who took part in the internship and those who didn't?
- Why do participants exit the program?
 - Are there differences between participants who graduate YAL and those who exit for other reasons?
- Are there any differences in outcomes for participants enrolled in sites operated by CBOs compared to those operated by libraries?

⁹ Findings of the evaluation can be found at the CEO website http://www.nyc.gov/html/ceo/downloads/pdf/yal_report_022211.pdf.

2. Methodology

After conducting the initial summer YAL evaluation, CEO contracted with Westat to conduct the Follow-up evaluation of YAL to study the progress and achievement of YAL participants. This section provides a brief overview of the methodology used in the study. All twelve sites provided data on participants enrolled between July 2009 and December 2010.¹⁰

2.1 Data Collection

This study is based on quantitative data provided by the sites, including the following:

- Demographic data;
- Attendance and enrollment dates;
- Internship participation; and
- Exit dates and reasons for exiting (if known).

In addition, each site submitted available results of the Test of Adult Basic Education (TABE; McGraw Hill, 2009). The TABE is an assessment used to measure participants' literacy and math skills. The difference between participants' first available test (pre-test) and last recorded test (post-test) was used to determine their growth in literacy and math achievement.

2.2 Data Analysis

2.2.a. Attendance, Enrollment, and Retention

The attendance rate was calculated by dividing the number of days participants attended by the number of possible days they could have attended, and multiplying by 100. Participants who attended at least 1 week of classes (more than 5 days) were included.¹¹

Length of time enrolled in the program was calculated by determining the number of days between enrollment and exit. For participants who were still enrolled at the end of the data reporting time frame (December 31, 2010), program enrollment was calculated as the number of days between enrollment in the program and December 31, 2011. Again, only participants who were enrolled for at least one week (more than 5 days) were included.

Retention was calculated by examining the number of literacy TABE tests each participant took while enrolled. Participants were considered retained if they had both a pre and post literacy TABE test.

Multivariate regression analyses were used to determine if any of the covariates significantly predicted attendance or enrollment. Additionally, Analysis of Covariance (ANCOVA) was conducted to test whether participants who entered the program at different levels of reading and math achievement had significantly different

¹⁰ In 2012 an additional five sites were funded through Mayor Bloomberg's Young Men's Initiative (YMI). The program is also being expanded to serve young probationers through the Young Man's Initiative.

¹¹ CEO requested that only participants who were enrolled for at least 5 days be included in analyses because those enrolled for less than a week were unlikely to have any meaningful exposure to the literacy classes.

attendance, enrollment, and retention outcomes.

2.2.b. Academic Achievement

To examine participants' growth in literacy and math skills over the course of the program, the Westat team used a single-group pre-test–post-test design.

It is important to note that findings from the above analyses do not indicate causality. Due to the absence of a comparison group, alternative explanations for change cannot be ruled out. These analyses are therefore descriptive in nature.

2.2.c. Comparative Analyses

A series of independent *t* tests compared different groups of participants on three outcomes of interest: attendance, literacy, and math growth. These groups were (a) internship participants to non-participants, (b) program graduates to non-graduates, and (c) participants in sites operated by library systems to those operated by CBOs.

3. Participant Characteristics

The twelve YAL program sites that are part of this study provided data on 985 participants who entered during the program months of July 2009 through December 2010. Of the 985 participants for which sites provided data, 861 of the participants were enrolled in the program for more than a week (more than five days). All analyses for this report include only participants who were enrolled for more than a week.¹²

Analyses were conducted to examine any differences between participants enrolled for less than a week and those enrolled for longer than a week. No significant differences between these two groups of participants were found.

The number of participants enrolled in each program site ranged from 39 to 137, with a mean of 71 participants per site. On average, sites enrolled approximately 16 participants per quarter. Typically, community-based organizations had larger enrollments than library sites. Table 1 shows the total number of participants enrolled in the program by site.¹³

Table 1. Number of enrolled participants by site

	Total
Site 1	49
Site 2	42
Site 3	109
Site 4	103
Site 5	62
Site 6	53
Site 7	76
Site 8	45
Site 9	58
Site 10	39
Site 11	137
Site 12	88
Overall	861

Table 2 provides a summary of the characteristics of these participants. Sites did not always collect information on all of participant characteristics necessary for the evaluation, which resulted in some instances of missing data.¹⁴

Although the YAL targets participants aged 17-24 years old, sites have enrolled a small number of participants (58) who are 16 years old and who are over 24 years old (28 participants).¹⁵ The participants enrolled in the program thus ranged in age from 16 to 27 years, with a mean age of 19.7. Overall, 55 percent of participants were male, and 45 percent were female. The majority of the participants were either African American (43%) or Hispanic (46%); only a small percentage of the participants were from

¹² CEO requested that only participants who were enrolled for at least 5 days be included in analyses because those enrolled for less than a week were unlikely to have any meaningful exposure to the literacy classes.

¹³ Enrollment data are presented because Westat did not have reliable data on average daily attendance in the literacy classes. However, enrollment numbers do not necessarily reflect the actual number of participants in the classroom on a typical day.

¹⁴ Despite efforts to collect as complete a data set as possible, substantial data remained missing for specific elements. For additional information, please see the Appendix.

¹⁵ Typically 16-year-olds would be enrolled in the public education system. Sites did not report why they were enrolling 16-year-olds. It is possible that the 16-year-olds were close to turning 17. It is also possible sites did not want to turn away willing participants who were seeking assistance.

another racial/ethnic group (11%).¹⁶ The highest grade that the participants completed ranged from third grade to 12th grade,¹⁷ and the mean educational attainment of the participants was 9th grade.

On average, participants at the time of the pre-test had a sixth grade reading level, (ranging from second to 12th grade). Similarly, the mean math grade level was fifth, with a range of approximately first grade to 12th grade.

¹⁶ The “other” category includes White, Asian, Native American, and Other.

¹⁷ Completing the 12th grade does not necessarily mean high school graduation.

Table 2. Participant characteristics by site

	Overall	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11	Site 12
Number of participants	861	49	42	109	109	62	53	76	45	58	39	137	88
Age*													
Mean	19.74	20.18	20.60	21.32	20.10	17.65	17.21	20.63	18.20	20.16	19.15	19.64	20.16
SD	2.45	2.09	1.94	2.42	2.42	1.81	1.51	2.02	1.98	2.41	2.10	2.31	2.41
Minimum	16	17	17	17	16	16	16	17	16	17	17	16	16
Maximum	27	24	24	27	24	24	23	26	23	25	24	25	26
Gender**													
Male	471 (55%)												
Female	389 (45%)												
Race/Ethnicity													
African American	374 (43%)	37	12	93	27	20	18	8	30	30	14	46	39
Hispanic	395 (46%)	6	11	12	74	39	35	67	4	8	10	81	48
Other	92 (11%)	6	19	4	2	3	0	1	11	20	15	10	1
Highest grade level completed***													
Mean	9.80	10.13	10.45	n/a	9.88	9.29	9.32	9.80	9.60	9.97	10.13	9.76	9.77
SD	1.14	1.20	1.64	n/a	1.05	1.00	0.98	1.11	1.36	1.06	1.09	1.16	0.83
Minimum	3	6	3	n/a	7	7	8	7	6	7	8	5	8
Maximum	12	12	12	n/a	11	11	12	12	11	12	12	12	11
Reading pre-test ****													
Mean	6.04	5.79	5.69	6.01	6.57	5.97	5.98	4.76	5.56	5.57	5.73	6.04	7.56
SD	1.66	1.25	1.23	1.70	1.31	1.13	1.15	1.43	1.10	1.66	1.27	1.60	2.25
Minimum	1.50	3.30	3.10	2.50	4.10	3.80	3.20	1.50	4.00	1.60	3.40	3.40	2.00
Maximum	12.90	8.70	8.70	10.90	10.30	8.30	9.80	8.30	7.70	10.60	8.60	12.9	9.90
Math pre-test****													
Mean	5.30	5.26	5.39	5.32	6.14	5.12	5.38	4.82	5.32	4.88	5.49	5.09	5.27
SD	1.65	1.71	1.56	1.25	1.61	1.39	1.79	1.75	1.45	1.61	1.66	1.59	1.91
Minimum	1.00	1.50	2.40	3.20	2.10	2.50	2.80	1.40	2.80	1.00	3.10	1.5	1.10
Maximum	12.90	9.80	9.90	9.60	10.50	9.90	12.90	10.80	7.70	9.90	11.00	11.10	9.90

* Information on age is calculated with information from 845 participants.

** Gender information is calculated with information from 860 participants. Site level gender information is not reported to protect the confidentiality of sites.

*** Highest grade level completed is calculated with information from 745 participants.

**** Reading pre-test scores are calculated for 813 participants. Math pre-test scores are calculated for 795 participants.

4. Results

This section discusses the findings for the following outcomes: (a) program attendance, enrollment, and retention; (b) literacy and math achievement; (c) internship participation; and (d) exit outcomes.

4.1 Attendance, Enrollment, and Retention

4.1.a Attendance

YAL sites offer literacy and math instruction as well as job readiness preparation. Typically, programs offer 15 hours over 3 to 5 days of instruction each week. To determine how often participants attend classes, an attendance rate was calculated.¹⁸ Attendance rate is the amount of days a participant attended divided by the total number of days the participant could have attended while enrolled in the program.

Figure 1 illustrates the attendance rate both by site and program-wide. Average attendance rates across sites ranged from 44.8 percent to 83.3 percent, with a mean of 56.7 percent, and a median of 50.3 percent. Overall, participant attendance ranged from 3.5 percent to 100 percent.

Multiple regression analyses were conducted to determine if participants' attendance rate was associated with any particular participant characteristics. The analysis found older participants had

significantly higher attendance rates than younger participants.¹⁹ Additionally, participants who were enrolled for a shorter length of time also had higher attendance. Finally, participants who had completed more years of school had higher attendance rates than those who had completed fewer years. No other participant characteristics (i.e., gender, race/ethnicity) were associated with attendance rate.

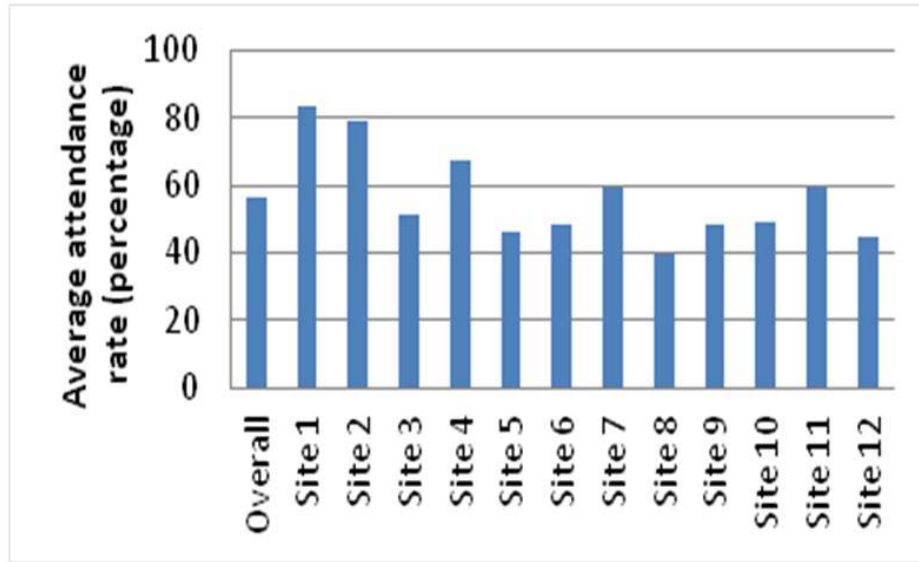
Older participants who had completed more schooling but were enrolled for shorter amounts of time had higher attendance rates. Although there are many possible explanations for these findings, it could be that older students who had previously completed more schooling were more conscious of the need to attend class in order to make progress. Additionally, shorter enrollment was associated with higher attendance; it is possible that participants were receiving more "concentrated" doses of the YAL program by being enrolled for shorter lengths but attending more hours during that time than other participants.

In addition to the analysis described above, Westat hypothesized that attendance may be related to the pre-test literacy and math scores. For example, participants with very low literacy or math upon entering the program may attend classes more regularly than participants entering with higher levels of literacy. To test this hypothesis, participants were placed into one of four groups based on their pre-test TABE literacy and math scores

¹⁸ Only participants who had data on attendance dates and hours were included in the calculation of attendance rate. Sites provided attendance data that were not always complete. After following up with sites, attendance data was missing for 133 participants. Additionally, only students who attended more than a week (5 days) of classes were included in calculations. There were 65 participants who attended less than a week of literacy classes.

¹⁹ There was no significant correlation between age and pre-test reading level, so it is unlikely that the relationship between age and attendance rate is because of a relationship between age and pre-test reading scores.

Figure 1. Attendance rates by site



(see Tables 3 and 4). ANCOVA analyses were then conducted to examine any difference in attendance among these groups. Controlling for other factors, we found that participants reading at the fourth to sixth grade level upon entry had significantly higher attendance rates than any other group.²⁰ It could be that literacy classes and curriculum at YAL sites are geared more towards those reading at the fourth to sixth grade levels. These participants may be more engaged or attentive, and therefore more likely to attend to the instruction than other participants because it is at a level that meets their needs.

ANCOVA was also conducted based on math scores at entry. Controlling for other factors, there were no significant differences in attendance rate based on math pre-test scores.

Table 3. Average attendance rate by literacy pre-test category

Literacy pre-test category (N=601)	Attendance rate
Below 4th grade (n=51)	54.75
4th – 5th grade (n=297)	58.53*
6th – 7th grade (n=177)	54.91
8th grade or higher (n=76)	52.07

* $F(3, 593) = 3.326, p < .05$.

Table 4. Average attendance rate by math pre-test category

Math pre-test category (N=589)	Attendance rate
Below 4th grade (n=148)	55.54
4th – 5th grade (n=272)	56.07
6th – 7th grade (n=133)	57.71
8th grade or higher (n=36)	55.98

4.1.b Enrollment

To determine how long participants were enrolled in the program, Westat calculated the number of days²¹ between when a participant enrolled in the program and when he or she

²⁰ Literacy: $F(3, 593) = 3.326, p < .05$; Math: $F(3, 581) = .370, ns$

²¹ This is a count of calendar days, not instructional days.

exited. Participants who were still enrolled in the program as of December 31, 2010 (the end of the data collection for this study) were considered separately. Table 5 shows length of enrollment by site.

Overall, length of enrollment for participants exiting the program prior to December 2010 ranged from 6 to 858 days, with a mean duration of 145 days.²² Participants were enrolled on average for approximately 5 months. There was variability in average enrollment by site, ranging from 73 days (approximately 2½ months) to 259 days (approximately 8½ months). Although these data show how long participants were enrolled in the program, they do not show how often participants attended classes during this time. That information can be found in Section 4.1.a. However it should be noted that attendance rate and length of enrollment are negatively correlated.²³ Participants who had higher attendance rates were enrolled for fewer days. It is possible that because these participants attended more classes they made gains more quickly, and therefore were enrolled for a shorter time period.

Separate analyses were conducted for the 145 participants still enrolled as of December 31, 2010 (the end of the data reporting time frame). Since they had not yet exited the program their length of stay was based on how long they had been in the program prior to the cutoff date. On average, these participants had been in the program for 325 days, ranging from 16 days to 816 days (see Table 6). It is possible many of these participants continued to be enrolled into 2011, but these data were outside the scope of the data collection time frame.

The length of enrollment for the currently enrolled (325 days) was considerably higher than for those who had exited (145 days). There are a number of plausible explanations for this difference. For example, programs could be doing better at retaining participants, or the currently enrolled participants could be different, perhaps more motivated, than the ones who have already exited.²⁴

²² Only participants who were enrolled for more than a week were included. Where enrollment date or exit date were missing, the pre- or post-test date was used.

²³ $r = -.168, p < .001$.

²⁴ Analyses revealed that those currently enrolled were not significantly different on TABE pre-test scores (literacy or math) than those who had already exited. However, there could be other non-measured differences between these participants. Because there were no measured differences between exiters and current participants, these two groups were combined for other analyses.

Table 5. Length of enrollment (in days) for participants who had exited the program by December 2010

	Overall	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11	Site 12
Total N	777	48	47	56	84	64	59	85	41	42	32	133	86
Mean	145	78	73	158	111	117	118	106	259	214	151	183	174
SD	133.1	41.0	46.4	152.1	99.7	91.7	98.2	103.9	196.6	183.4	103.4	141.2	145.9
Min	6	14	8	11	8	14	6	8	16	17	21	8	6
Max	858	209	262	685	537	443	574	473	779	773	471	858	470

Table 6. Length of stay (in days) for currently enrolled participants

	Overall*
Total N	145
Mean	325
SD	205.7
Min	16
Max	816

* Individual site-level data is not reported due to small cell sizes for some sites.

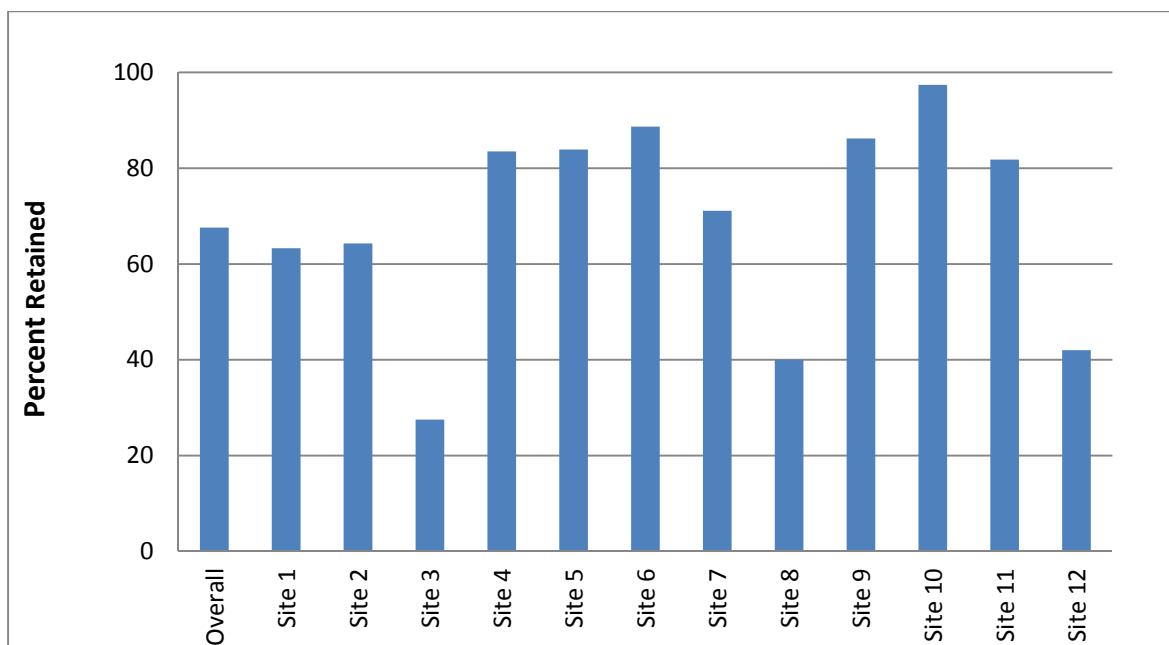
In an effort to understand enrollment differences between participants who entered the program at different literacy and math levels, further analyses were conducted. Participants were grouped in the same four categories as previously described based on pre-test TABE scores for literacy and math. There were no statistically significant differences among the four groups on length of enrollment. Participants who entered with low literacy and math scores were no different in how long they stayed in the program than those who entered with higher levels of literacy and math skills.

4.1.c Retention

Retaining program participants long enough to have an effect is a challenge for YAL sites. To provide information about

participant retention Westat examined the percentage of participants who remained in the program long enough to take two TABE tests. This is not the most precise way to define retention, although, given the data provided by the sites, this was the only way to calculate retention reliably. There are many possible reasons why a participant may not have had a post-test. For example, sites administer TABE tests at different times; some on regular intervals and some as needed. It is possible that sites that test more regularly or at more frequent intervals may be more likely to have higher retention rates because they provide more opportunities for participants to take additional TABE tests.

On average, the time between test dates was 146 days or just over four months. Of the 861 participants who attended at least five days of classes, 582 (67.6%) had both a pre-test and post-test TABE literacy score. Figure 2 illustrates the retention rate both by site and program-wide. Average retention rates across sites ranged from 27.5 percent to 97.4 percent, with a mean of 67.6 percent.

Figure 2. Retention rates by site

CEO and YAL programs indicate that retaining participants long enough to make gains in academic skills is essential to preparing them for a GED program or steady employment. As most participants enter at a sixth grade reading level, they have to make large gains in order to have the skills needed to enter to take the GED or enter a GED preparation class.²⁵ Analyses of literacy achievement (described in Section 4.2.a) suggest that CEO and YAL are correct in making retention a high priority; literacy achievement analysis showed that participants who have more time between tests make larger gains in literacy. Participants who were included in this analysis all were “retained” by our definition in that they had a pre-test and post-test. It appears that retention (staying long enough to have two TABE tests) and the length of time between tests is important for participant academic growth. Although the

²⁵ Many GED preparation classes suggest at least a ninth grade reading level is necessary to take the GED. www.gedonline.org.

measure of retention used in this study is not the most precise, it is important for future studies to examine the link between retention and academic achievement more closely.

4.2 Achievement in Literacy and Math

4.2.a Literacy Achievement

Analyses were conducted to examine literacy achievement. A total of 813 participants had attended at least one week of literacy classes and had literacy pre-test scores. Of those, 582 also completed a post-test.²⁶

Results indicate that participation in the program is associated with an increase in the participants’ literacy skills. Westat found that,

²⁶ Sites delivered pre-test and post-test data to Westat. It is unclear if this is because the participants did not complete a pre-test or if sites did not report the data. Westat worked with the sites to gather as much TABE testing information as possible but there were still instances of missing data. See the Appendix for greater description of missing data.

4. Results

on average, participants' literacy scores improved 1.41 grade levels.²⁷ The time between testing dates (pre-tests and post-tests) was on average 146 days (just over 4 months). Although there were 99 individual participants whose TABE literacy scores decreased over time, on average for participants with two or more test scores, gains were made in each site.^{28, 29} Multiple regression analyses, described next, explain which variables were significantly associated with change in literacy scores.

The academic skills of incoming participants were highly variable, both within each site, and across sites. Figure 3 shows the average pre-test literacy scores overall and by each site. Additionally, the figure shows the average literacy gains made by participants while enrolled.

Multiple regression analyses found participants who entered reading at a lower level gained significantly more than participants who entered reading at a higher level. Participants who had more time elapse between their pre-tests and post-tests also made greater gains in literacy. No other variables were significantly associated with gains in literacy achievement.³⁰

²⁷ $t_{480} = -18.592, p < .001$.

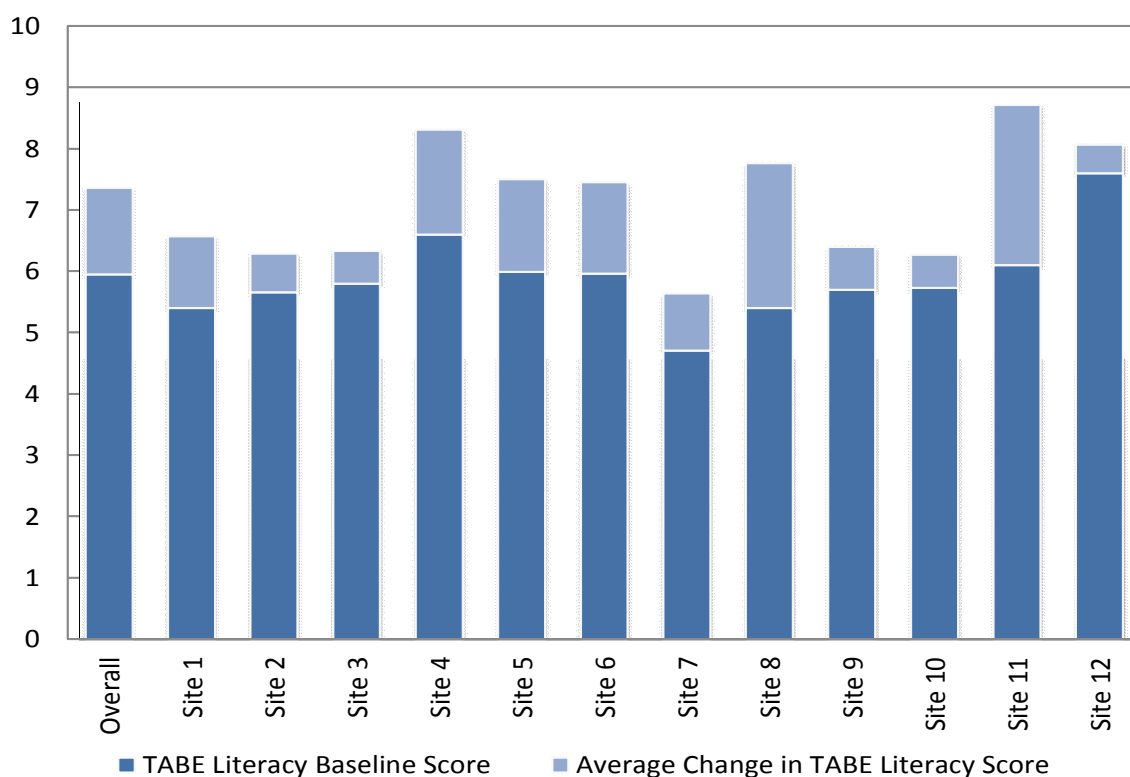
²⁸ Of those whose scores decreased over time, the average decrease was 0.91 grade level decrease, ranging from -5.20 to -.010.

²⁹ A multiple regression was performed using only participants whose literacy scores declined over time. No variables (i.e., age, race, last grade completed, time between testing, length of enrollment, attendance rate) were associated with declines in literacy scores.

³⁰ $F(5, 512) 2.710, p < .05$.

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Figure 3. Baseline literacy TABE scores and average literacy gains



It appears participants need more time between tests to make significant gains in literacy. Additionally, these classes may be more effective for those who enter at lower reading levels. YAL sites may be tailoring their instruction to meet the needs of participants who are reading at lower levels.

Next, participants were categorized based on their pre-test literacy scores (see Table 7), and an ANCOVA analysis was conducted to examine any difference in literacy achievement among these categories.³¹ Controlling for other factors, participants who started at the highest level (reading above an eighth grade level) made significantly smaller gains than any other group. Again, those reading at lower levels at entry made larger

gains. Sites may be gearing instruction towards these participants since presumably, they need to make more progress in order to successfully graduate to a GED program.

Table 7. Average change in literacy score by pre-test category

Literacy pre-test category (N= 554)	Change in literacy
Below 4th grade (n= 48)	1.90
4th – 5th grade (n= 279)	1.74
6th – 7th grade (n= 169)	1.19
8th grade or higher (n= 58)	.72*

* $F(3, 548) = 7.756, p < .001$.

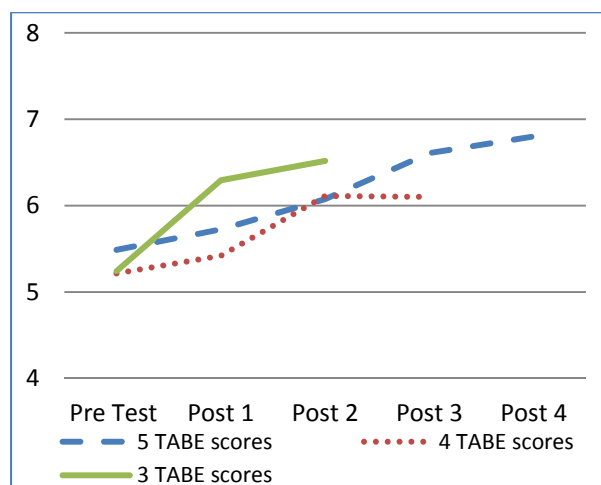
³¹ $F(3, 548) = 7.756, p < .001$.

Some participants had an opportunity to take multiple tests while enrolled in the program.³² While enrolled in the program, 111 participants took three tests (the pre-test, the post-test and one intermediate test). Forty participants took four tests, and 26 took five tests. Participants who had taken three tests gained an average of 1.3 grade levels in literacy.³³ Participants who had taken four tests gained an average of 0.9 grade levels, and those who had five tests gained 1.3 grade levels. Participants with multiple tests were no different in their average literacy scores at entry than those with only the pre and post scores. There were also no significant differences between those with 3 or more literacy tests and those with only two literacy tests in literacy gains or in length of enrollment.

Taking multiple TABEs does not appear to be related to more gains in literacy. It is unknown why some participants took more literacy tests than others, especially considering that they were not enrolled for longer amounts of time. It could be that some participants request to take a literacy test more frequently. Also it could be that instructors may encourage some participants to take more tests to track progress. However, these questions are outside the scope of the current study; future research should look more closely at explanations for why some participants take more tests than others. Figure 3 shows the trajectory of literacy growth for participants with three, four, and five TABE assessments. As shown in

Figure 4, all three groups increased their scores over time.

Figure 4. Change in literacy achievement by number of tests taken



4.2.b. Math Achievement

Analyses were conducted to examine math achievement. A total of 795 participants had attended at least one week of literacy classes and had math pre-test scores. Of those, 546 also completed a post-test.

Results indicate that participation in the program is also associated with an increase in math skills. On average, participants' math scores improved by just over one grade level (1.07 grade levels).³⁴ The time between testing dates (pre-test and post-tests) was on average 143 days (just over 4½ months). Participants who did not have a pre-test or a post-test score were excluded from the analysis because Westat could not calculate a change score without both a pre-test and post-test score. Although there were 113 individual participants whose math scores declined over time, on average, gains were made in each

³² Sites differed in how often and how regularly they offered TABE tests meaning not all participants might have had an opportunity for multiple TABE tests based on how regularly the site offered it, and how long they were enrolled. However, participants who had 3 or more TABE tests were more likely to be enrolled for longer: $t(653) = -3.181, p < .001$.

³³ These categories are exclusive.

³⁴ $t_{544} = -15.487, p < .001$.

site.^{35,36} Participants whose math scores decreased over time had higher pre-test math scores (average math pre-test = 6.16) compared to those whose math scores increased over time (average math pre-test = 4.94). Multiple regression analyses, described next, explain which variables were significantly associated with change in math scores.

Figure 5 shows the average pre-test math scores for all participants and average pre-test scores by each site. The upper bar shows the change in math scores by site.

Analyses were conducted to determine if the gains in math were associated with any particular participant characteristics such as age, gender, race/ethnicity, or last grade of schooling completed. No participant characteristics were significantly associated with larger gains in math. The only variable associated with gains was the pre-test math score. Participants who entered with lower math scores made greater gains in math achievement than those who entered with higher math scores.

Similarly to the literacy results, participants who entered at lower math levels made greater gains. It is possible the classes are also geared towards those with the greatest need of an increase (i.e., those who enter with the lowest math skills).

Next, participants were categorized based on their pre-test math scores (See Table 8)

³⁵ Of those whose scores decreased over time, the average decrease was 0.96 grade level decrease, ranging from -5.40 to -0.10.

³⁶ Separate multiple regression analysis was performed using only participants whose math scores declined over time. No variables (i.e., age, race, last grade completed, time between testing, length of enrollment, attendance rate) were associated with declines in math scores.

and then an ANOVA analysis was conducted to examine any difference in math achievement among these categories.³⁷ The lowest group (the group that entered with a math score below the fourth grade level) made significantly larger gains than any of the other groups. Participants in the four categories did not differ significantly in their length of time enrolled in the program or their attendance rates. It is possible that this finding represents a regression to the mean. Also, it is possible that classes are tailored to those who are the most lacking in math skills.

Table 8. Average change in math score by pre-test category

Math pre-test category (N= 545)	Change in math
Below 4th grade (n= 113)	1.79*
4th – 5th grade (n= 276)	1.07
6th – 7th grade (n= 120)	.68
8th grade or higher (n= 36)	.16

* $F(3, 541) = 14.661, p < .001$.

As with the literacy assessments, some participants had an opportunity to take multiple math tests while enrolled in the program. Figure 6 shows the trajectory of math growth for participants with three, four, and five assessments. While enrolled in the program, 100 participants took three TABE tests, 34 participants took four, and 27 took five. Participants who had taken three tests gained on average 0.9 math grade levels. Participants who had taken four tests gained on average 0.8 grade levels, and those who had five tests gained 1.4 grade levels. Participants with multiple tests were not significantly different in their average TABE math scores at entry than those with only the pre- and post-TABE scores.

³⁷ ANOVA was conducted here rather than ANCOVA because no other variables were significantly correlated with change in math score; therefore ANOVA is an appropriate test of differences among these groups. $F(3, 541) = 14.661, p < .001$.

Figure 5. Baseline math TABE scores and average math gains

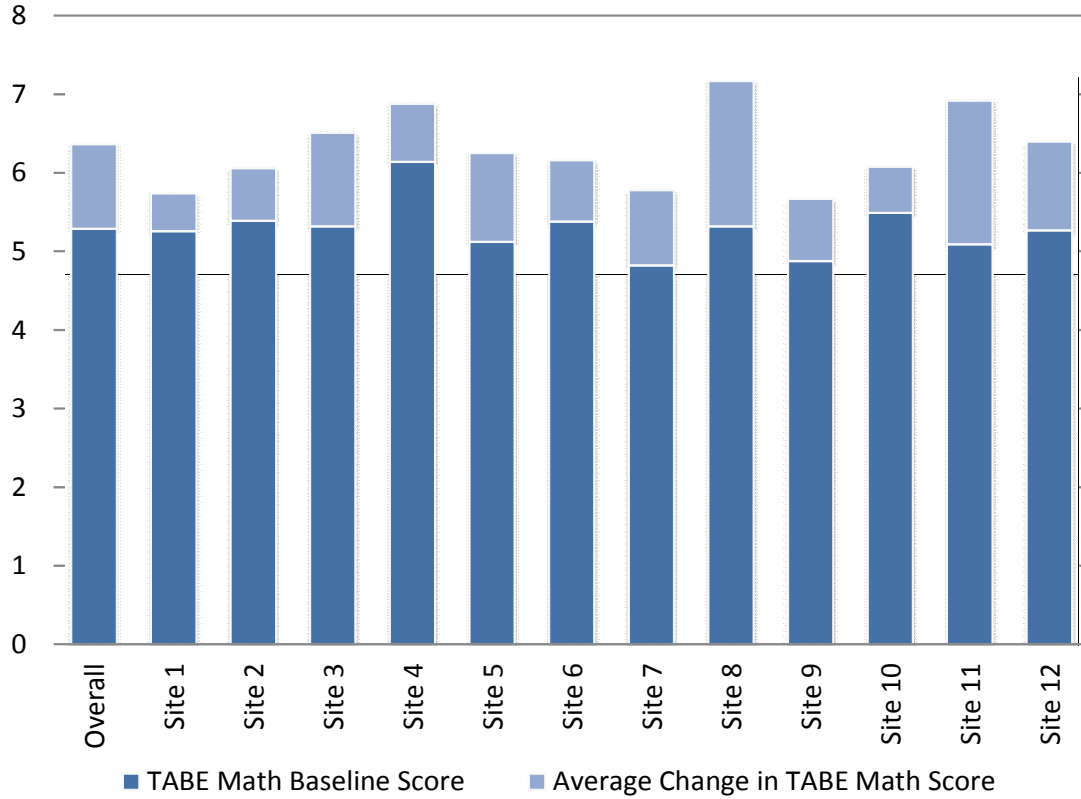
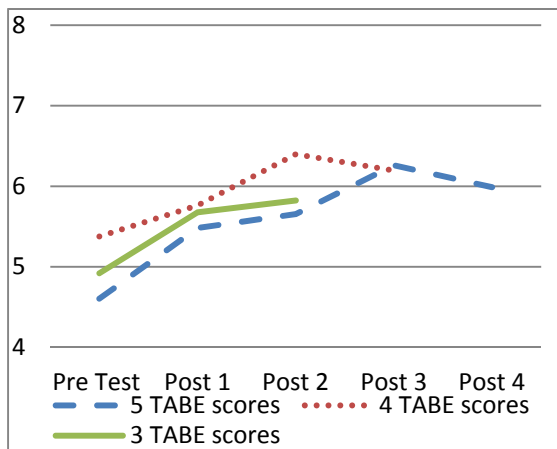


Figure 6. Change in math achievement by number of tests taken



4.3 Internship Participation

In addition to literacy and math classes, sites also offered internship opportunities. In July and August of 2009 an evaluation of adding a paid internship component to YAL model was conducted. During this evaluation five sites (out of nine) were randomly assigned to offer paid internships to participants; the remaining four sites did not. In order to be paid for the internship, participants had to attend at least 75 percent of the literacy class hours. The results of this evaluation were positive³⁸ and led CEO to support a year-round internship model at all sites. Some of

³⁸ Full evaluation report available at http://www.nyc.gov/html/ceo/downloads/pdf/yal_report_022211.pdf.

the key findings from the summer evaluation were as follows:

- Participants attended an average of 66 percent of the possible class hours.
- Retention in the program was quite high, with 85 percent of the participants remaining in the summer session.³⁹
- Participants made gains of approximately half a grade level in reading.
- Participants made gains of approximately half a grade level in math.
- Participants in the internship group attended more summer classes (75% of possible class hours) than control participants (58%).
- Over 90 percent of participants in the internship group remained in the program through the end of the summer, compared to 79 percent of participants in the control group.
- Participants in the internship group increased their math scores by over a full grade level over the course of the summer session, whereas control participants did not show any improvement in their math scores.

As a result of the evaluation findings, all sites began implementing internships, although participation in the internship was optional. However, the attendance requirement remained; to be eligible to participate in the internship, participants had to attend at least 75 percent of the literacy class hours. The current study examined whether the internship continued to be positively associated with outcomes for participants.

In the fall of 2010 all sites received expanded funding to begin implementing the internship component. Thus, the window for offering internship opportunities during the data collection period was small. In the current study, not all sites offered internships each quarter, and not all literacy class participants also participated in the internship.

Overall, sites reported data on 221 participants who participated for at least 1 day of an internship between July 2009 and December 2010.⁴⁰ Participation in the internship was contingent on attend the literacy classes. In order to be eligible to participate in the internship, participants had to attend at least 75 percent of the literacy class hours.

Table 9 shows the number of internship participants overall. The number of internship participants in each program site ranged from 5 to 44, with 221 overall participants participating in YAL internship. Internships vary from a traditional internship placement to a group community benefit project. Both types of internship are paid and provide work experience.

The length of time participants attended the internship varied considerably. Table 10 shows the length of internship participation by both days attended and hours worked. On average, internship participants attended 14 days of an internship and worked just over 71 hours at their internship placement.

³⁹ Participant retention was measured by determining the number of youth who remained in the program through the end of the internship program on August 20, 2009.

⁴⁰ Due to the smaller number of internship participants, those who attended 1 day were included in these analyses.

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Table 9. Internship participation by site

	Total number of participants	Number of internship participants
Site 1	50	6 (12%)
Site 2	47	11 (23%)
Site 3	118	18 (15%)
Site 4	110	44 (40%)*
Site 5	64	5 (8%)
Site 6	60	16 (27%)
Site 7	92	9 (10%)*
Site 8	50	25 (50%)*
Site 9	60	21 (35%)
Site 10	48	20 (42%)*
Site 11	141	19 (13%)
Site 12	145	27 (19%)*
Overall	985	221 (22%)

* NOTE: Sites with an * were the original sites that offered the internship during the first evaluation.⁴¹

Table 10. Internship participation in days attended and hours worked

	Mean	SD	Min	Max
Internship days attended (N=152)	14.4	10.0	1	47
Internship hours worked (N=170)	71.6	66.1	3	372

The number of work days attended by internship participants ranged from 1 to 47 days, with a mean of 14.4. Typically sites offer internship between one and three days a week meaning on average participants are engaged in their internship between approximately 5 and 14 weeks. Hours worked at the internship placement ranged from 3 to 372 hours, with a mean of 71.6. Figure 7 shows the distribution of internship hours worked.⁴²

⁴¹ Sites that offered the internship during the first evaluation were not different in their overall internship participation than sites that did not originally offer the internship.

⁴² Internship participation was calculated using the actual number of work days and hours during which a participant

Analyses were conducted to see if there were differences in outcomes between the participants who took part in the internship and those who did not. Independent *t* tests indicated that there were no significant differences in literacy or math gains.⁴³ Additionally analyses did not find a relationship between the number of hours worked and gains in literacy or math.

Although additional gains were not seen in literacy and math, the internship could still be providing valuable job readiness skills that were outside the scope of this research. Qualitative findings from the previous summer evaluation suggest that the internship provides participants with many intangible job readiness skills.

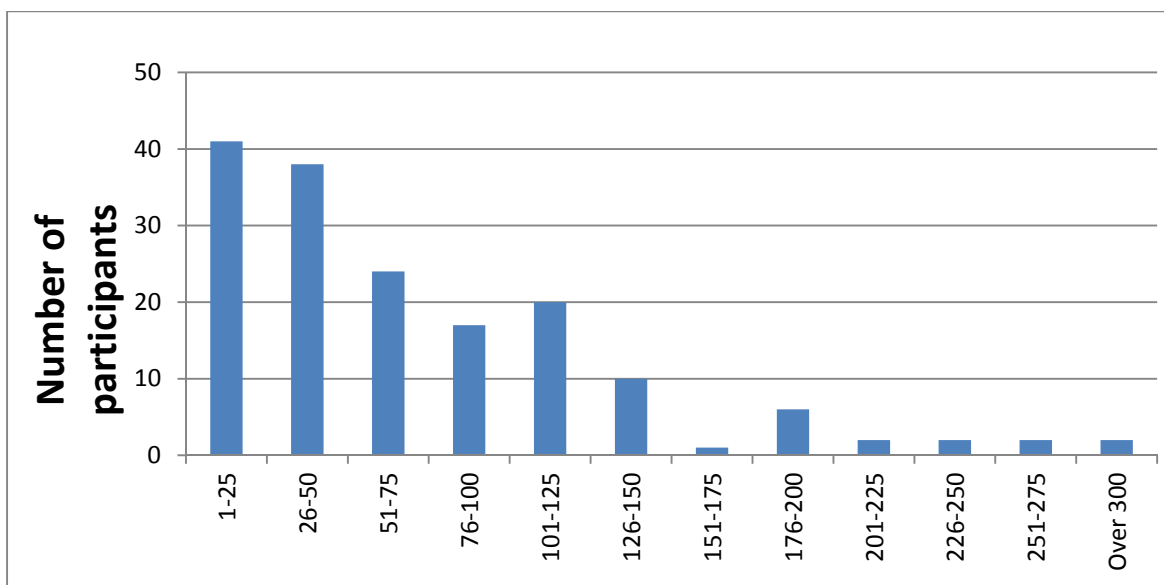
However, internship participants did have a statistically higher attendance rate and longer enrollment than non-internship participants.⁴⁴ They attended approximately 65 percent of the literacy class hours compared to 53 percent by non-internship participants.⁴⁵ Internship participants were enrolled on average 206 days (over 6 months) compared to 141 days (over 4 months) for non-internship participants. It is important to keep in mind internship participants self-selected into the internship and therefore, could be different from the non-internship participants in their motivation. Additionally, to be eligible to participate in the internship, participants were required to attend at least 75 percent of the literacy class hours.

worked at the internship. It was not calculated using the start and end date of internship.

⁴³ Literacy: $t(492) = -.484, p > .0125$; Math: $t(402.642) = .2538, p > .0125$.

⁴⁴ Internship and non-internship participants were compared based on overall attendance rate, not their attendance rate during the time in which they were participating in the internship, which was not available.

⁴⁵ $t(418.445) = -6.375, p < .001$; Enrollment length: $t(208.941) = -4.702, p < .001$.

Figure 7. Number of internship participants by hours worked

The goal of the attendance requirement is to motivate participants to attend classes in the hopes that increased attendance in classes in addition to the hands-on work experience provided by the internship will lead to increases in math and literacy. Although Westat did not find a direct relationship between attendance and gains in literacy and math, the internship is meeting the goal of increasing attendance, which could also lead to other unmeasured benefits for participants.

Additional analyses were conducted to determine if the number of internship hours worked (not just participation in the internship) predicted change in literacy and math scores or attendance rate. Number of internship hours worked was not a significant predictor of change in literacy or math scores. However, number of internship hours worked was a significant predictor of attendance rate. Participants who worked more internship hours had higher attendance rates than those who worked fewer (or no) internship hours.⁴⁶

⁴⁶ $F(3, 347) = 8.465, p < .001$.

4.4 Exit Outcomes

Sites were asked to report the reasons why participants left the program. Sites collect information on reasons why participants leave the program in different ways. Therefore, the “definition” of the following terms are not standardized across all sites. Table 11 presents the available information on participant exits.⁴⁷

As shown in Table 11, there were a variety of reasons participants left the program. Of note, “graduation” was not universally defined, but generally meant that participants’ attained an eighth grade reading level, moved on to a GED program, or took and passed the GED. Of the reported exit data, approximately 41 percent of participants graduated from the program.⁴⁸ Another 6 percent left because they had found

⁴⁷ Sites reported only 1 reason for exiting for each participant.

⁴⁸ Only participants who attended a minimum of 5 days or more were included in these analyses.

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employment. This means nearly half (47 percent) of participants are exiting for positive reasons. It appears YAL sites are offering services that help their participants achieve academic and job readiness success.

Table 11. Exit reason

Exit reason	Number (percent)
Graduation	281 (40.9%)
Employment	44 (6.4%)
Drop-out	95 (13.8%)
Medical/personal issue	23 (3.3%)
Court or criminal justice issue	18 (2.6%)
Moved/relocated	17 (2.5%)
Unknown	165 (22.7%)
Other	53 (7.7%)
Total	687

Approximately 14 percent of participants dropped out of the program, with an additional 7.7 percent of participants with other, non-classified reasons for exiting. Approximately 8.4 percent of participants exited the program because of medical or personal reasons, court or criminal justice issues, or because they relocated. The remaining 23 percent of participants had exits reasons that were unknown to the sites.

4.4.a Program Graduates

To understand any differences between graduates and those who exited the program for other reasons, Westat conducted a series of independent sample *t* tests to examine possible differences between the two groups. Participants who graduated from the program tended to enter with significantly higher literacy scores (average literacy pre-test = 6.4) compared to those who did not graduate

(average literacy pre-test = 5.9).⁴⁹ Similarly, those who graduated also had significantly higher math pre-test scores (average math pre-test = 5.7) compared to those who did not graduate (average math pre-test = 5.1).⁵⁰

Although causal relationships cannot be determined due to the nature of the study design, previous results revealed that those reading at the highest levels at entry made the least amount of gains. These graduation analyses show that those at the highest reading and math levels at entry are more likely to graduate. It is likely that those who are at the lowest academic levels at entry need to make much more progress before they are ready to graduate than those who are already reading at higher levels when they enter YAL. So although those entering with low academic skills make greater gains, they may still not be ready to graduate yet.

In regard to attendance rate, participants who graduated had significantly higher attendance rates (65.8%) than those who did not graduate (52.5%).⁵¹ Additionally, there was a relationship between graduation and internship participation. When a participant graduated, he or she was an internship participant 33.0 percent of the time. However, when a participant did not graduate he or she was an internship participant only 18.1 percent of the time.⁵²

Together with the internship findings, these results suggest that internship participation and attendance rates help to predict graduation. Even though internship participation did not increase literacy and math scores, it was associated with increased

⁴⁹ $t(669) = -4.021, p < .001$.

⁵⁰ $t(656) = -4.677, p < .001$.

⁵¹ $t(658.283) = -6.448, p < .001$.

⁵² $\chi^2(1, N=702) = 20.447, p < .001$.

attendance; and both attendance and internship participation were associated with graduation. The internship program provides an important piece towards moving participants to graduation.

Table 12 shows the participants by graduation and internship status. There were no differences between those who graduated and those who did not on the length of time they were enrolled.

Table 12. Percent of participants by graduation and internship status

Graduate	Internship Participation	
	No	Yes
No	81.9%	18.1%
Yes	67.0%	33.0%

Figure 8 shows the percentage of graduates at each site. The percentage of participants graduating from each site ranged from 7 to 64 percent.

Figure 9 shows the percentage of graduates in the sites by their pre-test literacy score. With the exception of Sites 7, 10, and 11 a greater percentage of graduates entered with pre-test literacy scores above sixth grade.

Overall, of participants who graduated, only 8 (3%) entered the program reading below the fourth grade level; 105 (43%) entered reading between the fourth and sixth grade reading level. Table 13 shows the number of graduates by their pre-test TABE literacy category. Due to small cell sizes in the four categories, the categories were combined into two groups for analyses.

Table 13. Number of graduates by pre-test literacy category

Literacy pre-test category	Number (%) graduates	Average pre-test score	Average post-test score
Below 6th grade	113 (46.5%)	5.1	8.14
6th grade or higher	130(53.5%)	7.5	9.4

To understand differences between graduates who entered reading below sixth grade and those who graduated and had entered reading at a sixth grade or higher level, a series of comparisons were made. Participants who graduated and entered reading below sixth grade made significantly larger gains in literacy than graduates who entered reading above sixth grade.⁵³ This finding makes intuitive sense in that participants who were already reading closer to levels necessary to enter a GED program would not have to make as large gains before they could graduate into a GED program, whereas participants who were reading far below levels necessary to enter (and succeed) in a GED program had to make more gains in order to have the literacy skills necessary to graduate.

⁵³ $t(204.175) = 4.594, p < .001$.

Figure 8. Percent of graduates by site

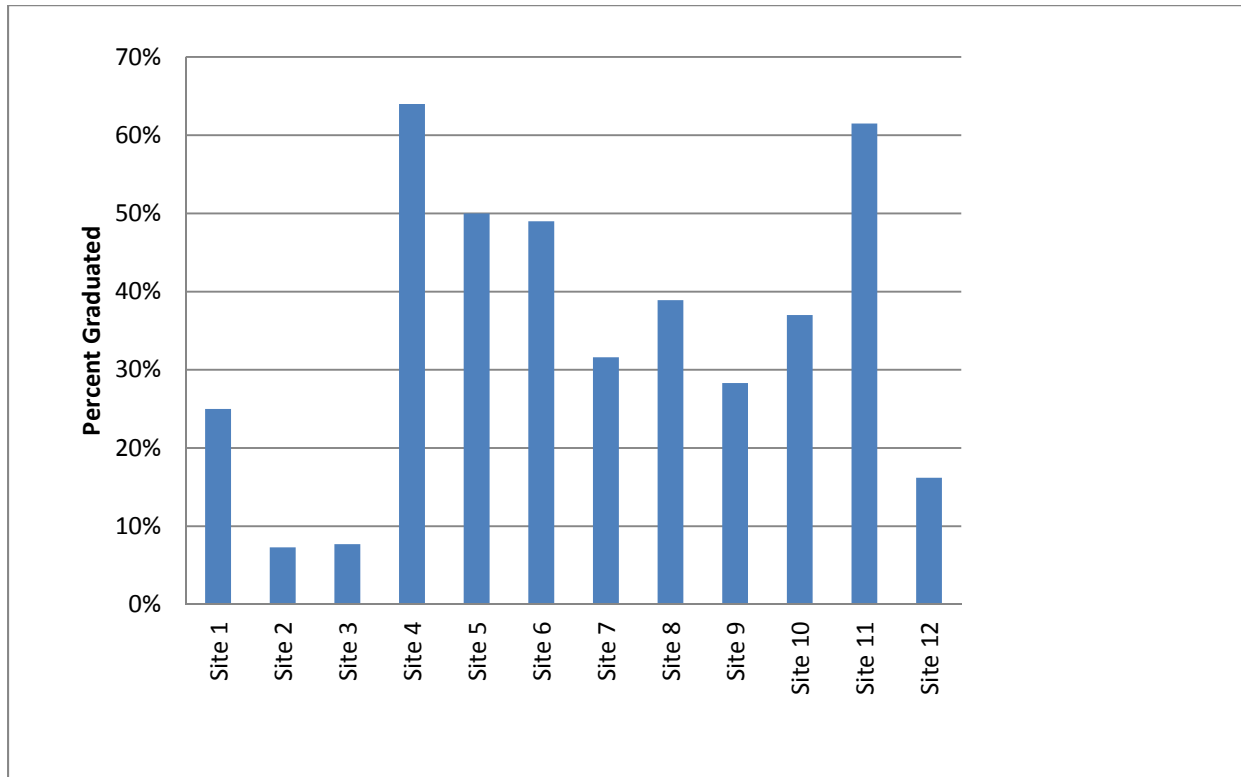
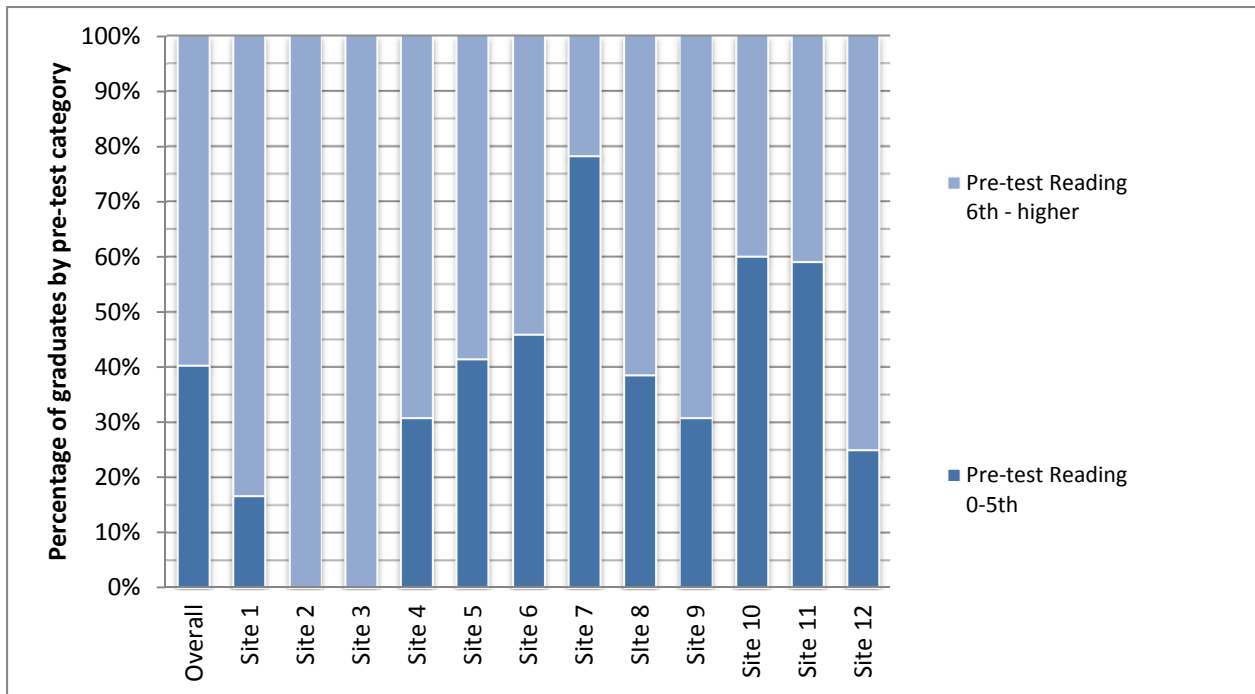


Figure 9. Percentage of graduates by pre-test literacy category



There were no differences between those who entered at a lower level and those who entered reading at a higher level in attendance rate, age, gender, internship participation, last grade completed, or in length of enrollment.

Of participants who graduated, only 34 entered the program with math scores below the fourth grade level.⁵⁴ Table 14 shows the number of graduates by their pre-test math category. Again, due to small cell sizes in the four categories, the categories were combined into two groups for analyses.

Those who graduated entering the program with math skills below the sixth grade level made greater gains (1.71 grade level gain) than those who entered with higher math skills (a 0.77 grade level gain).⁵⁵ Similar to the literacy findings, it is likely that participants who came in with lower math skills needed to make more progress in order to graduate than those who came in at higher reading levels. There were no other significant differences between those who entered with lower math scores compared to those who entered with higher math scores.

Table 14. Number of graduates by pre-test math category

Math pre-test category	Number (%) graduates	Average pre-test score	Average post-test score
Below 6th grade	146 (61.9%)	4.7	6.4
6th grade or higher	90(38.1%)	7.5	8.2

⁵⁴ CEO did not identify increasing low math scores as a priority of YAL. Although classes do provide instruction on math skills, literacy is the primary academic goal. The overall number of participants who enter reading below fourth grade is small, 170 participants.

⁵⁵ $t(219) = 4.155, p < .001$.

4.5 Comparison Between Library Sites and Community-Based Organizations

The 12 sites are operated by different agencies. Seven of the 12 sites are operated by three different library systems. The remaining five sites are operated by various community-based organizations (CBOs). Analyses were conducted to determine if there were any differences in literacy or math achievement, enrollment, retention, or attendance rate based on whether the site was operated by a library or a CBO. Westat found that there were no statistically significant differences in literacy or math achievement between library and CBO sites. Participants in both types of sites made similar gains in academic achievement. Additionally, there were no differences in length of enrollment, retention, or in attendance rate between the two types of sites.

5. Conclusion

The goal of YAL is to improve the literacy skills, math skills, and job readiness of disconnected youth. This report was able to examine the academic skills of participants, and taken together, the findings presented in this report indicate that the program is meeting these goals and having a positive influence on the population it serves.

A main concern of CEO and YAL sites is to increase attendance. The thought being that if participants attend more class they should be making greater gains in literacy and math skills. On average, participants are attending just over half of the literacy classes offered (56%). However, higher attendance rates were not associated with gains in literacy or math. The pathway between attendance and academic achievement may not be a simple linear relationship. Westat explored whether certain characteristics were related to attendance rates to begin to understand possible pathways. Westat found that older participants, participants reading at lower levels at entry, participants who were enrolled for shorter lengths, and those who had completed more school prior to entry were more likely to have higher rates of attendance.

In particular it is important to note that those entering with lower reading skills made larger gains. Because the program is targeted to participants with low levels of literacy, these participants may be more engaged in the classes than those who already have higher levels of literacy. It is possible that those who enter at the highest literacy levels do not gain as much because the classroom instruction is geared toward those with lower reading scores, and therefore they are not being presented with as much new information to improve their literacy skills. Those reading at higher levels could possibly be better served by a higher level course. Although the

analyses are not causal, and these characteristics do not cause participants to attend more class, it is helpful to understand factors that might be related in order to try and increase attendance for all participants.

YAL sites were keeping participants engaged both through attendance and retention. On average 67 percent of participants were retained, meaning they remained in the program long enough to take two TABE reading tests. Taking multiple TABE tests is important so that sites can have a measureable assessment of literacy and math achievement, as well as assess the current level of academic skill. Sites can use this information, in combination with other information (such as teachers' judgment of skills and progress), to determine appropriate next steps for participants (e.g., graduation, additional support surrounding literacy or math). Although there are other ways of measuring retention, it is helpful for sites to think about ensuring that all participants have an opportunity to take multiple tests at appropriate intervals.

In a short length of time (average enrollment length was five months) YAL participants are making 1.41 grade level increases in literacy and over a grade level increase in math scores. This finding is incredibly important given that participants enter reading at the sixth grade level and with math skills at the fifth grade level. These participants are in need of large improvements in order to be prepared for attempting a GED or engaging in a GED preparatory program. Participants who have been removed from formal school for varying lengths of time or may feel "older" than the average high school graduate (average age of YAL participants is 19 years old) may not be interested in programs where it will take years for them to

be ready for the “next step.” The large gains in a short time frame can be incredibly important to keep participants motivated and engaged in the program. Westat explored whether certain characteristics were associated with gains in literacy and found those who entered reading at a lower grade level, and those who had more time elapse between pre-tests and post-tests. Although these results are correlational and cannot necessarily be attributed to the program itself, the fact that participants are making substantial gains in such a short amount of time is important.

While enrolled in the program the math skills of the participants increased by just over one grade level. Unlike the literacy findings, gains in math were not associated with participant demographics or time between pre-tests and post-tests. However, similar to the literacy findings, participants who entered with lower math pre-test scores made greater gains in math achievement than those who entered at higher levels. Again, within an average of 5 months, participants gained one grade level in math scores. This increase raises the average participants’ math score from a fifth grade to a sixth grade level. Although participants typically have a lot of growth to make before being ready for a GED program, the gains being made while in the program are promising.

Finding ways to increase participants’ attendance in the literacy classes is an important issue and one that the program continues to address. One way YAL hoped to increase attendance in the literacy classes was through the internship initiative. In the original evaluation of the summer internship program, literacy class attendance was required in order to receive payment for the internship hours worked. Tying attendance in the literacy class to internship stipends was an attempt to increase attendance in the literacy

classes, which was found to be an effective strategy.

In this Follow-up analysis, internship participants self-selected into the internship component (as opposed to being randomly assigned as in the previous evaluation). Still we found that internship participants had significantly higher levels of attendance in the literacy classes than non-internship participants. It is possible that those who take part in the internship are more motivated participants since they self-selected into the internship, but the results suggest that adding a paid internship component could be a promising way to increase class attendance.

Although internship participants had higher literacy class attendance rates than their non-internship counterparts, these findings did not extend to the literacy or math achievement outcomes. In the previous evaluation, internship participants made greater gains in math scores, but this finding did not persist. Due to the lack of random assignment in this study, it is possible that internship participants who self-selected to participate were different than those in the previous study who were randomly assigned to the internship condition. Additionally, the length of time participants could engage in the internship varied between the previous study and this one, which could be another reason the same results were not observed.

Westat also examined the reasons why participants exit YAL. These reasons are difficult to define consistently across sites. Of the participants for whom we have exit data, approximately 41 percent graduate, which typically means they move on to a GED preparation program. However, graduation is not the only positive reason for leaving the program. Another 6 percent of participants left because they got a job. This means nearly half of YAL participants are exiting the

program for positive reasons. Using standard definitions for graduation would be helpful for future research and in explaining what are the positive reasons for exiting YAL.

Finally, we compared participants in sites operated by library systems to those enrolled in sites operated by CBOs. We found that there were no differences in literacy or math achievement based on the type of site. Additionally, there were no differences in attendance rate or length of enrollment between type of site. This suggests that both types of sites are equally effective at increasing academic achievement and engaging participants.

Future Directions

These findings provide valuable information which can guide YAL as they continue to recruit and enroll new participants. One goal of YAL is to reach participants who are reading at the lowest levels and need to greatly increase their reading skills in order to reach a GED program. These analyses showed that the participants who enter at the lowest reading and math levels make the biggest gains while enrolled. From this it appears that YAL is reaching one of its main goals. Sites should continue to target recruitment efforts towards these participants as they are effective in helping them to make the largest gains.

Additionally, younger participants made larger reading gains than older participants. There was no relationship between age and level of academic skill at entry so it is likely that other reasons are behind the relationship between age and reading gains. The program should consider targeting recruitment efforts to younger individuals who may also be those who have more recently left formal schooling. It could be that the longer a person has been out of the formal schooling system

(presumably the older participants), it might be harder to engage and increase literacy skills.

Once participants had enrolled in the program, we found that those who participated in the paid internship attended more classroom hours. This was likely due to the requirement that internship participants attend 75 percent of the classroom hours offered. Currently internship participation is optional, so the internship participants self-select into the internship part of program and therefore could be the more highly motivated participants. This motivation may translate into engaging in the internship but not necessarily mean gains in literacy and math, as the study found. Motivation may not be the only factor involved in why some participants take part in the internship while others do not. Those who selected into the internship could have also been participants with less outside challenges or obligations (e.g., participants without children or housing-related problems). These other factors were outside the scope of this study but would be important areas for future research to explore to explain who it is that takes advantage of the internship opportunity when it is not a mandated part of the program. Expanding the internship opportunities for participants by either offering more internships or a wider variety of internships may increase the number of participants who take advantage of this opportunity, and therefore attend more classes. The relationship between internship participation and attendance suggests that the internship is a valuable tool for increasing participant attendance. It is also important to note that participants who graduated also had higher attendance than those who did not graduate. As attendance rate was also associated with graduation, using the internship as a means to improve attendance might also improve rates of graduation.

Overall, YAL is reaching the intended population of disconnected youth. The typical YAL participant is in need of support to move towards a GED preparatory class or to find gainful employment. The results of this study indicate that the program is improving literacy and math skills in a short amount of time. The internship component of YAL appears to be a key component in increasing classroom attendance. Challenges still exist in finding ways to improve outcomes, but overall YAL is having a positive influence on the academic skills of disconnected youth.

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Appendix: Missing Data and Excluded Cases

Sites were asked to compile individual participant data from July 2009 through December 2010. Compiling data from this wide time frame was a difficult undertaking for the sites as they had to pull data from multiple quarters and years into one database. Some information may have been missing in the sites' databases, but at the time the sites were asked to compile the data, it may have been difficult or impossible to correct these instances of missing data. For example, many participants had already exited the program by the time data were delivered; therefore following up with participants to get clarification of the individual data was not often possible.

One of the biggest challenges of missing data was that not all participants had both a pre-test and post-test score for the math and literacy test. Individual sites vary in the way tests are administered. Although they are expected to pre-test participants when they enter, not all participants had reported pre-test scores. It is unclear if this is because the participants did not complete a pre-test or if sites did not report the data.⁵⁶ In regard to post-test data, sites administer tests at various intervals during the program. Some conduct additional testing at regularly scheduled intervals, such as every 3 months, where others may conduct Follow-up tests after a certain amount of class time has been completed for a participant. Some participants may have existed prior to a post-test being scheduled or administered. As it is impossible to predict when a participant might exit the program, not all participants have a post-test score. A total of 813 participants had attended

at least one week of literacy classes and had literacy pre-test scores. Of those, 582 also completed a post-test. For the math test, 795 participants had attended at least one week of the literacy classes and had a recorded pre-test score. Of those, 546 also completed a post-test.

Analyses were conducted to determine if there were differences in literacy and math pre-test scores between those who had both a pre-test and post-test and those who only had a pre-test. Analyses found no differences between participants who left the program without taking a post-test on their reading and math pre-tests than those who had both pre-tests and post-tests.

⁵⁶ Sites were all contacted and asked to provide information about pre-test TABE scores for any participants missing this information. Despite these efforts to gather the data, not all sites were able to produce pre-test scores for all participants.