**Appendix**

Table 3 Results of the testing of measurement invariance between BE- and non-BE pupils of the instrument based on the modified MPB (residuals free to vary in all models)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | χ2 (df) | Scalar invariance vs no measurement invariance | Strong factorial invariance vs scalar invariance | Strong factorial invariance vs no measurement invariance |
| Strong factorial invariance | 1364.813 (900) |  | χ2 = 23.575  df = 26  p > .05 | χ2 = 53.238  df = 52  p > .05 |
| Metric, but no scalar invariance | 1341.238 (874) | χ2 = 29.663  df = 26  p > .05 |  |  |
| No measurement invariance | 1311.575 (848) |  |  |  |

**MPB Questionnaire (translated from Dutch):** Original 40 items. Italicized items indicate later deletions.

|  |  |
| --- | --- |
| **Item** | **Cognition** |
| 1 | English is one of the most important school subjects. |
| *2* | *Learning English at school is a waste of time.* |
| 3 | If I learn English well, it will help me everywhere in the world. |
| *4* | *English is important for my future job.* |
| 5 | If I am good at English, people will respect me. |
| 6 | It’s important to get good marks for English. |
| 7 | English is important for my future training or studies. |
| 8 | If I learn English better, I can speak with more and different kinds of people. |
| 9 | By learning English you also learn Dutch better. |
| 10 | When you learn English, you also learn to appreciate the culture of English-speaking countries. |
| 11 | People who learn English well have a better future. |
|  | **Affect** |
| 12 | It’s fun to learn English. |
| 13 | I like it when my teachers speak English. |
| 14 | I enjoy understanding song lyrics and video clips in English. |
| 15 | I like learning English together with my classmates. |
| *16* | *English at school is boring.* |
| *17* | *Getting a bad mark for English makes me feel terrible.* |
| 18 | I enjoy learning English at school. |
|  | **Subjective Norm** |
| 19 | I think learning English well is something I should be expected to do. |
| 20 | All junior vocational pupils should learn English well. |
| 21 | Everyone in the world should be able to use English to communicate with each other. |
| 22 | I would be ashamed later if I couldn’t speak English. |
| 23 | Pupils should work harder to learn English. |
|  | **Perceived Behavioral Control** |
| 24 | I’m afraid to speak English in class. |
| 25 | I have trouble concentrating in the English lessons. |
| 26 | I just think the English language is too hard for me to learn. |
| *27* | *If I needed help with English, my parents would try to get me some tutoring.* |
| *28* | *At school we have good books and materials for learning English.* |
| 29 | I know how to easily look up English words on the Internet or in a dictionary if I don’t understand them. |
| 30 | I don’t have enough time to study hard to learn English. |
| *31* | *At school we have useful activities and projects for learning English.* |
| 32 | I don’t know how to use the Internet to help me learn English. |
|  | **Intention** |
| 33 | In the future I’m going to pay very close attention in English class. |
| 34 | I intend to work on my English every single day. |
| *35* | *It’s enough if I can get by with a bare minimum of English.* |
| 36 | I’m going to really pay attention when someone corrects my English mistakes. |
| 37 | If I have trouble with English, I will ask the teacher for extra help. |
| 38 | I’m going to try to really focus when I read or hear English online. |
| 39 | I’m going to make a huge effort to learn English as well as I possibly can. |
| 40 | *I’m just too lazy to make an effort to learn English.* |

Table 6 Results of multilevel analyses for verifying the interactions between bilingual education (BE) and year: Does the difference between BE and non-BE pupils on the scores for MPB constructs become larger in higher years (gm =grand mean centered)?

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Different numbers of pupils from 25**  **classes and 7 schools** | | **Cognition model 1** | **Cognition model 2** | **Affect model 1** | **Affect model 2** | **Affect model 2b** | **Sub. Norm model 1** | **Sub. Norm model 2** | **PBC mod. 1** | **PBC mod. 2** | **Int. mod. 1** | **Int. mod. 2** |
| N |  | 488 | 488 | 488 | 488 | 488 | 486 | 486 | 486 | 486 | 487 | 487 |
| Variance | class | .013 (.008) | .012 (.008) | .100 (.040) | .063 (.030) | .063 (.030) | .017 (.014) | .013 (.013) | .013 (.011) | .006 (.009) | .008 (.010) | .006 (.009) |
|  | pupil | .298 (.020) | .298 (.020) | .775 (.051) | .775 (.051) | .775 (.051) | .632 (.042) | .633 (.042) | .472 (.031) | .472 (.031) | .537 (.035) | .537 (.035) |
|  | total | .311 | .310 | .875 | .838 | .838 | .649 | .646 | .485 | .478 | .545 | .543 |
| Proportion of explained variance | class |  |  |  | 37.0% | 37.0% |  |  |  | 53.8% |  |  |
|  | pupil |  |  |  | .0% | .0% |  |  |  | .0% |  |  |
|  | total |  |  |  | 4.2% | 4.2% |  |  |  | 1.4% |  |  |
|  | intercept | ***3.738*** (.058) | ***3.726*** (.065) | ***3.887*** (.127) | ***3.745*** (.125) | ***3.677*** (.196) | ***3.638*** (.076) | ***3.673*** (.084) | ***4.084*** (.067) | ***4.010*** (.069) | ***3.889*** (.065) | ***3.845*** (.072) |
| Year | 1 |  |  |  |  | .068 (.232) |  |  |  |  |  |  |
|  | 2 | .044 (.078) | .088 (.101) | -.023 (.172) | .325 (.193) | .393 (.245) | **.289** (.103) | .234 (.130) | -.079 (.089) | .060 (.106) | **-.217** (.087) | -.117 (.111) |
|  | 3 | -.032 (.090) | -.044 (.122) | -.160 (.201) | -.068 (.232) |  | .021 (.119) | -.121 (.157) | -.043 (.104) | .096 (.128) | *-.285* (.100) | -.238 (.134) |
| BE stream | Non-CLIL | *-.215* (.069) | -.187 (.098) | *-.497* (.153) | -.164 (.189) | -.409 (.292) | -.089 (.091) | -.169 (.126) | -.147 (.079) | .025 (.103) | *-.276* (.077) | -.179 (.107) |
| Year\*BE stream | Non-CLIL\* year1 |  |  |  |  | .245 (.348) |  |  |  |  |  |  |
|  | Non-CLIL\* year2 |  | -.107 (.156) |  | -.*870* (.301) | -.626 (.375) |  | .055 (.200) |  | -.**337** (.163) |  | -.236 (.170) |
|  | Non-CLIL\* year3 |  | .025 (.180) |  | -.245 (.348) |  |  | .302 (.229) |  | -.**311** (.186) |  | -.105 (.194) |
| Fit (-2loglikelihood) |  | 809.342 | 808.722 | 1291.219 | 1283.923 | 1283.923 | 1166.762 | 1165.073 | 1025.095 | 1020.364 | 1085.911 | 1084.045 |
| Fit improvement compared to model … |  |  | Cognition model 1 |  | Affect model 1 | Affect model 1 |  | Sub. Norm model 1 |  | PBC model 1 |  | Int. model 1 |
| Difference in -2logl. |  |  | .620 |  | 7.296 | 7.296 |  | 1.689 |  | 4.731 |  | 1.866 |
| Difference df |  |  | 2 |  | 2 | 2 |  | 2 |  | 2 |  | 2 |
| P value |  |  | n.s. |  | P<.05 | P<.05 |  | n.s. |  | P<.10 |  | n.s. |

ns = not significant, bold = *p* < .05, italic = *p* < .01, bold and italic = *p* < .001