

## Factor analysis

Using principal component analysis (PCA), we intended to verify the structure of latent variables and indicators. First, we used an oblique (oblimin) rotation method, to allow correlations between components. Table S1 shows the component correlation matrix. As correlations were sufficiently low, we interpreted the rotated component matrix of the more simple structure using an orthogonal rotation method (varimax), as shown in table S2. Values below  $<.25$  are omitted.

Based on the rotated component matrix, we extracted three components. All indicators, except for 'coherence of speech' loaded more than sufficiently ( $>.76$ ) on one of the three components.

**Table S1.**

*Component Correlation Matrix*

| Component | 1     | 2    | 3     |
|-----------|-------|------|-------|
| 1         | 1     | .121 | -.203 |
| 2         | .121  | 1    | .064  |
| 3         | -.203 | .064 | 1     |

**Table S2.**

*Factor matrix*

|                        | Component |      |      |
|------------------------|-----------|------|------|
|                        | 1         | 2    | 3    |
| Reading comprehension  | .860      |      |      |
| Math                   | .809      |      |      |
| Science Skills         | .796      | .258 |      |
| Attitude enjoyment     |           | .836 |      |
| Attitude self-efficacy |           | .820 |      |
| Science Curiosity      |           | .763 |      |
| Inhibition             |           |      | .875 |
| Working memory         |           |      | .865 |
| Coherence of speech    | -.417     |      | .527 |