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Item Parameters for the TIMSS 2015 Students Like Learning Science Scale, Eighth Grade

| Item | delta | tau_1 | tau_2 | tau_3 | Infit |
|----------|----------|----------|----------|---------|-------|
| BSBS21A | -0.13142 | -1.01695 | -0.52680 | 1.54375 | 0.76 |
| BSBS21B* | 0.56759 | -1.19007 | -0.00233 | 1.19240 | 1.65 |
| BSBS21C* | 0.47515 | -1.36232 | 0.00944 | 1.35288 | 1.42 |
| BSBS21D | -0.52383 | -0.93744 | -0.51695 | 1.45439 | 0.90 |
| BSBS21E | 0.01158 | -1.06294 | -0.35802 | 1.42096 | 0.65 |
| BSBS21F | 0.41917 | -1.45338 | -0.07468 | 1.52806 | 0.83 |
| BSBS21G | -0.64772 | -0.96459 | -0.57542 | 1.54001 | 1.10 |
| BSBS21H | -0.67455 | -0.78921 | -0.43697 | 1.22618 | 1.33 |
| BSBS21I | 0.50403 | -1.16503 | -0.06851 | 1.23354 | 0.81 |

Scale Transformation Constants for the TIMSS 2015 Students Like Learning Science Scale, Eighth Grade

| Scale Transformation Constants | |
|--------------------------------|---|
| A = 8.489044 | Transformed Scale Score = 8.489044 + 1.163944 • Logit Scale Score |
| B = 1.163944 | |

Relationship Between the TIMSS 2015 Students Like Learning Science Scale, Eighth Grade, and TIMSS 2015 Science Achievement

| Country | Pearson's Correlation with Science Achievement | | Variance in Science Achievement for by Difference Between Region Scale ² |
|----------------------------------|--|-------------------|---|
| | (r) | (r ²) | |
| Australia | 0.34 | 0.12 | 0.10 |
| Bahrain | 0.28 | 0.08 | 0.07 |
| Botswana (9) | 0.41 | 0.17 | 0.15 |
| Canada | 0.23 | 0.05 | 0.05 |
| Chile | 0.16 | 0.03 | 0.03 |
| Chinese Taipei | 0.38 | 0.14 | 0.12 |
| Egypt | 0.37 | 0.14 | 0.13 |
| England | 0.31 | 0.10 | 0.09 |
| Georgia | - | - | - |
| Hong Kong SAR | 0.32 | 0.10 | 0.09 |
| Hungary | - | - | - |
| Iran, Islamic Rep. of | 0.18 | 0.03 | 0.04 |
| Ireland | 0.39 | 0.15 | 0.13 |
| Israel | 0.20 | 0.04 | 0.03 |
| Italy | 0.19 | 0.03 | 0.03 |
| Japan | 0.30 | 0.09 | 0.08 |
| Jordan | 0.26 | 0.07 | 0.06 |
| Kazakhstan | - | - | - |
| Korea, Rep. of | 0.40 | 0.16 | 0.15 |
| Kuwait | 0.23 | 0.06 | 0.04 |
| Lebanon | - | - | - |
| Lithuania | - | - | - |
| Malaysia | 0.35 | 0.12 | 0.11 |
| Malta | - | - | - |
| Morocco | - | - | - |
| New Zealand | 0.27 | 0.07 | 0.06 |
| Norway (9) | 0.28 | 0.08 | 0.07 |
| Oman | 0.27 | 0.07 | 0.06 |
| Qatar | 0.36 | 0.13 | 0.12 |
| Russian Federation | - | - | - |
| Saudi Arabia | 0.27 | 0.07 | 0.07 |
| Singapore | 0.27 | 0.07 | 0.07 |
| Slovenia | - | - | - |
| South Africa (9) | 0.19 | 0.04 | 0.03 |
| Sweden | - | - | - |
| Thailand | 0.22 | 0.05 | 0.04 |
| Turkey | 0.22 | 0.05 | 0.05 |
| United Arab Emirates | 0.30 | 0.09 | 0.09 |
| United States | 0.26 | 0.07 | 0.06 |
| International Median | 0.27 | 0.07 | 0.07 |
| Benchmarking Participants | | | |
| Buenos Aires, Argentina | 0.10 | 0.01 | 0.01 |
| Ontario, Canada | 0.23 | 0.06 | 0.05 |
| Quebec, Canada | 0.25 | 0.06 | 0.05 |
| Norway (8) | 0.21 | 0.04 | 0.03 |
| Abu Dhabi, UAE | 0.29 | 0.08 | 0.08 |
| Dubai, UAE | 0.28 | 0.08 | 0.08 |
| Florida, US | 0.23 | 0.05 | 0.05 |

A dash (-) indicates comparable data not available.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015