Journal of Youth Development
Bridging Research & Practice

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JOURNAL OF YOUTH DEVELOPMENT
bridging research and practice

Volume 7, Number 3, Fall 2012 **Article 120703RS002**

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Abstract: In the Summer of 2011 The Free Library of Philadelphia (FLP) hired 90 teenagers into its six-week Summer Reading Literacy Coach Program (SRLCP) as Teen Literacy Coaches (TLCs). Data was collected at Time 1, Time 2 and Time 3. The two study hypotheses were: (1) there will be a significant improvement in TLCs personal development skills from Time 1 to Time 3 and (2) demographic data and program specific skills measured at Time 2 will account for significant variance in each Time 3 personal development skill beyond the Time 1 personal development skills. We did not find support for H1 but did find support for H2. Specific to H2 we found that team-related and higher education interest each had a significant positive impact ($p < .05$) impact on explaining Time 3 self-awareness; and a marginally significant positive impact ($p < .10$) impact on explaining Time 3 self-management.

Introduction

What kinds of skills will students need to become successful as they face the 21st Century? Trilling and Fadel (2009) have provided a framework suggesting three general sets of skills: life and career skills; learning and innovation skills and information media and technology skills. Life and career skills include such skills as: adaptability, initiative, self-direction, communication and collaboration. Examples of learning and innovation skills include communication and collaboration, while examples of digital literacy skills include information literacy and media literacy. Related to these forecasted skill sets needed for success, Youth Development Programs (YDPs) for teens has emphasized promoting positive youth development through the 5 Cs: competence, confidence, connections, character and caring (Roth, & Brooks-Gunn, 2003). Competence encompasses teens' social, academic, cognitive and vocational competencies. Confidence consists of goals related to improving teens' self-esteem and self-efficacy.

Connections involve building and strengthening adolescents' connections with others. Character looks to increase teens' self-control, and respect for cultural or societal rules. Finally caring tries to improve teens' empathy and identification with others. Generally YDPs occur over the course of a school year for teens in a positive supportive program atmosphere (Roth, & Brooks-Gunn, 2003). Roth, Brooks-Gunn, Murray and Foster (1998) presented a model of the components and desired outcomes for YDPs, based on the list of 40 developmental assets that adolescents need for positive developmental outcomes (Benson, 1997). One outcome in their model is positive identity which includes sense of control over life, high self-esteem, sense of purpose and being optimistic about one's personal future (Roth, et al., 1998).

As noted by Roth, et al. (1998) and Roth and Brooks-Gunn (2003) there have been different programs, program goals & durations, contexts and research designs for carrying out YDPs. For example, Big Brothers/Big Sisters (BB/BS) is the oldest and best known mentoring program in the United States where youth living in single parent households meet with a volunteer adult on average 3-4 times/month for at least one year. In one eighteen month experimental design follow-up of 472 control versus 487 BB/BS 10-16 year old participants, the 487 participants were 46% less likely to start using illegal drugs and 27% less likely to initiate alcohol use during the study than were controls (Tierney, Grossman, & Resch, 1995). Over half of the programs reviewed by Roth and Brooks-Gunn (2003) engaged youth for the school year or longer, and 92% of all reviewed YDPs conveyed expectations for positive behavior. Summer YDPs are not as prevalent but two cited by Roth, et al., (1998) and Roth and Brooks-Gunn (2003) are the Louisiana State Youth Opportunities Unlimited (LSYOU) and the Summer Training and Education Program (STEP).

The LSYOU is a high school dropout prevention program for 14 to 16 year olds, where for 8 weeks during the summer, participants live on the Louisiana State University campus and spend half the day receiving math and reading academic instruction and the other half of the day working at various campus sites. An experimental design assessment of 51 control and 94 participants found that LSYOU participants: experienced significantly less declines in their reading skills than the control group; scored higher on standardized math tests at the end of the program; and expressed a significant increase in their intent to stay in school. The STEP sought to reduce high school dropout rates, stop summer learning loss and prevent teen pregnancy as adolescents worked half-time at jobs and attended academic classes half-time for 6 to 8 weeks. Adolescents were encouraged to participate for two consecutive summers. An experimental design assessment using 1,263 STEP program and 1,347 control participants, primarily 14 and 15 year old adolescents, found that STEP participants: improved their math and reading scores about one-half of a grade; received higher scores on knowledge tests of responsible social and sexual behavior; and had high attendance rates and high return rates (75%) for the second summer (Grossman, & Sipe, 1992; Walker, & Vileela-Velez, 1992). Both of these Summer YDPs emphasized teen competency improvement.

Various national youth-serving organizations often are the source for YDPs, including public libraries (Quinn, 1999). Jones and Delahanty (2011) found in a public library survey across 61 public libraries that library staff had positive perceptions towards the services they provided to young people within their libraries (e.g., we provide programs of interest to youth, our library provides a safe environment for youth). A report by Spielberger and Whalen (2002) noted that the Public Libraries as Partners in Youth Development (PLPYD) initiative, funded from 1999 - 2002 by the Wallace-Reader's Digest Funds, was designed to strengthen the role of public libraries by providing educational and career development programs for teens in underserved communities. One of the nine participating libraries in the PLPYD was the Free Library of

Philadelphia (FLP). The initial activities of the FLP involved training 20 high school students as Teen Library Assistants (TLAs) to provide one-on-one homework, reading and computer assistance to school-aged children in FLP branch libraries. College-age youth who graduated from the TLA program could become Associate Leaders (ALs). Related to PLPYD, the FLP started the Literacy Enrichment After-school Program (LEAP), a free, drop-in program for students in grades 1 to 12, Monday through Thursday from 3 to 5p, September to June, at all FLP neighborhood branches and Parkway Central Library. The primary focus for children participating in LEAP is getting their homework completed and TLAs and ALs receive training to coach the children through their assignments (Walter, 2009). After the children have finished their homework, the TLAs facilitate puzzles or games (e.g., Scrabble) with the children. Among the six positive youth development outcomes sought from the LEAP experience are improved personal and social skills for TLAs (Walter, 2009).

FLP Summer Reading Literacy Coach Program

The FLP developed its six-week Summer Reading Literacy Coach Program (SRLCP) several years ago (Summer Youth Programs, 2010) for two main reasons. First, to help school age children primarily ages 5 to 12 develop their reading skills over the summer and second, to help hired teen literacy coaches (TLCs) increase their personal skills development through participation in the SRLCP. Our study goal was to evaluate the impact of the FLP's SRLCP on improving TLCs' personal skills development. Thus, this study focuses on assessing the impact of a YDP (Duerden, & Witt, 2010. To date, we are unaware of any previous studies that have investigated this program. We tested the following two hypotheses:

H1 – There will be a significant improvement in TLCs' personal skills development from Time 1 to Time 3.

H2 – Time 2 demographic data and program specific skills will account for significant variance in each Time 3 personal development skill beyond the controlled-for Time 1 personal development skill.

Method

Sample

In the Summer 2011, ninety teenagers were hired as Teen Literacy Coaches (TLCs) into the SRLCP. After completing their initial training at the beginning of the program these 90 TLCs were assigned to different branches across Philadelphia based on living proximity to their local FLP branch. In order to match TLC surveys over time, we used their age, grade completed, gender, and team leader data. We maintained absolute confidentiality of data for each subject. The University Institutional Review Board approved all studies and surveys before any data was collected. Permission of the SRLCP Director was given prior to any data collection. See Table 1.

Table 1

Sample Demographics – Teen Literacy Coaches

Gender	
Male	38%
Female	62%
Race	
Caucasian	10%
African American	66%
Asian	11%
Hispanic	4%
Not Indicating Race	9%
Age	
14 Years Old	8%
15 Years Old	19%
16 Years Old	30%
17 Years Old	22%
18 Years Old	21%
Grade Just Completed	
8th Grade	8%
9th Grade	14%
10th Grade	30%
11th Grade	27%
12th Grade	21%

Procedure

The 90 TLCs were divided up across 29 library branches to perform their daily duties as student workers. The FLP assigned TLCs to help introduce new literacy skills to primarily school age (5-12) children. TLCs worked 20 hours/week at their library branches between Tuesday through Friday, 5 hours/day. All TLCs began the SRLCP with mandatory three-day training at the Parkway Central Library and followed this with mandatory weekly trainings on Monday from 1–5 pm. During these training times, the TLCs received knowledge on various literacy-related topics as well as practice in various literacy activities for children. At their assigned FLP branch the TLCs hosted fun activities such as educational games, arts & crafts, and led literacy-related activities for the children, including reading new books. The TLCs completed surveys at three different times during the program. At Times 1 (1 week into the program) and Time 3 (the last week of the 6-week program), the TLCs filled out a 12-item survey that the FLP had used previously to measure their personal development. No prior evaluation of the items measured by these two surveys had been done. At Time 2 (week 4 of the program) an 18-item study-specific survey was administered to measure skills that the SRLCP was trying to emphasize. Survey participation of the TLCs was voluntary.

As briefly noted above, all mandatory training introduced new activities and ideas for the TLCs to bring back to their individuals branches. This training was designed to help the teens by providing an environment where reading skill ideas were presented and questions were welcomed. Specific program skills were emphasized during these general training sessions. Teens learned time management skills by being required to show up on time to work and mandatory training. The FLP provided the student workers with many guest speakers; including Ph.D. students in Psychology, English, and History from University of Pennsylvania. Speaker topics were designed to help motivate the TLCs to bring many of the shared ideas back to the

individual branches. Introducing graduate students to the TLCs was done to help boost their interest in going to college to obtain a degree in library science or education. The program training activities were also designed to give the TLCs increased confidence in their abilities to work with younger children, and for each TLC to feel good about him/herself. In this training environment, TLCs were selected randomly to voluntarily share their experiences during the week. During training, TLCs were encouraged to provide suggestions and ideas to help increase the reading skills of the young children. The TLCs worked in groups of six to complete activities during training. Every Monday during training, TLCs were required to work with a new group of six members and a team leader. This weekly exposure to a new group and leader was meant to facilitate TLCs' team skills. During training the TLCs also completed weekly guided refection forms. Guided reflection forms were weekly recordings that the FLP wanted in which the teens could write down events that have occurred in their branch which they might be apprehensive to share. Team leaders reviewed these reflections.

Measures

TLCs self-rated themselves at the beginning of the program, first week (Time 1 or T1) and again at the end of the 6 week program (Time 3 or T3) using the same twelve-item survey. All 12 items were measured using a five point response scale, with 1 = strongly disagree to 5 = strongly agree. At week 4 of the six-week program (Time 2 or T2) the investigators collected data using 15 items to measure teen perceptions of various training program activities and skills, using a 6-point response scale, 1 = strongly disagree to 6 = strongly agree. At T2 demographic data (*age, grade just completed, gender),* and a control variable, *social desirability response bias* (SDR) were also collected. Also at T2 SDR was measured using three items based prior work by Paulhus (1984). A sample item is "I am always willing to admit it when I make a mistake", answered on a 6-point response scale, 1 = strongly disagree to 6 = strongly agree. In addition an open item was asked in the Time 1 and Time 3 surveys as "my library is a place for…." and TLCs were encouraged to write in their answers.

Data Analyses

The complete date sample size for all study variables was 78 teenagers. SPSS-PC version 17 (SPSS, 2009) was used to analyze the data. We used exploratory factor analyses (EFA) to form our scales at Times 1, 2 and 3. EFA was used because there had been no prior research investigating underlying patterns of data for these measures (Cater, & Machtmes, 2008). After we formed our scales, we tested H1 using a paired-sample t-test, and stepwise regression analysis was used to test H2.

Results

Scale Formation

Using EFA for the 12 Time 1 and Time 3 items, based on the scree test and common pattern of factor loadings (all loadings at least .40), two common factors emerged with eigenvalues over one (Cater, & Machtmes, 2008; Ford, MacCallum, & Tait, 1986). Given the limited number of items, we used principal component extraction to explain as much of the total variation in data as possible with as few factors as possible (Guion, & Rivera, 2006). We used varimax rotation to help create independent factors (Ford, et al., 1986), and there was minimal difference with an oblique rotation. Across both Time 1 (T1) and Time 3 (T3), three items had insufficient loadings or double loadings and could not be used. Based on item "face validity" (Hinkin, 1995), we labeled these personal skill factors: *self-awareness* (6 items, T1 eigenvalue = 3.55, alpha = .68; T3 eigenvalue = 5.24, alpha = .79), and *self-management* (3 items, T1 eigenvalue = 1.39, alpha = .60; T3 eigenvalue = 1.19, alpha = .79). At Time 1 these two factors accounted for

40% of the total variance, and at Time 3, 44%. At T1 and T3, self-awareness. Item examples were: "I can admit my own mistakes and seek assistance." and "I respect and listen to other people's points of view." In T1 & T3, for self-management, two item examples were "I can adapt easily to new situations" and "I can stay calm in stressful situations." The reliabilities of these two scales were less than .70 at Time 1 and over .70 at Time 3 (Nunnally, 1978).

Using EFA for the 15 items at Time 2, based on same process noted above, i.e., scree test and loadings of at least .40, four factors emerged with eigenvalues over 1. We used varimax rotation to help create independent factors (Cater, & Machtmes, 2008; Ford, et al., 1986) and principal component extraction to explain as much of the total variance with as few factors as possible (Guion, & Rivera, 2006). One item had an insufficient loading and another item loaded on a factor with a different label, so two items could not be used. Based on "face validity", we labeled these program-specific skill factors: t*eam-related* (5 items, eigenvalue = 4.52, alpha = .79), *self-esteem* (3 items, eigenvalue = 2.61, alpha = .88)*, time management* (3 items, eigenvalue = 1.87, alpha = .81) and *higher education interest* (2 items, eigenvalue = 1.44, alpha = .74)). Collectively, 70% of the total variance was explained by these four factors. A sample item for each factor is: team-related, "I feel comfortable with the other teens I work with," self-esteem, "I feel good about who I am", time management, "I am good at managing my time", and higher education interest "from this program I now am more interested in pursuing a degree in library science". All four scale reliabilities exceed the .70 threshold (Nunnally, 1978).

Thus, based on these factor analyses, two general personal skill development scales, self-awareness and self-management, and four program-specific skill scales, team-related, self-esteem, time management and higher education interest, were used in subsequent data analyses. Scales were divided by the number of items so that the reported mean could be more easily interpreted using the response scale.

Hypotheses Testing

Table 1 presents the variable means, standard deviations, scale reliabilities and correlations for study variables. As shown in Table 1 the self-management and self-awareness scales had some overlap at both Time 1 ($\underline{r}^2 = .36^2$ or 13%) and Time 3 ($\underline{r}^2 = .62^2$ or 38%). However, they were sufficiently independent to be used as separate variables (Nunnally, 1978). Looking at Table 1, we did not find support for H1, *there will be a significant improvement in personal development skills from Time 1 to Time 3.* Although the mean increased for self-management from 3.89 to 3.95, this increase was not significant ($\underline{t}$ = .78 (82), $\underline{p}$ > .05). For self-awareness, the mean increased from 4.35 to 4.41, but this increase was not significant ($\underline{t}$ = 1.26 (83), $\underline{p}$ > .05).

Table 1

Means, Standard Deviations, Reliabilities and Correlations for the Complete Data Sample[a]

Variable Name	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Self-Management T1	3.89[b]	0.61	(.60)[d]										
2. Self-Awareness T1	4.35[c]	0.49	0.36	(.68)									
3. Age T2	16.36	1.28	-0.17	0.11	(NA)								
4. Grade Complete T2	10.45	1.23	-0.12	0.12	0.94	(NA)							
5. Social Desirability Response Bias T2	4.66	0.88	0.18	0.41	-0.02	-0.08	(.66)[b]						
6. Higher Education Interest T2	3.18	1.39	0.34	0.10	-0.05	-0.08	0.30	(.74)					
7. Time Management T2	4.80	1.04	0.19	0.37	0.06	0.00	0.64	0.33	(.81)				
8. Self-Esteem T2	5.40	0.84	0.16	0.08	-0.08	-0.14	0.29	0.13	0.42	(.88)			
9. Team-related T2	5.50	0.54	0.10	0.37	0.01	0.01	0.30	-0.05	0.32	0.38	(.79)		
10. Self-Management T3	3.95[b]	0.70	0.39	0.44	0.10	0.07	0.36	0.37	0.44	0.26	0.30	(.79)	
11. Self-Awareness T3	4.41[c]	0.52	0.31	0.61	0.26	0.18	0.50	0.27	0.48	0.26	0.43	0.62	(.79)

Note. N = 78. $r > .21$ ($p < .05$); $r > .29$ ($p < .01$), both two-tailed

[a] T1 = Time 1, T2 = Time 2, T3 = Time 3, Time 1 and Time 3 scales of Self-Management and Self-Awareness measured on a 5-point response scale, where, 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, 5 = strongly agree, Time 2 scales of Social Desirability Response Bias, Higher Education Interest and Time Management measured on a 6-point response scale, where 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree and 6 = strongly agree. Age =14-18, Grade Complete = 8-12

[b] t-test for change in self-management from Time 1 to Time 3, $t = .78$ (df =82), $p > .05$

[c] t-test for change in self-awareness from Time 1 to Time 3, $t = 1.26$ (df =83), $p > .05$

[d] Scale reliability (coefficient alpha), NA = not applicable

To test H2 using regression analyses, variables were entered in these steps to the regression model: Step 1, Time 1 variables - self-management, self-awareness; Step 2, demographic/control variables - social desirability response, age, grade complete, gender ; and finally Step 3, Time 2 variables - higher education interest, time management, self-esteem and team-related. Table 2 presents the final regression model results for Time 3 self-management and Time 3 self-awareness. Based on these results, we did find support for H2, *Time 2 demographic data and program specific skills will each account for significant variance in each Time 3 personal development skill beyond the controlled-for Time 1 personal development skill.*

Table 2

Final Regression Models for Impact of Time 1 Controls, Time 2 Demographic/Control Variables, And Time 2 program Specific Skills for Explaining Time 3 Self-Management and Self-Awareness

	Time 3 Self-Management				***Time 3 Self-Awareness***			
Variable	***b*[b]**	**SE[b]**	**R^2**	**Chg R**	***b*[b]**	**SE[b]**	**R^2**	**Chg R^2**
Step 1: Time 1 Controls								
Self-Management	.33**	.13						
Self-Awareness					.46**	.10		
			.15**				.38**	
Step 2: Demographics/Control Variables								
Social Desirability Response	.04	.11			.05	.07		
Age	.15	.17			.22*	.10		
Grade Complete	-.08	.18			-.05	.10		
Gender[a]	.03	.15			-.12	.09		
			.28**	.13**			.51**	.13**
Step 3: Time 2 Program Specific Skills								
Higher Education Interest	.10+	.06			.07*	.03		
Time Management	.13	.09			.05	.06		
Self-Esteem	.03	.10			.03	.06		
Team-related	.25+	.14			.20*	.09		
			.37**	.09*			.59**	.08*

Notes, N = 78. *b* = unstandardized regression weight. SE = standard error
+ p < .10, * p < .05; ** p < .01
[a] gender, 1 = male, 2 = female
[b]unstandardized regression weights and standard errors rounded to nearest hundredths

Looking at self-management first, the demographic/control variables accounted for an additional 13% of the variance, which was significant (p < .01), and the program-specific skills accounted for an additional 9%, which was also significant (p < .05). A total of 37% (29% adjusted) of the variance in Time 3 self-management was explained, and only one individual variable was significant in the final model, Time 1 self-management (*b* = .33). However, two variables had marginal significance (p < .10), higher education interest (*b* = .10) and team-related (*b* = .25). For self-awareness, the demographic/control variables accounted for an additional 13% of the variance, which was significant (p < .01), and the program-specific skills accounted for an additional 8%, which was also significant (p < .05). A total of 59% (54% adjusted) of the variance in Time 3 self-awareness was explained, and four individual variables were significant, Time 1 self-awareness (*b* = .46), age (*b* = .22), higher education interest (*b*=.07) and team-related *(b* =.20).

Discussion

Our study goal was to evaluate the impact of the FLP's SRLCP on improving TLCs' personal skills development (Duerden, & Witt, 2010). To date we are unaware of any previous studies that have investigated this program. We did not find support for H1, a significant increase in TLCs' personal skills development. We were able to create two distinct personal development scales, a six-item measure of self-awareness, and a three-item measure of self-management. However, these two scales did not account for a majority of the total variance. The scale reliabilities were marginal at Time 1 (T1) but did improve at Time 3 (T3). Since these pre-determined T1 and T3 surveys were limited to 12-items using a five-point response scale, we would strongly encourage additional item development and broader item response scale in both surveys to measure self-awareness and self-management (Hinkin, 1995). For example, both of these

personal skills are argued to comprise part of one's emotional intelligence or EI (Bradbury, & Greaves, 2009; Goleman, 1998). Self-awareness involves having an understanding of one's own emotions, i.e., strengths, weakness, and needs, while self-management shows that an individual can control their emotions and can direct their behavior in a positive direction (Bradberry, & Greaves, 2009). Stronger scale measurement might have helped to show a significant increase in the personal skills development of TLCs from Time 1 to Time 3.

At Time 2 or T2, four weeks into the SRLCP we were able to administer a 15-item survey on a six-point response scale to measure program specific scales, and four scales were found: team-related (5 items); self-esteem (3 items); time management (3 items), and higher education interest (2 items). These four scales accounted for 70% of the total variance and each scale had a more than adequate reliability. We would encourage additional item development for the higher education interest scale. The two items measured asked about interest in pursuing a degree in library science and education. Perhaps additional items asking about interest in other possible degrees (e.g., information media and technology, communications) that TLCs receive exposure to in the SRLCP would be useful and also relevant to needed 21st Century skills (Trilling, & Fadel, 2009). Content analysis of the open item "my library is a place for…." indicated that collectively many TLCs saw the library as a peaceful and safe environment for learning, reading, sharing, having fun, using the computer to do research, broadening one's horizons, and bettering oneself. These comments are consistent with several of the library staff perceptions found by Jones and Delahanty (2011).

Limitations

We must acknowledge several study research design limitations, including a sample size of only complete-data78 TLCs, over a 6 week program, compared to much larger YPD studies with bigger samples over a longer duration (Roth, & Brooks-Gunn, 2003). However, a smaller sample and shorter time duration were built-in research design limitations. Despite these limitations support was found for the second study hypothesis. Specifically, after controlling for Time 1 personal skill scale and Time 2 demographics and social desirability response bias, two program-specific scales, higher education interest and team-related, were significantly positively related to Time 3 self-awareness. In addition, the higher education interest and team-related program-specific scales were marginally positively related to Time 3 self-management. These longitudinal results, combined with an absence of social desirability response bias, indicate that the SRLCP is helping to develop TLC personal skills. As TLCs worked with other teens in different groups and gained greater interest in pursuing a degree, these SRLCP skills had a positive impact on self-awareness and self-management. We could not assess positive change in the program specific scales. A future study of the SRLCP might be able to incorporate an additional survey administration to measure increases in these program-specific scales (perhaps at weeks 2 and 5), including time management and self-esteem.

Conclusion

Youth development remains an important topic and public libraries are an important source of youth development programs (Jones, & Delahanty, 2011; Quinn, 1999; Spielberger, & Whalen, 2002; Walter, 2009). Additional study of the specific links between the school year LEAP program and the SRLCP is needed. An integrative study might further increase teens' interest in studying library science in college. As noted recently, college student workers are a largely untapped recruiting source for the library profession (Maxey-Harris, Cross & McFarland, 2010).

We encourage further scale development for higher interest in education and hope this study stimulates additional research of youth development programs in a library context.

Acknowledgement: We gratefully acknowledge Jeff Neher and Karen Ho for allowing data to be collected.

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