

An Exploratory Case: Study Research Report Incorporating Service Learning

Caven S. Mcloughlin
Kent State University, USA

Abstract

Background: Traditional approaches to reducing adolescents' socially inappropriate behaviour typically target individuals rather than groups. This case study investigates whether positive outcomes might accrue in social behaviours among a group of extraordinarily behaviourally-challenging youth resulting from a peer-mediated service-learning project.

Aims: Service-learning interventions are implemented with the goal of increasing students' bonding to their school community, increasing personal responsibility, developing an ability to manage conflict responsibly, identifying with positive peers and increasing prosocial skill repertoires.

Sample: Subjects are 26 adolescent students attending an Alternative High School in the USA due to their school failure in regular settings.

Method: Group members worked together in small, heterogeneous groups on service-learning projects that contributed to improving their school or solving a problem that they themselves recognized within their school.

Results: Self-report measures taken pre- and post intervention suggest improvements in behavioural accountability, bonding to school, anger management, and the establishment of a psychological sense of school membership-all primary goals for this intervention.

Conclusion: These data support the contention that service-learning projects can increase affiliation with the life of the school and create enhanced valuing of self within a cohort of behaviourally challenging youth. This approach is easily implemented in schools and might prove useful to schools serving difficult-to-manage youth.

Keywords: Service-Learning; Intervention, Peer-group.

一個引入服務學習的探索性個案研究報告

Caven S. Mcloughlin
Kent State University, USA

摘要

*研究背景：*減少青少年不良社會行為的傳統方法大都是專門針對個人而不是群體。該個案研究旨在考察一群有突出行為問題的青少年在通過參加同伴媒介的服務學習項目後，積極結果能否增加。

*目的：*服務學習干預實施的目的是增加學生與學校團體的聯結，提高個人責任感以及應付衝突的能力，認同積極的同伴，並且提高親社會技能。

*被試：*被試為26名由於從常規學校中輟學而就讀於一所美國非傳統高中的26名青少年學生。

*方法：*在服務學習項目中，團隊成員在不同質的小團體中一起工作和學習，由此希望改善他們的學業或解決他們自己能意識到的一些與學校相關的問題。

*結果：*干預前後的自我報告表明，行為責任感，與學校的聯結，憤怒控制，以及學校歸屬感的建立等方面有所提高。這些項目均為本次干預的基本目標。

*結論：*結果數據支持了以下論點：服務學習項目能夠增加學校生活的歸屬感，能夠在一個行為問題少年的群體中創造自我評價的提高。這個方法在學校中實施方便，可能在學校應對難以管理的青少年時起到作用。

關鍵詞：服務學習，干預，同伴群體

Introduction

Schools serve as a training-ground for life, for citizenship and for mutual coexistence. Schools develop learners' knowledge, skills, and abilities and enable students to make informed and responsible choices. At school, students learn the important life-skills of responsibility, trustworthiness, self-respect, fairness, and caring. The goal of developing young people who are balanced in their socio-emotional status and prosocial in their behaviour has developed as a primary objective when intervening with disaffected youth.

Contemporary educators incorporate peers as co-instructors. Models incorporating peers as helpers to their age-mates are not new; peer groups have been shown to be positive social influences on potentially disaffected youth (e.g., Benítez-Muñoz, Almeida & Justicia, 2007; Cowie & Fernandez, 2006).

Coincidental with schools' growing interest in providing group-learning opportunities for social skills' development has been an increase in service-learning. Service learning integrates meaningful service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities.

When young people have a voice in decisions that affect their own lives and those of their peers they form stronger commitments to school and community and choose to act as agents of social change (Coalition of Community Foundations for Youth, 2002; Zeldin, Camino & Calvert, 2003). Service-learning emphasizes the power of including "young people as a meaning part of the creation and implementation of service opportunities" (Fredericks, Kaplan, & Zeisler, 2001, p. 1).

Service learning opportunities are becoming relatively commonplace in the USA. In a recent

governmental survey of a national sample of more than 2,000 Kindergarten through High School principals across the USA one-in-four schools were identified as providing 'academic-credit' for school-based community-service (Spring, Grimm & Dietz, 2008). A national study of USA-based service learning programs demonstrated that effective service-learning programs can improve academic grades, increase attendance in school, and develop increased levels of personal and social responsibility (Melchior & Bailis, 2002). Similar positive findings have been established for gains on measures of cognitive complexity and problem-solving (e.g., Billig & Klute, 2003; Billig & Meyer, 2002; Meyer & Billig, 2003), overall academic functioning (Kirkham, 2001), attitude towards school (Furco, 2002; Kraft & Wheeler, 2003) and motivation to learn (Ritchie & Walters, 2003). The increased level of civic engagement in today's North American youth has even been attributed to their opportunities and experience in making contributions at the school and community levels (Melchior & Bailis, 2002).

Since it is possible that the model for service-learning in the USA does not parallel experiences seen elsewhere, some of the common North American elements will be described here. Typically, schools offer community service projects as 'add-ons' to the typical curriculum; they are rarely mandated as elements of the state's master curriculum and more usually seen as a means of gaining 'extra-credit' towards the requirements for graduation. For example, when a child's grades in scholastics suffer for any reason then service-learning activities can compensate and add numerical credits so that the child achieves the benchmark for graduation. Service learning is therefore an option for schools and for students and is widely incorporated as a means of refocusing students' attention on their school, their

community and the social skills of successful students (and citizens).

The Context for this Study

This exploratory case study is founded on the interlinked ideas that (1) schools serve their communities best when students are engaged in tasks that improve their learning communities; (2) that schools' contribution to developing students' prosocial repertoires can be accomplished in group-settings; (3) that students can be positive guides for one another; and (4) that providing service is a means leading disaffected youth to closer affiliation with their school and subsequently to improved educational performance at the individual level.

This report presents the results of an analysis of data collected on students who had participated in a Positive Peer Group Program implemented by PSI Affiliates personnel (Twinsburg, Ohio, USA) in Lake Academy High School, Willoughby, Ohio—USA.

Lake Academy is an Alternative High School—all children have either 'dropped out' of attendance from regular public education schools or have administratively been removed from settings providing an education to 'typical' children. The majority were separated from their prior school for their chronic patterns of socially inappropriate behaviour reflected in a failure to comply with established school standards. Those who were previously habitually truant were induced to attend Lake Academy with assurances that the experience would be sufficiently 'different' from regular education models that they would be able to experience a 'fresh start.' Universally these students are not stellar at academics, are difficult to manage in groups and even when solo, and arrive at school with a distinct focus on meeting their own needs regardless

of whether that entails trampling on the rights and interests of others.

The Lake Academy student body comprises 40 boys and 21 girls aged from 14 to 18 years with a combined staff-to-student ratio of 1:10. Lake Academy is a day-school; there are no residential facilities or programs. Necessarily, the students are tough to teach; they would not be at Lake Academy unless they had already 'failed' in regular education settings. Two in three are supervised by the juvenile court probation department and seven-in-ten have experienced residential treatment for chemical dependency. All are, in their own individual ways, 'special' in terms of their educational needs and the challenges they bring in terms of behavioral and educational management.

Lake Academy curriculum focuses on traditional academics embedded within a context of social life-skills education accomplished through on site work experience, supervised goal setting, individualized small group instruction, and career exploration. Evident within the school are close advisor-student relationships that emphasize consensus decision-making. The students have a menu of electives from a broad curriculum with choice in class scheduling. The school draws its inspiration from Alfie Kohn's 1993 Phi Delta Kappan article 'Choices for Children: Why and how to let students decide' (See: <http://www.alfiekohn.org/teaching/cfc.htm>).

The intervention program described here was designed and implemented by the Prevention Initiatives Division of PSI Affiliates, Inc. of Twinsburg, Ohio, a human services consortium of psychologists, educators, and prevention specialists who work in partnership with over 250 schools in Ohio, USA. The organization's title **PSI** reflects the founding philosophy that drives all program

implementation - **Prevention through Systems Intervention**. The evaluations were planned and implemented by PSI staff, and facilitated by school administrators and teachers.

Positive Peer Groups (PPG) is a PSI program that has been incorporated into public and parochial regular education settings with success (see: Rosenberg, McKeon & Dinero, 1999; <http://www.pdkintl.org/kappan/kros9910.htm>). The program described here was devised to allow students at Lake Academy an opportunity to work together in small, heterogeneous groups on projects that contribute to improving their school or solving a problem that they themselves recognize at their school. The curriculum was designed to use the influence of positive peers as a motivator. The program intervention incorporates a 25-consecutive-week project where students complete a school needs-analysis, plan a project, and evaluate the impact of their project.

The PPG program is founded upon conceptual research originally proposed by Wonderly (1991)

which posits that: (1) Children want meaningfully to contribute to others. (2) Children need to make contributions but do not necessarily have the skills or opportunity to do so. (3) Meaningful contributions to their school will increase children's positive attitude toward their school. (4) A program which enhances the students' positive attitude toward work will, in turn, increase school performance, attendance and classroom participation, among other positive behaviours. Wonderly (1991) did not design or implement interventions to match his theory; the activities noted here are the current researchers' attempts at incorporating the principles into a practical model.

The major focus of the PPG program is to develop students' qualities by capitalizing on certain assumptions about children: They need to belong to a group; contributions to the school should involve service as motivation; and a positive atmosphere of service can influence other positive social characteristics.

Schematically, the concept in practical implementation may be described thus:

WORK + DISCIPLINE + RESPONSIBILITY = SUCCESS

Children were selected to participate in the program by their teachers because they fit one of four categories:

1. **Positive or 'well-rounded'/prosocial Leaders** (i.e., students viewed by adults as strong prosocial role-models and exemplars of acceptable-social-standards, with developed skills in finding resolutions to problems);
2. **Controversial Leaders** (i.e., students who are socially liked but predominantly for their rebellious behavior);

3. **Rejected Isolates** (i.e., students who are actively disliked by other students); and
4. **Neglected Isolates** (i.e., students who are neither actively liked nor disliked by the other students).

The remaining children became the "Control" or comparison group. Thus, the two groups, the one receiving training and intervention (the experimental group) and the other receiving no extraordinary training (the control group) were different from the beginning. We evaluated the group's demographics

before the program started and did not find any statistically significant differences; nonetheless, this is not a true experimental/control design for random assignment to groups did not occur.

Program goals were to encourage the following qualities in the experimental group participants:

1. Bonding to the school community
2. Personal responsibility
3. The ability to manage conflict responsibly
4. An identity with positive peers, &
5. Pro-social skills.

As an outgrowth of such enculturation, it is anticipated that the children will also experience what communication specialists call “inoculation”; that is the build-up of a reasoned resiliency against the contrary ideas and actions of others. This inoculation against peer pressure should help to protect children against such behaviours as drug use and violence in much the way that inoculations help arm the body against influenza.

The PPG program was designed to have an impact on a variety of psychological, social, and educational areas. These include, among others: Peer relations; psychosocial development; school experiences; initiative; social competency; socialization within the school environment; bonding to school; attitude toward work, and issues associated with compliance to discipline codes and drug-free behaviour.

The students worked with PSI facilitators and four sub-groups of students to implement two projects: One which involved selling healthy snacks to their fellow students, and the other which involved painting the school’s stairwell (an area that students indicated was avoided by many due to the poor lighting and dingy décor). In each case students completed a needs-analysis, planned the activity,

worked out the financial details, and implemented whatever was needed to complete the task.

Instrumentation and Analysis

This case study report presents data from 26 students who completed the program, and whose data were complete a single setting, Lake Academy. The measured variables are the coded responses on the five scales of the PSI Student Survey (PSISS; a paper-and-pencil device designed to measure the students’ self-perceptions of certain behaviours related to the goals of the PSI interventions). This protocol was selected to reflect content validity (i.e., subject matter relevance) as the principal criterion and established reliability as a secondary criterion. Items of the PSI Student Survey include:

Self Discipline (Alpha Coefficient, .75)

1. I finish my work on time.
2. I keep doing things even when they are boring.
3. I work hard to get what I want.
4. I work hard in school.
5. I try to be on time.

Work Ethic (Alpha Coefficient, .83)

1. I do well in school.
2. I do my homework.
3. I plan to work hard when I go to work so I can get ahead.
4. I am working to do my best in school.
5. I want to go as far in school as I can, maybe to college.

Behavioural Accountability (Alpha Coefficient, .80)

1. I take the blame when I make a mistake.
2. I return things I borrow on time.
3. I admit it when my parents blame me for something I really did.
4. I try to follow the school rules.

5. I try to work hard to improve myself.

Bonding to School (Alpha Coefficient, .80)

1. I like being in school.
2. I like the teachers and other adults in my school. I like the things taught in school.
3. I act the way I should in school.
4. I work on assignments to get the best grade I can.

Anger Management (Alpha Coefficient, .34)

1. I think, if I had to, I could talk my way out of a fight.
2. I use different ways to calm down when I get mad at people.
3. I can calm down if I get mad at somebody.
4. I walk away from fights.
5. My friends and I can settle our problems by talking it out.

Testing was conducted before the beginning of the PPG sessions and immediately after. The design was therefore a pretest-posttest quasi-experimental-control structure. As previously stated, however, because of the lack of randomization in creating the experimental and control groups, growth in the two groups was studied separately and compared using descriptive statistics. Dependent group t tests were run separately for the experimental and control groups with a critical value set at $\alpha = .05$. This is a statistical standard whether the results could have occurred by chance. It is important for readers to keep in mind, however, that any change (even changes in a positive direction that parallels the goal of the intervention) should not be construed to suggest causality.

In the present case study several terms and techniques are used which may not be familiar to the reader. For example, to evaluate the change in the program group, their median value (an average which reflects the total group) was located within

the distribution of the control group and assigned a percentile ranking. Using this indicator, we can see the change from pre-testing to post-testing.

“Group x Time” is a shorthand term for the ‘interaction’ between two variables: The program/control group membership and the time interval between the beginning of the program intervention and its end. This interaction reflects the difference in growth between the two groups: *If the change between the pretest and the posttest for the program students is different from the change seen in the control group, this value will be large, and the F ratio in the Table will, in turn, be larger than we would expect by chance.* Table 1 displays these values for readers’ review.

An interpretive statistic was included to facilitate interpretation of the data and to aid in curriculum diagnostics. This is the Effect Size (Cohen, 1977), a measure of the impact of the program as indicated by the group differences. It is essentially the proportion of the total variance accounted for by the test in question and calculated by the ratio of the between sum of squares to the total sum of squares. Cohen has given arbitrary, but reasoned and now widely accepted suggested interpretations of the index, as determined by results found in the general social science literature.

Values are standardized and can be interpreted as follows:

- * Zero to .35 is a low amount of impact;
- * .35 to .65 is a medium impact;
- * Any value over .65 is a strong impact.

These interpretations were established for social scientific research covering a wide variety of treatments. It is necessary to caution that since the PPG Program is an innovative and multi-faceted endeavour these interpretations may be far too

conservative for use at this time. They are guidelines for interpreting scientific research and may be adjusted for systems in development.

Thus, we can also see exactly how much each outcome was affected. Table 2 presents the “effect sizes” for all six measures. The “effects” presented here are one way to indicate the importance that being in the program group (instead of in the control group) has on each outcome, that is, how much more than the control students would we expect the program participants to change. Another way of phrasing this is to say that the effect size is the degree to which the outcome has been quantified after we have adjusted for the type of data and the type of statistical test being used. The values presented here are appropriate for the analysis-of-variance interaction terms used to test our statistical hypothesis.

Jacob Cohen (1977) has discussed the problems inherent in putting qualifying adjectives on these effect-size values but determined that informed interpretation, even if based on somewhat arbitrary values, is better than none at all.

Thus, a “small” effect size is likely in new areas of research inquiry “because the phenomena under study are typically not under good experimental or measurement control or both” (p. 25). Uncontrollable factors in the environment reduce the impact of the phenomenon under study by introducing ‘noise’ into the system. A “medium” effect size is often observable to the naked eye, often similar to the difference between trained and non-trained workers. For a “large” effect size to occur the two groups have less than 50% in common or overlap in their scores, similar to the overlap, say, between the heights of 13-year-old and 18-year-old girls.

Thus, small effect sizes are typical in innovative programs, while medium sizes are more typical of

what is found in the social science, psychological and educational literatures. Any effect size that is strong would stand out in most literature reviews.

Results

Of the 26 students who participated in the study 24 (92%) were Caucasian and 2 (8%) were African American. There were 18 male (69%) and 8 female (31%) students in the project aged 14.1 to 17.8 years.

Six measured outcomes were used to evaluate the outcomes of the intervention. All of the six measures showed improvements in the hypothesized direction although these might not all be attributable to the impact of the program (see Table 1 for the analyses of variance). All of the F ratios were larger than chance, and so we might conclude that the experience of the program intervention influenced these outcome measures. Nonetheless, readers are counselled to keep in mind that correlational relationships do not imply causality. Even though a positive change did occur for those in the intervention group there may have been other variables that triggered the observed changes.

The extent of the impact is seen in Table 2, where it can be seen that the effect size for *Anger Management* and *Behavioural Accountability* stand out as “strong” impact. The program affected *Work Ethic* and *Bonding to School* to a lesser, but still “medium” extent.

All of the five measures of the *PSI Student Survey* showed the same pattern of change illustrated in Figure 1 for the Total score. Two points should be noted. First, the Lake Academy students began below the control students. Second, following completion of the program there were no statistical differences between the two groups. The pattern is one where the control group’s scores decay while those of the program

participants either remain the same or increase. Here we see almost a five-point increase in the total score for the program students, concomitant with almost a 14 point drop for the control group over time.

Table 4 presents the differences between the pretest score and posttest score found in the experimental group. These were arbitrarily divided into three blocks indicating negative change, little movement, and positive change.

Seven of the program participants increased their responses on *Self-Discipline* three or more points on the 25 point scale while two students lost three or more points. Self-discipline and the ability to handle anger were the characteristics on which most students demonstrated positive change. Four program participants regressed, or lost ground, on *Work Ethic* three or more points.

Figure 1: Trend lines for the two groups' Total PSISS scores over time

A similar interpretation can be derived from studying the changes in the Lake Academy students' median performance in Table 3. While the actual change in their median score was slight, from 16 to 17 on *Self-Discipline* for example, relative to the control group's responses, this one-point change reflects a change in ranking from 24th centile to 53rd centile, having effectively jumped over almost 30% of the control group.

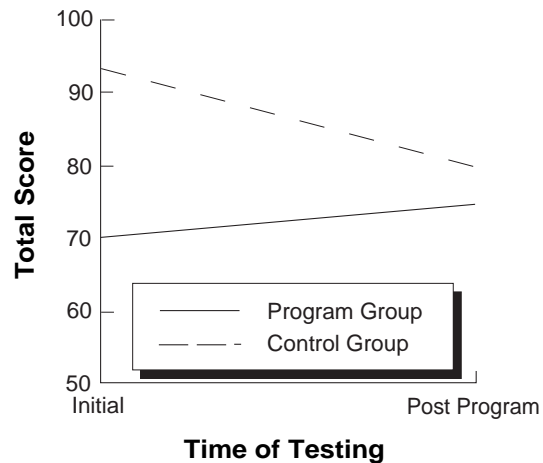
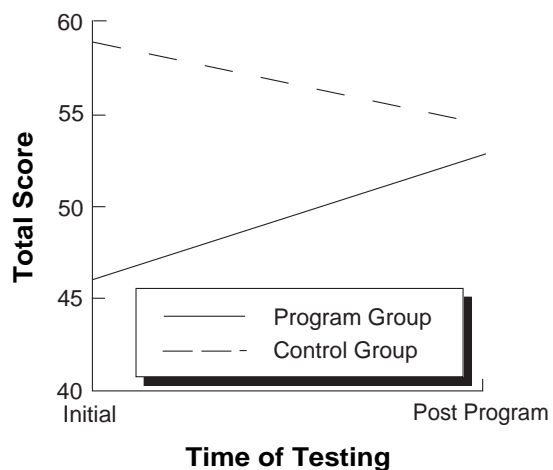


Figure 2: Trend lines for 'Psychological Sense of School Membership' for both groups over time

The PPG Program resulted in an effect size of .308 for the measure of Psychological Sense of School Membership (Goodenow, 1993). The pattern of change is depicted in Figure 2. Note that, although the program students were nearly 12 points below the control before the PPG intervention, they ended only three points lower by the end of the intervention period. The graph indicates; however, that this reversal was due, in part, to the 4.3 point drop in the mean of the control group. The experimental group's 6.7 point gain must be interpreted in this context.



Discussion

For the purposes of evaluating the outcomes of the Positive Peer Group Service Learning Intervention program, a 25-item paper-and-pencil instrument was designed. It measures five constructs using five statements for each construct. The pattern which all the scales followed was one in which the program students stayed the same while the control students' scores declined. This statistical decrease in their scores may be due to natural aging or might be seen as a sort of press found naturally in their environment – that of their peers, the school, or their society or parents. That is, it is possible that some force or forces in their environment had been acting to diminish these socially positive characteristics. Since we may assume that the program students were exposed to these same negative forces, it would appear that the effects of the intervention program might be an influence that is able to counteract them and help the students retain their initial status. One interpretation is that the program appears to work as a sort of *immunizing force* – one that prevents a decline in socially positive attitudes or counters negative societal forces both during and after the program.

The test-retest correlations of the *PSI Student Survey* scales ranged from .42 to .73 for the Experimental group. These values are strong indicators for short scales (5-question); most importantly, they argue that the students' scores are indeed stable, both at the group level and at the level of the individual student.

The students experiencing intervention showed stability in *Behavioural Accountability* and *Anger Management*. In effect, they maintained their initial ability to take personal responsibility for their actions or their willingness to admit mistakes. In addition, they report a stable ability to 'talk things over' or to

'calm down' when angry.

To a lesser extent the program helped them buttress their *Work Ethic* and *Bonding to School* scores. Work ethic implies the willingness to work hard and appreciate the value of doing one's best, while bonding to school includes psychological and cognitive attachment to their school, to its people and its values. Students without the program intervention, however, reported a reduction in these socially-valued characteristics.

A second, more extensive measure of bonding to school (*The Psychological Sense of School Membership*; Goodenow, 1993) expands on these ideas to include pride in the school, a feeling of inclusion in the school, and a sense of being recognized by others, both students and teachers. On this measure, the experimental-group students increased by an average of eleven points. While this in and of itself might indicate program impact (when compared to the control students' decline of five points) we might have both an inoculation against the negative forces within their social environment and a building up of their psychological sense of belonging to the school. The combined data on 'bonding to school' (from the *PSI Student Survey* and *The Psychological Sense of School Membership*; Goodenow, 1993) provide parallel and complementary indices suggesting that at the conclusion of the intervention students felt a stronger affiliation with their school. This force has been described as influential in causing children to avoid antisocial behaviour at school (McNamara, K. 1996; 2000).

Conclusions

Involvement in the Positive Peer Group Intervention program appears to have promoted a more positive school experience. Significant group

differences were found in Behavioural Accountability, Bonding to School, and Anger Management Skills. Evidence suggests that those students who were involved in the intervention experienced statistically significant increases in their Psychological Sense of School Membership – all primary goals for this intervention. There is strong statistical confidence that the program had a positive effect on a range of prosocial behaviours and attitudes, with implications for a wider outreach of the program's principles to the teachers and the parents. Yet, it is important to note that the limitations of this research design, the fairly small subject-sample, and the distribution of students into the control and experimental categories do not automatically mean that it was the intervention that caused the observed changes – only that they occurred. For example, the extra attention invested in the students in the experimental group could, alone, have been a contributory cause for the positive changes.

Having data to support the contention that increased affiliation with the life of the school creates enhanced valuing of self and concomitant acceptance of positive behaviour patterns affords this service learning program credibility and provides pointers for the future. This service-learning program has been demonstrated to encourage interaction and communication between the child and his/her peers, and between the child and school personnel. With more direct parental involvement, students would see the program goals within all three of their socialization forces: *Peer, Teacher, and Parent*. In this way, the triangle of support for children's growth can be strengthened and stabilized.

That an intervention program requiring relatively few resources and addressed to an educational system can provoke such subtle changes in individuals'

behaviour is testament to the power of prevention through systems intervention using service learning.

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Table 1: Service-Learning Intervention Group by Time Analyses of Variance for All Outcome Variables

Scale	Source	Statistic			
		Sums of Squares	df	Mean Squares	F Ratio
Total	Group x Time	2149.72	1	2149.72	8.75**
	Within + Residual	1295.26	46	245.55	
Self Discipline	Group x Time	69.29	1	69.29	6.98*
	Within + Residual	566.08	57	9.93	
Work Ethic	Group x Time	75.12	1	75.12	6.06*
	Within + Residual	706.25	57	12.39	
Behavioural	Group x Time	75.50	1	75.50	9.70**
Accountability	Within + Residual	459.04	59	7.78	
Bonding to School	Group x Time	114.06	1	114.06	8.61**
	Within + Residual	755.28	57	13.25	
Anger Management	Group x Time	132.46	1	132.46	9.83**
	Within + Residual	767.83	57	13.47	
Psychological Sense of School Membership	Group x Time	1197.94	1	1197.94	23.59**
	Within + Residual	2690.93	53	50.77	

* Significant at p = .05

** Significant at p = .01

Table 2: Effect Sizes for the PPG Service-Learning Intervention Group by Time Analyses, PSISIS Scales

Outcome Variable	Effect Size
Total	.160**
Self-discipline	.109*
Work Ethic	.096*
Behavioural Accountability	.141**
Bonding to School	.131*
Anger Management	.147**
Psychological Sense of School Membership	.308**

* Effect sizes are within the “medium” range as established by Cohen (1977).

** Effect sizes are within the “strong” range as established by Cohen (1977).

Table 3: Descriptive Statistics and Relative Rankings for Service-Learning Intervention Students

Scale	Time	Mean	Standard Deviation	Median	Percentile Ranking of the Median*
Self-Discipline	Pre	15.32	4.05	16	24
	Post	15.88	3.00	17	53
Work Ethic	Pre	14.86	4.91	14	17
	Post	15.73	3.51	16	42
Behavioural Accountability	Pre	15.64	4.25	16.5	25
	Post	16.12	3.97	17	56.5
Bonding to School	Pre	12.29	3.65	12	5
	Post	12.75	3.40	12.5	34
Anger Management	Pre	12.20	4.54	11.5	5.5
	Post	13.71	2.64	14	37
Total	Pre	69.94	16.80	68.5	3.5
	Post	74.57	14.35	79.5	51
Psychological Sense of School Membership	Pre	46.11	15.35	48.5	8
	Post	52.82	10.77	53	42.5

* Ranking is based on the control group distribution appropriate to the time of testing and is the percent of the control group below the median score of the Lake Academy students

Table 4: Number of Students in Each Change Category for the Five Scales of the PSISS

Scale	Amount of Change		
	Loss	Minimal	Gain
Self-Discipline	2	6	7
Work Ethic	4	3	5
Behaviour Accountability	2	9	4
Bonding to School	2	7	4
Anger Management	2	5	7

Loss = Three or more points decrease on the 25 point scale

Minimal = Change between -2 and +2

Gain = Three or more points increase on the 25 point scale

Note: The numbers in the Table do not add to 26 because not all students had fully completed the Survey and so scores on the related scale could not be calculated for non-responders.

Author Contact:

Caven S. Mcloughlin, Ph.D., Professor,

Kent State University, USA.

E-mail: [caven@kent.edu]

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