



MAKING EDUCATION WORK FOR MANUKAU

Manukau Family Literacy Programme Outcomes Valuation Project

August 2006

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In preparing this report and forming our opinion, we have relied upon, and assumed the accuracy and completeness of all information available to us from public sources and furnished to us by COMET. We have evaluated that information through analysis, inquiry and review, but have not sought to verify the accuracy or completeness of any such information. It should not be construed that we have conducted an audit of COMET.

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Glossary of Terms

Dyad	Parent/Adult and Child participating in the MFLP
ECE	Early Childhood Education
IALS	International Adult Literacy Skills
MFLP	Manukau Family Literacy Programme
COMET	City of Manukau Education Trust
PV	Present Value
NPV	Net Present Value
PACTT	Parent and Child Time Together

Table of Contents

1	Executive Summary	4
2	Introduction	5
	Purpose	5
	Background	5
3	Scope	7
	Methodology	7
4	Literature Review	9
	Child Literacy Programmes	9
	Adult Literacy Programmes	11
	Family Literacy Programmes	12
5	Survey Results	14
6	Analysis	15
7	Discussion	20
8	Conclusion	24
	Appendix A : Sample Survey Instructions	25
	Appendix B : Survey Results	27

1 Executive Summary

1.1 The City of Manukau Education Trust (COMET) requires information in regard to the effectiveness of the Manukau Family Literacy Programme (MFLP) not only for their own business practice and continuous improvement, but to assure prospective funders that their money is well invested and to advocate that intergenerational family learning should be considered for wider application in Manukau and elsewhere in New Zealand.

1.2 To this end an extensive evaluation by Benseman & Sutton, Auckland Uniservices Limited was completed in 2005¹. This report outlined the qualitative gains made to date by the participants of the programme.

1.3 The purpose of this project was to augment Benseman & Sutton's work (2005) by undertaking an analysis of the actual and potential economic gains the Manukau Family Literacy Programme has had and may have, given reasonable assumptions, in the future.

1.4 The findings of this project show a significant return on investment as a result of the MFLP. The economic return of the MFLP was found to be \$9.41 for every \$1 dollar invested over a staggered period of 30 years.

1.5 A summary of these values is included in Table 1 below, along with the costs of the programme, and the net economic value obtained.

Table 1: Net Economic Value of the Manukau Family Literacy Programme per Participating Dyad

Participant	Dyad Value ² (over 30 years)	Costs of MFLP	Net Economic Value
Adult	\$122,247	\$13,053	\$109,194
Child	\$ 5,657	\$ 604	\$ 5,053
Combined/Family	\$ 4,974	\$ 531	\$ 4,443
Total	\$132,878	\$14,118	\$118,690

1.6 There are a number of comparable studies that were accessed that aligned with the findings in this report. Moreover, it was found that the values that have been assigned for the purposes of this report are comparatively conservative.

1.7 Based on these findings the total net economic value of the MFLP, over all the participants to date, is estimated to be **\$29 million**.

1.8 If the MFLP programme is able to continue its expansion plans the total economic benefit of the programme staggered over a 30 year period based on 250 families per year, would result in a discounted economic NPV of **\$280 million**.

¹ Benseman, J. Sutton A. (2005). Summative Evaluation of the Manukau Family Literacy Project. University of Auckland.

² Parent/Adult and Child participating in the MFLP.

2 Introduction

Purpose

2.1 The purpose of this report is to assess and assign economic values to the outcomes of the Manukau Family Literacy Programme (MFLP) and provide a valuation based upon the Summative Evaluation of the programme by Benseman and Sutton (2005)³ plus updated participant information provided by the City of Manukau Education Trust (COMET).

Background

2.2 The Manukau Family Literacy Programme is a pilot project initiated by the Literacy Taskforce of the City of Manukau Education Trust (COMET). Since its inception in 2002 the programme has expanded to three sites across the wider Manukau area.

2.3 The MFLP is targeted at low-decile communities. Enrolments are sought from family members in the child's household who have low or no educational qualifications. The programme is delivered using an integrated approach consisting of 20 hours per week for the adult, and over the regular school or early childhood centre week for the child. It has four components structured as follows:

- an adult education component designed to extend basic education skills of participants and help them acquire successful interpersonal skills;
- children's education to promote growth and development of young children and engage parents' in their child's learning;
- Parent and Child Together Time (PACTT) involving shared learning experiences between child and parent; and
- parent learning of parenting skills, and other family and parenting issues.

2.4 Previous reports on the programme have provided a summative assessment of the qualitative outcomes of the MFLP. Of particular note is the summative evaluation of the MFLP report completed by Dr J Benseman (2005), of the University of Auckland. This report was the fourth in a series of reports on the pilot MFLP, with previous reports providing an overview and assessment of the processes and rationale behind the MFLP. The fourth and final report by Dr Benseman is the first to provide a comprehensive and in-depth assessment of the outcomes of the MFLP.

2.5 The key outcomes identified in this report were as follows:

- Foundation skill gains for both adults and children;
- An increase in parents' levels of self-confidence and self-efficacy;
- An increase in the long terms aims and aspiration of both parents and children;

³ Benseman, J. Sutton A. (2005). Summative Evaluation of the Manukau Family Literacy Project. University of Auckland.

- Greater parent involvement in their children's education;
- Improvement in parenting skills; and
- Strong learning communities among parents, their children and participating institutions.

3 Scope

3.1 The scope of this report is to assess and quantify the economic value of previously identified outcomes as well as outcomes identified through additional field research.

Methodology

3.2 In assessing the economic outcomes of the MFLP, a survey was conducted with 40 participants being sampled from across a total of 85. This was the total number of participants who have attended the programme over the three years since its inception. Of the 40 sampled, six did not complete the questionnaire. Of those who completed the questionnaire, two did not complete the programme.

3.3 The participants sampled were selected from across the three pilot sites. Participants were interviewed using the help of COMET volunteers.

3.4 Interviewers were provided with a set questionnaire template and were provided with instructions on how to elicit unbiased responses from participants. The questions used in the survey were designed to capture and measure the outcomes identified by Dr Benseman's study. The intent was to capture these outcomes in such a way as to allow an economic value to be assigned to each of the outcomes. A copy of the interviewer guidelines and questionnaire template are attached in Appendix A.

3.5 The questions asked of respondents were structured into the following areas:

- *Section A* provided information on details of the programme participant;
- *Section B* asked 'open' questions about the MFLP to introduce the questionnaire and set the scene;
- *Section C* gathered specific information about the work and education of the programme participants for BEFORE the programme, SINCE the programme, and NOW;
- *Section D* asked questions about the children of the participants and the impact of the programme on them;
- *Section E* allowed the interviewer to write down comments in regards to other benefits that the participant may have wished to add to the information that had been gathered in other questions; and
- *Section F* allowed the interviewer to write down any comments that they felt might add to the information that had already been gathered in the questions.

3.6 Results of the questionnaires were collated and coded into a number of key outcomes as a result of MFLP participation. These outcomes were:

- Enrolled in Further Study.
- Intending to enrol in Further Study.
- Reduced reliance on Government Agencies.

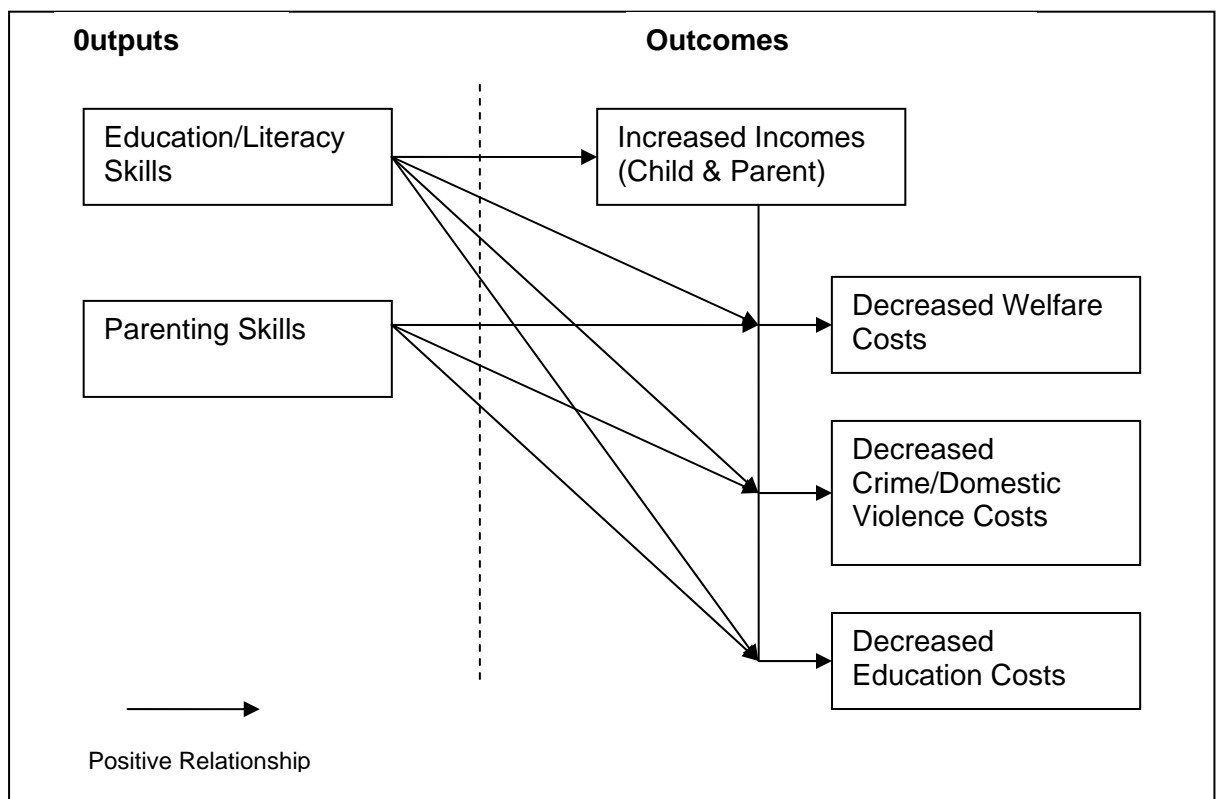
- Net change in Income since MFLP.
- Expected Future Income.
- Improvement in PACTT Child's school performance.
- Improvement in Other Children's school performance.
- Increase in children's aspirations and parents aspirations for children.
- Impact on home environment/life.

3.7 In addition to the primary data collection, a literature review was conducted based on research into family literacy programmes and early childhood literacy programmes of a similar nature. Most of the literature available was based on US or UK based programmes, however the outcomes that were measured in these studies were comparable to those identified by studies into the outcomes of the MFLP.

3.8 From the analysis of the survey results and information gathered from the literature review a model was developed that quantified the economic values assigned to each outcome over time.

3.9 Figure 1 outlines the relationships between the outputs of the MFLP and the identified outcomes. The effect of increased incomes can also be seen here to have a direct as well as moderating effect on each of the social cost measures.

Figure 1: Outputs- Outcomes Model



4 Literature Review

4.1 Family Literacy programmes as distinct from adult and child literacy programmes focus on the combined learning of both the parent/care giver and child. It uses an integrative approach to create a system for delivery of curriculum, instruction, and assessment. As opposed to stand-alone programmes, such as early childhood education or adult literacy programmes, family literacy programmes attempt to build synergies between these two types of programmes to obtain a wider scope of outcomes than just improved literacy skills⁴.

Early Childhood Literacy Programmes

4.2 There exists a significant amount of research and literature into the outcomes and benefits of child literacy programmes including early childhood education, before school programmes and pre-school care. These studies are often longitudinal and measure the benefits in terms of both social and economic outcomes.

4.3 One study of particular note is the High/Scope Perry Preschool Study, which is a 40 year longitudinal study into the short and long term effects of a high quality preschool education program for young children living in poverty⁵. The study has followed both a subject group and control group of students over 40 years, measuring outcomes in economic terms at various stages of each of the participants' lives. The study has found a significant difference between the economic outcomes of those participants who received a preschool education in basic literacy as opposed to those who did not. The study also found a significant positive economic impact on society in general from those who participated as opposed to those who did not.

4.4 In short the study found that the return to society was \$258,888 (NZD\$417,562)⁶ per participant over the 40 years since the start of the study, on an investment per participant of \$15,166 (NZD\$24,462). Or a return of \$17.07 (NZD\$27.53) (1,707%) per dollar invested. Of the total return 75.6% went to the general public and the rest to the individual. Of the total return to the public 88% came from crime savings, 7% from increased taxes due to higher earnings, 4% from education savings, and 1% from welfare savings. The study found that, overall, participants had between 17-25% higher incomes than the average income.

4.5 A summative review by the Teachers College at Columbia University also found significant cost savings to society/economy from Early Childhood Education (ECE) Programmes⁷. By focusing on the reduction in forgone costs as a result of improved early childhood literacy skills, the researchers found significant cost savings over the short and long term.

⁴ Benseman, J. Sutton A. (2005). Summative Evaluation of the Manukau Family Literacy Project. University of Auckland.

⁵ Schweinhart, L. (2006). The High/Scope Perry Preschool Study Through Age 40. High/Scope Educational Research Foundation.

⁶ Based on exchange rate as at 2/8/06 of 0.62

⁷ Belfield, C. 2004. *Early Childhood Education: How important are the Cost-Savings to the school system?*. Teachers College. Columbia University.

These savings were identified as being a result of the following outcomes:

- **Special Education Savings** – these savings result from a reduction in resource intensive special education requirements such as teachers aids and remediation courses.
- **Grade Repetition Savings** – these savings were made from a reduction in the costs associated with student year or grade repetitions.
- **Increase in Learning Productivity** – this measured the improved learning productivity of classrooms as a result of a reduction in poor student behaviours due to learning difficulties. It measured the savings as a result of less teacher time spent on non-learning activities.
- **Abuse/Neglect** – measured the reduction in vandalism and wear and tear on school equipment and a more efficient administration and supervisory system.

4.6 The total cost saving for each child who participates in an ECE program was found to be a saving of 7.8% of the total cost of a child's primary and secondary education⁸. This saving is net of the cost of providing a ECE program.

4.7 There are numerous other studies which point to significant economic benefits as a result of early childhood education and literacy programmes⁹. It is now a common and widely accepted belief that participation in early childhood care and education programmes, with a focus on literacy, has significant social and economic benefits. To the extent that these types of early childhood programmes across the globe are increasingly being fully funded.¹⁰

4.8 As previously identified, most of the literature available focuses on measuring the economic return as a result of cost savings, and improvements in economic growth as a result of higher incomes and increased productivity. What has not be measured in economic terms, however, are the non-monetary benefits such as improved quality of life.

4.9 The key economic outcomes that can be measured broadly fall into two groups: those that save costs; and those that lead to greater economic growth. These are summarised in the following table (Table 2).

Table 2: Economic Outcomes of Child Literacy Programmes

Cost Savings	Economic Growth
Reduced educational costs	Increase in incomes
Reduced crime costs	Increase in productivity
Reduced social/welfare costs	

⁸ Belfield, C. 2004. *Early Childhood Education: How important are the Cost-Savings to the school system?*. Teachers College. Columbia University.

⁹ Barnett & Ackerman (2006), Costs, Benefits, and Long-Term Effects of Early Care; Bruner, C. (2002) A Stitch in time: Calculating the Costs of School Unreadiness; Barnett, W. (2000), Economics of Early Childhood Intervention.

¹⁰ Barnett & Ackerman (2006), Costs Benefits, and Long-Term Effects of early Care and Education Programmes.

Adult Literacy Programmes

4.10 There also exists a substantial amount of research and literature on the economic benefits of adult literacy programmes. Often these economic benefits are measured in terms of the increase in incomes as a result of better job prospects¹¹. These studies also measure cost savings, such as, the reduction in welfare costs and reduced crime and family violence costs, which have a high correlation with education and socioeconomic levels.

4.11 Most research into adult literacy shows that literacy has a persistent, positive and statistically significant association with people's earnings per hour, or per week. People with greater literacy skills are paid more, on average, than people with weaker literacy skills, even after taking account of other observed factors¹². Using the New Zealand IALS data, Maré and Chapple (2000) show that a 10% increase in the average of the three literacy scores raises male annual earnings by 4.0% and female annual earnings by 5.1%¹³.

4.12 There also exists a substantial body of literature which clearly shows the correlation between domestic violence and crime with education and socioeconomic levels¹⁴. McCauley et al (1995) found that 63% of domestic violence sufferers had higher school certificate or less as their highest level of education, and 43% of domestic violence abusers had this level of education or less¹⁵. While the link between education and domestic violence is often not direct or strongly correlated, research shows that this link is further strengthened by income levels. The correlation between income levels and domestic violence has been shown to have a very strong inverse relationship and is often the determining variable in the education and domestic violence link¹⁶. Estimates of the cost of domestic violence in New Zealand range from \$1 billion to \$1.3 billion per year¹⁷.

¹¹ Hartley, R 1989, *The social costs of inadequate literacy: A report for International Literacy Year*, AGPS, Canberra; Gleeson, L 2005, *Economic returns to education and training for adults with low numeracy skills*, NCVER, Adelaide; ProLiteracy America 2003, *US adult literacy programmes: Making a difference—A review of research on positive outcomes achieved by literacy programmes and the people they serve*, ProLiteracy Worldwide, Syracuse, NY.

¹² Johnston, M. 2004. *Adult literacy and economic growth*. New Zealand Treasury working paper.

¹³ Maré, D & Chapple, S. (2000) "Literacy formation and its influence on earnings and jobs.", Wellington, Department of Labour.

¹⁴ Lockhart L. L. (1999). A re-examination of the effects of race and social class on the incidence of marital violence: A search for reliable differences. *J Marriage Fam.* 1987; 49:603-610.; Demetrios, Anglin, & Taliaferro. (1999). Risk Factors for Injury to Women from Domestic Violence. *New England Journal of Medicine.*; Centerwall BS. Race, socioeconomic status, and domestic homicide, Atlanta, 1971-72. *Am J Public Health.* 1984; 74:813-815.

¹⁵ McCauley, Kern, Koldner & Schroder. (1995). *The "battering syndrome": prevalence and clinical characteristics of domestic violence in primary care internal medicine practices*. Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.

¹⁶ Petersen R. Social class, social learning, and wife abuse. *Soc Serv Rev.* 1980; 54:390-406.; Abbott J, Johnson R, Koziol-McLain J, Lowenstein SR. Domestic violence against women. Incidence and prevalence in the emergency department population. *JAMA.* 1995;273:1763-1767.

¹⁷ Snively, S. (1994) *The New Zealand economic cost of family violence*. Family Violence Unit. Department of Social Welfare. Wellington.; Beckett, T. & Chapple S. (2006) *An estimation of the costs of family violence and neglect to New Zealand*. Ministry of Social Development. Wellington.

4.13 It has also been shown that there is a strong inverse relationship between crime and education/incomes levels. Lochner (1999) found that education beyond highschool reduced the likelihood of a person committing a crime by 30%, and that education beyond the equivalent to New Zealand's year 11, reduced the likelihood of a person committing crime by up to 95%¹⁸. Job Corps, a literacy program for youth in the US estimated a reduction in crime per participant of \$4,500 (NZD\$7,258)¹⁹. Further research also shows a strong inverse relationship between income levels and crime, the results of these studies, however, need to be treated carefully, as on some measures, such as GDP per capita there is a positive relationship between increasing incomes and an increase in certain types of crime.

4.14 In general, however, the combination of increased education, employment and income levels will have a significant decrease on the likelihood of an individual committing a crime²⁰. As reported by the New Zealand Treasury crime in New Zealand costs \$9.1 billion a year. Of that amount, \$7 billion is borne by private individuals, and \$2.1 billion by the government²¹.

Family Literacy Programmes

4.15 While the literature available on the economic benefits of both child and adult literacy programmes is wide and robust, there remains little relevant literature on the economic benefits of literacy programmes using an integrative approach, often referred to as 'family literacy programmes'. This in part is due to the length of time family literacy programmes have been in operation relative to child or adult only literacy programmes. In many cases, however, extrapolations can be made based on the literature and research available on child and adult literacy programmes.

4.16 The evidence on outcomes from existing family literacy programmes while lacking the statistical robustness associated with longitudinal studies, does show some strong positive short to medium term outcomes. One such programme is the Even Start family literacy program run by the US government, which is perhaps the most well known internationally. Research conducted on the outcomes of this program show a marked increase in not only the usual measures of improved literacy skills of both the parent and the child, increased employment rate, and higher incomes, but also an improvement in home life, resulting often in a decrease in child abuse, domestic violence, and poor behaviours by the child at school²². These outcomes are also supported by the work of Benseman & Sutton (2005) into the MFLP, who show a marked increase in the literacy scores for both parents and children, as well as an improvement in other factors such as child and parent aspirations, increase in self confidence and self efficacy, and improved behaviours of children at school²³.

¹⁸ Lochner, L. (1999). Education, Work, and Crime: Theory and Evidence. Rochester Center for Economic Research.

¹⁹ Long, C. Mallar, and C. Thorton. Evaluating the Benefits and Costs of the Job Corps. Journal of Policy Analysis and Management, 1(1):55(76, Fall 1981.

²⁰ Lochner, L. (1999). Education, Work, and Crime: Theory and Evidence. Rochester Center for Economic Research.

²¹ NZ Treasury. Economic Cost of crime in New Zealand. 2006.

²² Colorado Even Start. 2004-2005 Progress Report. www.cde.state.co.us/cdecare/evenstart.htm

²³ Benseman, J. Sutton A. (2005). Summative Evaluation of the Manukau Family Literacy Project. University of Auckland.

4.17 These outcomes are similar to the outcomes measured from child or adult only literacy programmes with the added benefit of an efficient integrated approach and the additional provision of parenting skills. The synergistic benefit of this approach can be expected to result in a greater combined effect on the economic outcomes than measures previously identified in child and adult only programmes.

4.18 There are also the economic benefits of improved parenting, child behaviours, and home life, which would be expected to further decrease costs associated with domestic violence and crime. Further, there is also the saving as a result of combining the teaching and operating costs of two programmes into one. Not only does this approach create a more efficient learning environment, but research shows that a key predictor of a child's educational success is the educational achievement of the mother²⁴. By improving the education of the mother at the same time as a child, the reinforcement effects are substantial. Indeed research by Benseman et al. (2005) has shown marked improvements on child literacy scores when using this approach.

²⁴ Biddulph, F., Biddulph, J., Biddulph, C. (2003) The complexity of community and family influences on childrens achievement in New Zealand. Wellington: Ministry of Development.

5 Survey Results

5.1 Responses to the interview questionnaire of the 34 participants were collated and coded into nine outcome areas. Full details of the survey results are included in Appendix B. A summary of the results are included below.

Table 3: Outcome Results of the Manukau Family Literacy Programme

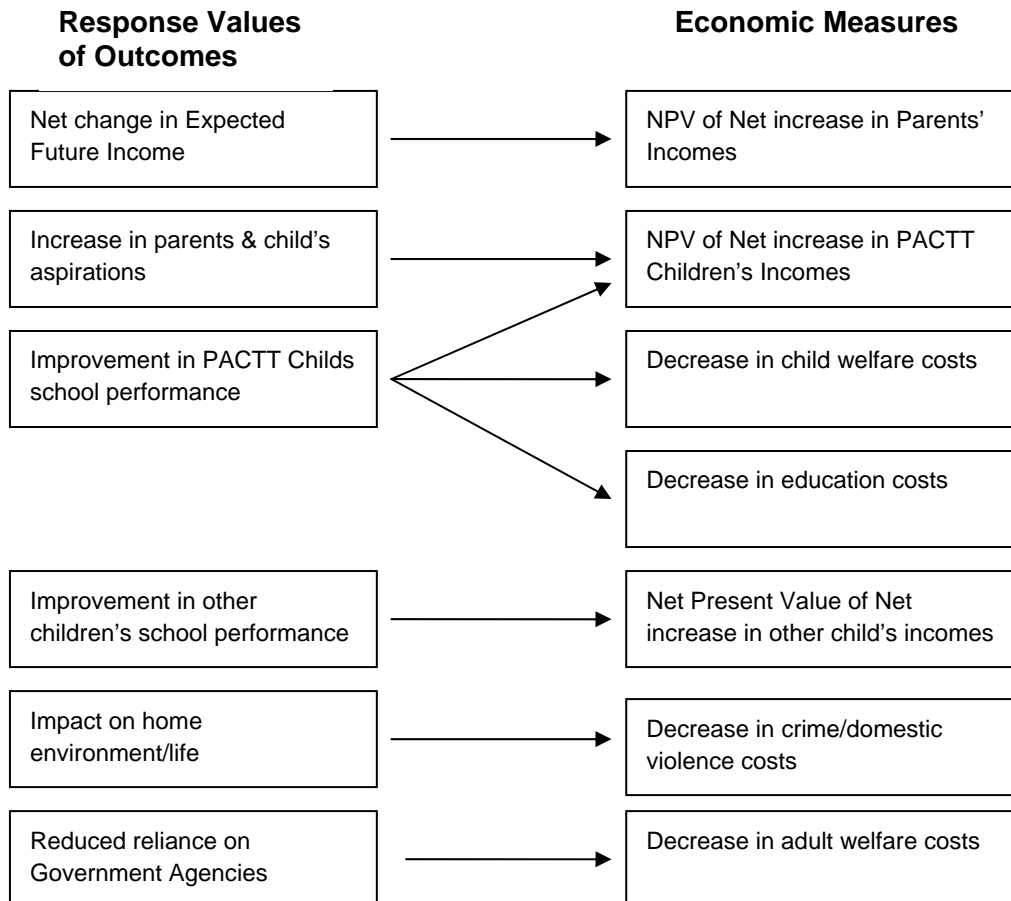
Survey Response Area	Results
Adults Enrolled in Further Study – indicates what further education course the participant is currently enrolled in.	67% have gone on to further study.
Adults Intending to enroll in Further Study – indicates what field of study the participant intends to enroll in the next three years.	15% are intending on doing further study in the next three years.
Adults Reduced reliance on Government Agencies – indicates what level of impact the MFLP course has had on the respondents reliance on government agencies such as WINZ.	71% had a reduced reliance on government agencies.
Adults Net change in income since MFLP – indicates the net change in the current weekly income level of participants since completing the MFLP course.	Average of \$200.50
Adults Expected Future Income – indicates what level of weekly income the respondents expect to obtain based on the current field or intended field of study.	Average of \$529.62 representing an average net change of \$574.88²⁵
Improvement in PACTT Childs school performance – This indicates the respondents assessment of the improvement in their PACTT Child’s performance at school since completing the MFLP	94% noticed an improvement.
Improvement in Other Children’s school performance – As for the PACTT Child, this indicates the parent’s assessment of the improvement in school performance of other children in the family who did not participate in the MFLP.	91% noticed an improvement.
Increase in children’s aspirations and parents aspirations for children – indicates the increase in aspirations for both parents and children since completing the course.	100% had an increase with 38% a significant increase.
Impact on home environment/life – indicates the level of positive change in the home/family life since completion of the course as assessed by the respondent.	100% had an increase with 38% a significant increase.

²⁵ This is due to many respondents receiving government support payments prior to the MFLP which is recorded as a negative income.

6 Analysis

6.1 Based on the response values captured in the survey of the MFLP participants, and the relationships between outputs and outcomes determined in the model outlined earlier, a further model was developed. This model shows the links made, based on the available research, between individual response values of outcomes of the MFLP survey and the economic measures used to quantify the potential impact of these outcomes.

Figure 2: Links between Outcomes and Economic Measures



6.2 The strength of relationship between the response values and economic measures was determined by a number of key assumptions and value weightings. For each coded participant response, the following value weightings were given (Table 4). Responses coded 0 are assigned a 10% value weighting to account for the prospective benefits described in the literature that are not able to be elicited through participant survey e.g. likelihood of child being involved in criminal behaviour in the future.

Table 4: Value Weightings

Responses coded as	Value Weighting
0	10%
1	50%
2	75%
3	100%

6.3 A number of key assumptions were developed in order to be able to calculate specific values for the measured outcomes (Table 5).

Table 5: The basis of the estimation of the potential value of MFLP

Assumption Variable	Rationale	Variable Value
Net Benefit of Future Child Income.	<p>Based on the High/Scope research children who attended literacy classes were found to have 17-25% higher incomes²⁶. This assessment has assumed participants in MFLP obtain a 17% discounted increase in incomes above average</p> <p>Assuming a child begins employment in 15 years, the current NZ average income of \$30,472²⁷ grown at 3% for this time period with a subsequent 17% increase in income from then on results in a net increase of \$8,071 per year, grown over a 30 year at 3% and discounted at 10% for 30 years and a further 15 years until the time to start of employment²⁸.</p>	\$383,964
Average Ministry of Social Development Costs per Adult	<p>This includes the reduction in the operating costs of welfare departments associated with less demand for support services such as job search and associated administration.</p> <p>Based on an operating budget of \$738 million²⁹ for the MSD to provide support services and administer social security payments to a total of 400,000 recipients per year³⁰. An average yearly cost per beneficiary was calculated and assumed to result in an annual saving over a 20 year period.</p> <p><i>Note: The reduction in direct welfare costs such as social security payments have been factored in by measuring the net increase in children's and parents' incomes.</i></p>	\$36,690
Average Ministry of Social Development Costs per Child	<p>The same figure as for parents. However, the savings are not expected for another 15 years or until the child would be expected to begin full-time employment. As such, the MSD costs are grown at 3% over 15 years, and then calculated the same as for adults but over a 30 year period instead.</p>	\$85,744
Average Cost of Crime & Domestic Violence per	<p>The public and private cost of crime in New Zealand is estimated at \$9.1 billion³¹, and domestic violence is estimated at \$1 billion.³²</p> <p>Based on an average of 442,000 offences per year³³ an average</p>	\$22,850

²⁶ Schweinhart, L. (2006). The High/Scope Perry Preschool Study Through Age 40. High/Scope Educational Research Foundation.

²⁷ NZ Statistics, 2006 Average Income.

²⁸ Assumed a child will begin full time employment in 15 years, and then will work on average for 30 years, making the total discount period 45 years.

²⁹ MSD Annual Report 2005.

³⁰ MSD Annual Report 2005.

³¹ NZ Treasury, 2005, Cost of crime in New Zealand report.

³² Snively, S. (1994) The New Zealand economic cost of family violence. Family Violence Unit. Department of Social Welfare. Wellington.

Assumption Variable	Rationale	Variable Value
Offence	cost per offence was calculated.	
Total Costs of Primary & Secondary Education	The total annual cost of primary and secondary education in New Zealand is \$4.1 billion ³⁴ . Based on an average of 764,000 primary and secondary students ³⁵ and an average of 13 years per child at school. The total cost per child's primary and secondary education was calculated.	\$69,704

6.4 The final values given to each outcome were determined as outlined in Table 6 below.

Table 6: Calculation of Value per Dyad participating in the MFLP

Outcome	Notes	Formula	Average Value per Participant ³⁶
PV of Net Increase in Parents' Income	Net increase in future expected income per year for 20 years grown at a rate of 3%. Discounted by 10%.	= current or prior income – expected future income x 3% growth for 20 years. Discounted at 10% for 20 years.	\$119,399
PV of Net Increase in PACTT Childs Income	Net Benefit of Future Child Income based on High/Scope research. Weighted according to the average between Improvement in PACTT Childs School Performance and Increase in Children's Aspirations and Parent's Aspirations for survey values. Discounted over 45 years.	= (Net Benefit of Future Child Income x Improvement in PACTT Childs School Performance response weighting + Net benefit of Future Child Income x Increase in Children's Aspirations and Parent's Aspirations response weighting)/2.	\$3,967
PV of Net Increase in Other Childs Income	Net Benefit of Future Child Income based on High/Scope research. Weighted according to the Improvement in Other Children's School Performance survey values.	= Net Benefit of Future Child Income x Improvement in Other Children's School Performance response weighting.	\$2,177
Decrease in Adult Welfare Costs	Average Ministry of Social Development Costs per Adult. Weighted according to the Reduced Reliance on Government Agencies survey values. Discounted over 20 years at 10%.	= Average Ministry of Social Development Costs per Adult x Reduced Reliance on Government Agencies response weighting.	\$2,847
Decrease in Child Welfare Cost	Average Ministry of Social Development Costs per Child. Weighted according to the Improvement in PACTT Childs School Performance survey values. Discounted over 45 years at 10%.	= Average Ministry of Social Development Costs per Child x Improvement in PACTT Childs School Performance response weighting.	\$803

³³ NZ Treasury, 2005, Cost of crime in New Zealand report.

³⁴ Ministry of Education, 2005 Education Statistics.

³⁵ Ministry of Education, 2005 Education Statistics.

³⁶ Participant is classified as one Parent and Child pair.

Outcome	Notes	Formula	Average Value per Participant ³⁷
Decrease Crime/Domestic Violence Cost	Average Cost of Crime & Domestic Violence per Offence in New Zealand. Weighted according to the Impact on Home Environment/Life survey values. Discounted over 20 years at 10%.	= Average Cost of Crime & Domestic Violence per Offence in New Zealand x Impact on Home Environment/Life response weighting.	\$2,797
Decrease in Education Costs	7.8% reduction in Total Costs of Primary & Secondary Education for each PACTT Child. Weighted according to the Improvement in PACTT Childs School Performance survey values. Discounted over 20 years at 10%.	= Total Costs of Primary & Secondary Education x 7.8% x Improvement in PACTT Childs School Performance response weighting.	\$888
Total			\$132,878

6.5 This figure gives an economic value over a staggered 30 year period. A number of the key assumptions of the above figures include:

- (a) Discount rate of 10% has been used as is customary with public funding projects of this nature and reflects the NZ Treasury accepted rate for 06/07³⁸.
- (b) Where income growth has been calculated, a rate of 3% in line with inflation has been used.
- (c) The decrease in welfare administration costs for the adult is the saving in MSD costs of each adult over a 20 year period. The decrease in welfare costs for the child is the savings in MSD cost in 15 years time over a 30 year period.
- (d) Parents/Adults income is grown and discounted over a 20 year period, as their remaining working lives are somewhat shorter as many of the participants are already in their mid to late thirties. The average age for participants in the survey was 39 years, with a range between 20 and 54.
- (e) The PV of Net Increase in Parents Income is the total change in an individual moving from a negative income position (relying on government welfare which costs money), to a positive income position (no reliance on welfare, individual actually pays taxes). In some cases participants were not relying on any form of government support. So their total net change has been from zero to some positive figure. In cases where a participant has been relying on welfare support, the net change has been a move from a negative number to a positive number which is a much larger spread, and result in a much greater PV figure.
- (f) PACTT and Other Childs Income is grown over a 30 year period, and discounted over a 45 year period. This is because they are not expected to begin full-time work for at least 15 years, and their subsequent working lives

³⁷ Participant is classified as one Parent and Child pair.

³⁸ NZ Treasury. Cost Benefit Analysis Primer. 2006.

will also be longer, and so the benefits will accumulate for a longer period of time.

(g) All other benefits are discounted over a 20 year period.

6.6 It should also be noted that the above figure indicates a value per participant which is classified as one parent and child dyad reflecting the integrated approach of the MFLP and the synergies created through combining adult and child learning. We have also split this figure into approximate values attributable to the child, the adult, and the combined or family values as outlined in Table 7.

Table 7: Attribution of value of the MFLP

Participant	Value
Adult	\$122,247
Child	\$ 5,657
Combined/Family	\$ 4,974
Total	\$132,878

6.7 The majority of the MFLP value can be attributed to the parent/adult, this is due to the easier and more reliable measurement of the increase or expected increase in the adults incomes, and the directly measured reduced reliance on government agencies.

6.8 For the child element, as a result of the longer time period till the expected benefits attributable to the child are realised, the discounted present value is much lower. In addition, the reliability in the measured value is also much lower, as there may be more moderating variables over the longer time period. It should be noted, however, that this value is very conservative when compared to the measured outcome values of studies such as the High/Scope project which assigned values of up to \$417,000 for child only literacy programmes.

6.9 The combined/family value element represents the value associated with the combined family unit. This includes the effect on children other than the PACTT Child, and the home/family environment which is expected to have the biggest impact on outcomes such as crime and domestic violence. In this situation, where there are other children, the effect is only measured as far as one other child.

6.10 Finally, it needs to be recognised that due to the limited resources for this study a control group was not used. Therefore, it is beyond the scope of this report to determine the effects measured herein independent of the MFLP.

7 Discussion

7.1 There have been a total of 85 participants in the MFLP over the three years since the programme has been running. With an approximate total running and development costs of \$1,200,000 over the three years, the approximate cost of the programme per participant regardless of whether they graduate or not is \$14,118. This figure increases to \$15,385 for a graduate. The costs have been assigned based on the proportionate value of the outcomes and are outlined in Table 8.

Table 8 : Net Value per Dyad participating in the MFLP

Participant	Dyad Value (over 30 years)	Costs of MFLP	Net Economic Value
Adult	\$122,247	\$13,053	\$109,194
Child	\$ 5,657	\$ 604	\$ 5,053
Combined/Family	\$ 4,974	\$ 531	\$ 4,443
Total	\$132,878	\$14,118	\$118,690

7.2 Total participants have been used to calculate cost per participant as economic benefits are still attributable to participants who do not actually complete the programme. In the survey of participants, two respondents did not complete the programme, however, one completed 50% of the programme and the other 75% of the programme and both responded that they had experienced benefits in terms of improved incomes, positive effect on home/life, and an improvement in their child's learning. Secondly, the total graduation rate of the programme over the three years is 92%, and of those who did not graduate most stayed on for a substantial period of time before they pulled out (usually for unplanned circumstances such as pregnancy, or sick family members).

7.3 Based on the above table the total economic value net of programme costs is **\$118,690** per dyad. This is equivalent to a return of \$9.41 for every dollar spent, or a **941% return**.

7.4 Going forward, the MFLP expect approximate running costs of \$13,000 per family, which is equivalent of a \$10.22 return for every dollar spent or a 1,022% return.

7.5 When compared to programmes of a similar nature and international research measuring the economic benefits of such programmes the above figure is conservative. A comparative table is set out in Table 10.

Table 10: Comparison of Valuations of Outcomes from Literature with those estimated for the MFLP

Outcome Measure	MFLP	High/Scope	Columbia University Study	Job Corps	Maré and Chapple
PV of Net Increase in Parents income	\$119,399				\$60,000- \$150,000 ³⁹
PV of Net Increase in PACTT Childs Income	\$3,967	\$98,127			
PV of Net Increase in Other Childs Income	\$2,177				
Decrease in Adults Welfare Admin Costs	\$2,847				
Decrease in Child Welfare Admin Cost	\$803	\$4,176			
Decrease Crime/Domestic Violence Cost	\$2,797	\$277,796		\$7,258 ⁴⁰	
Decrease in Education Costs	\$888	\$16,702	\$14,687		
Other Measured Benefit		\$20,761			
Total	\$132,878	\$417,562			

³⁹ Does not measure the overall increase, in other words the total change from a negative position as a result of relying on welfare payments, to a positive non government supplemented income.

⁴⁰ Based on 1990 dollars.

7.6 It is important to note that there remains a number of other outcomes which have not been measured. These other outcomes, however, deserve some mention here.

- Increase in productivity – there are an economic benefits attributable to improvements in workforce productivity. Research shows that improved literacy skills have a strong impact on workforce productivity, and productivity gains have a significant impact on economic growth⁴¹. While the first round effect of productivity is reflected in the measured increase in incomes, the multiplier effect of this increase has not been measured.
- Self-esteem/Self Efficacy – these factors can have positive effects on the health and wellbeing of participants. Research has shown that measures of self-esteem and self-efficacy can result in improved health and future maintainable earnings (FME) of participants⁴².
- Health Costs – improved incomes, education and self-esteem can have positive effects on reducing health costs. There is conclusive evidence that these factors can significantly improve a person's health, and reduce subsequent health associated costs⁴³.
- Peer effects – there also exists peer effects of improved literacy skills and improved aspirations. These effects can have noticeable benefits at both the child and adult level. It has been shown that while changes in education, incomes and aspirations can have some negative effects particularly in Pasifika and Maori communities in the short term, the longer term benefits can lift entire communities from poverty through just one person⁴⁴.
- There are also the effects on other children in the family. While we have measured the benefits to the PACTT Child and one other child, in at least 70% of the families there are 3 or more children. The improved home life and parents/adults literacy skills, as well as peer effects of the MFLP child will have an impact on the performance on these other children.

7.7 Based on the 85 participants who have attended the MFLP over the three years, the total economic value attributable to the programme to date net of operating costs is approximately **\$10 million**.

7.8 If the MFLP were to obtain its desired funding for a further 100 families, the resulting net economic benefit would be a further **\$11.9 million**.

⁴¹ Economic Development Indicators 2005. Ministry of Economic Development & The Treasury.

⁴² Emler, M. 2005. Self-esteem: The costs and causes of low self-worth. Joseph Rowntree Foundation. Birmingham.

⁴³ Friiters, P. 2003. Estimating The Causal Effect of Income on Health: Evidence from Post Reunification East Germany. Centre for Economic Policy Research, Research School of Social Sciences, Australian National University

⁴⁴ Pasifika Women's Economic Well-Being Study (Final Report). 2006. Ministry of Womens Affairs; Influences of Maternal Employment and Early Childhood Education on Young Children's Cognitive and Behavioural Outcomes. 2004. Ministry of Women's Affairs.

7.9 Finally, if MFLP were able to achieve their target of 250 families per year, over a 30 year period this would result in a discounted economic NPV of **\$280 million**.

8 Conclusion

8.1 The approach to analyse the economic value of the MLFP has been based on international literature findings, the Benseman and Sutton (2005) study and recent survey results of participants. The analysis has taken conservative estimates on all findings and assumptions.

8.2 The economic benefits of the MFLP outcomes, despite the conservative nature of the analysis, is still considerable with the future value of participants to date estimated to be \$10 million over a staggered 30 year period.

8.3 The methodology used is supported by a strong body of comparable studies and a wide sample of programme participants. While a number of key assumptions had to be made, these assumptions are conservative and also well supported.

8.4 The key economic benefits identified as outcomes of the MFLP included increased incomes, improved child school performance, reduced reliance on government agencies, and reduced crime and education costs. These economic benefits were found to be reliable estimates of the economic outcomes of the MFLP.

8.5 The potential economic benefits of this programme appear to be significant with an overall return of 9:1.

8.6 At first glance the return seems surprising. However, because the target group of the MFLP is likely to come from a lower socio-economic demographic, there is a greater marginal return in lifting these incomes.

8.7 Finally, it needs to be recognised that these results can not be generalised over the entire population. The socio-economic demographics of those targeted by the MFLP is a group of society with great need, and the measured programme benefits will only be realised at this level as long as the programme continues to serve participants from this demographic.

Appendix A: Sample Survey Instructions

Guidelines for Interviews

COMET wishes to establish a clearer understanding of the value that has been gained by participants in the MFLP programmes over 2003, 2004 in economic terms. You are asked to interview programme participants to get an update on their current situation for family, education, personal development and career – *as they have been influenced by the MFLP programme*. The results of all interviews will enable us to estimate the overall monetary value or benefit that the MFLP programme has provided to everyone.

Interviews

Participants will be interviewed using a structured set of questions – see interview template below. This will assist with obtaining consistent information from interviews and ensure a quality process of analysis.

Conducting the Interview

The process for conducting the interview is as follows:

1. Introduce yourself
2. Explain the purpose of the interview (see the *Introduction* at the start of the questionnaire)
3. Explain that all information collected will not be attributed, and therefore anonymity is assured
4. Conduct the interview in the order of the template
5. Use the wording of the questions as provided
6. Make notes on the template as appropriate in recording answers to questions
7. At the end of the interview, thank interviewees for their time and assistance.

Using the Interview Template

The interview template is designed to enable you to gather information from participants on the benefits that they have received from the MFLP programme. It is important to ensure that people provide information without being 'lead' to the answer.

Do not give the interviewee the paper this is for the interviewer to complete.

However, ask the interviewee to read the completed questionnaire to ensure they agree with what has been recorded.

NOTE: it is important to stick to the order and wording of the questions.

Please follow the instructions on the template and ask the questions in the order that they are presented.

Questionnaire Logic

The logic of the questionnaire is as follows:

1. *Section A* provides information on details of the programme participant.
2. *Section B* asks 'open' questions to help people feel comfortable and get them talking. The open broad questions ensure that people give answers without being prompted or led in a particular direction.

This is quite important to validate the integrity of the information provided.

3. *Section C* gathers specific information about the work and education of the programme participants for BEFORE the programme, SINCE the programme, and NOW.
4. *Section D* asks questions about the children of the participants and the impact of the programme on them
5. *Section E* allows you to write down any comments that you feel might add to the information that has been gathered in the questions.

Completion of Interviews

Please check that all sections of the interview template have been covered before ending the interview, and that the interviewee is happy with what has been recorded. Completed interview templates should be returned to Bernadine Vesper at COMET.

THANK YOU FOR ASSISTING THE COMET MFLP VALUATION STUDY
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Appendix B: Survey Results

1. **Enrolled in Further Study** – indicates what further education course the participant is currently enrolled in.

Of those surveyed, **67%** have gone on to further study. The main areas of further study included the following:

Table 11

Area of Study	# of respondents
Diploma in Early Childhood Education	7
Certificate in Business/Commerce/Computers	6
Bachelor of Teaching	4
Diploma in Social Work/Sciences	2
Diploma in Teaching (Primary or Otherwise)	2
Other Diploma	1
Other Certificate	1

2. **Intending to Enrol in Further Study** – indicates what field of study the participant intends to enrol in the next three years.

Of those surveyed, **15%** are intending to do further study. The main areas of intended study include the following

Table 12

Area of Study	# of respondents
Diploma in Social Work/Sciences	1
Diploma in Teaching (Primary or Otherwise)	1
Other Diploma	1
Other Bachelor	2

3. **Reduced Reliance on Government Agencies** – indicates what level of impact the MFLP course has had on the respondents reliance on government agencies such as WINZ.

Responses were as follows:

Table 13

Reduced Reliance	Coded as	# of respondents
Not Applicable	N/A	10
Some Reduced Reliance	1	8
Significant Reduced Reliance	2	9
No Further Reliance	3	7

4. **Net Change in Income Since MFLP** – indicates the net change in the current weekly income level of participants since completing the MFLP course. Where figures are blank there has been no change. It is important to note here that a large number of respondents that are now completing full-time study so there has been no change or a reduction in some income levels.

The average net change in income of all respondents since completion of the MFLP was **\$200.50**. This was a move from a net income average of -\$45.27 prior to MFLP to a net income average of \$186.50 since the MFLP, indicating a positive swing away from a reliance on the government for income.

5. **Expected Future Income** – indicates what level of weekly income the respondents expect to obtain based on the current field or intended field of study. It is important to note here that these figures are averages and are based on first year incomes for graduates. Where no information was available for a particular field of study, the NZ Statistics average income figure was used. It is also important to note that assessing incomes this way is a conservative method of valuation.

The average yearly figures used were as follows:

Teaching ECE	\$33,800 ⁴⁵
Teaching Primary	\$34,684 ⁴⁶
Social Work/Social Sciences	\$33,379 ⁴⁷
NZ Average Wage	\$30,472 ⁴⁸

⁴⁵ Ministry of Education, Remuneration in the Early Childhood Education Teacher-led Workforce, 2005

⁴⁶ Teach NZ, Teachers Salary Survey, 2005

⁴⁷ CYF, 2005

⁴⁸ Statistics New Zealand, 2006

The average income for expected future incomes of all respondents is **\$529.62**, which is a net change of **\$574.88** from the average income of respondents incomes prior to the MFLP.

6. **Improvement in PACTT Childs School Performance** – This indicates the respondent assessment of the improvement in their PACTT Child’s performance at school since completing the MFLP. This is further evidenced by a questionnaire sent to each PACTT Child’s teacher asking their assessment of the child’s improvement since completing MFLP. Where significant variances exists the lower of the two assessments is used. There were, however, very few (15%) instances where this was the case.

94% of respondent noticed an improvement in their PACTT Child’s performance at school. Responses were as follows:

Table 14

Reduced Reliance	Coded as	# of respondents
No Improvement	0	2 (6%)
Little Improvement	1	11 (32%)
Some Improvement	2	14 (41%)
Significant Improvement	3	7 (21%)

7. **Improvement in Other Children’s School Performance** – As for the PACTT Child, this indicates the parent’s assessment of the improvement in school performance of other children in the family who did not participate in the MFLP.

91% of respondent who had other children who did not participate in the MFLP noticed an improvement in these children’s performance at school. Responses were as follows:

Table 15

Reduced Reliance	Coded as	# of respondents
No Improvement	0	3 (9%)
Little Improvement	1	10 (29%)
Some Improvement	2	9 (27%)
Significant Improvement	3	2 (6%)
Not Applicable/No Other Children	N/A	10 (29%)

8. ***Increase in Children’s Aspirations and Parents Aspirations for Children*** – indicates the increase in aspirations for both parents and children since completing the course.

100% of respondent had a positive change in aspirations, with **38%** experiencing a significant change in aspirations. Responses were as follows:

Table 16

Reduced Reliance	Coded as	# of respondents
No change in aspirations	0	0 (0%)
Little increase in aspirations	1	3 (9%)
Some Increase in aspirations	2	18 (53%)
Significant Increase in aspirations	3	13 (38%)

9. ***Impact on Home Environment/Life*** – indicates the level of positive change in the home/family life since completion of the course as assessed by the respondent.

100% of respondent had a positive change in home/family life, with **38%** experiencing a significant change in home/family life. Responses were as follows:

Table 17

Reduced Reliance	Coded as	# of respondents
No Change	0	0 (0%)
Little positive change	1	3 (9%)
Some positive change	2	18 (53%)
Significant positive change	3	13 (38%)

Table 18

Where blank in Current or Future Weekly Income columns equals no change.

Respondent Number	Enrolled in Further Study	Further Study Intended	Reliance on Govt Agencies	Prior Weekly Income \$ (Net of Gov Benefits)	Current Weekly Income \$	Expected Future Weekly Income \$	PACCT Child	Other Children	Aspirations	Positive Home Impact
1	Diploma of Teaching ECE		N/A	0	0	650	2	1	1	3
2		Arts Course	N/A	-280	-280	586	3	N/A	3	2
3	Social Workers Certificate		1	-160		642	2	N/A	3	2
4	Diploma of Teaching		2	150		667	1	1	2	3
5	Diploma in Sport & Recreation		2	100		586	1	0	2	3
6	Diploma in Mangement		3	100	300	586	2	2	1	2
7	Computer/Business Admin - Distance learning		3	-434		586	1	1	2	2
8	Bus Driving Licence		3	-250	500		2	2	2	2
9		Teaching	3	-140		667	3	2	3	2
10	Diploma of Teaching ECE		N/A	500		650	1	2	3	2
11	Bachelor of Primary teaching		N/A	0		667	3	N/A	2	3
12	Diploma Social Work		2	-100	-300	642	2	1	3	2
13	Diploma of Teaching ECE		N/A	500	500	650	1	1	2	3
14	Certificate of Social Science		1	-250		642	2	1	1	2
15	Diploma of Teaching ECE		1	-200		650	1	N/A	2	1
16	Certificate in Small Business Management		N/A	300	700		3	2	3	2
17	Sick Mother		N/A	-250	-250		2	N/A	2	1
18	Level 4 Certificate in Communication	Diploma in Comm	2	0		586	1	N/A	2	3
19	N/A		1	0	500		1	1	2	2
20	Diploma in Teaching		1	1000	100	667	1	2	2	1
21	Diploma of Teaching ECE		2	0	200	650	2	2	3	3
22	Level 2 Computer Certificate		2	-250		586	1	N/A	3	2
23		Social Work	N/A	-200	-200	586	2	2	3	2
24	Bachelor of Education		N/A	400	600	667	2	1	3	3
25	Diploma of Teaching ECE		2	-150	50	650	4	N/A	3	3
26		Speech Therapy	2	100	300		1	1	2	2
27	Had a Baby		2	-250	500		1	N/A	2	2
28	Diploma of Teaching ECE		N/A	-265		650	2	2	3	3
29	Bachelor of Education		1	-360		667	2	0	3	3
30	Diploma of Teaching		3	50		667	0	N/A	2	3
31	N/A		3	-350	100		2	1	2	2
32	Did Not finished MFLP		3	-390	320		3	3	2	2
33	Did Not finished MFLP		1	-210	-210		3	3	2	3
34	N/A		1	-250	300		2	1	2	2