National Adult Language, Literacy and Numeracy Assessment Conference

The return on investing in LLN in industry

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Overview of presentation

Ai Group
- Drivers
- Productivity agenda and LLN
- Importance of employer Commitment

ACER
- Overview of ROI research and results

Ai Group
- Next Steps
Drivers: PIAAC and the Workforce

Employed
- Literacy: 39% < level 3
- Numeracy: 59% < level 3

Not in labour force
- Literacy: 69% < level 3
- Numeracy: 73% < level 3
Drivers: LLN by Industry
Drivers: LLN by Occupation

- Professionals
- Managers
- Clerical and Administrative Workers
- Sales Workers
- Community and Personal Service Workers
- Technicians and Trades Workers
- Machinery Operators and Drivers
- Labourers

Percentage:
- Literacy (Level 3/4/5)
- Numeracy (Level 3/4/5)
- PSTRE (Level 2/3)
Drivers: Employer Concerns

- Poor completion of workplace documents or reports: 21.1
- Time wasting: 17.7
- Material wastage: 11.5
- Recruitment difficulties: 8.3
- Financial miscalculations: 6.8
- Ineffective work teams: 6.7
- Not applicable: 6.6
- Staff unable/unwilling to take on new work: 6.4
- Non-compliance: 6.3
- Staff lack confidence: 5.2

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Drivers: Example of Impact

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**STANDARD OPERATING PROCESS** - showing terms and concepts that employees with low levels of literacy are likely to need training or support to understand

<table>
<thead>
<tr>
<th>Title: Bulk Chemical Loading and Receipt</th>
<th>Effective Date: February 1, 2011</th>
<th>Review Period: 12 months</th>
</tr>
</thead>
</table>

1. **PURPOSE**

The **aim** of this process is to **ensure** that bulk products delivered or loaded from a processing plant are done in a safe and efficient manner in line with **Legislation**, **Australian Standards** and **industry guidelines**.

2. **SCOPE**

The process is designed to cover the loading and **receipt** process but is limited to bulk requirements as defined.

- **Bulk Receipt**: Any liquid material designated to be pumped from an intermediate bulk container or tank vehicle to a static storage tank on any work premises.
- **Bulk Loading**: Any liquid material designated to be pumped from a static storage tank into an appropriate road, rail or sea bound tanker at any work premises.
- **Static Storage Tank**: Any tank capable of holding in excess of 1000L that is not designed to be lifted or moved as part of a process. An anchored mixing vessel may be considered a static storage tank.

3. **RESPONSIBILITIES**

- **Operations Manager**: Responsible for providing and maintaining plant or systems of work that are safe to receive, hold and load bulk chemicals. Ensures that the process is carried out in accordance with work and safety instructions. Responsible for ensuring drivers and operators are conversant with company processes and safety directions. Responsible for ensuring that any company operator nominated as a Loading Supervisor is trained and competent in that task.

- **Unloading Supervisor**: An employee trained and assessed as competent may be nominated as a Unloading Supervisor. The responsibility of the Unloading Supervisor is to ensure that the delivery is received and processed in accordance with relevant work instructions and forms.

- **Regulatory Manager**: It is the responsibility of the Regulatory Manager to provide accurate and timely information concerning relevant legislation, Australian Standards and industry Guidelines. It is the responsibility of the Regulatory Manager to monitor and report compliance with relevant legislation, Australian Standards, Industry Guidelines and company processes.

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Productivity Agenda

Connection between higher LLN skills and productivity?

Evidence of benefits to employers?

“Part of the reason for low firm investments is the lack of a credible business case providing clear evidence of a positive return on investment”.

UPSKILL, Centre for Literacy, Quebec, Canada
Participation and Income

Improvement in LLN skills from Level 1 to Level 3 would increase labour force participation and hourly wage rates by 25% for women and 30% for men.

The Productivity Commission

Literacy skill levels are positively associated with income for full-time male and female employees.

NCVER
Importance of Employer Commitment

“Learning programs initiated by and within workplaces are the ones that survive long-term.”

“Skills for Life” UK study

“Employer commitment is essential to stability and sustainability of workplace literacy and essential skills training efforts.”

Alison Wolf: Adult Basic Skills and Workplace Learning Project
Barriers to Employer Involvement

- Lack of awareness of literacy – productivity link
- Cost
- Limited time, resources & personnel
- Management attitudes
- Absence of champions
- Complex training landscape
- Lack benefits to business data
- Confidentiality concerns
- Achieving employee buy-in
The ROI research project

- Purpose was to develop a model of data collection and reporting which can assist with measuring returns to workplace LLN training
- Work with a convenience sample of employers and RTOs to consider new types of data collection, interpretation & analysis and presentation of results via case studies
- Build on, and make a contribution to, the existing knowledge base (e.g. NZ, Canada, Aus etc)
Return on Investment

- Research literature differs on how the ‘ROI’ to workplace training is measured and the types of metrics used.

- ROI indicates the extent by which the benefits (outputs) of training exceed the costs (inputs).

\[
ROI (%) = \frac{(Benefit - Cost)}{Cost} \times 100
\]

- A result >100% indicates a net benefit (after accounting for the costs of provision).
Return on Investment – methodological concerns

- the lack of practical, standardised approaches for evaluating ROTI
- difficulties in isolating the benefits of training and quantifying all costs and benefits
- difficulties in designing experimental studies involving control groups (understanding the counterfactual)
- differences in expectations about what can be measured across multiple stakeholders
- problems of timing and resources, including the prospect of benefits accruing after the evaluation period
- data access and collection issues, including sample selection, access to data (e.g. confidential records, costs of collecting data, taking staff “off the line”)

Source: Smith, A. (editor), 2001, Return on investment in training research readings, NCVER
Return on Investment – lessons from WELL evaluations

• Evaluation of WELL found “challenges arose due to an absence of certain data, and also a common view of certain concepts such as “needs being met”, “employability”, or “productivity” and how these should be measured.”

• “Employee productivity was measured by looking at how employers and RTOs perceived employees had improved in the following areas:
  – increased productivity;
  – improved work quality;
  – increased autonomy;
  – reduced absenteeism; and
  – improved communication skills.”
Return on Investment

<table>
<thead>
<tr>
<th>case study organisation</th>
<th>industry</th>
<th>employment</th>
<th>positive impact of training on</th>
<th>estimated ROI %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia–New Zealand Direct Line (ANZDL)</td>
<td>transportation – freight</td>
<td>300</td>
<td>goal setting, time management</td>
<td>323</td>
</tr>
<tr>
<td>Franklins</td>
<td>retail</td>
<td>27,900</td>
<td>costs of induction</td>
<td>1,000</td>
</tr>
<tr>
<td>Huntsman Chemicals</td>
<td>manufacturing</td>
<td>400</td>
<td>safety and WorkCover premiums</td>
<td>1,277</td>
</tr>
<tr>
<td>Kodak Australasia</td>
<td>manufacturing</td>
<td>2,000</td>
<td>productivity</td>
<td>256</td>
</tr>
<tr>
<td>Mission Australia</td>
<td>charity</td>
<td>2,200</td>
<td>staff turnover</td>
<td>7,125</td>
</tr>
<tr>
<td>QR (Queensland Rail)</td>
<td>transportation – rail</td>
<td>14,800</td>
<td>fuel usage, time and train handling</td>
<td>30</td>
</tr>
<tr>
<td>Target Australia</td>
<td>retail</td>
<td>23,000</td>
<td>sales and staff turnover</td>
<td>980</td>
</tr>
</tbody>
</table>

# Return on Investment

## Table 4: A Taxonomy of Possible Training Outcome Indicators for ROIT Studies

<table>
<thead>
<tr>
<th>Productivity and Efficiency</th>
<th>Quality of Products and Services</th>
<th>Organisational Climate, Culture and Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity targets met/exceeded</td>
<td>Quality of products and services (cont.)</td>
<td>Number of employee suggestions (submitted or implemented)</td>
</tr>
<tr>
<td>Production/completion time per unit (e.g., forms, loans, clients, projects)</td>
<td>Company image and reputation</td>
<td>Employee satisfaction and motivation</td>
</tr>
<tr>
<td>Output (per worked hour, per shift, per machine, or per annum)</td>
<td>Compliance with the investors in People National Quality Standard</td>
<td>Interpersonal relationships and commitment to team goals</td>
</tr>
<tr>
<td>Equipment/facility/asset utilisation (e.g., down time due to machine stoppages, shift changeover time)</td>
<td>Customer service and satisfaction</td>
<td>Participation in teams and committees</td>
</tr>
<tr>
<td>Capacity of staff to solve routine and non-routine problems (e.g., supervision time required)</td>
<td>Customer satisfaction levels (with timeliness, availability, quality and price of goods and services)</td>
<td>Team performance</td>
</tr>
<tr>
<td>Staffing requirements and workforce flexibility (e.g., dependence on casual/contract labour)</td>
<td>Customer relationships and experiences</td>
<td>Internal communication and information systems</td>
</tr>
<tr>
<td>Overtime (quantity, cost)</td>
<td>Repeat business (customer retention or loyalty)</td>
<td>Implementation of new work practices</td>
</tr>
<tr>
<td>Induction time for new employees</td>
<td>New business resulting from client referrals</td>
<td>Standardisation of work practices</td>
</tr>
<tr>
<td>Productivity of new employees</td>
<td>More/new customers or markets (e.g., contracts won, loans processed, funding awarded)</td>
<td>Implementation/maintenance of a service culture</td>
</tr>
</tbody>
</table>

### Occupational Health and Safety

- Accidents or injuries (number, time lost, compensation costs, premium cost/fee)
- Safety critical incidents (number, cost)
- Compliance with safety and health requirements (e.g., hygiene testing results)
- Violation of safety rules
- Improved response to crises

### Organisational Learning and Development

- Performance appraisal ratings
- Achievement of organisational competency profile requirements (e.g., to meet accreditation or licensing requirements, new operating environments or facilitate organisational expansion)
- Number/percentage of employees with nationally recognised qualifications
- Internal promotions resulting from employee competence and performance
- Training awards received
- Employee perceptions of training and development opportunities
- Alignment with human resources, business and strategic planning

**Source:** Smith, A. (editor), 2001, *Return on investment in training research readings*, NCVER
ROI Instruments

- Section A – Program description and budget (identifying the total cost of WELL program, including in-kind costs)

- Section B – Quantitative benefits of training e.g:
  - Changes in productivity (e.g. staff supervision, completion of key tasks)
  - Changes in operational costs (e.g. OH&S, waste)
  - Changes in HR costs (e.g. turnover, replacement)

- Section C – Qualitative benefits of training
  - Commentary from enterprises on financial gains from intangible benefits (e.g. self-confidence, worker morale, team work, decision-making, autonomy).
Return on Investment – how have these data been collected elsewhere?

**Productivity**

1. Over the last six months (since the training began), do you think that productivity (completing tasks quickly and completely) among employees has...

<table>
<thead>
<tr>
<th>1 Increased</th>
<th>2 Decreased</th>
<th>3 Neither increased nor decreased</th>
<th>4 Don’t Know</th>
<th>5 N/A for firm</th>
</tr>
</thead>
</table>

IF RESPONDENT INDICATED THAT A CHANGE OCCURRED:

2. Do you have an updated report that shows this change? If yes, would you be willing to share it with us?

3. Do you think the change would have happened if the training hadn’t taken place?

<table>
<thead>
<tr>
<th>Very unlikely</th>
<th>Unlikely</th>
<th>Not sure</th>
<th>Likely</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

IF RESPONDENT SAID VERY UNLIKELY OR UNLIKELY:

4. Can you be specific about how you think the training made a difference?

- Productivity
- Costs and errors
- Product / services quality
- Customer service
- Sales
- Turnover
- Absenteeism
- Health and safety

# Example 1: Manufacturing

<table>
<thead>
<tr>
<th>Program Costs</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C1</strong> Employer contribution to LLN Program</td>
<td>$10,000</td>
</tr>
<tr>
<td>Staff Labour Costs for employer [staff paid to attend training]</td>
<td>$73,000</td>
</tr>
<tr>
<td><strong>C2</strong> Lean Manufacturing Program [$85,000 - $64,800 Government Rebate]</td>
<td>$20,200</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td>$103,200</td>
</tr>
<tr>
<td><strong>Program Benefits</strong></td>
<td></td>
</tr>
<tr>
<td><strong>B1</strong> Injury Rates [WorkCover premium saving $1,300 per week]</td>
<td>$67,860</td>
</tr>
<tr>
<td><strong>B2</strong> Energy Savings</td>
<td>$42,000</td>
</tr>
<tr>
<td><strong>B3</strong> Labour Saving [saved 316 hours pa @ cost of $26 ph per employee]</td>
<td>$8,216</td>
</tr>
<tr>
<td><strong>B4</strong> Recycling Waste [less waste saving of $1,500 per month]</td>
<td>$18,000</td>
</tr>
<tr>
<td><strong>Total Benefits</strong></td>
<td>$136,076</td>
</tr>
<tr>
<td><strong>Return on Investment</strong></td>
<td></td>
</tr>
<tr>
<td>Program Benefits/Program Costs x 100 = $136,077/$103,200 x 100</td>
<td>131.8%</td>
</tr>
</tbody>
</table>
## Example 2: Aged Care

<table>
<thead>
<tr>
<th>Total Project Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C1   Commonwealth funding</td>
<td>$35,576</td>
</tr>
<tr>
<td>Employer contribution</td>
<td></td>
</tr>
<tr>
<td>$27,676</td>
<td></td>
</tr>
<tr>
<td>Additional costs to employer, including in-kind</td>
<td></td>
</tr>
<tr>
<td>$7,900</td>
<td></td>
</tr>
<tr>
<td>Cost of additional staff to support training (e.g. Operations manager)</td>
<td>$1000</td>
</tr>
<tr>
<td>Expenditure on training materials (e.g. computers, printing)</td>
<td>$80</td>
</tr>
<tr>
<td>Expenditure on program development/customisation</td>
<td>$1,000</td>
</tr>
<tr>
<td>Other, please identify: Photocopying</td>
<td>$25</td>
</tr>
<tr>
<td>Total employer contribution</td>
<td>$10,005</td>
</tr>
</tbody>
</table>

### Labour Cost Savings Benefit

<table>
<thead>
<tr>
<th>Before (or near) start of training</th>
<th>Change 6 months after</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours supervisors work with trainees</td>
<td></td>
</tr>
<tr>
<td>Number of supervisors 1 x $50.60 per hour</td>
<td>9.3 hours 6.5 hours</td>
</tr>
<tr>
<td>Labour costs (supervisor)</td>
<td>$471</td>
</tr>
<tr>
<td>$1,882</td>
<td>$329</td>
</tr>
<tr>
<td>Carer hours to complete documentation</td>
<td>17.5 10.5</td>
</tr>
<tr>
<td>Costs x 30 carers x $33.10 ph</td>
<td>$15,640</td>
</tr>
<tr>
<td>$10,440</td>
<td></td>
</tr>
<tr>
<td>Annual cost savings</td>
<td>$11,756</td>
</tr>
</tbody>
</table>

**Annualised Return on Investment (ROI %)**

117.5%
## Example 3: Utility

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Program Cost</td>
</tr>
<tr>
<td></td>
<td>Program Benefit</td>
</tr>
<tr>
<td>B1</td>
<td>100 Service Orders processed prior to training = 5.8 hours x $47.50 per hour = $275.50</td>
</tr>
<tr>
<td></td>
<td>100 Service Orders processed after training = 1.5 hours x $47.50 = $71.25</td>
</tr>
<tr>
<td></td>
<td>Total Improvement = $275.50 - $71.25 = $204.25 per 100 Service Orders</td>
</tr>
<tr>
<td></td>
<td>Expected lifecycle for new process 3 years or 3,000 service orders = 30 x $204.25</td>
</tr>
<tr>
<td></td>
<td>Return on Investment = $6,127.50 / $6,000 x 100</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>1</td>
<td>Employer cost of WorkCover assessments 892 x $200</td>
</tr>
<tr>
<td>2</td>
<td>Employer average “lost time” from job for WorkCover training and assessment $500 x 3 days = $1,500 per person for 892 employees</td>
</tr>
<tr>
<td>3</td>
<td>Actual employer cost for re-testing is $100 for actual test, plus $500 for a day of lost time - so $600 per retest for 89 employees</td>
</tr>
<tr>
<td>4</td>
<td>State average of WorkCover re-test statistics of 46% if applied to this employer 410 people @ $600 per person</td>
</tr>
<tr>
<td>5</td>
<td>WorkCover re-test saving for employer $246,000 - $53,400</td>
</tr>
</tbody>
</table>
ROI Summary

- All worksites that were able to produce a ROI were positive.
- All sites draw on different measures and methodologies to make a compelling case.
- The range was from 102 - 162%.
- This applied across a range of industries: food and metals manufacturing, aged care and utilities.
Wrapping up: What does this mean?

- There are a range of reasons why employers participate in LLN programs – these findings provide a compelling case for financial returns.
- Help to strengthen the business case for why employers should invest in workplace literacy and numeracy.
- There is no ‘right’ way of calculating an ROI but there are degrees of soundness which must be considered when interpreting results.
Wrapping up: What next?

- place report on website
- develop short publication featuring ROI results
- promote benefits widely
  - Ai Group website, blog, newsletter
  - LLN Workplace Champions
  - Industry Skills Fund
Contact Details

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How Aussies went: some lessons from Australia's PIAAC results

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Like its predecessor, the Adult Literacy and Life Skills Survey (ALLS), PIAAC is an international survey of adults 16-64 years of age (15-74 in Australia). PIAAC

- measures the cognitive domains of
  - literacy (reading) [literacy also includes the components of reading - word meaning, sentence processing and passage comprehension]
  - numeracy
  - problem solving in technology-rich environments (PSTRE)

- through two modes of administration
  - paper and pen
  - computer

- allows comparison with the results of the ALLS

- was administered in OECD and partner countries (including by ABS in Australia) in 2011-12

- proficiency is described in terms of a scale of 500 points divided into levels

- also provides a rich array of information regarding respondents’ use of skills at work and in everyday life, their education, their linguistic and social backgrounds, their participation in the labour market and other aspects of their well-being (based on almost 300 background questions)

- questions and tasks based on common texts and stimuli
After the “filtering” process, what percentage of the adults aged 15-74 across Australia undertook PIAAC on the computer?
Problem solving in technology-rich environments

PSTRE (Problem solving in technology-rich environments)

Proportions of persons in PSTRE. Total Australian population aged 15-74 years.

Note: ‘Not classified’ refers to those adults who either opted out of the computer based assessment or who failed a basic ICT test or who had no computer experience.
What do we know?

In PISA: 19th out of 65 countries in numeracy (just above the mean). Compared to literacy where we are 14th and significantly above the mean.

In both literacy and numeracy in PISA Australia has significantly declined since 2003.

In PIAAC: 13th out of 23 countries in numeracy (just below the mean). Compared to literacy where we are 4th and significantly above the mean.

In literacy in PIAAC there has been a small improvement since 2006, but a decline in numeracy.

Why the difference between literacy and numeracy?
What do we know? PIAAC

Proportions of persons in Literacy and Numeracy in PIAAC. Total Australian population aged 15-74 years.

**Performance by Level (15-74 yos)**

- **Below L1:**
  - Literacy: 620,000
  - Numeracy: 1.1 million

- **L1:**
  - Literacy: 200,000
  - Numeracy: 230,000

- **L2:**
  - Literacy: 5.0 million
  - Numeracy: 5.4 million

- **L3:**
  - Literacy: 6.3 million
  - Numeracy: 5.2 million

- **L4:**
  - Literacy: 2.4 million
  - Numeracy: 1.8 million

- **L5:**
  - Literacy: 2.0 million
  - Numeracy: 5.0 million

**Gender (PIAAC):**

- 49.4% of males are at levels 1 or 2
- 59.0% of females are at levels 1 or 2
- A difference of almost 10%!

**44% at level 2 or below in literacy**

**54% at level 2 or below in numeracy**
FEW DUTCH WOMEN AT THE BLACKBOARD

There is a low percentage of women teachers in the Netherlands compared to other countries. In most of the other countries, the majority of teachers are women. However, if we include the figures for inspectors and school principals, the proportion shrinks considerably and women are in a minority everywhere.

Percentage of women teachers (kindergarten, elementary, and secondary).
What is the maximum number of days you should take this medicine?
List three situations for which you should consult a doctor.

__________________________________________
__________________________________________
__________________________________________

Level 3
45.76% correct
According to the announcement, where could you get more information about CIEM?

---

Some items

Centre on Internal and External Mobility

What is CIEM?
CIEM stands for Centre on Internal and External Mobility, an initiative of the personnel department. A number of workers of this department work in CIEM, together with members from other departments and outside career consultants.
CIEM is available to help employees in their search for another job inside or outside the NZCO Manufacturing Company.

What does CIEM do?
CIEM supports employees who are seriously considering other work through the following activities:
• **Job Data Bank**
  After an interview with the employee, information is entered into a data bank that tracks job seekers and job openings at NZCO and at other manufacturing companies.
• **Guidance**
  The employee’s potential is explored through career counselling discussions.
• **Courses**
  Courses are being organised (in collaboration with the department for information and training) that will deal with job search and career planning.
• **Career Change Projects**
  CIEM supports and coordinates projects to help employees prepare for new careers and new perspectives.
• **Mediation**
  CIEM acts as a mediator for employees who are threatened with dismissal resulting from reorganisation, and assists with finding new positions when necessary.

How much does CIEM cost?
Payment is determined in consultation with the department where you work. A number of services of CIEM are free. You may also be asked to pay, either in money or in time.

How does CIEM work?
CIEM assists employees who are seriously considering another job within or outside the company.
That process begins by submitting an application. A discussion with a personnel counsellor can also be useful. It is obvious that you should talk with the counsellor first about your wishes and the internal possibilities regarding your career. The counsellor is familiar with your abilities and with developments within your unit.

Contact with CIEM in any case is made via the personnel counsellor. He or she handles the application for you, after which you are invited to a discussion with a CIEM representative.

For more information
The personnel department can give you more information.

Level 2
88.76% correct
List two ways in which CIEM helps people who will lose their jobs because of a departmental reorganisation:

- **Job Data Bank**: After an interview with the employee, information is entered into a data bank that tracks job seekers and job openings at NZCO and at other manufacturing companies.

- **Guidance**: The employee’s potential is explored through career counselling discussions.

How many items have you answered correctly? 27.39% correct
Some items

Adults were asked to look at a photograph containing two cartons of coca cola bottles (changed to water bottles for PIAAC) and give the total number of bottles in the two full cases.

Pre-Level 1
95.22% correct
Some items

Adults were asked to look at the petrol gauge image. The task states that the petrol tank holds 48 litres and asks the respondent to determine how many litres remain in the tank. A range of answers are allowable as correct.

Level 2
82.99% correct
Compare the per cent of change in Dioxin level from 1975 to 1985 to the per cent of change in Dioxin level from 1985 to 1995. Which per cent of change is larger, why?
One of the most difficult literacy tasks in PIAAC is also associated with the “Library Search” unit. The respondent is asked to identify the book likely to be least useful in providing more information about genetically modified food. As mentioned in the framework, negative phasing is more complex than affirmative, so evaluating the 10 books in terms of which is least useful for the defined purpose is expected to be difficult. The fact that the correct selection is located at the end of the second page of results also increases the difficulty of the task. The respondent must read and evaluate each of the choices in order to make a correct selection.

<table>
<thead>
<tr>
<th>Question ID</th>
<th>Description</th>
<th>Correct (%)</th>
<th>OECD Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E323005S</td>
<td>Library Search</td>
<td>12.53%</td>
<td>19.70%</td>
</tr>
</tbody>
</table>

Use the scale to estimate what the high temperature predicted for Bangkok would be in degrees Celsius (if the scale were extended).

<table>
<thead>
<tr>
<th>Question ID</th>
<th>Description</th>
<th>Correct (%)</th>
<th>OECD Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C611517S</td>
<td>Temp Scale</td>
<td>63.06%</td>
<td>54.69%</td>
</tr>
</tbody>
</table>

Use the map on the opposite page
Follow the instructions written under the map on the opposite page and mark the path directly on the map with your pen.

<table>
<thead>
<tr>
<th>Question ID</th>
<th>Description</th>
<th>Correct (%)</th>
<th>OECD Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C617605S</td>
<td>Map</td>
<td>60.23%</td>
<td>51.22%</td>
</tr>
</tbody>
</table>
Further information

PISA and PIAAC
For further information on PISA visit http://www.acer.edu.au/ozpisa/pisa-australia
The OECD website for PISA is: http://www.oecd.org/pisa/
The OECD website for PIAAC is: www.oecd.org/site/piaac/
PIAAC reports are available from: www.oecd.org/site/piaac/publications.htm
For the details of the Australian PIAAC results go to the ABS website at: www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4228.0Main+Features12011-12?OpenDocument
PIAAC conference videos: vimeo.com/album/2571591. The two key overview videos are these two:
vimeo.com/album/2571591/video/79372616 &
vimeo.com/album/2571591/video/78496266
A recent (May 2014) analysis of the Australian PIAAC data has been done by the Productivity Commission: www.pc.gov.au/research/staff-working/literacy-numeracy-skills

And please contact me for further information: Dave Tout, ACER
David.Tout@acer.edu.au
Questions?