



**EVALUATION:**  
*Waste Wise Schools Program*

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**PHASE ONE REPORT:**  
*An analysis of existing waste wise schools survey data*

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# PHASE ONE REPORT:

*An analysis of existing waste wise schools survey data*

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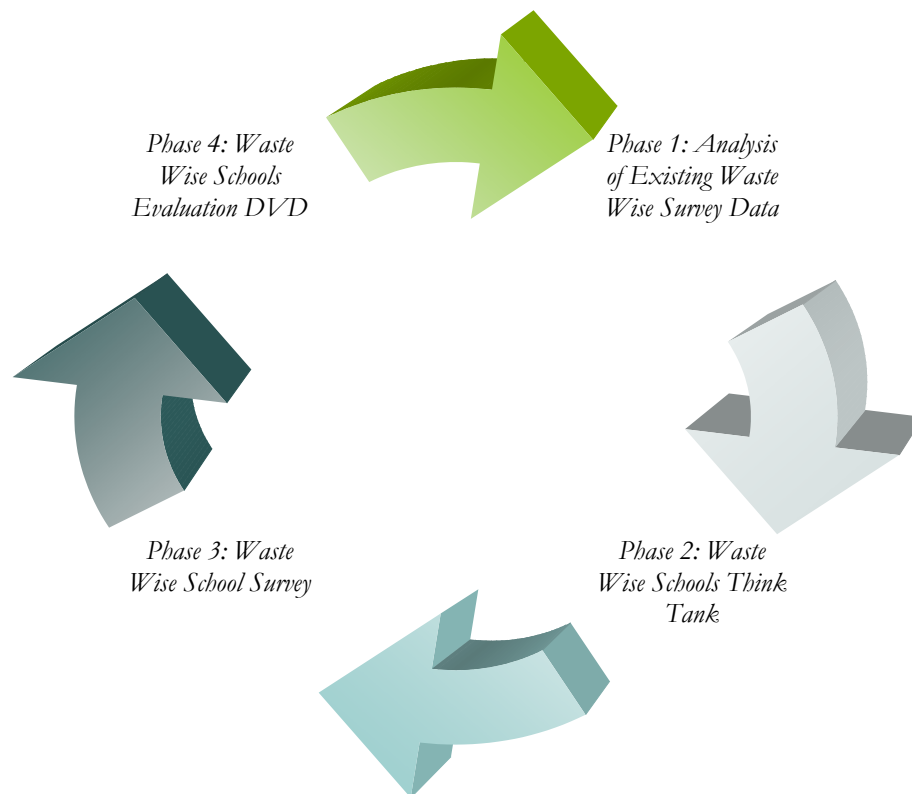
## INTRODUCTION

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In May 2006, Dr Amy Cutter-Mackenzie was engaged by the Gould League of Victoria to undertake the evaluation of the Waste Wise Schools program. The primary purpose of the evaluation is to measure the impact of the program against its stated objectives:

1. *to implement a waste and litter education program in Victorian schools that integrates sound waste operating practices with a comprehensive waste and litter curriculum;*
2. *to promote a best practice-approach to waste minimisation in schools, in both operating practices and curriculum;*
3. *to establish and support a network of model schools to provide advice and support to other schools;*
4. *to encourage schools to adopt actions that will result in major reductions in the amount of waste and litter generated, a greater awareness in students of the issues of waste and litter and a change in the values and culture towards living sustainably in the schools, their families and their local communities; and*
5. *to encourage partnerships and collaboration with other waste and litter educators working with schools.*

The evaluation includes four distinct phases. This report constitutes the completion of Phase 1, the analysis of existing survey data. Phase 1 informs and provides the base data for the remaining phases which are: 1) Waste Wise Schools Think Tank; 2) Waste Wise Schools Survey; and 3) Waste Wise Schools Evaluation DVD.



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## RESEARCH METHODS

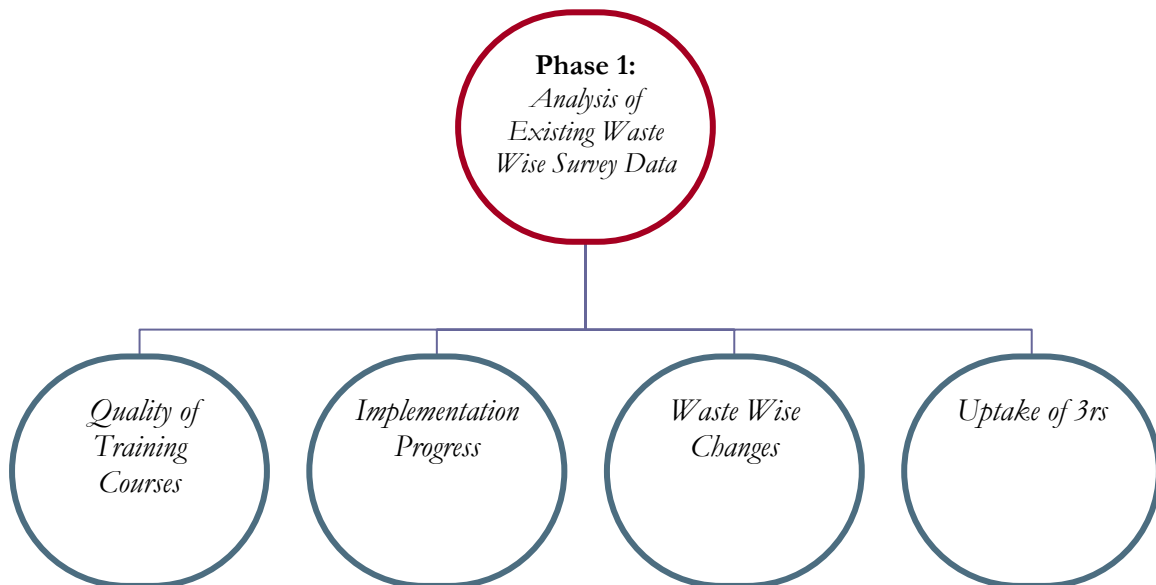
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The existing survey data were collected in the form of two surveys. The first survey (Refer to Appendix One) was administered prior to the Waste Wise Professional Development Workshop. This data is referred to as pre-survey data (2005). The second survey (refer to Appendix Two) was administered after the Professional Development Workshop (2004-2005). This data is referred to as post-survey data.

The data were analysed using that Statistical Software Package for the Social Sciences (SPSS Version 14.1). In total, 87 pre-survey and 51 post-survey cases (*questionnaires returned*) were analysed. The data are analysed using univariate (*descriptive*) and bivariate techniques. These methods allow for a comprehensive analysis of the data.

The primary purpose of this part of the evaluation was to determine:

1. *the quality of the training courses;*
2. *how each school is progressing in implementing the waste wise programs, and to identify any difficulties or problems they may be encountering;*
3. *whether or not the workshop has led to waste wise changes in the school; and*
4. *the uptake of the 3rs in schools and their inclusion in the curriculum.*



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## RESEARCH LIMITATIONS

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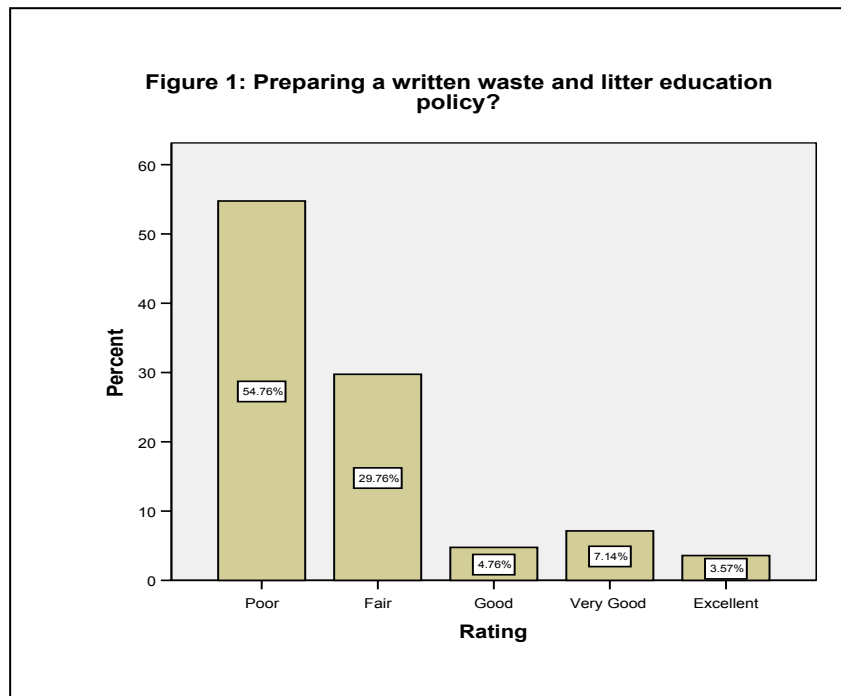
While this report presents a comprehensive analysis of existing waste wise schools survey data, it is important to outline the limitations encountered. These include:

- ~ no data (completed questionnaires) were provided for the course evaluation (Appendix 1 Evaluation Brief). This therefore confines the analysis concerning the quality of training courses;
- ~ the research instruments (questionnaires) are analytically restricting such that they are not scaled adequately, include no reliability/validity items, do not include demographic items and are not clearly linked to the objectives outlined in the Evaluation Brief;
- ~ the research instruments (questionnaires) are not well correlated, thus restricting analysis capabilities;
- ~ little comparison can be made with the evaluations undertaken by Armstrong (2004), Armstrong and Grant (2004) and Sharpley (2003a; 2003b) as the data sources and foci are different and inconsistent; and
- ~ the sample sizes (87 and 51 respectively) are low, therein hampering the validity of the report findings.



**PRE SURVEY DATA PRESENTATION & ANALYSIS**

Each participating school (leading teacher) was invited to rate their school’s waste and litter education efforts, with 1 being poor, 2 fair, 3 good, 4 very good and 5 excellent. As illustrated in Figure 1, 54.76% of schools rated their efforts as poor, with only 3.57% rating their efforts as excellent.



As shown in Figure 2 and Figure 4, schools rated their efforts higher in preparing a waste and litter strategy (36.9% = *Fair*), and including waster and litter in all levels of the curriculum (48.8% = *Fair*). The relationship between school’s efforts in preparing a policy, strategy and including waste and litter in the curriculum were statistically significant at  $P < 0.002$  (*Pearson Chi-Square*).

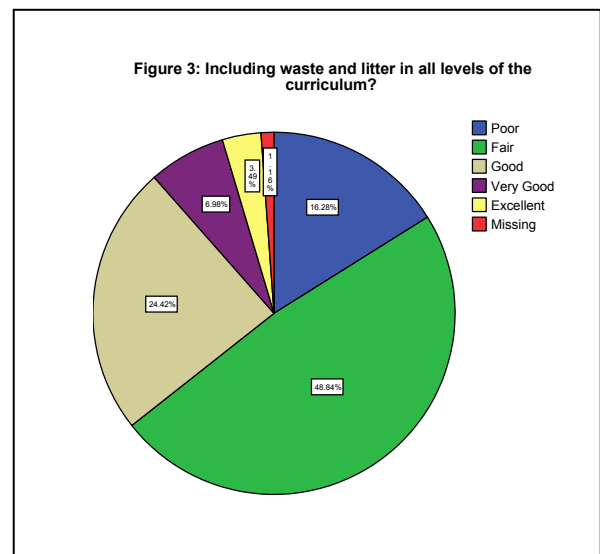
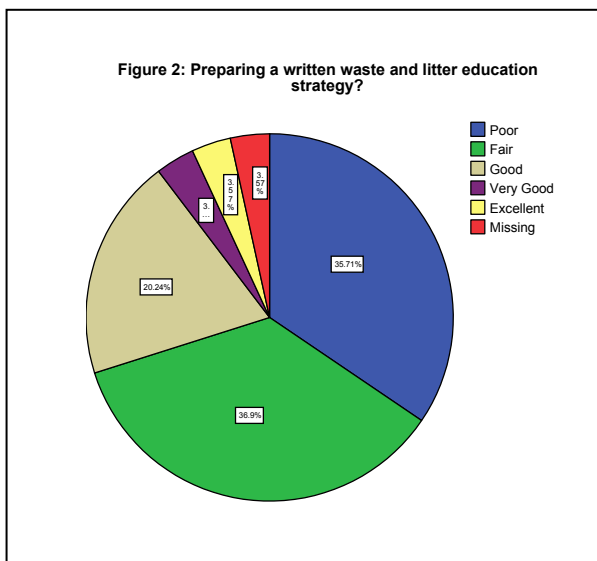


Table 1 illustrates that school's (prior to participating in a Waste Wise Schools Workshop) rated applying mulch to the school garden (25.3%) highest, and composting garden waste (53.6% = Poor) and food scraps (45.3% = Poor) lowest. The data also revealed that there are significant correlations between particular waste wise habits, such as composting garden waste and composting food scraps (.731 Pearson Correlation Coefficient).

**Table 1: Waste Wise Habits**

	<i>Recycling paper and cardboard</i>	<i>Recycling other materials</i>	<i>Encouraging waste reduction and reuse practices</i>	<i>Composting or worm composting food scraps</i>	<i>Composting garden waste</i>	<i>Applying mulch to the school garden?</i>
<b>Poor</b>	7.1%	38.1%	15.3%	45.3%	53.6%	10.3%
<b>Fair</b>	12.9%	33.3%	42.4%	23.3%	20.2%	13.8%
<b>Good</b>	27.1%	16.7%	22.4%	8.1%	8.3%	25.3%
<b>Very Good</b>	34.1%	6.0%	15.3%	7.0%	7.1%	25.3%
<b>Excellent</b>	18.8%	6.0%	4.7%	16.3%	10.7%	25.3%

In accordance with such trends, 79.5% of participants rated their ‘school’ as poor to fair in terms of involving the whole school community in decision making about school waste and litter management (see Figure 4). 20.5% of participants rated their school as good to very good. Of particular interest, there are strong correlations between such involvement and waste wise habits (Refer to Appendix Three).

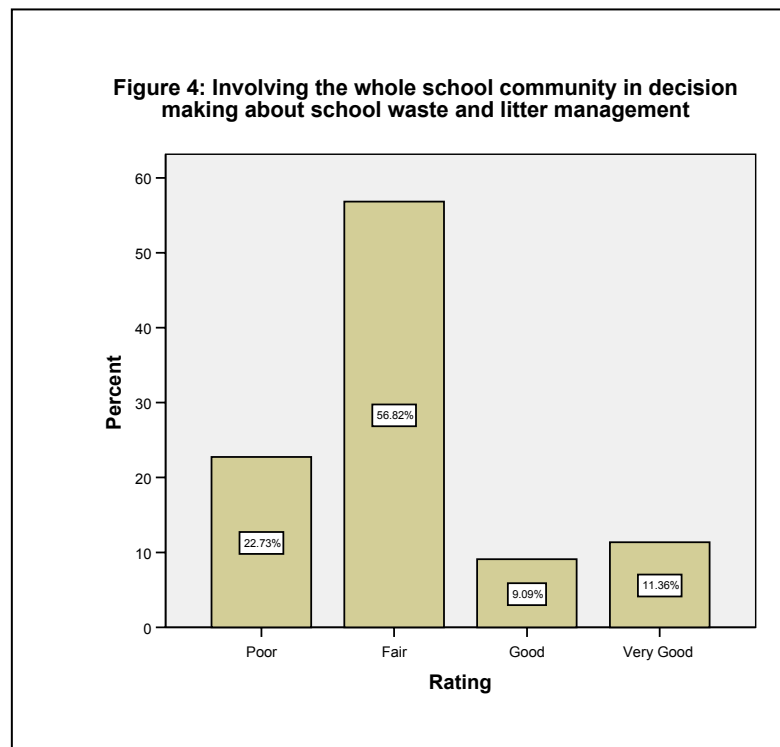
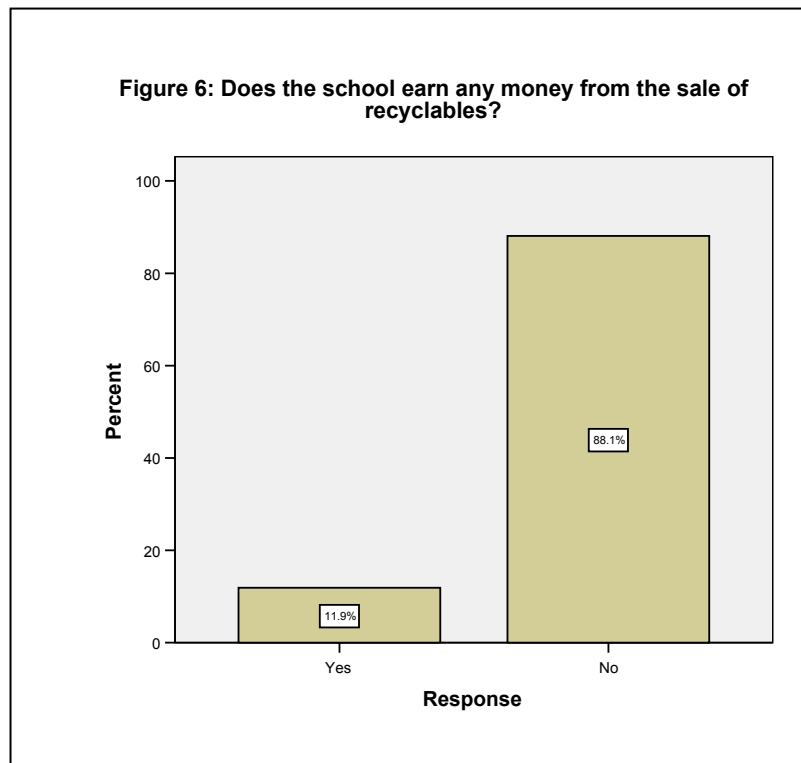
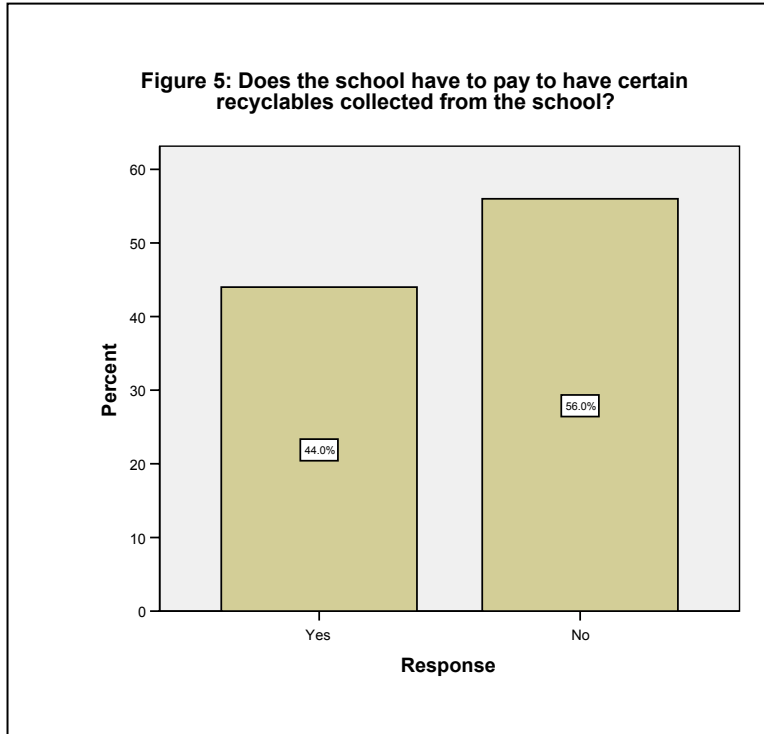


Figure 5 illustrates that 44.0% of surveyed participants pay to have recyclables collected from their school. The data also indicate that the average (*mean*) cost of waste disposal for one year is \$2881.29. As shown in Figure 6, only 11.9% of participating schools generated income from the sale of recyclables.



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## POST SURVEY DATA PRESENTATION & ANALYSIS

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### Part One: *Quality of Training Courses*

*There is no doubt that the program and the resources are excellent. I have learnt, however, to make small steps and to introduce a few things at a time ensuring that they work effectively. I look forward to becoming an accredited Waste Wise School in the near future (Berwick Primary School).*

Given that there is no quantitative data for this item (*Refer to Research Limitations*), the quality of the training courses cannot be measured and/or reported at this time. This area will be a focus in phases 2, 3 and 4 of the evaluation. As highlighted above, several participating schools included anecdotal comments regarding the quality of the training courses in the general comments section of the questionnaire.

### Part Two: *Implementation Progress*

*Waste in our big skip has reduced to the point where we only need a monthly collection. Paper recycling has improved. The refillable Auslen whiteboard markers are terrific. Students are organised into bin duty teams and we have certificate awards for the winning team each term (Longwood Primary School).*

Since the implementation of the Waste Wise Schools Workshop, 28.57% of schools reported that the program had ‘*really taken off in a big way*’. As shown in Figure 7, a further 57.1% reported that they are ‘*offering some activities*’.

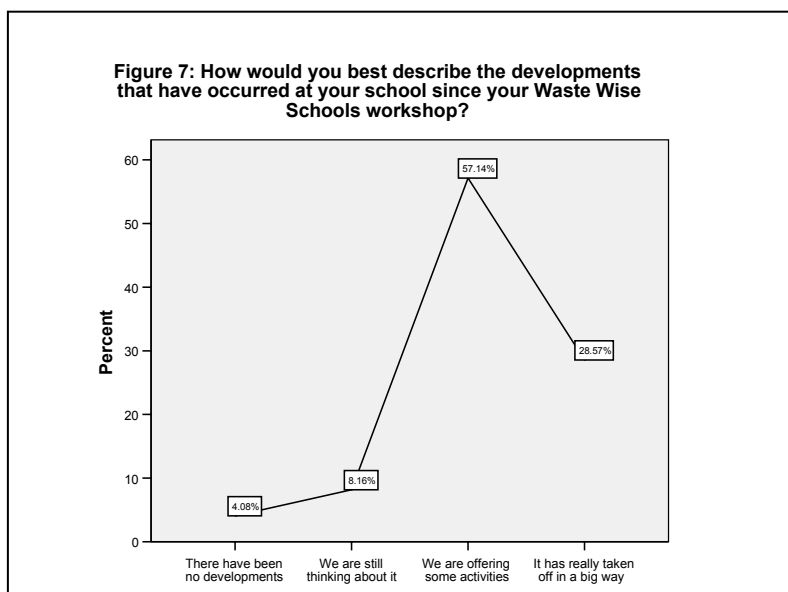


Table 2 outlines that 37.3% of participating schools now have a planning committee/team to consider waste and other sustainability issues. A further 40.8% indicated that purchasing practices to reduce waste have been introduced, as has a waste and litter education policy (35.5%). 64.0% of all participating also indicated that waste and litter activities are included in the curriculum. In comparison, 48.8% of participants in pre-survey rated the inclusion of litter/waste activities in the curriculum as fair.

Conversely, 52.0% of participating schools reported that ecological sustainability has not become a focus area of the school charter. This finding differs to the results reported by Sharpely (2003) who identified that there is a significant correlation between the... waste wise program and the whole-school movement to and/or focus upon ecological sustainability. However, the post data revealed that there is a strong correlation between ecological sustainability as a focus and waste/litter activities in the curriculum (.292 Pearson Correlation Coefficient).

**Table 2: Organisational Changes**

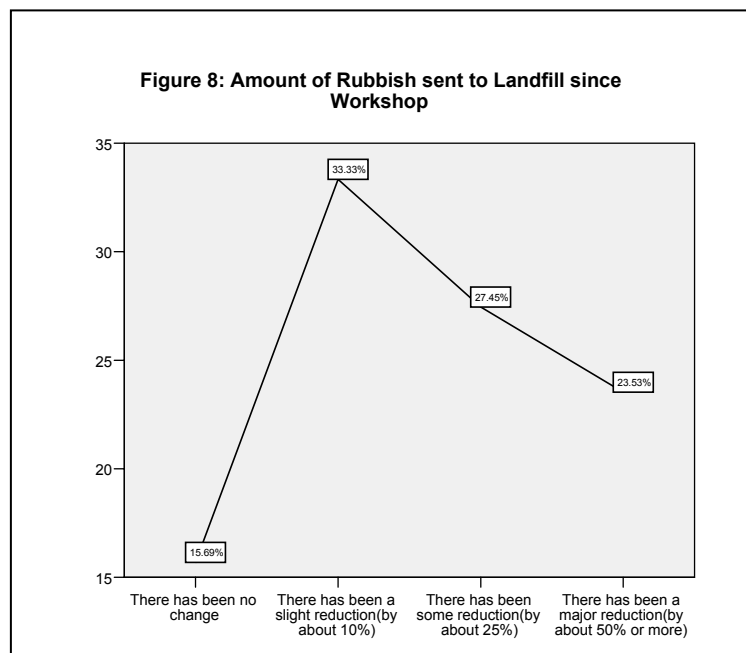
	<i>A planning committee or team has been established to consider waste and other sustainability issues</i>	<i>Purchasing practices to reduce waste have been introduced</i>	<i>Waste and litter activities are included in the curriculum</i>	<i>A waste &amp; litter education policy has been developed</i>	<i>Ecological sustainability has become a focus area in the school charter</i>
<b>Present before the workshop</b>	17.6%	4.1%	14.0%	8.3%	6.0%
<b>No</b>	27.5%	26.5%	6.0%	27.1%	<b>52.0%</b>
<b>We are considering it</b>	17.6%	28.6%	14.0%	<b>37.5%</b>	32.0%
<b>Yes</b>	<b>37.3%</b>	<b>40.8%</b>	<b>64.0%</b>	27.1%	10.0%

*Problems areas not yet addressed: - plastic garbage from kitchen areas, food scraps, composting – meat in scraps - rodents/flyes, water – enormous roof areas, worm farms – onus on 1 and 2 and the problems with sustaining these over camp breaks of 5 days and school vacations. We are a school Camp so our problems are probably unique and we could use some help and inspiration to get more staff on board. If you (Gould League) are able to attend Somers School Camp and assist with suggestions/in-service I would be more than happy to co-ordinate this with you (Somers School Camp).*

**Part Three: Waste Wise Changes**

*It has been a fabulous program taken on by our environmental group, which consists of about 15 children. It has become a major focus of this timetabled activities (Anglesea Primary School).*

Figure 8 illustrates that 23.53% of schools indicated that there has been a significant reduction in landfill rubbish since the workshop. 60.75% of participants also reported that landfill rubbish has been reduced to 10-25%.



Furthermore, Figure 9 reveals that 24.49% of participating schools have also reduced the amount of litter in their school grounds by 50% or more. 48.98% of schools revealed a 10-25% reduction in litter, whereas 26.53% indicated that there had been no change. The relationship between the amount of rubbish sent to landfill and the changes in the amount of litter in school grounds is statistically significant at  $P < 0.002$ .

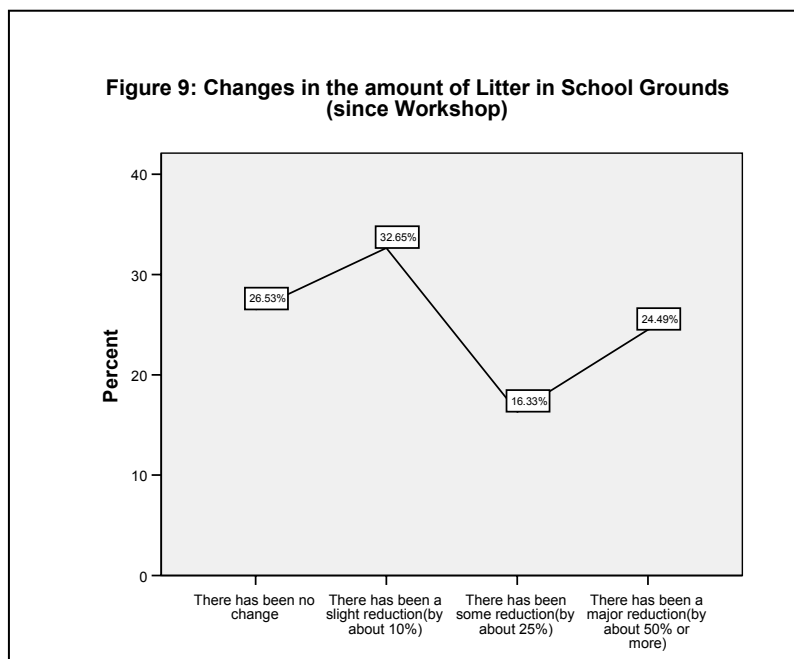


Table 3 illustrates that 70.0% of participating schools agree to strongly agree that the waste wise schools approach is consistent with other planning processes in their schools. Similarly, 92.0% of schools agree to strongly agree that the program provides opportunities for students to be innovative and creative and work with others and in groups. 70.0% also revealed that the program has led to other sustainability issues being included in the school program. The relationships between and/or across these variables are statistically significant as shown in *Appendix Four*.

**Table 3: Waste Wise School's Approach**

	<i>Is consistent with other planning processes at our school.</i>	<i>Helps students develop a positive attitude towards their learning.</i>	<i>Provides opportunities for students to be innovative and creative.</i>	<i>Provides problem-solving activities for students.</i>	<i>Encourages students to work with others and in groups.</i>	<i>Has helped our school develop links with the wider community.</i>	<i>Has led to other sustainability issues (such as water, energy, school grounds &amp; biodiversity) being included in our school program.</i>
<b>Strongly Disagree</b>	2.0%						
<b>Disagree</b>	4.0%					8.0%	8.0%
<b>Unsure</b>	24.0%	14.0%	8.0%	12.0%	8.0%	28.0%	22.0%
<b>Agree</b>	60.0%	58.0%	62.0%	64.0%	60.0%	42.0%	34.0%
<b>Strongly agree</b>	10.0%	28.0%	30.0%	24.0%	32.0%	22.0%	36.0%

**Part Four: Uptake of 3rs**

*The Waste Wise program was a valuable starting point in approaching the 3R's. Our contribution to land fill has reduced from 6 overflowing 'green' bins to 2.5 'green' bins on a big week. We now have 6 'blue' recycling bins, 3 worm farms and kids that are very strict on their use. We are now moving to water and salinity management as focus areas in sustainable environment education (Sacred Heart Primary School).*

The surveyed participants reported that 45.1% are now recycling paper. The remaining 54.9% indicated that this practice was already in place prior to the Waste Wise Schools Workshop. Surveyed participants also revealed that they are now recycling bottles and cans (46.0%), composting or worm composting (36.7%), and implemented reduction (52.0%) and reusing (52.9%) practices. Such figures are inconsistent with those reported by Armstrong and Grant (2004) such that a 95% reduction was not achieved.

**Table 4: 3r Activities**

	<i>Paper recycling</i>	<i>Bottle / can recycling</i>	<i>Composting or worm composting</i>	<i>Reduction activities, such as double sided photocopying</i>	<i>Reuse activities, such as using paper printed on one side for rough work</i>
<b>Present before the workshop</b>	54.9%	28.0%	32.7%	28.0%	35.3%
<b>No</b>		20.0%	6.1%	6.0%	3.9%
<b>We are considering it</b>		6.0%	24.5%	10.0%	5.9%
<b>Yes</b>	45.1%	46.0%	36.7%	52.0%	52.9%

As shown in Table 5, significance testing also revealed that there are significant relationships between recycling paper and all other waste wise practices.

**Table 5: Relationship between Paper Recycling and Other Waste Wise Habits**

		<i>Bottle / can recycling</i>	<i>Composting or worm composting</i>	<i>Reduction activities, such as double sided photocopying</i>	<i>Reuse activities, such as using paper printed on one side for rough work</i>
<i>Paper recycling</i>	<b>Pearson Correlation</b>	.545(**)	.289(*)	.427(**)	.334(*)
	<b>Sig. (2-tailed)</b>	.000	.044	.002	.017

\*\* Correlation is significant at the 0.01 level (2-tailed). \* Correlation is significant at the 0.05 level (2-tailed).

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## SUMMARY

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As mentioned earlier, the primary purpose of this part of the evaluation was to determine: the quality of the training courses; implementation progress, waste wise changes; and the uptake of the 3rs. Two sets of data were analysed, pre and post workshop survey data.

Prior to the implementation of the waste wise schools workshop (pre-survey data), schools rated their efforts as poor with respect to waste and litter education. Waste wise habits were also rated generally poor, albeit paper recycling and applying mulch to school gardens. 44.0% of the pre-surveyed participants (N=33) indicated that they pay to have recyclables collected from their school. The data also indicate that the average (*mean*) cost of waste disposal for one year is \$2881.29. Only a small percentage of participating schools generated income from the sale of recyclables. Thus, the pre-survey data reveals that schools waste wise practices were substandard prior to participating in the waste wise schools program.

Since the implementation of the Waste Wise Schools workshop (post survey data), 28.57% of schools (N=14) revealed that the program had 'really taken off in a big way', with a further 57.1% reporting that they are '*offering some activities*' (N=28). Approximately one third of post-surveyed participants also indicated that a planning committee/team had been formed to consider waste and other sustainability issues, in addition to writing a waste and litter education policy. 64.0% of participants (N=32) revealed that waste and litter activities are included in the curriculum. However, 52.0% of participating schools (N=26) reported that ecological sustainability has not become a focus area of the school charter which differs to the results reported by Sharpely (2003).

73.47% of participating schools (N=36) reported a reduction in the amount of litter in their school grounds. 84.28% (N=43) also indicated that there had been a reduction in the amount of rubbish sent to landfill. Waste wise practices (the 3rs) showed significant progress, although a 95% reduction has not been achieved at this time as reported by Armstrong and Grant (2004). Notwithstanding, the Waste Wise Schools Program is clearly having a profound impact on waste wise practices and education in schools and communities across Victoria. The Gould League of Victoria should be commended for their work in this area. The proceeding phases of the evaluation will reveal a more comprehensive analysis of the Waste Wise Schools Program.

*The Waste Wise School program is rapidly becoming part of our culture (Ballarat Grammar).*

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## REFERENCES

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Armstrong, P. (2004). The Waste Wise Schools Program: Evidence of Educational, Environmental, Social and Economic Outcomes at the School and Community Level. *Australian Journal of Environmental Education*, 20(2), 1-12.

Armstrong, P., & Grant, J. (2004). How Research Helped Us To Move From Awareness to Action and Then to Systems Development. *Australian Journal of Environmental Education*, 20(1), 13-24.

Sharpley, B. (2003a). *A report on the waste wise schools program at Cobden Technical School*. Melbourne: Gould League and EcoRecycle.

Sharpley, B. (2003b). *Sustainability education, litter and waste wise schools: A report investigating how schools in the waste wise schools program deal with two important issues - sustainability and litter*. Melbourne: Gould League and EcoRecycle.

APPENDIX ONE

**Survey 1: How Waste Wise is Your School?**

**PART A. RATE YOUR SCHOOL**

This survey will give you an overview of how your school is performing in waste and litter education. Give yourself a score out of five for each area.

- 1 = Poor
- 2 = Fair
- 3 = Good
- 4 = Very good
- 5 = Excellent

How would you rate your school's efforts in:

- 1 preparing a written waste and litter education policy? (1) 2 3 4 5
- 2 preparing a written waste and litter education strategy? (1) 2 3 4 5
- 3 including waste and litter in all levels of the curriculum? 1 (2) 3 4 5
- 4 recycling paper and cardboard? 1 2 3 (4) 5
- 5 recycling other materials? (1) 2 3 4 5
- 6 encouraging waste reduction and reuse practices? (1) 2 3 4 5
- 7 composting or worm composting food scraps? (1) 2 3 4 5
- 8 composting garden waste? (1) 2 3 4 5
- 9 applying mulch to the school gardens? 1 2 3 (4) 5
- 10 involving the whole school community in decision making about school waste and litter management? (1)

**PART B. QUANTITIES AND COSTS**

You may need to refer to your school records for this information.

- 1 What volume of waste is sent by your school to landfill each year? (Calculate from the number of full wheelie bins or hoppers collected each week, extrapolated over forty weeks of the school year.) 360m<sup>3</sup>
- 2 How is this waste collected, stored, and transported? wheelie bins emptied into 3.0m<sup>3</sup> skip. Cleanaway collects 3 times a week (£18-45 per pick up)
- 3 What is the cost of this waste disposal for a year? \$2878-20 per year
- 4 What arrangements are there for the recycling of bottles, cans and paper, etc. in the school? Only paper/cardboard. City bins collected every fortnight.
- 5 Does the school earn any money from the sale of recyclables e.g. cans? Yes (No)  
If yes, how much per year? \_\_\_\_\_
- 6 Does the school have to pay to have certain recyclables collected from the school? Yes (Yes) No  
If yes, how much per year? Very \$170 per year.
- 7 How are food scraps and garden waste disposed of in your school? Into waste bins  
NOT composted

APPENDIX TWO

**Questionnaire**  
**The Waste Wise Schools Program**

Please complete this questionnaire and return it to:  
 Waste Wise Schools Coordinator  
 c/o Gould League  
 PO Box 1117  
 Moorabbin 3189  
 Fax 9532 2860



Name: \_\_\_\_\_  
 School: \_\_\_\_\_  
 Date of your workshop: \_\_\_\_\_  
 School Email: \_\_\_\_\_

1. How would you best describe the developments that have occurred at your school since your Waste Wise Schools workshop? (Tick one)

There have been no developments	We are still thinking about it	We are offering some activities	It has really taken off in a big way
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please indicate if your school has introduced any of the following organisational changes since your Waste Wise Schools workshop.

	Present before the workshop	No	We are considering it	Yes
A planning committee or team has been established to consider waste and other sustainability issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purchasing practices to reduce waste have been introduced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waste and litter activities are included in the curriculum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A waste & litter education policy has been developed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ecological sustainability has become a focus area in the school charter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. How would you best describe the changes in the amount of rubbish sent to landfill from your school since your Waste Wise Schools workshop?

There has been no change	There has been a slight reduction (by about 10%)	There has been some reduction (by about 25%)	There has been a major reduction (by about 50% or more)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please turn to Page 2.

4. Please indicate if your school has introduced any of the following 3Rs activities since your Waste Wise Schools workshop.

	Present before the workshop	No	We are considering it	Yes
Paper recycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bottle / can recycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Composting or worm composting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduction activities, such as double sided photocopying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reuse activities, such as using paper printed on one side for rough work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How would you best describe the changes in the amount of litter in your school grounds since your Waste Wise Schools workshop?

There has been no change	There has been a slight reduction (by about 10%)	There has been some reduction (by about 25%)	There has been a major reduction (by about 50% or more)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Please read the following statements about the Waste Wise Schools' approach and indicate your opinion on the scale provided:

	Strongly Disagree	Disagree	Uncare	Agree	Strongly agree
Is consistent with other planning processes at our school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helps students develop a positive attitude towards their learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provides opportunities for students to be innovative and creative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provides problem-solving activities for students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encourages students to work with others and in groups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has helped our school develop links with the wider community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has led to other sustainability issues (such as water, energy, school grounds & biodiversity) being included in our school program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Are there any comments you would like to make about the Waste Wise Schools Program? (e.g., benefits of the program to your school, cost savings, involvement of students, teachers and parents)

*Thank you for your time to complete this questionnaire.*

Brief Waste Wise Schools Evaluation July 2005 to June 2006 (2).doc

APPENDIX THREE

The correlations table displays Pearson correlation coefficients, significance values, and the number of cases with non-missing values. The Pearson correlation coefficient is a measure of linear association between two variables. The values of the correlation coefficient range from **-1 to 1**. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative).

		Recycling paper and cardboard?	Recycling other materials?	Encouraging waste reduction and reuse practices?
Recycling paper and cardboard?	Pearson Correlation	1	.466**	.514**
	Sig. (2-tailed)		.000	.000
	Sum of Squares and Cross-products	111.012	50.627	52.482
	Covariance	1.322	.617	.640
	N	85	83	83
Recycling other materials?	Pearson Correlation	.466**	1	.548**
	Sig. (2-tailed)	.000		.000
	Sum of Squares and Cross-products	50.627	110.417	55.819
	Covariance	.617	1.330	.681
	N	83	84	83
Encouraging waste reduction and reuse practices?	Pearson Correlation	.514**	.548**	1
	Sig. (2-tailed)	.000	.000	
	Sum of Squares and Cross-products	52.482	55.819	97.224
	Covariance	.640	.681	1.157
	N	83	83	85
Composting or worm composting food scraps?	Pearson Correlation	.322**	.715**	.590**
	Sig. (2-tailed)	.003	.000	.000
	Sum of Squares and Cross-products	46.143	99.855	76.000
	Covariance	.555	1.218	.916
	N	84	83	84
Composting garden waste?	Pearson Correlation	.151	.612**	.407**
	Sig. (2-tailed)	.175	.000	.000
	Sum of Squares and Cross-products	19.220	74.025	46.390
	Covariance	.237	.925	.573
	N	82	81	82
Applying mulch to the school garden?	Pearson Correlation	.423**	.390**	.406**
	Sig. (2-tailed)	.000	.000	.000
	Sum of Squares and Cross-products	52.905	48.167	47.400
	Covariance	.630	.580	.554
	N	85	84	85

		Composting or worm composting food scraps?	Composting garden waste?	Applying mulch to the school garden?
Recycling paper and cardboard?	Pearson Correlation	.322**	.151	.423**
	Sig. (2-tailed)	.003	.175	.000
	Sum of Squares and Cross-products	46.143	19.220	52.905
	Covariance	.555	.237	.630
	N	84	82	85
Recycling other materials?	Pearson Correlation	.715**	.612**	.390**
	Sig. (2-tailed)	.000	.000	.000
	Sum of Squares and Cross-products	99.855	74.025	48.167
	Covariance	1.218	.925	.580
	N	83	81	84
Encouraging waste reduction and reuse practices?	Pearson Correlation	.590**	.407**	.406**
	Sig. (2-tailed)	.000	.000	.000
	Sum of Squares and Cross-products	76.000	46.390	47.400
	Covariance	.916	.573	.554
	N	84	82	85
Composting or worm composting food scraps?	Pearson Correlation	1	.731**	.411**
	Sig. (2-tailed)		.000	.000
	Sum of Squares and Cross-products	190.372	122.798	67.302
	Covariance	2.240	1.479	.792
	N	85	84	85
Composting garden waste?	Pearson Correlation	.731**	1	.392**
	Sig. (2-tailed)	.000		.000
	Sum of Squares and Cross-products	122.798	156.988	57.631
	Covariance	1.479	1.891	.694
	N	84	84	84
Applying mulch to the school garden?	Pearson Correlation	.411**	.392**	1
	Sig. (2-tailed)	.000	.000	
	Sum of Squares and Cross-products	67.302	57.631	143.103
	Covariance	.792	.694	1.664
	N	85	84	87

\*\* . Correlation is significant at the 0.01 level (2-tailed).

APPENDIX FOUR

<i>Is consistent with other planning processes at our school.</i>	Pearson Correlation	1	<i>Helps students develop a positive attitude towards their learning.</i> .487(**)	<i>Provides opportunities for students to be innovative and creative.</i> .317(*)	<i>Provides problem-solving activities for students.</i> .293(*)	<i>Encourages students to work with others and in groups.</i> .280(*)	<i>Has helped our school develop links with the wider community.</i> .409(**)	<i>Has led to other sustainability issues (such as water, energy, school grounds &amp; biodiversity) being included in our school program.</i> .373(**)
	Sig. (2-tailed)		.000	.025	.039	.049	.003	.008
<i>Helps students develop a positive attitude towards their learning.</i>	Pearson Correlation	.487(**)	1	.409(**)	.385(**)	.449(**)	.343(*)	.338(*)
	Sig. (2-tailed)	.000		.003	.006	.001	.015	.016
<i>Provides opportunities for students to be innovative and creative.</i>	Pearson Correlation	.317(*)	.409(**)	1	.631(**)	.496(**)	.293(*)	.228
	Sig. (2-tailed)	.025	.003		.000	.000	.039	.112
<i>Provides problem-solving activities for students.</i>	Pearson Correlation	.293(*)	.385(**)	.631(**)	1	.672(**)	.361(*)	.184
	Sig. (2-tailed)	.039	.006	.000		.000	.010	.202
<i>Encourages students to work with others and in groups.</i>	Pearson Correlation	.280(*)	.449(**)	.496(**)	.672(**)	1	.453(**)	.405(**)
	Sig. (2-tailed)	.049	.001	.000	.000		.001	.004
<i>Has helped our school develop links with the wider community.</i>	Pearson Correlation	.409(**)	.343(*)	.293(*)	.361(*)	.453(**)	1	.475(**)
	Sig. (2-tailed)	.003	.015	.039	.010	.001		.000
<i>Has led to other sustainability issues (such as water, energy, school grounds &amp; biodiversity) being included in our school program.</i>	Pearson Correlation	.373(**)	.338(*)	.228	.184	.405(**)	.475(**)	1
	Sig. (2-tailed)	.008	.016	.112	.202	.004	.000	

\*\* Correlation is significant at the 0.01 level (2-tailed). \* Correlation is significant at the 0.05 level (2-tailed).