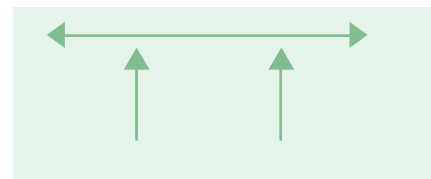


The Early Literacy Activities Before Beginning Primary School (ELA) scale was created based on parents' frequency of doing nine activities described below. See [C. A. B. & H., 2011, TIMSS & PIRLS 2011 Context Questionnaire Scales](#) for more information on how the scales were formed.

Exhibit 1: Items in the PIRLS 2011 Early Literacy Activities Before Beginning Primary School Scale

Before your child began primary/elementary school, how often did you or someone else in your home do the following?

- 3) Sing songs A ——— A ——— A
- 4) Play with alphabet toys (e.g., blocks with letters of the alphabet) A ——— A ——— A
- 5) Talk about things you had done A ——— A ——— A
- 6) Talk about what you had read A ——— A ——— A
- 7) Play word games A ——— A ——— A
- 8) Write letters or words A ——— A ——— A
- 9) Read (you)



10.7

Exhibit 2: Item Parameters for the PIRLS 2011 Early Literacy Activities Before Beginning Primary School Scale

| Item | delta | tau_1 | tau_2 |
|---------|----------|----------|---------|
| ASBH02A | -1.55846 | -1.38837 | 1.38837 |
| ASBH02B | -1.23058 | -1.37237 | 1.37237 |
| ASBH02C | -0.99194 | -0.98882 | 0.98882 |
| ASBH02D | -0.69449 | -1.02037 | 1.02037 |
| ASBH02E | -1.82023 | -1.14874 | 1.14874 |
| ASBH02F | -0.75392 | -1.33504 | 1.33504 |
| ASBH02G | -0.42446 | -1.20341 | 1.20341 |
| ASBH02H | -1.06159 | -1.15244 | 1.15244 |
| ASBH02I | -0.79101 | -0.99028 | 0.99028 |

Exhibit 3: Scale Transformation Constants

Scale Transformation Constants

A = 10.01234

B = 1.49109

Transformed Scale Score = 10.01234 + 1.49109 • Logit Scale Score

Exhibit 4: Equivalence Table of the Raw Score and the Transformed Scale Score

| Raw Score | Transformed Scale Score | Cutpoint | Raw Score | Transformed Scale Score | Cutpoint |
|-----------|-------------------------|----------|-----------|-------------------------|----------|
| 0 | 2.13766 | | 8 | 8.05868 | |
| 1 | 3.95611 | | 9 | | |
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Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2011 Early Literacy Activities Before Beginning Primary School Scale (Continued)**

| Country | | | Factor Loadings for Each Item | | | | | | | | |
|----------------------------------|------|----|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | ASBH02A | ASBH02B | ASBH02C | ASBH02D | ASBH02E | ASBH02F | ASBH02G | ASBH02H | ASBH02I |
| Sixth Grade Participants | | | | | | | | | | | |
| Botswana | 0.78 | 37 | 0.64 | 0.51 | 0.47 | 0.59 | 0.55 | 0.68 | 0.66 | 0.67 | 0.63 |
| Honduras | 0.78 | 37 | 0.63 | 0.65 | 0.50 | 0.60 | 0.50 | 0.67 | 0.65 | 0.65 | 0.61 |
| Kuwait | 0.76 | 35 | 0.61 | 0.54 | 0.36 | 0.65 | 0.52 | 0.63 | 0.68 | 0.65 | 0.62 |
| Morocco | 0.77 | 35 | 0.64 | 0.60 | 0.44 | 0.61 | 0.53 | 0.62 | 0.55 | 0.70 | 0.62 |
| Benchmarking Participants | | | | | | | | | | | |
| Alberta, Canada | 0.82 | 41 | 0.60 | 0.66 | 0.55 | 0.64 | 0.56 | 0.70 | 0.72 | 0.66 | 0.69 |
| Ontario, Canada | 0.79 | 38 | 0.63 | 0.65 | 0.55 | 0.62 | 0.54 | 0.65 | 0.67 | 0.59 | 0.65 |
| Quebec, Canada | 0.77 | 35 | 0.58 | 0.59 | 0.47 | 0.60 | 0.49 | 0.62 | 0.68 | 0.65 | 0.62 |
| Maltese - Malta | 0.77 | 35 | 0.61 | 0.61 | 0.50 | 0.62 | 0.42 | 0.63 | 0.66 | 0.63 | 0.63 |
| Eng/Afr (5) - RSA | 0.81 | 40 | 0.66 | 0.59 | 0.50 | 0.64 | 0.58 | 0.67 | 0.70 | 0.66 | 0.67 |
| Andalusia, Spain | 0.73 | 32 | 0.57 | 0.60 | 0.49 | 0.61 | 0.45 | 0.55 | 0.65 | 0.60 | 0.53 |
| Abu Dhabi, UAE | 0.74 | 33 | 0.61 | 0.57 | 0.47 | 0.56 | 0.53 | 0.61 | 0.61 | 0.59 | 0.59 |
| Dubai, UAE | 0.76 | 35 | 0.66 | 0.60 | 0.48 | 0.60 | 0.54 | 0.62 | 0.62 | 0.59 | 0.61 |
| prePIRLS Participants | | | | | | | | | | | |
| Botswana | 0.77 | 36 | 0.64 | 0.52 | 0.43 | 0.64 | 0.51 | 0.65 | 0.63 | 0.65 | 0.65 |
| Colombia | 0.77 | 36 | 0.61 | 0.62 | 0.53 | 0.62 | 0.51 | 0.64 | 0.66 | 0.61 | 0.58 |
| South Africa | 0.77 | 36 | 0.64 | 0.54 | 0.44 | 0.61 | 0.55 | 0.66 | 0.64 | 0.65 | 0.63 |

** England and the United States did not administer the Home Questionnaire.

Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Exhibit 6: Relationship Between the PIRLS 2011 Early Literacy Activities Before Beginning Primary School Scale and PIRLS 2011 Reading Achievement**

| Country | Pearson's Correlation with Reading Achievement | | Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (r^2) |
|------------------|--|-----------|--|
| | (r) | (r^2) | |
| Australia | 0.21 | 0.04 | 0.04 |
| Austria | 0.20 | 0.04 | 0.03 |
| Azerbaijan | 0.07 | 0.00 | 0.01 |
| Belgium (French) | 0.20 | 0.04 | 0.03 |
| Bulgaria | 0.38 | 0.14 | 0.13 |
| Canada | 0.21 | 0.04 | 0.03 |
| Chinese Taipei | 0.21 | 0.05 | 0.03 |
| Colombia | 0.07 | 0.01 | 0.01 |
| Croatia | 0.17 | 0.03 | 0.02 |
| Czech Republic | 0.12 | 0.02 | 0.01 |
| Denmark | 0.15 | 0.02 | 0.02 |
| Finland | 0.16 | 0.02 | 0.02 |

Exhibit 6: Relationship Between the PIRLS 2011 Early Literacy Activities Before Beginning Primary School Scale and PIRLS 2011 Reading Achievement (Continued)**

| Country | Pearson's Correlation with Reading Achievement | | Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (r^2) |
|-----------------------|--|-------------------|--|
| | (r) | (r ²) | |
| France | 0.19 | 0.04 | 0.02 |
| Georgia | 0.15 | 0.02 | 0.02 |
| Germany | 0.14 | 0.02 | 0.01 |
| Hong Kong SAR | 0.13 | 0.02 | 0.01 |
| Hungary | 0.18 | 0.03 | 0.04 |
| Indonesia | 0.11 | 0.01 | 0.01 |
| Iran, Islamic Rep. of | 0.16 | 0.03 | 0.03 |
| Ireland | 0.21 | 0.05 | 0.04 |
| Israel | 0.21 | 0.04 | 0.03 |
| Italy | 0.17 | 0.03 | 0.02 |
| Lithuania | 0.17 | 0.03 | 0.02 |
| Malta | 0.28 | 0.08 | 0.06 |
| Morocco | 0.06 | 0.00 | 0.00 |
| Netherlands | 0.09 | 0.01 | 0.01 |
| New Zealand | 0.26 | 0.07 | 0.05 |
| Northern Ireland | | | |
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Exhibit 6: Relationship Between the PIRLS 2011 Early Literacy Activities Before Beginning Primary School Scale and PIRLS 2011 Reading Achievement (Continued)**

| Country | Pearson's Correlation with Reading Achievement | | Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (%) |
|----------------------------------|--|-------------------|--|
| | (r) | (r ²) | |
| Benchmarking Participants | | | |
| Alberta, Canada | 0.19 | 0.04 | 0.04 |
| Ontario, Canada | 0.18 | 0.03 | 0.02 |
| Quebec, Canada | 0.21 | 0.04 | 0.04 |
| Maltese - Malta | 0.23 | 0.05 | 0.04 |
| Eng/Afr (5) - RSA | 0.29 | 0.08 | 0.07 |
| Andalusia, Spain | 0.21 | 0.04 | 0.03 |
| Abu Dhabi, UAE | 0.28 | 0.08 | 0.05 |
| Dubai, UAE | 0.32 | 0.10 | 0.08 |
| prePIRLS Participants | | | |
| Botswana | 0.23 | 0.05 | 0.05 |
| Colombia | 0.07 | 0.00 | 0.01 |
| South Africa | 0.12 | 0.01 | 0.01 |

** England and the United States did not administer the Home Questionnaire.

Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).