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Exploring the effects of a youth enrichment program on academic motivation and engagement

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Abstract. This study explores the effects of a youth enrichment program on academic motivation and engagement. Fifty-three students aged 14–16 years participated in the Rotary Youth Program of Enrichment (RYPEN). Embedded within the program were workshops revolving around the Student Motivation and Engagement Wheel [Martin (2003a). *How to motivate your child for school and beyond*. Sydney: Bantam] and strategies aimed at enhancing students' academic motivation and engagement. Motivation was measured using the Student Motivation and Engagement Scale [Martin (2001). *Australian Journal of Guidance and Counselling 11*, 1–20; Martin (2003b) *Australian Journal of Education, 14*, 34–49] at the outset of the program, towards the end of the program, and again 6–8 weeks later. Data showed that there were gains on key facets of students' motivation by the end of the program – gains that were sustained 6–8 weeks later. These gains were demonstrated by boys and girls. Moreover, when compared to a larger weighted sample (2769 high school students), by Time 2 and also by Time 3, significant declines in motivation had been reversed and any pre-existing advantages or parallel strengths of the RYPEN sample over the weighted sample were maintained. Five facets of the program proposed to have contributed to its effectiveness are: the optimistic expectations held by adults, the program's focus on mastery, the climate of cooperation and the ensuing sense of belonging, the positive relationships that developed amongst students and between students and adults, and embedding school-related elements within a broader enrichment program. Each of these is discussed.

Key words: student motivation; student engagement; youth programs; intervention

1. Introduction

Many young people participate in enrichment programs that aim to enhance their self-esteem, confidence, sense of self, self-awareness, approach to life, life satisfaction, and general motivation. The range, scope, duration, intensity, philosophical orientation, and methods of these programs are diverse. Some programs are quite unrelated to school, others incorporate some school-related skill building, while others are specifically designed

to enhance students' functioning, engagement, and performance at school. This paper explores the effects of a broadly based youth enrichment program – Rotary Youth Program of Enrichment (RYPEN) – that also incorporated specific intervention targeting students' academic motivation. Specifically, it examines the shifts in students' academic motivation and engagement over the course of the program and then 6–8 weeks later.

2. The Student Motivation and Engagement Wheel

Motivation and engagement have been described as students' energy and drive to engage, learn, work effectively, and achieve to their potential at school and the behaviours that follow from this energy and drive. Motivation and engagement play a large part in students' interest in and enjoyment of school and study. Motivation and engagement also underpin their achievement (Martin, 2001, 2002b, 2002c, 2003b; Martin, Marsh, & Debus, 2001a, 2001b, 2003; Meece, Wigfield, & Eccles, 1990; Pintrich & DeGroot, 1990; Schunk, 1990).

There have been numerous theoretical contributions to our understanding of motivation and engagement. Amongst the more influential theories are need achievement theory, self-worth motivation theory, self-efficacy theory, expectancy-value theory, attribution theory, control theory, choice theory, and motivation-orientation theory. Taken together, these theories tell us (a) why students do what they do, (b) how they do it, (c) their confidence in being able to do it, (d) their ability to surmount obstacles and challenges before them, and (e) their capacity to pick themselves up after academic setback or hold their ground in the face of study pressures.

Martin (2001, 2002b, 2002c) developed the Student Motivation and Engagement Wheel that comprises constructs central to these theories and the Student Motivation and Engagement Scale to measure each facet of the Wheel. The Student Motivation and Engagement Wheel (and the Student Motivation and Engagement Scale) separates motivation into factors that reflect enhanced motivation and those that reflect reduced motivation. These are called *boosters* and *guzzlers* respectively. Figure 1 shows this Wheel and the specific facets of motivation that comprise it.

As shown in Figure 1 and discussed fully in Martin (2001, 2002b, 2002c), boosters include self-efficacy, mastery orientation, value of schooling, persistence, study management, and planning. Guzzlers include anxiety, uncertain control, failure avoidance, and self-handicapping. The strength of the Student Motivation and Engagement Wheel is that it can be easily communicated by practitioners to students and following from this, is readily understandable by students. The practitioner and student can easily separate the 'helpful' (boosters) motivation from the 'unhelpful' (guzzlers). Thus, this model is an easy way for students to understand their motivation and an easy way for practitioners to explain it to them. When students

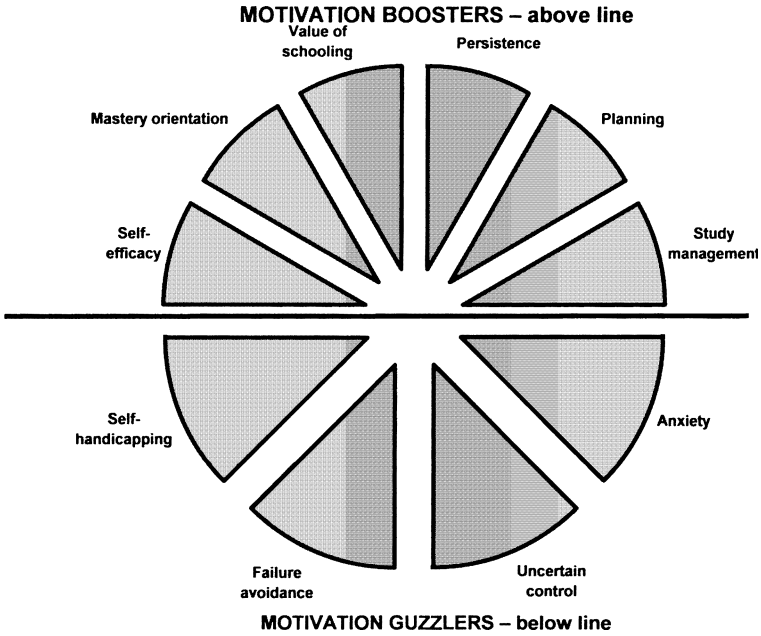

Figure 1. The Student Motivation and Engagement Wheel – adapted from "How to Motivate Your Child For School and Beyond" (Andrew Martin, 2003a, Bantam).

understand motivation and the dimensions that comprise it, intervention is more meaningful to them, and as a consequence, is likely to be more successful.

Martin (2001, 2002b, 2003b) has shown that the Student Motivation and Engagement Scale is a valid and reliable measure of academic motivation and engagement as reflected in the Wheel. For example, Martin (2001, 2002b, 2003b) used LISREL procedures to confirm a strong factor structure of the Student Motivation and Engagement Scale. He has also shown that the Student Motivation and Engagement Scale is a reliable instrument with approximately normally distributed dimensions. In addition, this scale has been validated and significantly associated with literacy, numeracy, and achievement in mathematics and English as well as being sensitive to age and gender related differences in motivation.

3. Factors impacting on students' motivation

Because motivation plays such a large part in students' academic engagement and achievement it is important to identify factors that contribute to their motivation. Research conducted to date has shown that a variety of factors impact on students' motivation including the nature of pedagogy they receive (Teven & McCroskey, 1997), relationships they have with their teachers (Kelly & Hansen, 1987), parents' attitudes towards and

expectations for their children (Dandy & Nettelbeck, 2000), peers (Wigfield & Tonks, 2002), class climate (Qin, Johnson, & Johnson, 1995), school culture and structure (Anderman & Maehr, 1994), socio-demographic status (Becker & Luthar, 2002), gender (Martin, 2002a), and age (Martin, 2001, 2003b).

In addition to these findings, other research has sought to examine the effect of motivation programs on students' academic engagement. Often these programs focus on specific aspects of students' motivation and have been successful in enhancing students' self-concept (Marsh, 1990), attributional patterns (Craven, Marsh, & Debus, 1991), goal orientations (Covington, 1998), and sense of control (Craven et al., 1991), as well as reducing students' anxiety (McInerney, McInerney, & Marsh, 1997).

4. The impact of more broadly based youth enrichment programs

However, there are many programs in which students engage in the course of their schooling that are not specific to academic motivation and yet offer scope for personal growth and development. It is suggested here that these broadly based programs (that is, programs that are aimed at the development or support of emotional, social, behavioural, and physical development) also offer scope to build bridges to students' academic lives. One way to do this would be to include as part of the program's activities some units that relate specifically to skills students are required to use at school to perform more effectively and efficiently. Valentine, Cooper, Bettencourt, and DuBois (2002) report that co- or extra-curricular programs can enhance academic engagement and achievement if they in some way relate to aspects of students' academic life and/or they promote identification with or relatedness to school. If this is the case, what then, is the impact on specific facets of students' motivation of more broadly based programs that make meaningful links to school-related skills? This is the central focus of this investigation. Specifically, it focuses on the impact on students' academic motivation of a broadly based youth enrichment program that is combined with some targeted intervention around the concept of student motivation and strategies to improve such motivation.

There are a number of features of effective youth programs that are worth considering before focusing on the program in the present study. Programs typically range in specific purpose but generally are aimed at enhancing or intervening at any one or more of emotional, social, physical, behavioural, and academic development. Characteristics of effective youth programs include intensive individualised attention, multi-agency collaboration, strong links to schools and outside agencies, social skills training, engagement of peers, and staff with strong training skills and background (Dryfoos, 1990). In addition, programs that help youth feel valued, develop supportive relationships, establish a productive place for the individual in a

group, and foster individuals' usefulness to others directly address adolescent needs (Lerner & Galambos, 1998). In a more wide-ranging analysis of youth programs, Weissberg, Kumpfer, and Seligman (2003) concluded that successful programs tend to address research-based risk and protective factors, are long-term and age specific, aim to establish practices that nurture optimal development, use interpersonally skilled staff, and incorporate or adapt evidence-based programming (see also Nation et al., 2003).

5. The program under focus

The program under focus is the RYPEN, a program for 14–16 years old school students. RYPEN was developed in Australia in 1980 and programs have been held across Australia as well as in New Zealand, America, and Canada. It is this author's understanding that the program has not been formally evaluated to date. The program is aimed at providing participants with an opportunity to review themselves, where they are in life, and where they are headed. These aims are achieved through providing young people with an environment in which they can explore their own boundaries and gain a greater sense of self-understanding and self-reliance through challenging tasks, active learning, and problem solving. Taken together, these activities are designed to develop participants' mental, physical, and social skills. Core components of the program are the focus on task and activity mastery, an optimistic and positive orientation to young people, the development of teamwork and cooperation, building a sense of community, and the development of quality relationships amongst young people and between young people and the adult leaders. Typical RYPEN activities in which these components are embedded include orienteering, swimming, discussion groups, sporting games, community dining, and group physical challenges.

Invitations to participate in the program are sent to schools in a given district. Young people are selected on the basis of age, availability to participate in the full program, and a readiness to make some changes in their lives. Selection is typically carried out by a school's Principal or Year Advisor who identifies appropriate students and then nominates them to Rotary. The program does not target 'at risk' students per se, but includes students experiencing some difficulties such as decreased motivation, low self-esteem, vocational confusion, or bouts of school failure. The program, then, is aimed at the middle range of students who are not performing to their potential, yet who have demonstrated a capacity to make changes in their lives. Nominated students are informed that they have been identified on the basis that they show potential to benefit from the program.

In terms of its comparability to other youth programs, it is worth noting the following characteristics that align with features of effective programs

outlined above: intensive individualised attention, multi-agency collaboration (schools and Rotary), strong links to schools and outside agencies (Rotary), engagement of peers, staff with strong training skills and background (staff had extensive experience working with youth), centrality of group work and productive activity within that group, celebration and valuing of the individual, and age specificity (targeting a particular developmental level – middle high school). In terms of the motivation work itself, workshops involved research-based risk and protective factors, established practices that nurture optimal development, used interpersonally skilled staff, and incorporated evidence-based programming (see Dryfoos, 1990; Lerner & Galambos, 1998; Nation et al., 2003; Weissberg et al., 2003).

6. The student motivation workshops

The RYPEN program typically invites a guest speaker enabling a focus on a complementary but non-overlapping dimension of development. Motivation was identified by program administrators as an area that was consistent with the goals of the program and which could be meaningfully embedded in the weekend's activities. Hence, academic motivation is not specifically inherent in the program but quite consistent with it. In the RYPEN program reported on here, two motivation workshops were conducted with participants. Participants were divided into two equally sized groups, each receiving the two motivation sessions. The first workshop introduced and defined the concept of motivation, presented and explained the Student Motivation and Engagement Wheel (Martin, 2001, 2003a) to students, presented case studies of students who represented different motivation patterns, and explained to participants potential barriers to change and how to overcome these barriers. The second workshop focused on specific facets of the Student Motivation and Engagement Wheel and detailed strategies students could use to address each one in their academic life. Support materials were also provided to participants which included all slides from both workshops, activity sheets, and reading lists for participants and their parents.

7. Aims and design of the study

The central question in this investigation is the impact the program had on participants' academic motivation over the course of the weekend and then over the following 6–8 weeks. It is not uncommon to experience immediate gains as a function of an intervention, as the issues and concepts under focus are top-of-mind for participants (Craven, Marsh, & Burnett, 2003). Given this, it is expected that there would be motivational gains at the end of the program. Notwithstanding this, it is of interest to determine if there are few or no gains in areas which could not be reasonably

expected to increase over the course of the weekend – constructs such as academic planning and study management would be relevant here. It was also of interest to follow students up within one academic term of the intervention program. This was considered to be a feasible test of students' ability to sustain motivational gains over a reasonable period of time that encompassed the diversity of academic pressures students typically experience. One academic school term in the context of this study required that re-testing be conducted 6–8 weeks later. Although not part of the present study, longer term gains would be an even stronger test of sustainability over time.

It was also of interest to determine if gender effects emerged in relation to these differences across time. Given the widespread interest in gender effects in academic engagement, motivation, and achievement (House of Representatives, 2002; Lingard, Martino, Mills, & Bahr, 2002; Martin, 2002a), it was considered important to determine the (potentially) differential nature in which boys and girls responded to the youth enrichment activities. Previous research has found that girls are statistically significantly higher in mastery orientation, planning, study management, and persistence while boys are significantly higher in self-handicapping. Girls are also significantly higher in anxiety (Martin, 2004). To date, however, research is unclear as to whether there is differential gain for boys and girls as a function of intervention, and the present study provides an opportunity to do so. Although, there may be mean-level gender differences in motivation at any one time, no predictions are made as to the relative degree of motivational gains as a function of gender. Age was not included as a factor for formal analysis because only 10 and 7 students were 14 and 16 years respectively (68% of students being 15 years) representing cell sizes deemed too small to yield generalisable findings as a function of age.

8. Method

8.1. SAMPLE AND PROCEDURE

RYPEN participants were 53 high school students from urban high schools (government, systemic catholic, and independent schools) located in predominantly middle-class suburbs of Sydney, Australia. For the most part, schools were represented by only one student. In total, 53% of students were males and 47% females with a mean age of 15 years (SD = 0.57 years). One student was in Year 9, 46 were in Year 10, and six were in Year 11.

Leaders administered the Student Motivation and Engagement Scale (Martin, 2001, 2003b) to participants in the early part of the weekend. The Scale was again administered to students towards the end of the weekend. Approximately 5 weeks later, the Scale was posted to participants in a self-addressed reply-paid envelope. Along with the Scale was a one-page letter

to parents reiterating the central ideas underpinning the motivation workshops and a similar one-page letter to students. Twenty-three surveys were completed and returned following this initial mail-out. A reminder survey was posted 2 weeks later and a further thirteen surveys were completed and returned. In total, the response rate for the follow-up survey was 68% (36 follow-up surveys). Follow-up data pertain to the 6–8 week period following the RYPEN weekend.

8.2. THE WEIGHTED COMPARISON SAMPLE

Because no control group was involved in this study, mean-level group comparisons were drawn with a larger Australian sample who had previously been administered the Student Motivation and Engagement Scale. This larger sample comprised 5203 high school students. From this sample, all Year 9, 10, and 11 students were selected. In total, this represented 2769 students. The data for this comparison sample of Year 9, 10, and 11 students were then weighted to reflect the number of Year 9 (2%), Year 10 (87%) and Year 11 (11%) students in the RYPEN sample. The weighted data for this group then served as the comparison group for the study.

This comparison sample is not a control group. It is simply another means by which the present data can be contextualised, understood, and interpreted. The parallels between the test sample and comparison are that both comprise a mix of government and non-government schools, both comprise single-sex and co-educational schools, both comprise males and females, both are Australian, and both are matched in age. Notwithstanding this, the participants are not matched or paired in the design and so conclusions regarding the comparison sample must consider this. It is also important to recognise that the timing of testing differed for the two samples. The test sample was administered the Scale at the outset of the school year whereas the comparison sample comprised many schools that were administered the instrument at different times of the year.

8.3. MATERIALS

The Student Motivation and Engagement Scale (Martin, 2001, 2003b) is an instrument that measures high school students' motivation. It assesses motivation through six boosters and four guzzlers.

8.3.1. *Boosters*

Self-efficacy (e.g. "If I try hard, I believe I can do my schoolwork well"): Self-efficacy is students' belief and confidence in their ability to understand or to do well in their schoolwork, to meet challenges they face, and to perform to the best of their ability.

Value of schooling (e.g. "Learning at school is important to me"): Value of schooling is how much students believe what they learn at school is useful, important, and relevant to them or to the world in general.

Mastery orientation (e.g. "I feel very pleased with myself when I really understand what I'm taught at school"): Mastery orientation is being focused on learning, solving problems, and developing skills. The goal of a mastery orientation is to be the best student one can be.

Planning (e.g. "Before I start an assignment I plan out how I am going to do it"): Planning is how much students plan their schoolwork, assignments, and study and how much they keep track of their progress as they are doing them.

Study management (e.g. "When I study, I usually study in places where I can concentrate"): Study management refers to the way students use their study time, organise their study timetable, and choose and arrange where they study.

Persistence (e.g. "If can't understand my schoolwork at first, I keep going over it until I understand it"): Persistence is how much students keep trying to work out an answer or to understand a problem even when that problem is difficult or is challenging.

8.3.2. *Guzzlers*

Uncertain control (e.g. "I'm often unsure how I can avoid doing poorly at school"): Students are uncertain in control when they are unsure about how to do well or how to avoid doing poorly.

Self-handicapping (e.g. "I sometimes don't study very hard before exams so I have an excuse if I don't do as well as I hoped"): Students self-handicap when they do things that reduce their chances of success at school. Examples are putting off doing an assignment or wasting time while they are meant to be doing their schoolwork or studying for an exam.

Failure avoidance (e.g. "Often the main reason I work at school is because I don't want to disappoint my parents"): Students have an avoidance focus when the main reason they do their schoolwork is to avoid doing poorly or to avoid being seen to do poorly.

Anxiety (e.g. "When exams and assignments are coming up, I worry a lot"): Anxiety has two parts: feeling nervous and worrying. Feeling nervous is the uneasy or sick feeling students get when they think about their schoolwork, assignments, or exams. Worrying is their fear about not doing very well in their schoolwork, assignments, or exams.

8.4. MEASUREMENT AND STATISTICAL ANALYSIS

Four items measure each facet of the model. To each item, students rated themselves on a scale of 1 ('Strongly Disagree') to 7 ('Strongly Agree'). Each

student's answers to the four items on each motivation area were then aggregated and converted to a score out of 100. Hence, each student was assigned 10 scores out of 100. If a student answered less than three items in a subscale, he or she did not receive a score for that subscale. Data were analysed using SPSS for Windows. Statistical analyses included repeated measures of ANOVAs, MANOVAs, tests of internal consistency (reliability), tests for effect sizes, one sample *t*- tests, and Pearson product moment correlations.

9. Results

9.1. DISTRIBUTIONAL AND RELIABILITY STATISTICS

Table I shows distributional and reliability statistics for each booster and guzzler. Data show that each facet of motivation is approximately normally distributed across the three waves of data collection. Internal consistency for each facet is generally high across the three waves of data collection. In terms test–retest reliability, correlations across the three time points are high. This is the first time the Student Motivation and Engagement Scale has been administered on multiple occasions with the same students and findings demonstrate reliability across time.

9.2. DIFFERENCES ACROSS TIME

A central element of the analysis was to compare mean motivation levels across the three time points. In the first instance this entailed comparing Time 1 (towards the outset of the weekend) and Time 2 (towards the end of the weekend) data because it was at these two time points that the entire sample's data were available. Secondly, this entailed comparing (a) Time 1 and Time 3 (6–8 weeks following the weekend) data and (b) Time 2 and Time 3 data for the sub-sample that completed and returned the follow-up surveys.

Three analytic decisions were made here: (a) MANOVA was not conducted because univariate tests were the effects of particular interest – the multidimensional model of motivation and engagement directs attention to the specific dimensions of motivation and engagement which are unravelled through univariate analyses, (b) repeated measures ANOVA was not conducted across all three time waves because more students were present at Times 1 and 2, and analyses including Time 3 would have excluded the students not returning surveys 6–8 weeks later, and (c) age was not included as an interaction term because there were relatively few 14- and 16-year olds in the sample thus yielding cell sizes too small to allow valid generalisations. These analyses did, however, incorporate gender as an independent variable to determine if boys and girls responded differently across time to the program.

Means and SDs for each facet of motivation across each time point are presented in Table II.

Table I. Distributional and reliability statistics

	Distributional Data						Internal consistency reliability			Test-retest reliability		
	Time 1		Time 2		Time 3		Time 1	Time 2	Time 3	T1-T2	T1-T3	T2-T3
	Skew	Kurtosis	Skew	Kurtosis	Skew	Kurtosis	Cronbach's α	Cronbach's α	Cronbach's α	Correlation	Correlation	Correlation
Boosters												
Self-efficacy	−1.09	1.36	−0.53	0.94	−0.73	1.37	0.90	0.82	0.87	0.70	0.64	0.64
Value school	−0.51	0.30	−0.47	−0.01	−0.64	0.66	0.63	0.79	0.79	0.78	0.51	0.69
Mastery orient	−0.94	1.54	−0.46	−0.14	−0.45	−0.49	0.89	0.93	0.91	0.85	0.60	0.81
Planning	−0.11	−1.07	−0.09	−1.00	0.03	−1.15	0.90	0.91	0.92	0.82	0.84	0.86
Study manage	−0.19	−0.82	−0.38	−0.80	−0.49	−0.50	0.91	0.94	0.90	0.91	0.80	0.79
Persistence	−0.28	−0.22	−0.46	−0.03	−0.78	0.54	0.77	0.90	0.94	0.88	0.70	0.76
Guzzlers												
Anxiety	−0.26	−0.29	0.03	−0.33	−0.03	−0.33	0.77	0.88	0.90	0.88	0.77	0.79
Failure avoid	−0.03	−0.62	0.17	−0.73	0.52	−0.24	0.59	0.75	0.84	0.77	0.55	0.77
Uncert control	0.21	1.01	0.25	−0.54	0.40	0.42	0.74	0.87	0.80	0.77	0.39	0.51
Self-handicap	0.11	−0.65	0.49	−0.44	0.53	−0.75	0.75	0.87	0.88	0.79	0.65	0.70

Time 1 and Time 2 data were analysed using a series of 2 (boys, girls) × 2 (Time 1, Time 2) ANOVAs with repeated measures on the second factor. Table III presents findings. Because there were no statistically significant gender effects on any measure (indicating that the immediate effects of the RYPEN program do not differ markedly for boys and girls), the findings in Table III relate to repeated measures of main effects only. As Table III shows, there were a number of statistically significant repeated measures of main effects with effect sizes ranging from small to moderate. Specifically, students were significantly higher at Time 2 than Time 1 on self-efficacy, mastery orientation, and persistence and were significantly lower at Time 2 than Time 1 on anxiety, failure avoidance, and uncertain control. These results show that by the end of the RYPEN program, students were significantly improved on key facets of academic motivation and engagement.

The critical question, however, is whether these gains were sustained 6–8 weeks later. This question was explored through a series of 2 (boys, girls) × 2 (Time 1, Time 3) ANOVAs with repeated measures on the second factor. Results (see Table III) showed that there were statistically significant differences in motivation at the outset of the program compared with 6–8 weeks later with effect sizes ranging from moderate to large. Specifically, at Time 3 (6–8 weeks later), students were significantly higher than they were at Time 1 (the start of the program) in self-efficacy, valuing of school ($p < 0.1$), planning, mastery orientation, study management, and persistence. At Time 3 they were significantly lower than Time 1 in anxiety, uncertain control, and self-handicapping. Moreover, only one gender-related effect emerged: girls' persistence was more likely to have improved between Time 1 and Time 3, $F(1, 33) = 7.89$, $p < 0.01$. Taken together, these findings provide support for the medium-term benefits from the program for both boys and girls.

Further analysis was undertaken to examine the nature of effects between Time 2 and Time 3 – that is, between the end of the program and 6–8 weeks later. This was explored through a series of 2 (boys, girls) × 2 (Time 2, Time 3) ANOVAs with repeated measures on the second factor. Results (see Table III) showed that there were statistically significant differences between Time 2 and 3 on some dimensions with small effect sizes. Specifically, students were significantly higher on mastery orientation, planning, and study management and significantly lower in uncertain control and self-handicapping – all reflecting adaptive shifts in motivation. One interaction effect was found: girls' persistence was more likely to have improved between Time 2 and Time 3, $F(1, 31) = 11.51$, $p < 0.01$.

9.3. COMPARISONS WITH A LARGER WEIGHTED SAMPLE

One limitation of the previous analyses is that no control data were available and so it is unclear how the mean levels of motivation compare to a

Table II. Time 1 (entire-sample and those who completed follow-up survey), Time 2, Time 3, and weighted comparison data for boosters and guzzlers

	Time 1 entire sample ($n = 53$)		Time 1 completing follow-up ($n = 36$)		Time 2		Time 3		Weighted comparison*	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Boosters										
Self-efficacy	79	16.7	78	14.8	83	11.5	83	11.6	80	13.6
Value school	82	10.1	80	9.90	83	11.7	83	9.4	80	12.6
Mastery orient	77	15.3	76	14.5	80	14.6	83	12.1	83	11.8
Planning	54	21.3	56	21.3	58	19.3	63	18.2	59	18.0
Study manage	64	22.3	63	20.9	65	21.5	69	17.6	70	16.9
Persistence	68	15.9	69	15.3	72	16.0	74	14.4	69	15.3
Guzzlers										
Anxiety	61	18.7	62	18.9	54	19.7	56	21.1	62	18.1
Failure avoid	45	15.7	46	15.5	39	16.0	43	19.6	48	18.8
Uncert control	48	16.3	51	17.1	44	16.2	40	13.7	52	17.4
Self-handicap	41	17.8	40	18.0	38	18.8	32	14.1	41	17.6

* Weighting of $N = 2769$ Australian high school students: 2% of comparison Yr 9 sample; 87% of Yr 10 sample; 11% of Yr 11 sample.

Table III. Tests for main effects[a] across time and differences between each time and a comparative weighted sample

	Time 1–Time 2 repeated measures		Time 1–Time 3 repeated measures		Time 2–Time 3 repeated measures		Time 1-comparison[b] difference		Time 2-comparison difference		Time 3-comparison difference	
	F (df)	Effect (effect size)	*F* (df)	Effect (effect size)	*F* (df)	Effect (effect size)	*t* (df)	Effect (effect size)	*t* (df)	Effect (effect size)	*t* (df)	Effect (effect size)
Boosters												
Self-efficacy	6.93 (1,46)**	T1 < T2 (0.28)	4.83 (1,32)*	T1 < T3 (0.38)	0.51 (1,31)	ns	−0.49 (50)	ns	2.27 (49)	T2 > Comp (0.24)	1.75 (35)†	T3 > Comp (0.24)
Value school	0.54 (1,47)	ns	3.49 (1,30)†	T1 < T3 (0.33)	3.71 (1,31)	ns	1.28 (51)	ns	1.60 (49)	ns	1.96 (35)*	T3 > Comp (0.16)
Master orient	3.93 (1,46)*	T1 < T2 (0.20)	13.79 (1,33)***	T1 < T3 (0.53)	7.05 (1,31)*	T2 < T3 (0.23)	−2.52 (51)*	T1 < Comp (0.44)	−1.06 (49)	ns	0.26 (35)	ns
Planning	3.23 (1,46)	ns	12.78 (1,33)***	T1 < T3 (0.35)	8.86 (1,31)**	T2 < T3 (0.27)	−1.76 (50)†	T1 < Comp (0.25)	−0.59 (49)	ns	1.18 (35)	ns
Study manag	0.24 (1,46)	ns	5.25 (1,32)*	T1 < T3 (0.31)	4.34 (1,31)*	T2 < T3 (0.21)	−1.94 (50)†	T1 < Comp (0.31)	−1.77 (49)†	T2 < Comp (0.26)	−0.35 (35)	ns
Persistence	11.63 (1,47)***	T1 < T2 (0.25)	4.95 (1,33)*	T1 < T3 (0.34)	0.02 (1,31)	ns	−0.63 (51)	ns	1.20 (49)	ns	2.04 (35)*	T3 > Comp (0.34)
Guzzlers												
Anxiety	20.07 (1,45)***	T1 > T2 (0.37)	4.62 (1,32)*	T1 > T3 (0.31)	0.26 (1,31)	ns	−0.53 (49)	ns	−2.73 (49)**	T2 < Comp (0.42)	−1.61 (35)	ns
Failure avoid	14.26 (1,47)***	T1 > T2 (0.38)	0.55 (1,33)	ns	1.42 (1,31)	ns	−1.56 (51)	ns	−4.12 (49)***	T2 < Comp (0.56)	−1.53 (35)	ns
Uncert contrl	7.47 (1,47)**	T1 > T2 (0.25)	13.03 (1,33)***	T1 > T3 (0.64)	5.52 (1,31)*	T2 > T3 (0.27)	−1.78 (51)†	T1 < Comp (0.24)	−3.14 (49)***	T2 < Comp (0.48)	−5.26 (35)***	T3Comp (0.77)
Self-handicap	1.49 (1,45)	ns	13.31 (1,32)***	T1 > T3 (0.47)	6.84 (1,31)*	T2 > T3 (0.37)	0.16 (49)	ns	−1.15 (49)	ns	−3.92 (35)***	T3 < Comp (0.57)

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; †$p < 0.1$; ns = not statistically significant.

Note that for repeated measures analyses (comprising 30 tests), Bonferroni correction would render p < 0.001. as the revised significance level.

Note that for the one-sample *t*-tests (comprising 30 tests), Bonferroni correction would render $p < 0.001$ as the revised significance level.

[a] Only main effects reported as only two time *x* gender effects were statistically significant.

[b] Comparison is weighted sample of $N = 2769$ Australian high school students.

sample that did not undertake the RYPEN weekend. To redress this, a weighted comparison sample (described above) was incorporated into the analyses. Mean levels of motivation for this comparison sample are presented in Table II. To test for differences between this weighted sample and each time point in the RYPEN sample, a series of one-sample *t*-tests was carried out. Findings are presented in Table III

Table III shows that at the outset of the weekend, the RYPEN students were significantly lower in mastery orientation, planning, and study management and not significantly different in self-efficacy, value of schooling, persistence, anxiety, failure avoidance, or self-handicapping. Taken together, these findings show that at the outset of the program, they are either no different from the weighted sample or significantly less motivated on key dimensions.

By Time 2 and also by Time 3, however, significant declines in motivation had been reversed such that they were no longer markedly less motivated than the weighted sample or such that they were now significantly more motivated than the weighted sample. Moreover, any pre-existing advantages or parallel strengths of the RYPEN sample over the weighted sample were maintained across time. Effect sizes ranged from small to large with most effect sizes in the moderate to large range. Taken together, these findings also attest to the positive effects of the program on students' academic motivation in the short term and also some 6–8 weeks later.

9.4. EXAMINING THE FOLLOW-UP SAMPLE MORE CLOSELY

Given the significant effects associated with Time 3 data and given that not all students returned follow-up Time 3 surveys, it was considered important to ascertain whether the follow-up sample was markedly different from the sub-sample of students that did not return follow-up surveys. A series of MANOVAs was conducted to test this with the 10 facets of motivation as dependent measures and return status (returned follow-up survey, did not return follow-up survey) as the independent measure. MANOVA tests for differences in Time 1 motivation between those who returned surveys and those who did not return them indicated no significant difference between the two groups, $F(10, 38) = 2.04$, $p = \text{ns}$. MANOVA tests for differences in Time 2 motivation between those who returned surveys and those who did not return them indicated no significant difference between the two groups, $F(10, 39) = 0.96$, $p = \text{ns}$. Moreover, MANOVA tests for discrepancies in Time 1−Time 2 motivation difference scores (calculated by taking the difference between Time 1 and Time 2 scores to test for differences in degree of change over the weekend) between those who returned surveys and those who did not return them indicated no significant difference between the two groups, $F(10, 35) = 0.63$, $p = \text{ns}$. Taken together, these findings show that the Time 3 follow-up sample did not differ in significant

ways from the larger Time 1 and Time 2 sample, essentially indicating that the Time 3 sample was not unrepresentative of the larger group and that findings associated with Time 3 are as valid as those associated with Times 1 and 2.

10. Discussion

The data show that there were immediate gains on key facets of students' motivation by the end of the RYPEN program. Specifically, students were significantly higher at Time 2 than Time 1 on self-efficacy, mastery orientation, and persistence, were significantly lower at Time 2 than Time 1 on anxiety, failure avoidance, and uncertain control. Data also show that 6–8 weeks later, students were significantly higher than they were at Time 1 (the start of the program) in self-efficacy, mastery orientation, valuing of school, planning, study management, and persistence. At Time 3 they were significantly lower than Time 1 in anxiety, uncertain control, and self-handicapping. Moreover, when compared to a larger weighted sample, by Time 2 and also by Time 3, significant declines in motivation had been reversed and any pre-existing advantages or parallel strengths of the RYPEN sample over the weighted sample were maintained. These findings were largely independent of gender indicating that boys, as much as girls, benefited from the youth enrichment program.

10.1. SIGNIFICANCE OF FINDINGS

The findings are significant for a number of reasons. Firstly, they show that brief intervention, well timed and well targeted, yields effects consistent with the underlying theoretical rationale of the program. Although long-term programs are found to be most effective for intervention youth work (Weissberg et al., 2003), it is very encouraging that briefer approaches can yield results.

Second, it is also encouraging that key targeted components can be embedded into an existing program and yield effects specific to its focus. This suggests that it is not necessary to develop programs 'from the ground up', but look for opportunities to hook into complementary but non-overlapping strategies.

Third, the findings reflect and confirm research into the elements of youth programs that work. For example, in terms of the motivation intervention itself, workshops involved the following elements that research has found underpin effective youth programs: research-based risk and protective factors, established practices that nurture optimal development, use of interpersonally skilled staff, and incorporation of evidence-based programming (see Dryfoos, 1990; Lerner & Galambos, 1998; Nation et al., 2003, Weissberg et al., 2003).

Fourth, the findings are also significant because they provide a more multi-dimensional understanding of motivation and engagement, show how intervention can address a diversity of motivation and engagement factors, and demonstrate what particular dimensions of these are most influenced by intervention work.

Fifth, the gains made and sustained over a 6–8 week period are significant because this period represents nearly one whole academic term for students. Over this time they are subjected to a diversity of academic pressures and challenges. In the context of this, the findings can be considered robust in the face of students' demanding academic lives. Related to this, the 6–8 week findings are also important because they provide some insight into the longevity of intervention work. Because the effect was sustained over the course of an academic term, it is reasonable to expect they could continue through the following academic term. Having said this, to maximise the likelihood of this occurring it would be critical for practitioners to regularly revisit with students the issue of motivation and engagement to refresh their knowledge as to the key features and critical strategies to address them.

10.2. KEY ELEMENTS OF THE PROGRAM

The central question now is what key facets of the program contributed to these motivation gains. In the discussion below, the focus is on the following five facets of the program that are proposed to be particularly pivotal in contributing to the motivational shifts in students throughout the course of the program and beyond: the optimistic expectations held by adults, the focus on mastery, the climate of cooperation and the ensuing sense of belonging, the positive relationships that developed amongst students and between students and adults, and embedding school-related elements within a broader enrichment program. These components are emphasised on the basis that they are key elements of the program and have also been identified in previous literature as relevant to students' academic engagement.

10.3. THE POSITIVE EXPECTATIONS HELD BY ADULTS

Research shows that optimistic and positive expectations for young people held by adults impact positively on young people's engagement and orientation to school and schoolwork. In relation to teachers, for example, research shows that some teachers differentially interact with students they believe to be more or less capable (Good & Nichols, 2001) and through these interactions, communicate to students the expectations they hold for them. Moreover, the nature of these interactions and expectations can impact on the expectations students have for themselves and the behaviours in which they engage (Brophy & Good, 1970; Good &

Brophy, 2000). In relation to parents, more adaptive academic functioning has been associated with parents' optimistic expectations for their children (Dandy & Nettelbeck, 2000), parents' encouragement of their children (Hermans, ter Laak, & Maes, 1972), parents' provision of more positive reactions to successes and less negative reactions to failures (Crandall, Katkovsky, & Crandall, 1965), parents' positive academic goals for their child (Zimmerman, Bandura, & Martinez-Pons, 1992), and educational values and standards held by parents (Marchant, Paulson, & Rothlisberg, 2001).

Similarly, in the RYPEN program, positive and optimistic expectations are explicitly and implicitly communicated to students. Through the tasks and challenges assigned to the students, they are implicitly informed that there is the expectation that they can succeed and master what they set out to do. Through the positive messages communicated directly to students over the course of the weekend generally and through the motivation workshop more specifically, the students are directly informed that they have the capacity to effect positive changes in their lives generally and in their academic life more specifically. Taken together, the heightened and optimistic set of expectations communicated to students and the support provided to them to realise these expectations are proposed to impact positively on their academic motivation.

10.4. THE FOCUS ON MASTERY AND PROMOTION OF EFFICACY

Related to the communication of optimistic and positive expectations is the focus on mastery and the promotion of success experiences. Over the course of the program there were frequent opportunities to master tasks assigned and the provision of an environment and social support that maximised opportunities to succeed. Mastery and success cultivate a sense of efficacy (Bandura, 1997; Schunk, 2001) and this is proposed to impact on students' academic motivation. Self-efficacy research shows that as students make progress they increasingly gain a sense that they are capable of performing well and this enhances their self-efficacy. This enhanced sense of efficacy impacts positively on their task choice, persistence, effort and achievement (Schunk & Miller, 2002). In addition to self-efficacy gained through mastery, it also develops through positive modelling, the tasks assigned to students by adults (Bandura, 1997), and also through association with efficacious peers (Steinberg, Brown, & Dornbusch, 1996). All these elements are features of the RYPEN program – adult leaders modelling efficacious behaviour, these leaders assigning tasks that are challenging but clearly achievable through appropriate quality and quantity of effort, and the development of a cohesive group of students whose efficacy develops over the course of the weekend.

10.5. THE CLIMATE OF COOPERATION, SUPPORT, AND COMMUNITY

In the program, there is also a strong emphasis on group work, team building, and team work which together create a climate of cooperation. Cooperative environments are increasingly seen as ideal environments in which to foster young people's engagement. It is suggested here that this general cooperative approach coupled with a focus on school-related skills is an ideal environment in which to develop these school-related skills. Cooperation can be operationally defined as the presence of joint goals, mutual rewards, shared resources, and complementary roles (Qin et al., 1995). Thus, in cooperative situations, students strive to reach their goals through the support and joint focus of others in their group or class. Importantly, cooperative efforts are more effective than competitive efforts for many learning related tasks such as those involving motor skills, decoding, and recall of information (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981). Cooperative environments are also more conducive to higher-level thinking skills and problem solving (Johnson et al., 1981; Qin et al., 1995; Slavin, 1983), key facets of the enrichment program.

Through the cooperative climate and mutual support is developed a strong sense of community and belonging. A sense of community impacts on young people's sense of self and efficacy. It can also impact on their engagement. In the educational context, Becker and Luthar (2002) suggest that an important means to enhance motivation is through approaches that promote students' sense of belonging to their school as a community. Moreover, Martin and Dowson (in review) propose that alienation may be conceptualised not just in relational terms (i.e., not feeling 'at home' in a particular group or institution) but also in academic terms (i.e., not being able to relate to particular content or the presentation of that content). For these reasons, Martin and Dowson suggest that approaches to the provision of programs for students should focus explicitly on their sense of belonging and be supported by the provision of appropriate and non-alienating role models.

10.6. THE ROLE OF RELATIONSHIPS

Underpinning this sense of community and students' self-efficacy and engagement were the quality relationships that developed over the course of the weekend – relationships amongst the students themselves and also those between students and the adult leaders. Indeed, a particular strength of youth enrichment programs more generally is the scope they offer for support and confidence gained through relationships along the way. According to Kelly and Hansen, "effective social interactions during adolescence are important for adjustment, as they are necessary for an adolescent to make friends, become part of a peer group, develop heterosocial relationships, and become an independent, socially competent individual" (1987, p. 135).

Relationships are a major source of happiness (Argyle, 1999). Through relationships, individuals receive instrumental help for tasks and challenges as well as emotional support in their daily lives (Gutman, Sameroff, & Eccles, 2002). Relationships are also a critical factor in young people's engagement with, and motivation in, school. For example, students who believe their teacher is a caring one also tend to believe they learn more (Teven & McCroskey, 1997). Positive relationships with teachers predict enhanced social, cognitive, and language development in young children (Kontos & Wilcox-Herzog, 1997), and teachers higher in warmth tend to develop greater confidence in students (Ryan & Grolnick, 1986). In relation to parent–child relationships, it has been found that greater nurturance is associated with enhanced academic functioning and interest (Avery & Ryan, 1987; Grolnick, Ryan, & Deci, 1991), children's relatedness to parents predicts engagement with school (Ryan, Stiller, & Lynch, 1994), and more perceived support from parents is associated with a greater interest in school (Wentzel, 1998). Taken together, it is suggested that positive relationships developed between the students and adult leaders contributed to the students' engagement generally but also to particular facets of school-related engagement that were a central feature of workshops.

In addition to the relationships with supportive adults, relationships with peers were a major element of the program. According to Ryan (2000), peers impact on one's motivation and engagement in three ways: information exchanges and discussions amongst peers, modelling, and reinforcement of peer norms and values. Ryan (1999, in 2000) has also found that the peer group influences students' intrinsic value for school and achievement. Moreover, Berndt, Hawkins, and Jiao (1999) have found that students' perceptions of cognitive competence can be predicted by their friends' cognitive competence scores. Peer relationships also play a part in students' resilience. For example, recent research has shown that positive peer relationships and peer acceptance can reduce the negative impact of family adversity (Gauze, Bukowksi, Aquan-Assee, & Sippola, 1996). For these reasons, resilience-building strategies have a strong focus on relationships and pro-social bonding through positive connections with peers (Thomsen, 2002). Taken together, the impact of peers on students' engagement is significant, and given that peer relationships were a central feature of the RYPEN program, it can be reasonably argued that they yielded a similar influence.

10.7. THE ROLE OF TARGETED INTERVENTION IN THE CONTEXT OF A BROADER PROGRAM

A distinguishing feature of the enrichment program was the series of workshops focusing on student motivation. Given this, it is worth considering how this might have impacted on students' academic motivation. Drawing

on the work of Valentine and colleagues (Valentine et al., 2002) and the work of Marsh and Kleitman (2002), it is apparent that there are particular out-of-school activities that can actually enhance academic engagement and achievement. In particular, activities that increase students' identification with or relatedness to school have the potential to enhance engagement and achievement.

Also, activities that are relevant to academic orientations, skills, and material hold potential to enhance academic engagement and achievement. Through the inclusion of an academic motivation component in the RYPEN program, it is apparent that both these criteria have been met. The motivation workshops were a direct means of increasing relatedness to school and were clearly an exercise aimed at enhancing academic orientations and skills.

Given this, it is recommended that general youth enrichment programs seeking to build and broaden students' school-related engagement should incorporate components that are directly aimed at doing this. Furthermore, it is proposed that when the academic-related component is embedded in the overall program, there is scope for the overall program to yield academic benefits not possible had the academic components not been included.

Moreover, research shows that targeted intervention is more effective than intervention that does not focus on specific target behaviours (Weisz et al., l995) and so it is proposed that general programs seeking to build specific academic skills and competencies need to provide targeted support that can do this.

10.8. LIMITATIONS AND FUTURE DIRECTIONS

The present study provides a number of important insights into youth enrichment programs that embed school-related intervention within them and also the impact such programs can have on school-related outcomes. Notwithstanding this, there were some aspects of the study that require qualification and which provide direction for future research.

The absence of a control group is one aspect of the research that requires consideration. To what extent would gains have occurred amongst these students had they not participated in the program? The incorporation of a large weighted sample as a proxy for a control group informs this question in part. Comparisons with this larger sample showed that participants were lower in motivation at the outset of the program (as would be expected given that they are targeted for the program on the basis that they are not as engaged as they could be) but increased their motivation relative to the comparison sample over the course of the weekend. They then either sustained or increased their gains compared to the larger sample 6–8 weeks later. Given the inclusion of a large weighted comparison sample and the

findings associated with this weighted sample, the limitations resulting from the absence of a control group are qualified.

It must also be recognised that the program was conducted at the start of the school year and that gains in motivation over the following 6–8 week period might have occurred regardless of the program. Again, it is suggested that the inclusion of a weighted comparison sample somewhat qualifies this limitation because the data show that relative to the weighted sample of students who were in the midst of the school year when they were surveyed, gains were seen in the experimental group.

It may be that a Hawthorne effect can account for part of the gains observed. That is, being part of a program and participating in the motivation workshops cued students into the demand characteristics of the study and inflated their self-reported motivation. However, although this may have partly been the case for gains over the course of the weekend, it is less likely to sustain the gains observed 6–8 weeks later. Moreover, it is interesting to note that over the course of the weekend there were no significant gains in areas that could not have been enhanced over the weekend but which could be enhanced over the following 6–8 weeks. I refer specifically to the fact that no significant gains were made in relation to planning and study management between Time 1 and Time 2 and yet such gains were made once students were at school at Time 3. The RYPEN program did not include tasks that required students to plan schoolwork better or manage study time more effectively and so no gains were made on these measures over the course of the weekend. However, once students were in school such gains were possible and indeed they were found.

It is possible that these gains were simply a result of study timing – that is, progressing further into the academic year the test sample moved closer to the typical study timing of the comparative sample and also narrowed the gap in terms of mean levels of motivation. The present data were unable to shed light on this issue. To test this, it would be important to track a large comparative sample and an intervention sample over the course of a school year to ascertain the extent to which timing effects account for shifts in motivation and then to establish the extent to which gains occur for intervention over and above changes that would occur anyway. This would be a fruitful direction for future research.

It might also be possible that these gains are a function of participants' expectations, practice effects, or their propensity to be test 'savvy'. They were fully aware of what was being targeted in the intervention and may have been motivated to give the 'right' answers. Although this is possible, it is contended that it is unlikely to be the case for three reasons. First, the completed surveys were always submitted to the researcher who was not known to the students thus limiting social desirability inclinations. Second, gains were not made where they could not have been made – for example, at the end of the weekend, students' planning and study management had

not increased and this would be expected because they had not engaged in any academic work or study over the course of the weekend. If students were simply responding in a socially desirable fashion, planning and study management items would probably have yielded gains as well. Finally, gains were sustained 6–8 weeks later – when students could not have remembered what they answered to previous instruments. Taken together, although not directly resolving the social desirability or practice effects possibilities, the findings and design mitigate against their likelihood.

It must be recognised that the participating students were selected on the basis of their potential to change aspects of their lives. Given this, the findings pertain to students in a potential state of readiness to change. Research into the transtheoretical model of change (Prochaska, DiClemente, & Norcross, 1992; Prochaska & Marcus, 1994) shows that the more individuals are ready to change, the more likely that change will take place. It is unclear, then, to what extent change would occur with students less ready to change. Future research needs to explore this. It may be that the benefits of youth enrichment programs might be to fast-track students' readiness to change.

When students received their follow-up survey, they and their parents each received a one-page letter reiterating the central messages underpinning the motivation workshops. This might have cued students to respond in a particular way to the follow-up survey. Although this is a potential qualification to the data, it can be alternatively interpreted as a powerful demonstration that it may be relatively easy to re-activate students' motivation once the core ingredients of motivation are instilled in them. Moreover, linking parents into the motivation process can also be seen as an important strategy to ensure that students are receiving consistent motivation-related messages.

A more powerful test of the effectiveness of the intervention would be to assess the link between it and later academic achievement. Unfortunately, no achievement data were available in the present study and future research would do well to extend the data collection to incorporate 'objective' measures of performance such as achievement scores. It is contended that changes in motivation are likely to lead to changes in achievement – for example, Martin (2001) found that facets of the Wheel are significantly correlated with mathematics and English achievement. However, this needs to be tested in the context of an intervention that brings about changes in motivation and engagement and the subsequent impact this might have on academic grades. Related to this, it is important to note that the data presented in this study are all self-reported. Although this is a logical and defensible methodology in its own right given the substantive focus, it is important to conduct research that examines the same constructs using data derived from additional sources such as, for example, that from teachers and parents.

Finally, it is recognised that the sample for this study was not large and so the extent to which it is representative of the larger student population is unclear. It must be noted, however, that intervention research – particularly intensive and extended interventions such as the RYPEN program – do not typically involve large numbers and so this sample is not unusually small in this context. Moreover, the students selected for the program are students in the 'middle of the pack' but who could be more engaged or performing better. This type of student represents quite a large slice of the student population (Vinson, 2002) and so even the relative small size of the present sample can be seen to reflect the motivation of a significant proportion of the student body. Furthermore, the inclusion of a large weighted comparison sample provided an important and valid context in which to explore the motivation gains observed.

11. Conclusion

The present study sought to explore the effects on students' academic motivation of a youth enrichment program that was both broadly based and also included motivation-specific intervention. The data showed gains on key facets of motivation over the course of the program and then also 6–8 weeks later. Key elements of the program that are proposed to have contributed to the gains include the optimistic expectations held by adults, the focus on mastery, the climate of cooperation and the ensuing sense of belonging, the positive relationships that developed amongst students and between students and adults, and embedding school-related elements within a broader enrichment program. Taken together, these findings hold practical implications for program developers seeking to enhance key facets of students' academic engagement as well as implications for researchers seeking to assess the impact of programmatic interventions on academic outcomes.

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