

## Lickey Hills Primary School 27th-30th Sept 2004

Report from a visit by Swedes

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We are deeply grateful to Lickey Hills Primary School,  
the brilliant teachers  
the lovely children  
and their generous parents  
who all gave us the opportunity to visit their wonderful school.



## About Lexion

Lexion has been developed by Olof Gunnilstam and Martti Mårtens, both speech therapists from Sweden. Since 1992 the program has been used and tried out by countless speech therapists and special education teachers in the areas of aphasia and reading and writing difficulties. Lexion has over the years proven to be a very dependable method in assisting users with language deficits.

Lexion should be regarded as an educational tool containing 94 different training modules interwoven according to a thoroughly thought-out educational pattern.

The assessment part is a powerful tool in Lexion. The use of Lexion Assessment means a standardized testing situation. The same instructions are given by the same 'administrator' each time. The results are compiled and appropriate exercises are proposed.

*The helpful Lex Testor administers the test procedure, so the observer may make notes on the qualitative aspects of the individual's performance.*

*The test results are displayed in figures and charts. The findings are also summarized in ordinary text format.*

*Lexion automatically creates appropriate exercises according to the test results.*

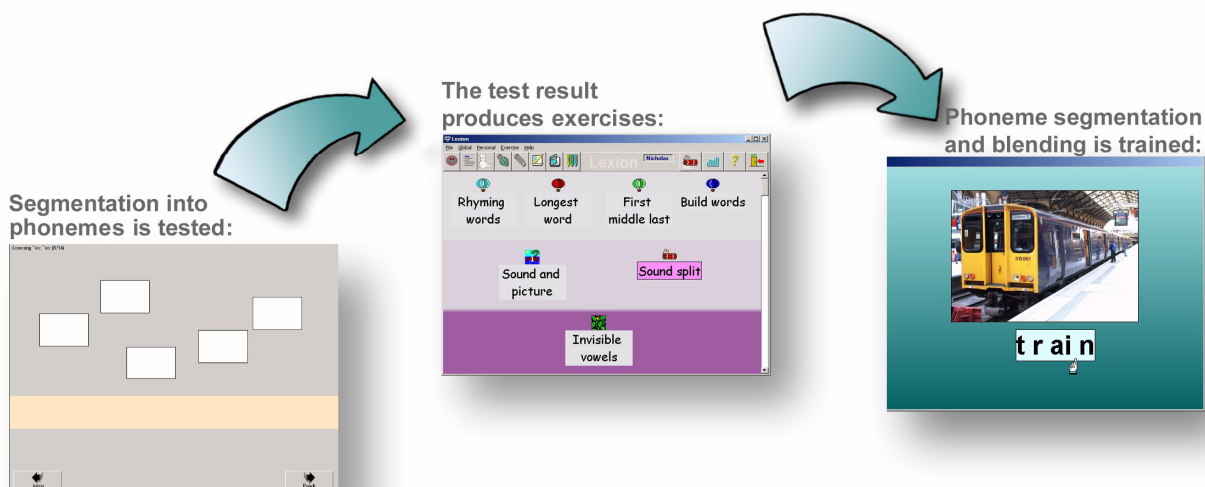
*Later the individual may be reassessed with the same or other tests.*

The assessments are firstly a tool for deciding if a certain child will have difficulties in reading and writing during the first years in school. Secondly, the assessments may be used as a screening tool at any age when a new stage in reading and writing education is to begin, or when you think that a certain level of ability should be present for an individual.

The assessment contains several parts. Each age from 6 years and up has its own test parts. For every age there are approximately 5 to 10 test areas. See next page for details.

It is our experience so far that children like to be tested with Lexion Assessment. The special approach awakens curiosity and the children concentrate surprisingly well for long periods.

The test results are compared with norms collected from normal children of the age in question. Our visit to Lickey Hills Primary School had the purpose of collecting such data, as well as check if the test items were adequately constructed for the different ages. 16 pupils from Year 1 to Year 6 were randomly selected as our test subjects.



## **Details on the tests**

### **Arrange Letters**

Instruction: You will hear a word, and then you will see some letters. Try to build the word with the letters.

Purpose: Tests the ability to build words with letters. A word is spoken (normally), and the subject will need to segment it in order to rebuild it with the letter labels.

A subject who manages the test Arrange sounded words proves to have a functioning phonological-phonemic strategy. The subject can synthesize and segment the phonemes of a word. This also suggests a functioning short term memory on this level. What happens if letters are introduced? Researchers propose that the first step into phonologically based use of letters is writing. The phonological-phonemic analysis of words requires active production of the letter sequence. It is often noticed that children mix letter names and letter sounds during this process; which is what this test might detect.

### **Arrange Sounded Letters**

Instruction: You will hear a word by their sounds. You must try to figure out what word it is, and then build the word with letters.

Purpose: This test is similar to Arrange letters, but here letter characters are used instead of empty sounding labels. The target word is segmented into phonemes. The subject does not need to segment the word, just to assemble it by means of letters.

### **Arrange Sounded words**

Instruction: You will hear sounds that make up a word. Then there will be labels on the screen. If you click on a label you will hear a sound. You must build a word with the sounds.

Purpose: Tests the ability to identify phonemes in a phoneme sequence and create a synthesis (blending) into a word. The subject should detect what word it is, say the word, and then build the word with labels representing the sounds. The sound will be presented if a label is clicked. The tasks require a deep phonological ability, which consists of synthesis, segmentation, and sequencing skills on phoneme and word level. In the writing process, for instance, active segmentation and blending is needed.

### **Arrange Syllables**

Instruction: Lex Testor will say a word. There are empty labels on the screen, representing the syllables of the word. Click on the labels to listen to the syllables. Arrange the labels so the syllables form the word that Lex Testor said.

Purpose: The test has two series. In the first series you build a word from a number of syllables. In the second series there will be superfluous labels that sound almost as the correct ones. Both series test the phonological ability; the latter also tests discrimination. The test reveals the ability to segment words into syllables and to rearrange syllables into a word. The distracting labels of the second series contain syllables similar in vowel quality or other distinctive features. A test person with a weak phonological ability may repeat the word correctly but still be unable to find the right syllables. The phonological effort may also tire the test person as the test is progressing.

### **Find picture for sounded words**

Instruction: You will hear sounds and you must tell what word they make up. Then you will see some pictures. One of the pictures fits the word.

Purpose: Tests the ability to identify phonemes in a sequence and create a synthesis into a word. The subject should detect what word it is, say the word, and then pick out the right picture. The tasks require synthesis skills and phonological awareness. In the writing process, for instance, active segmentation and synthesis is needed.

### **Phonological Awareness**

Instruction: If you have the word letter, and add the word box, what word do you get? Click on the picture that best fits the right answer.

Purpose: Tests the ability to manipulate word parts without seeing them as written text. The result will show the ability of the test person to recognize the formal aspects of language. Segments are manipulated on word, syllable, and phoneme levels.

## **Reading Comprehension**

Instruction: You will read a word. When you have read the word, click the button "Ready". Then you must pick the right picture on the screen.

Purpose: Interpreting the assessment of a subject's reading ability involves several factors. The subject must have reached a certain level of automated decoding, so that attention may be devoted to the interpretation of the meaning of a word, which, in turn, requires a lexicon.

Furthermore, certain grammar skills are needed, which involves understanding why certain words are used and how their inflection affects their meaning.

## **Reading**

Instruction: You will hear a word. Then you have to pick the right word that is written on the screen.

Purpose: Tests reading skill. The presented utterance must be matched with one of four alternatives written on the screen.

## **Remember number sequence**

Instruction: You will hear some numbers. Try to remember them. Then you will see the numbers scattered around and you must try to arrange them in the right order.

Purpose: Tests the ability to keep a short series of numbers in short term memory.

## **Remember Pattern Sequence**

Instruction: You will see meaningless patterns. First you will look at a series of patterns that you must try to remember. Then you will see them again, scattered around. Try to arrange them in the same way as they were shown from the beginning.

Purpose: Tests visual memory skills in a pure manner without engaging phonological or linguistic strategies, i.e., it is almost impossible to name the patterns in order to remember them better.

## **Remember Picture Sequence**

Instruction: You will hear some words. Try to remember the words and the order in which they were said. Then you will see pictures of all the words and you must try to arrange the pictures in the order that they were said.

Purpose: Tests the ability to keep a series of nouns in short term memory. After the words are spoken, pictures are shown in random positions and should be arranged in the right order.

## **Spoonerisms**

Purpose: Spoonerisms for age 10 to 12 is a test that replaces the Phonological awareness test. The latter was found to be too easy for the upper Primary school level, even if the tasks were made more difficult. To create a more challenging test for these students, the Spoonerisms test was added to the battery and it too tests phonological awareness. By finding the word 'football' from the source word 'bootfall', a considerable amount of phonological awareness is needed, according to recent findings in the dyslexia area. The challenge is even greater if the false word parts also have a meaning; 'cookbase' is considerably tougher than 'freakbast'.

## **Writing**

Instruction: You will hear a word. Try to write the word in the text field that appears on the screen.

Purpose: Tests writing ability. Spelling is only marginally tested. Writing is done after dictation. A word is presented. It has to be remembered, segmented into sounds, and the right graphemes have to be found on the keyboard. The words increase in difficulty during the test.

## **Remarks**

The tests for the ages 6 to 9 are identical. The tests for the ages 10 to 12 are also identical. They are separated into specific ages in order for the results to refer to the norm values of the age in question.

# Individual results

## Boy JD, Year 1

	Boy JD Y1
Arrange letters	
Arrange sounded letters	
<b>Arrange sounded words</b>	<b>0</b>
Arrange syllables	
<b>Find picture for sounded word</b>	<b>21</b>
<b>Phonological awareness</b>	<b>0</b>
Reading comprehension	
Reading	
Remember number sequence	
Remember pattern sequence	20
Remember picture sequence	15
Spoonerisms	
Writing	

The test Phonological awareness is preceded by a manual instruction where JD is asked to identify a number of words in a short sentence, e.g. “‘a sausage’, how many words is that?”, which he could not answer. We tried to do the instruction tasks in the test itself, but we had to abandon that.

The test Arrange sounded words is a more demanding test than the previous one. Both tests indicate that JD’s phonological ability in relation to letters is not fully developed.

However, his results in the test Find picture for sounded word indicate that he has begun to understand the concept of a phoneme in a phonological context. This requires the support of pictures for naming which gives him the word name. JD needs more manual help to understand the introductory tasks.

An additional undeveloped area is his short term memory and working memory. This is shown in the tests Remember Picture and Pattern sequence respectively. The first one requires auditory memory sequencing skills. The latter one requires visual memory skills to a higher degree.

Summary: JD has fundamental problems with tasks that make significant demands on language processes.

## Girl RK, Year 1

	Girl RK Y1
Arrange letters	
Arrange sounded letters	
<b>Arrange sounded words</b>	<b>17</b>
Arrange syllables	
Find picture for sounded words	50
<b>Phonological awareness</b>	<b>56</b>
Reading comprehension	
Reading	
Remember number sequence	
Remember pattern sequence	50
Remember picture sequence	38
Spoonerisms	
Writing	

The results of RK confirm our general impression regarding phonological ability that the Phonological awareness test is performed better than the Arrange sounded words test. The memory tests show better results. RK also shows results above average in memory tests. This indicates that she is making progress. Comparing the test Arrange sounded words and the test Find picture for sounded words shows that she still needs additional visual support by pictures. No letters should be introduced yet, as that might interfere with her improvements.

## Girl FG, Year 1

	Girl FG Y1
Arrange letters	
Arrange sounded letters	
<b>Arrange sounded words</b>	<b>17</b>
Arrange syllables	
Find picture for sounded words	71
<b>Phonological awareness</b>	<b>84</b>
Reading comprehension	
Reading	
Remember number sequence	
Remember pattern sequence	40
Remember picture sequence	62
Spoonerisms	
Writing	

FG has developed phonological awareness well, but has a weakness in the deeper processing. She also takes advantage of pictures supporting the process. She shows high results for her age in phonological tasks. FG needs further exercises in deep phonological processing with picture support.

**Elementary** phonological ability refers to the ability to recognize rhyming words, word lengths, etc., but will not be sufficient for recognizing individual phonemes.

**Deep** phonological ability refers to the ability to also recognize the phonemes of words, manage the segmentation of words into phonemes and the blending of phonemes into words, and generally understand the fundamental functions of phonemes.

## Boy TF, Year 2

	Boy TF Y2
Arrange letters	50
Arrange sounded letters	
<b>Arrange sounded words</b>	
Arrange syllables	
Find picture for sounded words	38
<b>Phonological awareness</b>	<b>4</b>
Reading comprehension	
Reading	68
Remember number sequence	
Remember pattern sequence	60
Remember picture sequence	69
Spoonerisms	
Writing	31

TF needs elementary phonological non-letter training, in order to acquire the deep phonological ability required in adequate decoding and spelling. He has a very good auditory and visual sequencing memory. This indicates that he has good prerequisites for memorizing and retrieval. His reading is now probably very much based on logographic strategies.

## Girl AP, Year 2

	Girl AP Y2
Arrange letters	81
<b>Arrange sounded letters</b>	<b>44</b>
Arrange sounded words	33
Arrange syllables	
Find picture for sounded words	64
<b>Phonological awareness</b>	<b>72</b>
Reading comprehension	
<b>Reading</b>	<b>74</b>
Remember number sequence	45
Remember pattern sequence	40
Remember picture sequence	38
Spoonerisms	
<b>Writing</b>	<b>23</b>

AP has a rather good deep phonological awareness but not enough prerequisites yet for acquiring adequate spelling. She needs more focusing on the deep processing, first without letters and later with letters.

AP reads well due to good logographic skills, but we suspect that she also uses phonological assistance for less frequent words.

Writing requires more phonological ability than reading because you can not write a word as a homogeneous unit, you have to produce it letter by letter.

## Girl EP, Year 2

	Girl EP Y2
Arrange letters	50
Arrange sounded letters	33
<b>Arrange sounded words</b>	<b>25</b>
Arrange syllables	
Find picture for sounded words	57
<b>Phonological awareness</b>	<b>80</b>
Reading comprehension	
<b>Reading</b>	<b>47</b>
Remember number sequence	55
Remember pattern sequence	50
Remember picture sequence	69
Spoonerisms	
<b>Writing</b>	<b>15</b>

The results show a good average, but Arrange sounded words (typically) and Writing are somewhat problematic.

EP obviously reads logographically.

Aside from these observations, there is nothing alarming about her.

### Boy SC, Year 3

	Boy SC Y3
Arrange letters	100
Arrange sounded letters	89
<b>Arrange sounded words</b>	<b>75</b>
Arrange syllables	
Find picture for sounded words	100
<b>Phonological awareness</b>	<b>92</b>
Reading comprehension	80
Reading	100
Remember number sequence	45
Remember pattern sequence	70
Remember picture sequence	69
Spoonerisms	
<b>Writing</b>	<b>85</b>

SC achieves top results in all tests. He does not seem to have any problems in reading and writing, considering his age. It is interesting to note that his spelling ability correlates with the results in Arrange sounded words, meaning that, in our opinion, he has the prerequisites for a good development in reading and writing acquisition.

### Girl TLH, Year 3

	Girl TLH Y3
Arrange letters	50
<b>Arrange sounded letters</b>	<b>17</b>
<b>Arrange sounded words</b>	<b>42</b>
Arrange syllables	
Find picture for sounded words	29
<b>Phonological awareness</b>	<b>52</b>
Reading comprehension	48
Reading	79
Remember number sequence	18
Remember pattern sequence	40
Remember picture sequence	69
Spoonerisms	
<b>Writing</b>	<b>31</b>

TLH gets anxious when tasks are too difficult. The results show a typical pattern; good reading and good picture memory (number sequence, however, is problematic).

TLH seems to take advantage of logographical strategies instead of phonological ones. This might jeopardize her future development as a reader if deep phonological ability is not trained.

### Boy GR, Year 3

	Boy GR Y3
Arrange letters	69
<b>Arrange sounded letters</b>	<b>72</b>
<b>Arrange sounded words</b>	<b>33</b>
Arrange syllables	
Find picture for sounded words	57
<b>Phonological awareness</b>	<b>92</b>
<b>Reading comprehension</b>	<b>64</b>
<b>Reading</b>	<b>89</b>
Remember number sequence	64
Remember pattern sequence	70
<b>Remember picture sequence</b>	<b>92</b>
Spoonerisms	
Writing	23

GR has good results in elementary phonological awareness but, unfortunately, that does not mean that his deep phonological ability has improved. Arranging sounded words and Writing show low results, while Reading and Reading comprehension are rather good. We may look for the answer to this from another aspect than the phonological one. If we look at the extremely good results in Remember picture sequence, one might draw the conclusion that his reading is dependent on logographical strategies. We may only speculate why GR achieved such good results in the test Arrange sounded letters in relation to Arrange sounded words. Both these tests have similar stimulus items. The logical assumption is that he is a logographical reader.

### Girl JC, Year 4

	Girl JC Y4
Arrange letters	75
Arrange sounded letters	56
<b>Arrange sounded words</b>	<b>33</b>
Arrange syllables	
Find picture for sounded words	86
<b>Phonological awareness</b>	<b>80</b>
Reading comprehension	76
Reading	79
Remember number sequence	82
Remember pattern sequence	80
Remember picture sequence	69
Spoonerisms	
Writing	38

JC seems to have achieved rather normal results. Though there are no norm values (or the values are based on too small a number of test subjects) we may conclude that JC will continue her literacy development in a normal way.

## Boy SH, Year 4

	Boy SH Y4
Arrange letters	25
Arrange sounded letters	33
<b>Arrange sounded words</b>	17
Arrange syllables	
Find picture for sounded words	64
<b>Phonological awareness</b>	76
Reading comprehension	28
Reading	37
Remember number sequence	55
Remember pattern sequence	70
Remember picture sequence	31
Spoonerisms	
<b>Writing</b>	15

SH demonstrates the typical discrepancy between phonological awareness and handling sounded words. This indicates that he has not automatically retrieved deeper phonological ability. The deep one is needed to be able to perform blending of phonemes. We see the consequence of this in Arrange sounded words, which shows if there is a prerequisite for phonologically based spelling.

SH has normal results on the memory tasks. This suggests that we can not refer to poor memory regarding the results in Arrange sounded words.

## Boy LH, Year 4:

	Boy LH Y4
Arrange letters	75
Arrange sounded letters	61
<b>Arrange sounded words</b>	<b>33</b>
Arrange syllables	
Find picture for sounded words	80
<b>Phonological awareness</b>	<b>56</b>
Reading comprehension	80
Reading	79
Remember number sequence	64
Remember pattern sequence	60
Remember picture sequence	38
Spoonerisms	
<b>Writing</b>	<b>46</b>

LH demonstrates a rather typical performance pattern, except for a discrepancy in Arrange sounded words. The results in Phonological awareness could be better considering his age. The conclusion is that he would benefit from structured training in this cognitive area.

## Girl JC, Year 5:

	Girl JC Y5
Arrange letters	
Arrange sounded letters	
<b>Arrange sounded words</b>	<b>17</b>
Arrange syllables	67
Find picture for sounded words	
Phonological awareness	
Reading comprehension	65
<b>Reading</b>	<b>46</b>
Remember number sequence	
Remember pattern sequence	
Remember picture sequence	
<b>Spoonerisms</b>	<b>75</b>
<b>Writing</b>	<b>17</b>

JC also demonstrates results comparable with the other children that have problems in deep phonological processing. Elementary phonological ability is good, as shown in Spoonerisms. Reading ought to be better but is consistently below average considering her age, probably due to phonological processing problems. We had to repeat the initial instruction a few times about the principles of Spoonerisms with the marker labels. Works slowly at the end. The final result in Spoonerisms is, however, satisfactory.

Thinks of goldfish instead of goldfish. Does not understand the words underestimation, hypersensitivity, electromagnetically.

Means that flower is a one-syllable word. Does not understand that energy should be e\_e\_g\_ and not en\_er\_gy\_.

Selects astronawt, calandar, descriphshon, thawt, etc. These words visually resemble the right ones. Thus, logographical strategies are probably dominating.

## Boy OHJ, Year 5:

	Boy OHJ Y5
Arrange letters	
Arrange sounded letters	
<b>Arrange sounded words</b>	<b>50</b>
Arrange syllables	83
Find picture for sounded words	
Phonological awareness	
Reading comprehension	74
Reading	71
Remember number sequence	
Remember pattern sequence	
Remember picture sequence	85
<b>Spoonerisms</b>	<b>85</b>
<b>Writing</b>	<b>35</b>

OHJ manages the deeper phonological processing well compared to the other children, as shown in Arrange sounded words. His results indicate that he probably will not have any future problems in reading and writing. Writing, though, could improve if deep phonological training increased. If you plan on giving a larger group of pupils increased deep phonological training, he is also a candidate, but his needs are not as big as those of other children.

Suggests goldfish instead of goldfish. Means that flower is a one-syllable word. Suggests astronaut, parlement.

Arranges: The huge elephant is a animal.

## Boy LK, Year 6

Boy LK Y6	
Arrange letters	
Arrange sounded letters	
<b>Arrange sounded words</b>	<b>50</b>
Arrange syllables	72
Find picture for sounded words	
Phonological awareness	
Reading comprehension	87
Reading	75
Remember number sequence	
Remember pattern sequence	
Remember picture sequence	62
<b>Spoonerisms</b>	<b>75</b>
<b>Writing</b>	<b>48</b>

This young person gives the impression that he is in a phase of acquiring phonological processing, but due to his age it is not really enough. We expect that the amount of new words in the school literature will soon increase rapidly and this might give LK problems in decoding unfamiliar words. LK may place the labels of the word 'together' from memory but cannot say what word that is. He leans on memory capacities instead of phonological processes, because he can not assemble the phonemes into the spoken word.

## Boy COG, Year 6

Boy COG Y6	
Arrange letters	
Arrange sounded letters	
<b>Arrange sounded words</b>	<b>8</b>
Arrange syllables	22
Find picture for sounded words	
Phonological awareness	
Reading comprehension	0
<b>Reading</b>	<b>21</b>
Remember number sequence	
Remember pattern sequence	70
Remember picture sequence	46
<b>Spoonerisms</b>	<b>10</b>
<b>Writing</b>	<b>0</b>

COG, as we all know, has developed language skills slowly. He cannot develop the various language skills without help. The question is how much he understands of complex lectures etc. but his teachers would know that. A test in this area should have been made to try to establish his future ability in understanding written language. His reading ability is probably based on word images. Still, high frequency words as 'kitchen' pose problems. Interestingly, the results in Remember pattern sequence seem near average, which indicates that COG has a good capacity in visual analysis and processing.

COG does not understand the principles of Spoonerisms. He writes forst and vegtbs. Insect becomes est. Builds a set of stairs in Remember picture sequence. In the end he makes random arrangements.

