



SCO-KOHNSTAMM INSTITUUT

## SUMMARY

### *Report*

## LEARNING TO LEARN

### A PILOT STUDY OF A FINNISH TEST FOR 15-YEAR OLD STUDENTS

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## Summary

### 1 Introduction and research aims

#### 1.1 Background

Learning to learn is one of the key innovations in secondary education in the Netherlands. It is the speed of developments in society that makes learning to learn such a valuable concept. Social change has been so radical and far-reaching that the knowledge and skills pupils acquire at school are no longer enough. More and more of our citizens are being faced with demands to update and extend their knowledge and skills after initial training. This is what is meant when people talk about lifelong learning.

Learning to learn is not exclusive to the Netherlands, of course. Similar trends can be observed in most Western countries: Finland is a good example. The Finns have been working to develop a new testing framework to map the effectiveness of schools since the mid-nineties (<http://www.edu.helsinki.fi/arviointikeskus/framework/>). The Learning to Learn test is a prominent component of the new framework: a test that aims to measure the extent to which pupils are prepared for lifelong learning.

The Department for Secondary Education of the Ministry of Education, Culture and Science has expressed an interest in having the Finnish instrument translated and running a pilot study with Dutch pupils. The Ministry's interest in this is connected with an initiative at European level in which the Netherlands is involved: a cooperation project on the theme of learning to learn. The project includes research into the possibility of developing instruments for this important purpose that could be shared between countries.

#### 1.2 Research aims

As its name suggests, the Finnish Learning to Learn test is geared to learning how to learn. When we were first introduced to the Finnish test, we came up against the fact that learning to learn is not a culturally-neutral concept. Subtests in the Finnish test deal with aspects of educational attainment, including knowledge of the history, geography, science, art and culture of Finland. Translation alone is not enough for subtests of this nature; localisation is needed, in which, as far as possible, comparable questions about Dutch culture would have to be set. However, in the absence of a common measure, any such undertaking would be doomed to fail before it started.

That is why it was decided to restrict the translation and the pilot study of the Finnish test to a small number of subtests that are not dependent on culture, or in any case are much less so. The choice then fell on five subtests: one from the domain of intelligence and four from the affective domain. These are described in section 3.2. The following research aims were drawn up for the chosen subtests:

- a. to translate the subtests concerned from the Finnish Learning to Learn test into Dutch;
- b. to give the tests to a sample of pupils from the third year at secondary school;
- c. to assess the psychometric quality of the subtests;
- d. to compare the subtests with instruments currently in use in the Netherlands on important psychometric criteria.

### 2 Description of the Finnish Learning to Learn test

The Learning to Learn project has been running in Finland since 1996; it is a joint venture of the National Board of Education, the Centre for Educational Assessment of the University of Helsinki and the City of Helsinki Education Department. The purpose of the project is to take measurements of learning skills. Meanwhile, versions have been

developed for different age groups: 10-, 12- and 15-year-olds and a version for pupils aged 17 and older. We are discussing the version for 15-year-olds here, pupils in year nine in the Finnish school system, the last year of compulsory schooling.

This version distinguishes between two types of subtest: cognitive tests and attitude tests (which the Finns call 'belief scales'). The test contains six cognitive subtests and five attitude subtests. Some of the subtests are broken down into a number of specific scales (see Table 2.1). There are almost 200 items in total. The test takes 180 minutes and is spread over two or three days. Several of the scales or subtests did not meet the minimum homogeneity (internal consistency of the items in a scale) requirement of .70, but it should be noted that a number of the subtests and scales were relatively short. There are no validity data.

It is interesting to compare the Finnish test with prevailing views on learning to learn in the Netherlands. It is striking that the Finnish test contains elements that in Dutch research would not be understood to form part of learning to learn. These are in fact all of the six cognitive subtests. Two of them concern intelligence; the other four concern specific school subjects: maths, reading and cultural subjects. The attitude subtest 'Socio-moral self-concept' also falls outside the scope of learning to learn, as it is envisaged in the Dutch professional literature. This subtest contains questions with which pupils can describe their own character, using labels such as 'fair', 'well-behaved', 'brave', 'lazy' and 'liar'. What is also striking is that learning strategies are poorly represented in the test. Only the 'Learning motivation and learning strategies' subtest contains a small number of questions on this issue. All in all, there is less correspondence between the Finnish test and the concept of learning to learn than the name might suggest in the Dutch use of this concept. There are Dutch tests for 15-year-olds available that cover the Dutch concept learning to learn more thoroughly.

Table 2.1 Structure of the Finnish Learning to Learn test (version for 15-year-olds)

Subtests	Scales	Number of items	Cronbach's alpha <sup>ab</sup>
<b>Cognitive scales</b>			
Reasoning skills 1	Deductive reasoning	18	.60
Reasoning skills 2	The relevance of information	14	.56
Mathematical thinking 1	Invented mathematical concepts	10	.83
Mathematical thinking 2	Arithmetic operations	10	.81
Text comprehension	Text macro-processing	32	.77
	Reading comprehension	24	.40
General knowledge	History, geography, sciences, arts and culture, signs and symbols	47	.84

Subtests	Scales	Number of items	Cronbach's alpha <sup>ab</sup>
<b>Belief scales</b>			
School-related self-concept and self-esteem	Academic self-concept		
	- I as a thinker	3	.78
	- I in mathematics	3	.93
	- I as a reader	3	.79
	- I as a speaker	3	.86
	- I as a writer	3	.88
	Global self-esteem	4	.89
	Control expectancy	3	.88
	Learning environment		
	- Class	3	.63
	- School	3	.77
	Significant others		
	- Parents' attitude towards school	4	.82
	- Teachers' attitude at school	3	.84
	- Peers' attitude towards school	3	.86
	Use of computer and books		
- Use of books and periodicals	3	.70	
- Use of computer	3	.83	
Learning motivation and learning strategies	Goal orientations		
	- Learning orientation	3	.83
	- Achievement orientation	3	.87
	- Performance orientation	3	.69
	- Ego-protective orientation	3	.76
	- Avoidance orientation	3	.79
	Means-ends-beliefs		
	- Effort	3	.75
	- Ability	3	.76
	- Chance	3	.66
	Control motivation	3	.77
	Self handicapping	3	.69
	Fear of failure	3	.69
	Deep processing		
- Deep processing	3	.77	
- Surface processing	3	.57	
Group work skills and habits	Group work behavior		
	- Domineering	4	.61
	- Withdrawing	4	.63
	- Task-oriented	8	.86
	- Cooperation-oriented	6	.81
Socio-moral self-concept	Socio-moral self-concept		
	- Good pupil	9	.82
	- Sloth	6	.79
	- Self-assured	5	.77
	- Rational	4	.80
Future orientation	Future orientation		
	- Further education orientation	6	.75
	- Not oriented to further education	4	.76

<sup>a</sup> Indices are based on a test in 1997 of a national sample of about 2,000 Finnish 15-year-olds (paper-and-pencil version).

<sup>b</sup> Cronbach's alpha gives a measure of the extent to which the items of a scale are consistent with each other. This is usually referred to as the internal consistency or homogeneity of the scale.

### 3 Research design

#### 3.1 Population and sample

The population was made up of pupils in the third year of secondary school, ranging from pre-vocational secondary education (Vmbo) streams up to and including pre-university education (Vwo) streams. A sample of 497 pupils was taken from two secondary schools. Although the sampling was not completely random, it is reasonable to assume that the pupils at these schools formed a reasonable cross section of the national population.

#### 3.2 Selected Finnish subtests

The subtests were selected for the pilot study in consultation with the research applicant. The subtests which operationalise the Dutch interpretation of learning to learn were chosen. At the request of the research applicant, a cognitive subtest was also included, even though this is, by Dutch criteria, less appropriate as an operationalisation of learning to learn. It had to be possible to complete the test within one lesson. Table 3.1 shows the five selected test components: one cognitive subtest (Reasoning skills 2) and four of the five attitude subtests. The 'Socio-moral self-concept' subtest was not included because it is of limited relevance to learning to learn.

Table 3.1 Finnish subtests selected for the Dutch pilot study

Subtests/scales	Item numbers	Number of items
A.1 Academic self-concept		
A.1.1 I as a thinker	A06 A14 A28	3
A.1.2 I in mathematics	A02 A32 A39	3
A.1.3 I as a reader	A10 A20 A42	3
A.1.4 I as a speaker	A04 A12 A33	3
A.1.5 I as a writer	A07 A30 A35	3
A.2 Global self-esteem	A09 A29 A31 A44	4
A.3 Control Expectancy	A18 A22 A26	3
A.4 Learning Environment		
A.4.1 Class	A08 A24 A34	3
A.4.2 School	A01 A19 A41	3
A.5 Significant others		
A.5.1 Parents' attitude towards school	A05 A16 A27 A37	4
A.5.2 Teachers' attitude at school	A17 A25 A40	3
A.5.3 Peers' attitude towards school	A13 A21 A43	3
A.6 Use of books and computers		
A.6.1 Use of books and periodicals	A03 A15 A36	3
A.6.2 Use of computer	A11 A23 A38	3
B.1 Goal orientations		
B.1.1 Learning orientation	B01 B12 B31	3
B.1.2 Achievement orientation	B16 B19 B34	3
B.1.3 Performance orientation	B07 B24B33	3
B.1.4 Ego-protective orientation	B05 B14 B36	3
B.1.5 Avoidance orientation	B23 B28 B38	3
B.2 Means-ends-beliefs		
B.2.1 Effort	B15 B18 B22	3
B.2.2 Ability	B13 B26 B37	3
B.2.3 Chance	B04 B10 B39	3
B.3 Control motivation	B11 B21 B32	3

Subtests/scales	Item numbers	Number of items
B.4 Self-handicapping	B06 B27 B30	3
B.5 Fear of failure	B02 B09 B20	3
B.6 Processing		
B.6.1 Deep processing	B03 B17 B25	3
B.6.2 Surface processing	B08 B29 B35	3
C Reasoning skills 2	C01 tot en met C14	14
D Group work behavior		
D.1 Domineering	D01 D06 D09 D20	4
D.2 Withdrawing	D10 D12 D13 D19	4
D.3 Task-oriented	D02 D05 D07 D08 D15 t/m D18	8
D.4 Cooperation-oriented	D03 D04 D11 D14 D21 D22	6
E Future orientation		
E.1 Further education orientation	E01 E03 E05 E06 E09 E10	6
E.2 Not oriented to further education	E02 E04 E07 E08	4

The test components were translated into Dutch from the English-language version. Then the Dutch version was compared directly with the original Finnish version, with the assistance of a fellow researcher who is proficient in both languages. Differences of interpretation that came to light through this were resolved by discussion. This approach provided extra certainty that the Dutch and Finnish versions were very similar in terms of content.

### 3.3 Data-processing and analysis

The data file contained a total of 497 pupils. The number of missing observations averaged 34 per item (6.9 percent of the number of pupils). Missing observations arose when pupils did not answer a question, for instance, because they were short of time or they found it difficult to choose an answer. Pupils who left more than 20 percent of the questions unanswered were removed from the data file. This applied to 43 pupils (8.7 percent of the total pupil sample). The data file remaining after this still included 454 pupils, who on average did not answer 3.2 percent of the items. All the homogeneity analyses were performed using list-wise deletion for each subscale. The analyses were carried out based on classic test theory, in line with the methods used by the Finns. We also followed the Finnish example when it came to allocating the items over the scales. Two types of characteristics were calculated: item characteristics (such as mean, standard deviation and item-rest correlations) and scale characteristics (mean, standard deviation and Cronbach's alpha). Two items which were worded so as to produce answers opposite to the scale were, of course, recoded in line with the scale ('Group work behaviour' subtest, items 12 and 14). Items which showed a low connection with the scale they belong to were marked (see next section 4.2). We used a minimum item-rest correlation of .30.

## 4 Results

### 4.1 Comparison of Dutch and Finnish pupils' scores

Table 4.1 shows the means and standard deviations of the sample. For comparison purposes, the means and standard deviations of a Finnish sample are also shown. The exact specifications of this sample are not known, but the sample came from a national research study carried out in Finland in the 2001-2002 school year. The Finnish data were

gathered via the Internet, just as our data were. The Finnish sample was considerably larger than the Dutch sample, containing about 3,000 pupils.

The last column of the table shows what is known as the effect size, which is a measure of the size of the difference between the two means. The effect size is calculated by dividing the difference in means by the combined standard deviation. A negative effect size in this case means that the Dutch mean is lower than the Finnish mean. Cohen (1988) has provided rules of thumb for interpreting effect sizes. Using these allows us to say the following about the differences:

small differences ( $\leq 0.20$ ):	eighteen scales
small to medium differences ( $> 0.20$ but $< 0.50$ ):	eleven scales
medium to large differences ( $\geq 0.50$ but $< 0.80$ ):	three scales
large differences ( $\geq 0.80$ ):	one scale

It can be seen then that the differences are small in the majority of cases. In our view, this sample does not warrant an interpretation of the content of the differences. There are too many uncertainties with respect to the structure of the Dutch sample for that. While it is true that the two schools that the Dutch pupils came from were in all probability not noticeably special or different, that certainly does not make our sample representative for the whole country.

Table 4.1 Scale means and standard deviations for the Dutch and Finnish samples, plus the effect size

Subtests/scales	Netherlands (ca. 450 pupils)		Finland (ca. 3,000 pupils)		Effect size (Ne-Fi) <sup>b</sup>
	Mean	SD	Mean	SD	
A.1 Academic self-concept					
A.1.1 I as a thinker	13.68	3.38	14.26	3.30	-0.18
A.1.2 I in mathematics	13.61	4.90	12.92	4.92	0.14
A.1.3 I as a reader	14.26	3.56	15.79	3.60	-0.43
A.1.4 I as a speaker	12.87	3.96	12.95	3.96	-0.02
A.1.5 I as a writer	14.55	3.52	13.23	3.96	0.34
A.2 Global self-esteem	22.83	4.46	20.97	5.15	0.37
A.3 Control Expectancy	17.90	2.96	15.34	3.76	0.70
A.4 Learning Environment					
A.4.1 Class	14.23	3.37	14.18	3.35	0.01
A.4.2 School	13.82	3.60	14.17	3.31	-0.10
A.5 Significant others					
A.5.1 Parents' attitude towards school	23.81	3.84	23.66	3.97	0.04
A.5.2 Teachers' attitude at school	13.09	3.78	13.14	3.80	-0.01
A.5.3 Peers' attitude towards school	11.96	3.72	12.66	3.73	-0.19
A.6 Use of books and computers					
A.6.1 Use of books and periodicals	10.40	3.89	12.79	3.75	-0.63
A.6.2 Use of computer	17.24	3.72	13.53	4.78	0.80
B.1 Goal orientations					
B.1.1 Learning orientation	14.85	3.74	15.25	3.51	-0.11
B.1.2 Achievement orientation	16.65	3.58	16.57	3.48	0.02
B.1.3 Performance orientation	11.21	4.41	11.90	3.82	-0.18
B.1.4 Ego-protective orientation	12.18	3.41	11.81	3.91	0.10
B.1.5 Avoidance orientation	13.62	3.78	12.54	4.09	0.27



Subtests/scales	Netherlands (ca. 450 pupils)		Finland (ca. 3,000 pupils)		Effect size (Ne-Fi) <sup>b</sup>
	Mean	SD	Mean	SD	
B.2 Means-ends-beliefs					
B.2.1 Effort	15.99	3.19	16.25	3.21	- 0.08
B.2.2 Ability	11.46	3.63	10.54	3.61	<i>0.25</i>
B.2.3 Chance	8.28	3.56	6.69	3.25	<i>0.48</i>
B.3 Control motivation	15.66	3.75	13.98	4.02	<i>0.42</i>
B.4 Self-handicapping	10.54	3.97	11.02	3.74	- <i>0.13</i>
B.5 Fear of failure	10.35	3.87	10.57	3.86	- 0.06
B.6 Processing					
B.6.1 Deep processing	13.12	3.89	14.05	3.94	- <i>0.24</i>
B.6.2 Surface processing	14.45	3.39	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
C Reasoning skills 2	7.26	2.56	8.50	2.60	- 0.48
D Group work behavior					
D.1 Domineering	13.73	4.43	13.42	4.22	0.07
D.2 Withdrawing	11.89	3.99	11.69	4.09	0.05
D.3 Task-oriented	32.93	8.54	36.11	8.12	- <i>0.39</i>
D.4 Cooperation-oriented	30.52	5.52	31.21	5.75	- <i>0.12</i>
E Future orientation					
E.1 Further education orientation	33.92	5.69	35.28	5.15	- <i>0.26</i>
E.2 Not oriented to further education	13.59	5.13	10.89	4.95	<i>0.54</i>

<sup>a</sup> Scale B.6.2 is not included in the Finnish reference sample.

<sup>b</sup> Effect sizes that deviate from zero (alpha .05) are shown in italics where the deviation is statistically significant. The standard error of the effect size is about 0.10.

If we assume for the purposes of a practice exercise that the data were *not* based on a pilot study, we can compare and attempt to interpret the test scores of the Finnish and Dutch pupils. The medium and large differences on four scales are discussed here (effect size:  $\geq 0.50$ ): 'Control Expectancy', 'Use of books and periodicals', 'Use of computers', and 'Not oriented to further education'.

'Control Expectancy' is an aspect of motivational factors and of self-evaluation. The Dutch pupils clearly had much more belief in their own control over their results (Control Expectancy) than the Finnish pupils. If this were not a practice exercise, we might expect that the Dutch pupils' greater self-confidence would result in them being more motivated for school, though it must be remembered, of course, that self-evaluations are not the only motivating factor.

With the 'Use of books and periodicals' and 'Use of computers' scales, we see an inverse difference between the Finnish and Dutch pupils. The Finns clearly reported that they made more use of books and periodicals, while the Dutch pupils made far more use of the computer (Internet) for their information. Attempts could be made to link these differences to the structure of the curriculum and availability of computers in the two countries.

Dutch pupils clearly scored higher than their Finnish counterparts on the 'Not oriented to further education' scale of the 'Future orientation' subtest. Future orientation can be seen as a motivating factor. A clearly greater measure of 'Not oriented to further education' could result in less motivation for school. It is also the case here that an objective, and certainly a long-term objective, is not the only motivating factor. As well as objectives, self-evaluations have traditionally been accepted as important motivating factors. However, it must be stated once more that any such interpretations of differences found on the scale scores are merely practice exercises at the moment.

#### 4.2 Homogeneity analyses

A total of 34 scales were included in the homogeneity analyses (or analyses of the internal consistency of the items belonging to one scale) (Table 4.2). A minimum Cronbach's alpha of .70 is common for a scale to be considered homogeneous. Eighteen of the 34 scales meet this standard. Subtest A (School-related self-concept and self-esteem) has three scales with low homogeneity; subtest B (Learning motivation and learning strategies) has nine scales; subtest D (Group work behaviour) has two scales; and subtest E (Future orientation) one scale. The only cognitive subtest C (Reasoning skills 2) also shows low homogeneity. Compared with the Finnish homogeneity figures, the results of our sample proved rather disappointing. By far the majority of scales turned out to be more homogeneous in Finland than in our sample. In the Finnish sample only nine of the 34 scales failed to meet the standard for sufficient homogeneity; however, in absolute terms this was not a negligible number.

Another way to assess the homogeneity of a scale is to study the correlations between the separate items and the scale to which they belong. To avoid auto-correlations, we used item-rest correlations. A minimum of .30 for this is customary. Seven scales turned out to contain one or more items with a low item-rest correlation. In most cases this applied to one or two items per scale. Subtest C springs out in a negative sense, because eight of the fourteen items did not meet the standard for a reasonable item-rest correlation. We decided not to analyse the content of these items, but without such an analysis it is a reasonable supposition that these items are not worded clearly, or that their content does not fit in sufficiently with the other items on the scale.

Table 4.2 Results of the homogeneity analyses

Subtests/scales	No items	Cronbach's alpha	Items with low $r_{ir}^a$	Cronbach's alpha (Finnish sample) <sup>b</sup>
A.1 Academic self-concept				
A.1.1 I as a thinker	3	.72		.78
A.1.2 I in mathematics	3	.90		.93
A.1.3 I as a reader	3	.65		.79
A.1.4 I as a speaker	3	.79		.86
A.1.5 I as a writer	3	.76		.88
A.2 Global self-esteem	4	.81		.89
A.3 Control expectancy	3	.78		.88
A.4 Learning environment				
A.4.1 Class	3	.46	A24 A34	.63
A.4.2 School	3	.72		.77
A.5 Significant others				
A.5.1 Parents' attitude towards school	4	.73		.82
A.5.2 Teachers' attitude at school	3	.77		.84
A.5.3 Peers' attitude towards school	3	.78		.86
A.6 Use of books and computers				
A.6.1 Use of books and periodicals	3	.62		.70
A.6.2 Use of computer	3	.70		.83
B.1 Goal orientations				
B.1.1 Learning orientation	3	.80		.83
B.1.2 Achievement orientation	3	.84		.87
B.1.3 Performance orientation	3	.75		.69
B.1.4 Ego-protective orientation	3	.46	B36	.76
B.1.5 Avoidance orientation	3	.57		.79

Subtests/scales		No items	Cronbach's alpha	Items with low $r_{ir}^a$	Cronbach's alpha (Finnish sample) <sup>b</sup>
B.2	Means-ends-beliefs				
	B.2.1 Effort	3	.58	B22	.75
	B.2.2 Ability	3	.69		.76
	B.2.3 Chance	3	.62		.66
B.3	Control motivation	3	.66		.77
B.4	Self-handicapping	3	.65		.69
B.5	Fear of failure	3	.62		.69
B.6	Processing				
	B.6.1 Deep processing	3	.70		.77
	B.6.2 Surface processing	3	.58		.57
C	Reasoning skills 2	14	.59	C01 C02 C05 C10 C11 C12 C13 C14	.56
D	Group work behavior				
	D.1 Domineering	4	.59	D01	.61
	D.2 Withdrawing	4	.52	D12 D13	.63
	D.3 Task-oriented	8	.86		.86
	D.4 Cooperation-oriented	6	.72	D14	.81
E	Future orientation				
	E.1 Further education orientation	6	.80		.75
	E.2 Not oriented to further education	4	.75		.76

<sup>a</sup> The limit used is .30.

<sup>b</sup> Indices are based on a test in 1997 of a national sample of about 2,000 Finnish 15-year-olds (paper-and-pencil version).

## 5 Summarised comparison of the Finnish and Dutch subtests

We compared the Finnish subtests with available Dutch instruments and what emerged from this was that only a small number of subtests added anything to the arsenal of tests already at our disposal. Part of the reason for this was that the homogeneity of the Finnish subtests left something to be desired in many cases. The subtests with potential added value are:

- A.1 Academic self-concept, except for the 'I as a reader' scale;
- A.5 Significant others, especially the 'Parents' attitude towards school' and 'Peers' attitude towards school' scales;
- B.1 Goal orientations, especially the 'Learning orientation', 'Achievement orientation' and 'Performance orientation' scales;
- Group work behaviour, especially the 'Task-oriented' and 'Cooperation-oriented' scales.

## 6 Summarised conclusions

Learning to learn is an important innovation in education in the Netherlands. Across the full spectrum of secondary education, staff have set themselves the task of teaching pupils how to learn. Naturally, there is also a need to evaluate how well this objective is being realised and instruments are needed for that purpose. This research ran a trial of the Finnish Learning to Learn test with 500 pupils in the third year of secondary school. Based on the results of the trial and a comparison of the test with a number of Dutch

instruments, we reached the following conclusions on a set of instruments to evaluate learning to learn in the Netherlands.

First, we will look at how useful the Finnish test is for use in Dutch secondary schools.

- a. While the Finnish test does contain some useful and, from a psychometric perspective, acceptable scales for measuring learning to learn, many of the scales turned out to be insufficiently homogeneous. The psychometric quality of the test as a whole was not good enough.
- b. There was a large measure of overlap with available Dutch tests on various aspects of learning to learn and the Dutch tests usually had better psychometric properties.
- c. As far as learning to learn is concerned, the Finnish test contained unnecessary elements as well as lacking other important elements. The Finnish test contained subtests that are not usually an operationalisation of learning to learn, while it lacked other subtests for common operationalisations of learning to learn. Consequently, the operationalisation of learning to learn in the Finnish test turned out not to be suitable for the way learning to learn is operationalised in the Netherlands.

Second, we concluded that there is no adequate set of instruments available for evaluating the level at which pupils have learned to learn when they reach the end of their compulsory schooling in the Netherlands. As stated earlier, there are useful tests for aspects of learning to learn. A fitting set of instruments could be developed for the Netherlands after a thorough conceptual analysis of the field of learning to learn. Possible gaps in the current tests could be filled, possibly with translations or reworkings of tests from abroad. If the aim is to develop a set of instruments for learning to learn that could be used internationally, the development could be undertaken within a broad association of countries.

The reader should bear in mind for that matter that the Finns are still developing the test. The version that was used as the source for the translation into Dutch has been modified and improved in some aspects. It is possible, therefore, that elements which were found to be psychometrically weak in this pilot study have been modified in the meantime.