



Findings of the Reading in Workplace Literacy Programmes Study

By Greg Allen

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Contents

Findings of the Reading in Workplace Literacy Programmes Study	1
Summary	1
Background to the study.....	2
Aims of the study	3
Reading activity.....	4
Workplace literacy programmes.....	5
The study methodology	5
Design.....	5
Participant recruitment.....	5
Reading skill assessment and reading activity survey.....	6
Analysis	7
Results.....	8
Participant characteristics.....	8
Persistence and attrition in the study.....	8
Reading skill assessments	9
Reading activity	11
Reading materials provision and outcomes.....	13
Discussion.....	15
References	16
Appendix 1 – Reading Practices Questionnaire Form.....	17
Appendix 2 – Reading Activity Survey Form	20

Findings of the Reading in Workplace Literacy Programmes Study

Summary

The Reading in Workplace Literacy Programmes Study was undertaken to investigate whether providing additional reading materials for interest or enjoyment would help increase the reading skills of participants in workplace literacy programmes, or improve the retention of reading skills after the completion of the programmes.

The aims of the study were to explore:

- Does the provision of reading materials for interest or enjoyment (to read in participants' own time) improve reading skill gains for participants on workplace literacy programmes (as assessed by the Reading Assessment Tool)?
- Does the provision of reading materials for interest or enjoyment improve the retention of reading skills?
- Does the provision of reading materials for interest and enjoyment change the amount of time participants spent reading or the frequency and range of their reading at work and at home?

The study involved 145 employees in ten Auckland companies, between January 2014 and July 2015. Free reading materials were provided for fourteen months to 97 of the 145 participants, who were split into three groups:

- Group one took part in a workplace literacy programme for seven months (WLP only)
- Group two took part in a seven-month workplace literacy programme, and received reading materials for the seven months of the programme and for a further seven months after completing the programme (WLP + reading)
- Group three received reading materials for fourteen months (Reading only).

The workplace literacy programmes ran for around seven months, with participants receiving 1.5 to 2 hours training each week up to a total of approximately 40 hours by the end of the programme.

Each month, for fourteen months, groups two and three were offered a range of new reading materials that could be read in participants' own time. Materials were selected to match participants' interests, requests, feedback and reading levels¹ as closely as possible. The identification, purchasing, and distribution of the reading materials involved considerable time and cost.

At the start of the study, all participants read for work related purposes (to obtain information from work orders or operating procedures), although many did not consciously think of this as reading. Additionally, 96% of participants reported regular discretionary reading (referred to in this study as reading for interest or enjoyment). Mostly this was reading the local free community newspaper, online news and social media.

¹ Participants who had lower reading levels could choose short adult readers.

- Participants on workplace literacy programmes, particularly those with English as a second or other language, made significant² reading skill gains over the period of the programme, but the addition of reading materials made little or no difference to the gains made, or to the retention of reading skills after the training had completed.
- The provision of reading materials did increase the amount of time participants spent reading each week for interest and enjoyment.
- Those receiving reading materials, but not on a literacy programme, made some gain in reading skills, and a number of these participants reported personal benefits from taking time to read more.
- The provision of reading materials over the period of the workplace programme and for an additional seven months had no significant effect on the retention of reading skills.
- The provision of reading materials had no significant impact on the frequency³ of reading or the range of materials read at home or at work.

There was considerable time involved in the identification, purchase and distribution of the reading materials, however, the positive impact on reading skill gains; retention of skills; increase in time spent reading; frequency of reading and range of materials read were all relatively small.

In conclusion, it was found that the difference made by the provision of the reading materials for interest or enjoyment was not significant or sustained enough to make the provision of reading materials a cost effective strategy to enhance or maintain reading skills in workplace literacy training.

Background to the study

As ‘knowledge-based’ economies emerge worldwide, workers are increasingly expected to acquire higher levels of education and skill to enjoy labour market success⁴. Most New Zealand adults can read, write and use numbers to some extent, but an estimated 43% of New Zealanders, have difficulty with the literacy demands of their job.⁵

The Workplace Literacy Fund was established to support literacy, language and numeracy training programmes in New Zealand workplaces at no cost to employees, reaching adults who otherwise may not be engaged in learning. The Workplace Literacy Fund allows for forty hours of training for employees with low literacy, language or numeracy skills. Employees typically attend the training in small groups of two to five, in work time, at their workplace, in training sessions of one to four hours per week.

The Adult Literacy, Language and Numeracy Learning Progressions (the Progressions) and a standardised Reading, Writing and Numeracy Assessment Tool (the Assessment Tool) have been developed by the Tertiary Education Commission as the framework for the development and measurement of adult literacy skills in New Zealand.

² Throughout this report significant refers to statistically significant.

³ Frequency refers to how often as distinct from how long.

⁴ Literacy for Life: Further results from the Adult Literacy and Life Skills Survey, OECD and Statistics Canada, 2011, OECD Publishing, page 80.

⁵ Josh Williams, Senior Manager Tertiary Education Policy, Ministry of Education, Presentation, Literacy and Numeracy at the core, 27 June 2013

Participants in workplace literacy programmes complete reading and numeracy assessments using the Assessment Tool at the start and end of the workplace literacy programmes.

Research into literacy interventions for adults has considered the impact of basic skills programmes and the length of training time (level of participation) required to make significant literacy skill gains. Research and literature reviews of adult literacy training programmes identify that they often have little or low effect on literacy gains (Venezky, et al., 1994). In their review of evidence-based literature, Benseman, et al. (2005) noted that “providing tuition for LNL [literacy, numeracy and language] learners is more effective than not.” Reder (2013) in his longitudinal study of adult learning, notes “there is no immediate relationship between proficiency change and participation in adult basic skills programmes” and contends “programme participation is directly related to changes in engagement in literacy practices”, which over time can lead to growth in literacy proficiency.

Reports and studies on the level of participation in adult literacy programmes have identified that from 35 to 300+ hours of learning is needed to make ‘grade level’ improvement (Benseman, et al. 2005). A literature review undertaken by Vorhaus, et al. (2011) identified that the time needed to make significant learning progress is often in excess of 100 hours. The Alkema & Rean (2014) literature review reported “studies in the UK and New Zealand found that ‘statistically significant’ gain was made in 35–39 hours”. Fitzgerald, et al. (1997) in their study of persistence in adult literacy learning found that hours of instruction had little effect on outcomes for study participants taking part in Adult Basic Education programmes. Instead, full-time tutors, the use of personalised curricula, and tailoring the course to the participant were the main influences on improving literacy.

There has also been research on reading for enjoyment, as an intervention or a component in intervention, for improving reading skills and habits. Both Rodrigo, et al. (2014) and Greenberg, et al. (2011) found some skill gains, but not significant when compared with other types of intervention. They found a change in reading habits did result from extensive reading approaches, including increased motivation to read, development of improved reading habits and a positive change in reading behaviour.

A number of researchers and literature reviews, including Shore, et al. (2013), Hock & Mellard (2011), Greenberg, et al. (2006) and Benseman, et al. (2005), have found evidence that deliberate acts of teaching are required for significant gain in reading skills, that is, reading practice alone will not improve reading skills.

Aims of the study

The aim of the Reading in Workplace Literacy Programmes Study was to explore:

- Does the provision of extra reading materials improve reading skill gains for participants on workplace literacy programmes (as assessed by the Reading Assessment Tool)?
- Does the provision of extra reading materials improve the retention of reading skills after a literacy programme has completed?
- Does the provision of extra reading materials help to increased the amount of time spent reading or the frequency and range of reading at work and at home?

The hypotheses were:

- Reading skill increases would not be evident without deliberate acts of teaching, that is, providing additional reading alone would not increase participants reading skills, however, the

provision of extra reading materials may improve reading gains made during a literacy programme.

- Continued provision of reading materials reading after a workplace literacy programme completed would improve skill retention.
- Participants receiving reading materials would increase the range and amount of reading they did at work and at home.

The study involved 145 people employed in ten Auckland companies over a fourteen-month period. The participants were placed into three study groups:

- Group one took part in a workplace literacy programme for seven months (WLP only)
- Group two took part in a seven-month workplace literacy programme, and received reading materials for the seven months of the programme and for a further seven months after completing the programme (WLP + reading)
- Group three received reading materials for fourteen months (Reading only)

Participants in all groups completed a reading skills assessment and a reading activity survey at the start of the study (Pre), after seven months (or at the completion of their workplace literacy programme (Post) and again after fourteen months from the start of the study (Follow-up).

Reading activity

At the start of the study, all participants identified that they read for information and/or work related purposes (such as job sheets or work orders and operating procedures), although most did not consciously think of this as reading. When asked about reading, initial responses related more to discretionary reading, including newspapers, magazines and books and social media such as Facebook. Participants needed prompting to identify other types of reading, such as the reading for information at work and home, for example, signs, labels, and maps.

At the start of the study, 139 (96%) of participants reported doing some reading for interest or enjoyment, spending on average about 3.5 hours per week.

- 134 (92%) reported regularly (daily or weekly) reading a newspaper at work or at home.
- 96 (66%) reported regularly reading magazines for interest or enjoyment.
- 49 (34%) reported that they regularly read books: novels or non-fiction works for interest or enjoyment.
- 36 (25%) reported never reading books.

During the fourteen months of the study, Groups two (WLP + reading) and three (Reading only), totalling 97 participants, were delivered reading materials (magazines or books) every month. It was essential to match reading materials as much as possible to the interests and skill levels of participants, and this was a time intensive and costly aspect of the study.

Each month, participants in the groups getting reading materials were asked for feedback about what they had read in the previous month: how much they had read; what they enjoyed; what they did not enjoy; how easy or difficult they found the materials to read; and any change in materials sought to inform the purchase and provision of the reading materials. New reading materials were purchased each month and offered to these participants. They each took from one to ten books and magazines to read over the Following month. As the study progressed participants would swap

reading materials with each other, and by the end of the fourteen months of the study, were recommending books and other reading materials to colleagues and family members.

Workplace literacy programmes

Participants in six workplace literacy programmes, at six companies were involved in the study. Each literacy programme had a different tutor, except one programme where two tutors delivered to different groups within the same organisation, and two smaller programmes where one tutor took both, one with reading materials and one not. Tuition took place in work time, in small groups, with sessions of 1.5 or 2 hours weekly.

The literacy programmes were contextualised so that training covered the documents, language and calculations required of the participants in their job roles, appropriate to the skill levels of the participants in each group. A combination of oral language (speaking and listening), reading, writing, and/or numeracy skills were taught over the programmes.

The amount of specific reading skills training that participants received in their literacy programmes varied depending on their initial skill levels and the level of reading demands of their respective job roles. Tutors identified the reading skills and strategies the participants already knew or used and built on those using the vocabulary and comprehension strategies described in the Learning Progressions⁶.

The study methodology

Design

The study design was based around three study groups with approximately 50 participants each:

- Group one took part in a workplace literacy programme for seven months (WLP only)
- Group two took part in a seven-month workplace literacy programme, and received reading materials for the seven months of the programme and for a further seven months after completing the programme (WLP + reading)
- Group three received reading materials for fourteen months (Reading only)

The study ran between January 2014 and June 2015. Participants in each group were surveyed and assessed at the start of the study, at seven months (or at completion of their workplace literacy programmes) and a Follow-up at fourteen months. Participation in the study was voluntary.

Participant recruitment

Participant groups were recruited and the allocation of groups was randomised based on the start date of the workplace literacy programme and the agreement of the organisation. As each literacy programme was scheduled to start, the programmes were randomly allocated to lists for study groups one and two (WLP only and WLP + reading respectively). The companies were then asked if they wanted to take part in the study. If a company agreed to take part, volunteers from the

⁶ Learning Progressions for Adult Literacy and Numeracy: Background Information, Tertiary Education Commission, 2008

programme participants were sought. This process continued until the required number of participants were reached in each of the WLP only and WLP + reading groups.

To identify possibly participants for study Group three (Reading only), a randomly ordered list of organisations from similar industry groups and sizes to those taking part in the literacy programmes was generated from a commercial business database. The businesses were contacted and asked if they would take part in the study, and if so then volunteers were sought, at similar work level / job role as those in Groups one and two and enrolled into Group three (Reading only).

149 participants were initially enrolled into the study:

- 51 into Group one – WLP only
- 49 into Group two – WLP + reading
- 49 into Group three – Reading only.

The 100 who enrolled through workplace literacy programmes were from six different companies, three providing participants for the WLP only group, and three providing participants for the WLP + reading group. The participants in the Reading only group came from four companies.

At recruitment, a range of demographic information and reading interests (for those recruited into groups being given reading materials) was captured. After the initial enrolment and before the first assessments and surveys, four enrollees from the literacy programmes groups one and two withdrew from the study.

Reading skill assessment and reading activity survey

Participants completed a reading skill assessment and a reading activity survey three times during the study:

- Pre: at the start of a workplace programme or prior to receiving reading materials
- Post: at the completion of a workplace programme or an equivalent time for those not on programmes
- Follow-up: six to seven months after the Post assessment.

The three reading skill assessments were completed using the Reading Assessment of the Tertiary Education Commission's Literacy and Numeracy for Adults Assessment Tool (the Assessment Tool). The Assessment Tool was used to measure reading skill gains in this study as it is the current measure of adult literacy skills in New Zealand.

In their annotated bibliography of adult literacy, language and numeracy (LLN) research literature and its impact and implications for the New Zealand context, Alkema and Rean, (2014), noted "Given the recentness of the introduction of the Assessment Tool, there is little research evidence about its use and impact." Alkema and Rean commented on a paper by Eagle-Ashmore (2012), about the adequacy of the Assessment Tool as a reliable indicator of literacy gain, "The research methodology is unclear and it appears to be more of an opinion piece than research based" (Page 30).

Workbase reviewed a sample of 1,000 workplace programme participants' pre- and post-programme Assessment Tool reading scores. Those participants who scored low in their initial assessments achieved greater gains than those who had higher scores in their initial assessments. Those participants that scored highly in their initial assessment, getting close or up to 100% of the

answers correct could, in a subsequent assessment, again get close or up to 100% correct yet achieve a lower overall assessment score based on the reading tasks and associated level of questions in each assessment. For this reason, 13 participants who scored highly in the Pre assessment, (scores over 738 - Step 6 on the Reading Progressions), were not included in the analysis of reading gains using the Assessment Tool in this study.

A reading activity survey tool was developed to capture participant information, and the self-reported range and frequency of reading activity, including reading for interest or enjoyment and reading for information, both at work and at home.

Analysis

Four main types of analysis were conducted:

- a. Participant characteristics were reviewed to ensure the study groups were similar. Characteristics of participants who left the study before completion (the attrition group) were also compared with those completing the study.
- b. Analysis of change in reading skills (measured using the data from the Assessment Tool).
- c. Analysis of change in hours per week spent reading (measured using data from the Reading Activity Surveys).
- d. Analysis of range of reading materials and change in frequency of reading (measured using data from the Reading Activity Surveys).

In addition, a review of the reading completed by those in the groups receiving reading materials was undertaken.

Participant characteristics were compared using chi-squared tests. The characteristics included age, gender, ethnicity, highest level of education, whether the participant was born in New Zealand, and whether or not English was a first language.

Repeated measures ANOVA was used to analyse change in reading assessment scores, change in hours spent reading and change in the range of reading materials read. Then ANOVA and contrasts were used to analyse the difference between Pre-study scores with Post and Follow-up scores.

Contrasts were used to measure the effects between:

- Those on literacy programmes and those just getting reading materials (WLP only and WLP + Reading with Reading only)
- Those getting reading materials and those not getting reading materials (WLP + Reading and Reading only with WLP only)
- Those on programmes with reading materials and those on programmes without reading materials (WLP + reading with WLP only)
- Those getting reading materials only and those on a programme only. (Reading only with WLP only)

Paired t-tests were used to analyse individual group results.

The analysis of change in frequency of reading different materials was completed using log linear analysis.

Results

Participant characteristics

Participants' ages ranged from 20 to 63, with a mean age of 41 years.

The majority, 95 (64%), of the participants were male.

The ethnic distribution of participants was as below, and reasonably consistent between study groups:

- Pacifica: 73 (49%)
- Asian: 40 (27%)
- European/Pakeha: 15 (10%)
- Maori: 12 (8%)
- Other: 6 (4%)
- Not stated: 3 (2%).

The majority of participants, 113 (76%), were born outside New Zealand, and 110 (74%) had English as a second or other language.

Education levels based on participants' self-reported highest level of education achieved (percentages are rounded) were also similar between study groups:

- 2 (1%) had no formal education
- 15 (10%) had up to two years of secondary education
- 72 (48%) had three or more years of secondary education
- 27 (18%) had tertiary education to a National Certificate or Diploma level
- 33 (22%) had a university degree, mostly from overseas universities.

The three study groups were similar in age, gender and ethnicity.

Whether participants had English as their first language or had English as a second or other language (ESOL) varied significantly across the study groups. This was a likely confounding influence on results, so the analysis of results was completed by whether participants used English as their first language, or English was a second or other language (ESOL).

Persistence and attrition in the study

Attrition was reasonably low at 11% between Pre and Post assessments, rising to 24% by the Follow-up assessments and surveys. Attrition was due to people wanting to withdraw from the study, moving to new jobs, and at Follow-up two organisations were particularly busy with high production volumes so some participants were unable to complete the final assessments and surveys.

Attendance rates for the workplace literacy programmes was high, averaging 92%, with participants attending on average 43 hours of tuition (sd=4.5 hours). Attendance was consistent across both workplace literacy programme study groups, irrespective of first language.

Table 1: Participant attrition and persistence

Group	Description	n Pre		n Post		n Follow-up	
		First language English	ESOL	First language English	ESOL	First language English	ESOL
Group one	WLP only	6	42	4	38	2	28
Group two	WLP + reading	12	36	11	35	8	34
Group three	Reading only	22	27	19	25	18	22
		40	105	34	98	28	84

There was no significant difference in ethnicity, gender, English as a first language, highest levels of education, and attendance rates between the attrition group and those completing the study. The average age of those in the attrition group was 6 years younger than the participants completing the study.

Due to high volumes of work at their places of employment, six participants in the WLP only group completed their Follow-up assessments unobserved by the researcher. These results were excluded from the Follow-up analysis.

Reading skill assessments

Participants in the workplace literacy programmes attended an average of 43 hours, with an estimated 14 hours of training time spent on reading strategies and reading activity.

Pre – Post analysis of reading assessment score gains

This analysis included those who completed Pre and Post assessments, excluding those who scored very high in their first (Pre) assessment.

The repeated measures analysis of variance (ANOVA), for Pre and Post assessments of participants with English as a first language, showed no significant change over time, no significant difference between study groups, and no significant interaction between study groups over time.

The repeated measures ANOVA for Pre and Post assessments for ESOL participants showed significant change over time ($p < 0.001$), but no significant difference between study groups, and no significant interaction between study groups. Those ESOL participants on workplace literacy programmes showed significant gain over the period of the programme ($p = 0.007$), but there was no evidence that the provision of reading materials made any difference to the reading gains.

The provision of reading materials to the Reading only group appeared to make little impact on the gains made by participants with English as a first language, however there was some statistical evidence ($p = 0.065$) that ESOL participants in the Reading only group did make some reading assessment score gains.

There was no significant evidence in the Pre-Post analysis that the provision of reading materials made any difference to reading assessment score gains by participants on workplace literacy programmes, the level of gains being about the same for each group. ESOL participants in the

Reading only group did make some gain, though smaller in magnitude than those on literacy programmes.

Figure 1: Change in assessment scores Pre and Post for participants with English as a first language.

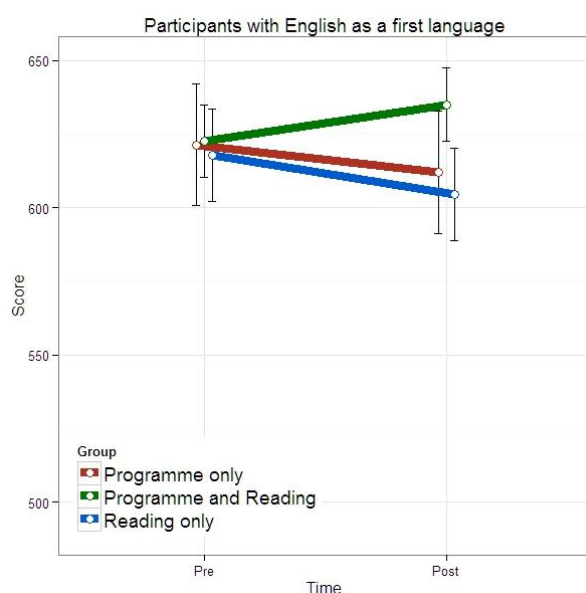


Figure 2: Change in assessment scores Pre and Post for participants with English as a second or other language.

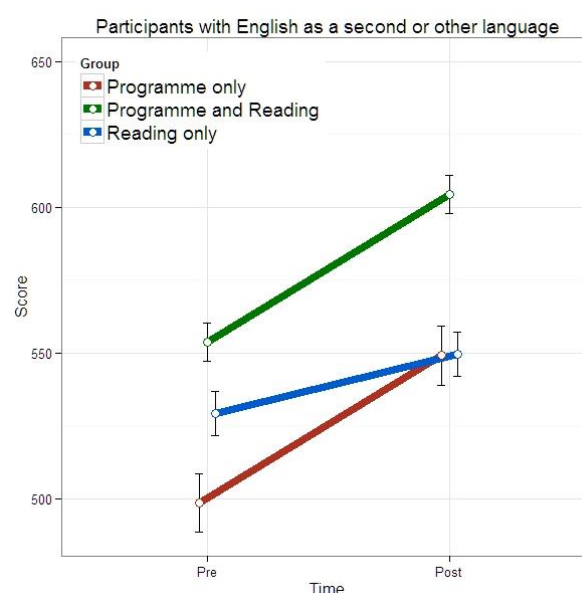


Table 2: Participants completing Pre and Post assessments

Group	Description	First language	n	Pre Assessment mean (sd)	Post Assessment mean (sd)	p value (paired t test)
Group one	WLP only	English	3	621 (65)	612 (73)	0.564
		Other	38	499 (116)	549 (132)	0.000 ***
Group two	WLP + reading	English	10	623 (62)	635 (95)	0.445
		Other	35	554 (96)	604 (81)	0.000 ***
Group three	Reading only	English	15	618 (51)	604 (79)	0.525
		Other	24	529 (93)	550 (104)	0.065 .

Pre – Post – Follow-up analysis of reading assessment score gains

This analysis included participants who completed Pre, Post and Follow-up assessments, excluding those who scored very high in their first (Pre) assessment, and six participants who did not complete their assessments under the observation of the researcher.

The Pre, Post and Follow-up repeated measures ANOVA for participants with English as a first language provided no significant evidence to a difference in reading assessment scores over time ($p=0.702$), between groups ($p=0.62$), or for an interaction between group and time ($p=0.708$).

The Pre, Post and Follow-up repeated measures ANOVA for participants with English as a second or other language on workplace programmes were significant over time ($p<0.001$), but not significant by group ($p=0.105$) or for an interaction between group and time ($p=0.443$).

While there was a drop in assessment scores between Post and Follow-up assessments for ESOL participants in both workplace literacy programme groups (WLP Only and WLP + Reading), the ESOL participants on workplace programmes showed evidence of skill retention at Follow-up when

compared to the Pre study scores. There was no evidence that the provision of additional reading materials had any impact on the score gain or retention of skills for participants in the WLP Only and WLP + Reading groups.

There was some evidence ($p=0.059$) of skill retention/gains at Follow-up by ESOL participants in the Reading only group.

Figure 3: Change in assessment scores Pre, Post and Follow-up for participants with English as a first language.

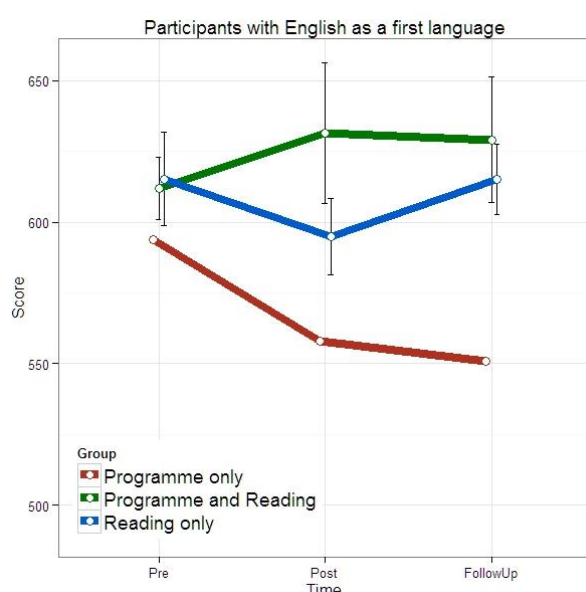


Figure 4: Change in assessment scores Pre, Post and Follow-up for participants with English as a second or other language.

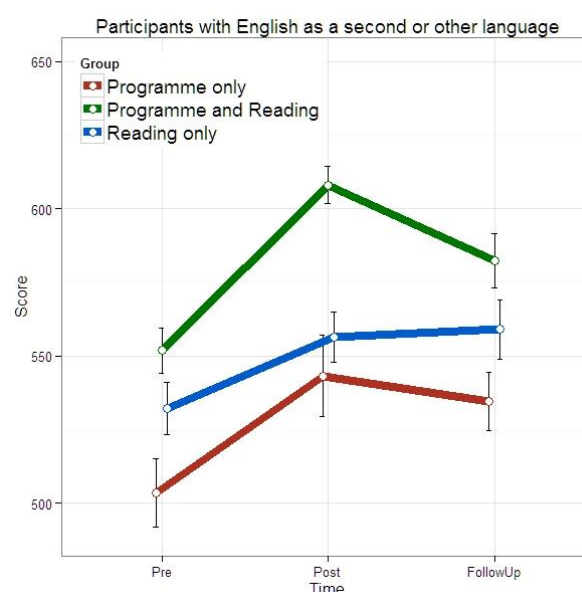


Table 3: Participants completing Pre and Follow-up assessments

Group	Description	First language	n	Pre Assessment mean (sd)	Follow-up Assessment mean (sd)	p value (paired t test)
Group one	WLP only	English	1	594 n/a	551 n/a	
		Other	22	503 (104)	534 (88)	0.028 *
Group two	WLP + reading	English	7	612 (60)	629 (55)	0.336
		Other	34	551 (96)	582 (90)	0.018 *
Group three	Reading only	English	14	615 (51)	615 (69)	0.994
		Other	21	532 (99)	559 (133)	0.059 .

Reading activity

Pre – Post analysis of hours spent reading for enjoyment

This analysis included all participants who completed the Pre and Post surveys.

The Pre-Post repeated measures ANOVA gave evidence for a change in hours spent reading for interest or enjoyment over time for English as a first language study groups ($p=0.002$) and ESOL study groups ($p<0.001$), but no significant evidence of a difference between groups or for an interaction between group and time.

For the English first language speakers there was significant evidence of a difference between participants in the group receiving Workplace Literacy Programme training with reading, and those in the reading only group ($p=0.032$). There was a difference between participants in groups that had programmes (with or without reading), and those in the reading only group, but not significant ($p=0.092$).

For the ESOL participants there was no evidence for a difference between study groups over time. All groups increased the hours they spent reading for interest or enjoyment, but the provision of reading materials did not seem to have any increased effect for those on programmes. Participants in the group getting reading materials only (not on programmes) also increased the hours they spent reading for interest or enjoyment.

Figure 5: Change in time spent reading for interest or enjoyment between Pre and Post surveys, for participants with English as a first language.

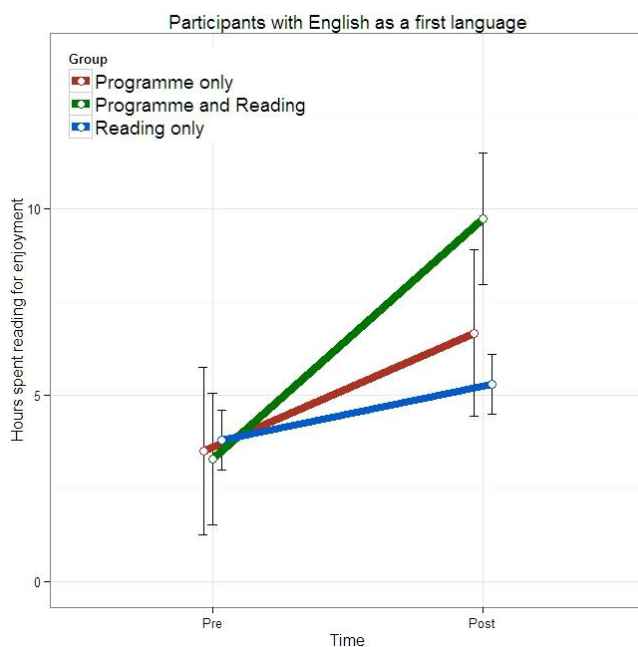
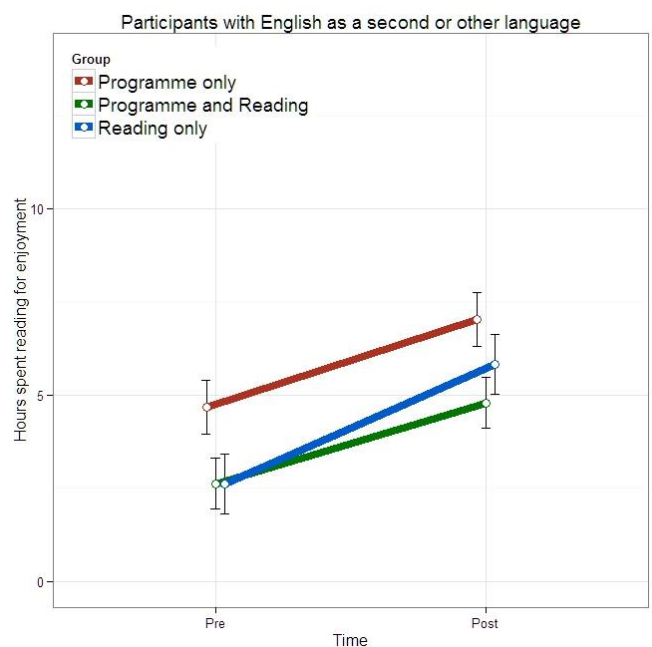


Figure 6: Change in time spent reading for interest or enjoyment between Pre and Post surveys, for participants with English as a second or other language.



Pre – Post – Follow-up analysis of hours spent reading for enjoyment

The repeated measures ANOVA for the Pre – Post – Follow-up surveys showed evidence for change over time for the English first language study groups ($p=0.027$) and the English as a second or other language study groups ($p=0.005$), but no significant evidence by study group or the group time interaction.

Figure 7: Change in time spent reading for interest or enjoyment between Pre and Follow-up surveys, for participants with English as a first language.

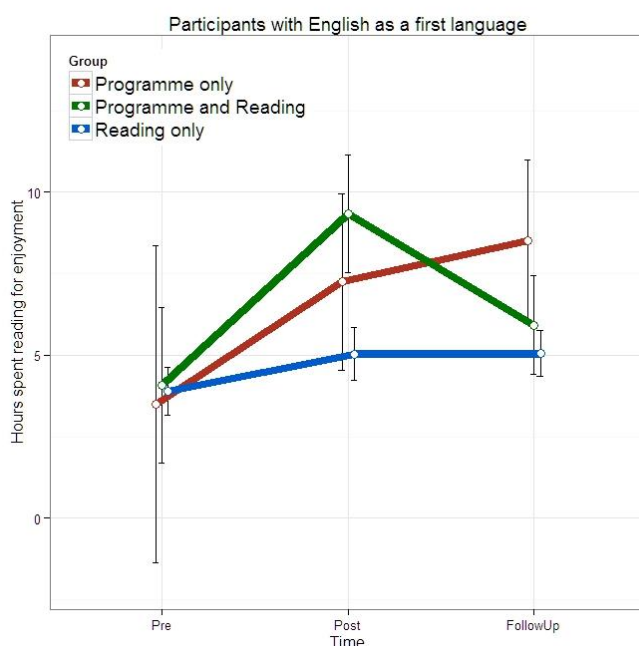
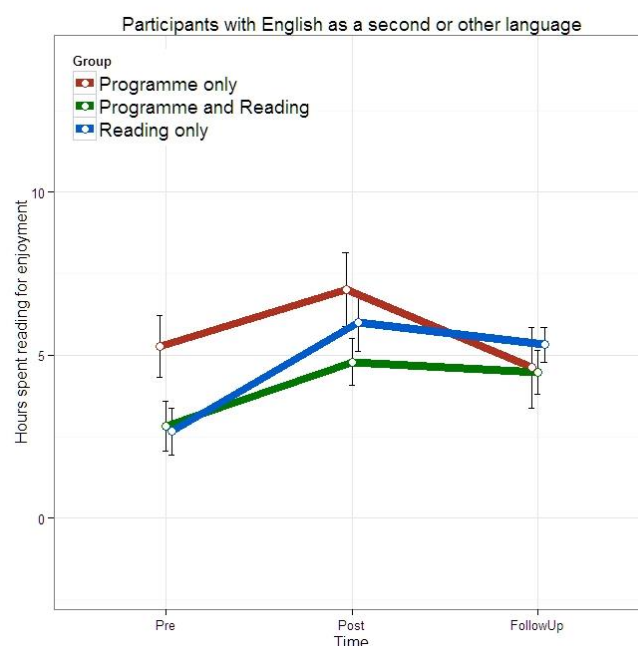


Figure 8: Change in time spent reading for interest or enjoyment between Pre and Follow-up surveys, for participants with English as a second or other language.



Frequency and range of reading

Another factor considered in the analysis of the reading activity survey was the frequency of reading a range of different materials at work and at home, reading for information as well as for interest or enjoyment (newspapers, magazines and books).

Log linear analysis showed some increase in the number and frequency of materials read for information at work at Post and Follow-up surveys for WLP Only and WLP + reading groups, both attending Workplace Literacy Programmes, however none of the increases were significant.

The Reading only group showed some evidence of increase in the frequency of reading at home for information but the results were not significant.

Reading materials provision and outcomes

Participants receiving reading materials read a total of 2,700 books and magazines over the study period, averaging two items per month. Over the fourteen-month study period, 90% of the participants read at least two substantive books, noting that 25% of the participants getting reading materials initially reported “never” reading books.

Over the study, 2,200 books and magazines were purchased or obtained for delivery to participants. This was made up of over 100 magazine titles, 220 fiction titles, 270 non-fiction titles, 160 children's titles (participants taking books for children were asked to do so only if they were going to read the book to children in their households) and 20 other assorted titles. Fiction and non-fiction books were read in equal numbers.

The most popular type of non-fiction books requested were bibliographies of sporting or other national identities or 'real life' stories about people and their exploits. The most read titles included books by or about Bear Grylls, "Richie McCaw, The Open Side", and books on Nelson Mandela. Many overseas born participants requested books on their homelands, especially participants from the Pacific Islands. Unfortunately books about the Pacific Islands and Pacific Islanders were difficult to find, and when purchased were highly sought after.

The most read fiction authors were James Patterson, Danielle Steel, Nicholas Sparks, and Lee Child. Fiction titles requested were mostly romance and detective stories, but also included war stories, science fiction and fantasy and books written by New Zealanders, from Barry Crump through to Eleanor Catton.

The most widely read magazine titles were the Spacifik, NZ Healthy Food Guide, NZ Handyman and NZ Fishing News. Over 100 magazine titles were purchased to meet participants requests, covering topics such as computer gaming, gardening, sports, weekly woman's magazines, as well as Readers Digest, National Geographic, and New Zealand Geographic.

Every month, over the study period, participants were offered a selection of titles aligned to their stated interests. Participants often took several titles: magazines and books. At each monthly visit, the researcher reviewed the previous months reading with participants. Books were returned unread, little read, mostly read or fully read. Some participants were quick to identify reading likes, but for others it took several months to identify the types of reading materials they were interested in enough to read mostly or fully.

There was significant time and effort involved in identifying and meeting the reading interests of the participants. Researchers had to identify the interests of the participants and in many cases identify materials that were at a suitable reading level. Those with low reading skills initially took magazines on familiar topics of interest such as fishing, league, rugby, DIY magazines, weekly magazines, and healthy eating. As confidence developed that any reasonable reading material request would be met, many participants moved to try reading books, fiction and non-fiction.

When participants did find titles interesting they recommended these to others in the group and often reported passing the books to co-workers and other family members to read.

Anecdotal feedback from participants was favourable, with most enjoying the reading, and comments included "Reading more has reopened my mind", "This is the first book I have read and I read it in two days. Sometimes I had to go back over parts to remember what had gone before", "Awesome!".

After the first seven months of the study 98% (up 2%) of participants reported reading for interest or enjoyment, spending on average 6.1 hours (74% increase) per week reading.

- 128 (97% - up 5%) reported regularly (daily or weekly) reading a newspaper at work or at home for interest or enjoyment.
- 99 (75% - up 9%) reported regularly reading magazines for interest or enjoyment.

- 84 (64% - up 30%) of the participants reported that they were regularly reading books novels or non-fiction works for interest or enjoyment.
- 13 (10% - down 15%) reported that they never read books, novels or non-fiction works.

At Follow-up (seven months after literacy programmes completed, and fourteen months after the Pre assessments and surveys), participants reported spending 5.0 hours per week reading for interest or enjoyment, a 45% increase over initial reported levels.

All completing participants reported reading regularly for interest or enjoyment.

At the end of the study, Auckland Libraries made on-site presentations to employees in all the companies receiving reading materials. There was a good response with many taking the opportunity to join their local libraries and continue their reading.

Discussion

The key findings from the study are that:

- the provision of additional reading materials to participants on workplace literacy programmes did not make a significant difference to the reading skill assessment score gains made over the programme, and did not impact the retention of skills seven months after the programme had completed, as assessed by the Assessment Tool.
- the provision of reading materials to participants not on literacy programmes did improve the reading skill assessment scores of ESOL participants, though the skill gains were not as great as those made by ESOL participants on workplace literacy programmes.
- participants increased the amount of time spent reading for interest or enjoyment, but the provision of reading materials to participants did not significantly increase the frequency of reading or the range of materials read at work or at home.

Skill gains did drop between the Post and Follow-up assessments for those on workplace literacy programmes, but the Follow-up assessment scores for ESOL programme participants were still significantly higher than their Pre scores.

The provision of reading materials did not seem to have any impact on the frequency of reading or the range of materials read at work or at home. This may be due to the different purposes, skills and strategies required when reading for interest or enjoyment compared to reading for information at work or at home. For many employees, there is little requirement in day-to-day job tasks to read large documents. Reading at work is more likely to be for specific purposes, scanning for information on job sheets, identifying steps in instructional information and operating procedures, finding alphanumeric product codes and numeric information on computer screens, scanners or labels, and reading and interpreting short texts such as notes or emails.

The results of this study need to be considered in the context of the small number of participants in the study groups. Analysis was done by English first language speakers and ESOL participants in each study group due to the differing proportions of English first language speakers in each group, and the possible confounding influence of this. In effect, this meant there were six study groups. The small numbers of participants with English as their first language in the WLP only group (n=3 at Post, and n=1 at Follow-up) and WLP + reading groups (n=10 at Post, and n=7 at Follow-up) means the English first language results are indicative at best. Low group numbers overall also need to be taken into account when interpreting the results.

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Appendix 1 – Reading Practices Questionnaire Form

Reading Practices Questionnaire - reading study

To be collected three times – start, middle and end of the study period (before the Reading Activity (picture) survey)

Date of interview	
Name of Interviewer:	
Participant ID	
For people who said they had a first language other than English How good is your reading in your first language?	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not good <input type="checkbox"/> Can't read in first language
For Everyone How good is your reading in English?	<input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Okay <input type="checkbox"/> Not good <input type="checkbox"/> Can't read in English
Do you like reading (in English)?	<input type="checkbox"/> I like reading a lot <input type="checkbox"/> I like reading sometimes <input type="checkbox"/> Reading is okay <input type="checkbox"/> I do not like reading much <input type="checkbox"/> I do not like reading at all
Which of the following do you have in your home? Tick all that apply	<input type="checkbox"/> A daily newspaper? <input type="checkbox"/> Magazines? <input type="checkbox"/> Dictionary? <input type="checkbox"/> A computer? <input type="checkbox"/> More than 10 books? - If so how many _____ <input type="checkbox"/> Calculator? <input type="checkbox"/> Ruler/tape measure? <input type="checkbox"/> None? <input type="checkbox"/> Do you use a computer to read anything?
Do you ever borrow books from the library?	<input type="checkbox"/> Every day <input type="checkbox"/> Every week <input type="checkbox"/> Every month <input type="checkbox"/> One or two times a year <input type="checkbox"/> Never
Do you have children in your household? If yes, how old are they?	Yes / No
Do you read to them? If "yes" About how many hours per week? _____	<input type="checkbox"/> Every day <input type="checkbox"/> Every week <input type="checkbox"/> Every month <input type="checkbox"/> One or two times a year <input type="checkbox"/> Never

Reading Practices Questionnaire - reading study

To be collected three times – start, middle and end of the study period (before the Reading Activity (picture) survey)

<p>What reading do you need to do in your job?</p> <p>List main things need to read</p>	
<p>How often do you need to read in your job?</p>	<p><input type="checkbox"/> Every day</p> <p><input type="checkbox"/> Every week</p> <p><input type="checkbox"/> Every month</p> <p><input type="checkbox"/> One or 2 times a year</p> <p><input type="checkbox"/> Never</p>
<p>How often do you need to use a computer at work?</p>	<p><input type="checkbox"/> Every day</p> <p><input type="checkbox"/> Every week</p> <p><input type="checkbox"/> Every month</p> <p><input type="checkbox"/> One or 2 times a year</p> <p><input type="checkbox"/> Never</p>
<p>Do you use a computer at home/elsewhere?</p>	<p><input type="checkbox"/> Every day</p> <p><input type="checkbox"/> Every week</p> <p><input type="checkbox"/> Every month</p> <p><input type="checkbox"/> One or 2 times a year</p> <p><input type="checkbox"/> Never</p>
<p>For people in programmes</p> <p>Do you remember any of the reading strategies/ things to do if you have problems when you are reading that the tutor covered in the literacy programme?</p> <p>Which?</p>	<p>Yes / No</p>
<p>For people not in a programme</p> <p>When you are reading and you find something that is difficult, what do you usually do?</p>	
<p>Open Question</p> <p>What have you read at home in the last week? (In English)</p>	

Reading Practices Questionnaire - reading study







To be collected three times – start, middle and end of the study period (before the Reading Activity (picture) survey)

Open Question What have you read at home in the last week? (In other languages - Not English)	
Open Question What have you read at work in the last week?	
How many hours a week do you spend reading books, magazines or other printed materials for your own interest or enjoyment?	
How many hours a week do you spend on a computer for interest or enjoyment?	
What do you like to read?	
Complete at <i>Reading Activity Survey</i>	

What do you read at work?

[illegible]

What do you read at home?

				
Newspapers / Newsletters	Computer / Internet / Websites – Facebook, Trade me / eMail	Manuals and instructions	Text messages	Games
How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never
				
Magazines / TV guide	Brochures / Leaflets / Catalogues	Books, novels (story books or factual books)	Religious books such as the Bible and Koran	Children's books
How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never
				
Letters, notes, bills. From: school, friend, power co., council	Food labels	Maps	Medicine labels or health information	Other: Recipes, Time tables, KiwiSaver information, Bank statements
How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never	How often: <input type="checkbox"/> every day <input type="checkbox"/> every week <input type="checkbox"/> every month <input type="checkbox"/> 1 or 2 times a year <input type="checkbox"/> never