

Exploring the reading-writing relation

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Introduction

The aim of the present paper is to present the correlation between reading and writing and the didactic potential for this correlation in literacy enhancement in school. This aim entails two sub-goals. One such sub-goal is to report from the research literature on the relation between reading and writing competence, as discussed in Langer and Flihan (2000) and laid out in Loban 1963. Another sub-goal of this paper is to set up this and similar research as a background for my own study, which is to be further developed, of assessing the writing development and its relation with the reading, of a group of students with varied language backgrounds in a Norwegian mid-size city school in the period 2008-2011. I will furthermore tentatively show an example of what the reading-writing correlation may amount to, by studying the assessed writing of a student's text on the one hand and the reading test administered for the students on the other.

In my project I survey the students from 3rd to 5th grade. An in-depth study will be made of one school class (28 students), with the possibility of a corrective type of information from two parallel classes at the same school. The project is part of a bigger research project whose goal is to enhance students' literacy in a setting of great access to literature and reading.

Motivation for exploring the reading-writing relation:

In my project I want to see in what concrete ways reading competence and writing competence match and do not match. Since the two activities are different in aim and purpose, it can be expected that there will not be a perfect match in the level of mastery of the various sub-competences like vocabulary, recognition versus synthesis of words and sentences, etc.

A further motivation is that if we find more detailed information about the characteristics of the correlation between reading and writing, and if the relationship is of the type exemplified by passive and active vocabulary, we are able to explicate why it is the case that reading combined with productive activities like writing, dramatizing, etc, in connection with the students' reading, yield better scores on general literacy measures than does reading alone (Allekleiv og Lindvall 2003, Elley 1991, Begnum, Daal, Gabrielsen og Solheim, 2007).

The detailed information may also give teachers ideas as to how such additional literacy activities as those mentioned above should be structured and carried out, i.e. in what language fields and in what ways the productive activities may be most effective with regard to deepening and widening the receptive and productive language knowledge gained through the students' reading of literature, i.e. in what ways the additional activities are most effective with regard to enhancing the students' literacy.

In the paper, I first look at the correlation between reading and writing as it is laid out in the research literature, with the aim of selecting some linguistic fields where reading competence and writing competence correspond. Then I give an example of a student's written text, matched with the variables in the diagnostic reading test, to give an idea of what kinds of details that may be expected to be found.

The reading and writing correlation

Langer and Flihan (2000) hold that the central focus of research on literacy examines reading and writing as they are embedded in social and cultural contexts. They state that "... literacy studies now explore how, when and where reading and writing are used, by whom and for what purposes." (ibid.) Hence, literacy is more than the skills of reading and writing, but naturally includes both, as well as the process and situations these actions are part of. What processes and situations are these? And how are the processes and situations of the two skills related, how are they similar and how do they differ? Langer and Flihan refer to research that asserts that writing and reading are both meaning-making activities: "When people write and read, meaning is continually in a state of becoming. The mind anticipates, looks back, and forms momentary impressions that change and grow as meaning develops." (ibid.).

Some (e.g. Smith 1983) hold that reading like a writer allows one to actually become a writer, by way of modelling what is read when actually turning to write. Also, turning the perspective, when one writes, one has to put oneself in the shoes of the reader, the writer has to imagine the knowledge level of the reader, in order to compose comprehensible prose for the reader.

Still, notwithstanding their similarities, reading and writing are different with regard to activity, strategy and purpose. Langer (1984) found that writing and reading were different in that pupils are slightly more concerned with bottom-up issues such as syntax, text and lexical choices when writing than when reading. She also found that pupils were more aware of the strategies they used to get at meaning when writing than when reading.

A vast amount of research literature report about the relation between reading and writing, in that very good results are observed for students on all literacy measures, including writing, in school settings where the students are "flooded" with good and varied literature, and where they are given ample time in school to read (see Alleklev og Lindvall 1998 and 2003, Armbruster, McCarthey and Cummins 2005, Axelsson 2000, Begnum, Daal, Gabrielsen, and Solheim 2007, Elley 1991, Morrow, Pressley, Smith and Smith 1997, Roser and Bommer 2005).

Furthermore, Walter Loban and his research team as early as in the 1950s started a research program to quantitatively, in a longitudinal study, evaluate the potential correspondence between reading, writing, listening and speaking in a group of 338 children who attended kindergarten in 1952. The researchers monitored the students over a period of eleven years. Here I will concentrate on the relation between reading and writing, as reported in a research report, Loban (1963).

Loban and his team in third grade used a reading test which included the extraction of word and paragraph meaning. It served as the base for assessing the reading competence of the students in the research program. With regard to writing, the students were tested in the beginning of fourth grade (8-9 years old).¹

As for the students' writing ability, the following parameters were assessed:

1. The use of sentence patterns
2. The use of relational words (*yet, however, since*, etc.)
3. The use of phrases and clauses

¹ They used The Stanford Achievement Test to assess the reading competence in sixth grade. Information about The Stanford Achievement Test of today: <http://www.ncele.gwu.edu/databases/EAC/EAC0167.HTM>

4. The organization of ideas
5. The expression of time and place
6. The employment of vigorous verbs
7. The use of specific, rather than general, vocabulary
8. Awareness of reader
9. Spelling and punctuation
10. +/- title
11. clarity of content

Loban and his team found that from the reading tests undertaken in third grade and the writing tests undertaken in the beginning of fourth grade, there is a strong correlation between the students reading competence and their writing competence. Table 1 shows the connection between the two competences for the selection of students in this specific correlation check

Written language: classification of students	Students in classified writing group	Students in the lowest reading quartile (1/4)	Students in the second lowest reading quartile	Students in the second highest reading quartile	Students in the highest reading quartile
I (highest)	33	0 (0%)	6 (15%)	10 (25.5%)	17 (44%)
II	52	5 (12.5%)	16 (40%)	19 (48.5%)	12 (31%)
III	44	16 (40%)	15 (37.5%)	6 (15.5%)	7 (18%)
IV (lowest)	29	19 (47.5%)	3 (7.5%)	4 (10.5%)	3 (7%)
TOTAL GROUP	118	40 (100%)	40 (100%)	39 (100%)	39 (100%)

Table 1 The interrelation between reading and writing in grade 3-4 (interpreted from the data in Loban 1963).

Also in grade 6, there is a strong interrelation between reading and writing abilities in the (same) students. Table 2 shows the connection between the two competences for the selection of students in this specific correlation check (Loban 1963:74):

Written language: classification of students	Number in group	Number reading above chronological age	Number reading below chronological age	Average reading achievement above or below expected age norm
I (highest)	21	21	0	+3 yr. and 6 mo.
II	102	83	19	+1 yr. and 6 mo.
III	73	20	53	-0 yr. and 9 mo.
IV	22	0	22	-2 yr. and 7 mo.
V (lowest)	4	0	4	-3 yr. and 6 mo.
TOTAL GROUP	222	124	98	+0 yr. and 5 mo.

Table 2 Interrelations among reading and writing, grade 6, Loban (1963).

These results are interesting in their own right. My project involves taking these correlations as given, and try to sort out in what way the two literacy competences correlate, i.e. for

example, to find whether it is necessary to have good bottom up strategy in word creation (morphology) in writing in order to have good word/morphological understanding when reading? Similarly, is it a prerequisite for a student to write well, that the student is able to organize information in a successful manner when she reads?

**What can a student's reading tell us about the student's potential problems in writing?
What can the student's writing tell us about the student's potential problems in reading?**

As mentioned in the introduction, it cannot be anticipated that the relation between each competence field, like morphological and syntactic interpretation in reading, corresponds directly with the same type of competence in writing, since the action of writing presupposes a (conscious or non-conscious) competence of the particular linguistic subfield that is not necessary for succeeding in understanding and interpreting, i.e. when reading.

The language field of vocabulary illustrates this point: It is common that a person's passive (receptive) vocabulary outnumbers his or her active (productive) vocabulary. That is, a person can read and listen to a lot of words and understand and interpret them in the situation where they are used, but when the person is talking and writing, other words are chosen, words that the speaker/writer feels more comfortable with and has a deeper knowledge of. The correlation in this case is such that a relatively high number of words in the passive vocabulary would correspond to a relatively high number of words in the active vocabulary, but still, the absolute numbers would still normally be lower of the active type than that of the passive.

That is, in general, the sub-competences that are included as part of an overall reading competence, may often match in one way with a sub-competence necessary for writing, but the match is probably not one of identity. It is therefore interesting to sort out in some detail how the competences differ, notwithstanding their similarities. It can also be interesting, further in the project, to compare the students looking for students with the same score in one sub-discipline in reading, say, but different skills in the corresponding sub-discipline in writing, or vice versa. Such findings would indicate that a rather complex relation holds between the (what in the outset is taken to be) corresponding sub-disciplines of reading and writing.

In the following, I will tentatively show how I plan to look for concrete reading-writing correspondences by matching students' writing with their reading ability. Not by comparing total test scores, but rather by comparing similar linguistic subfields like word and sentence understanding (reading) and composing (writing). To do this, it is necessary to look more closely at the reading tests used.

The reading tests used in my project

The students' reading development is recorded in reading tests administrated by authorities external to the research project. The reading tests are both national tests and diagnostic tests carried out in 3rd and 5th grade, i.e., in the start and towards the end of the project. In these tests, vocabulary and morphological consciousness are central test variables, in addition to the students' ability to extract information by way of textual, syntactic and semantic knowledge. For compatibility and comparability, the variables I analyze in the students' writing are chosen from the battery of variables tested for in the reading tests. The texts written by the

students are therefore checked for development with regard to word choice, morphological and syntactic maturity, text grammatical competence and genre repertoire.

In order to compare and sort out the potential sub-correspondences and differences, we can look at variables in the written texts that are similar to those variables tested for in the reading tests. What are those variables? Some good candidates, as we study the reading tests, may be: choice of words, some aspects of orthography, morphology, syntax and text grammar features.

More concretely, the diagnostic test consists of the following:

- The reading of words: from word to picture – the student is supposed to find the picture that fits with the word ("polar bears" is to be matched with a picture of SEVERAL polar bears)
- Analysis of compound words (reading-book (not re-adingbook), light-bulb, etc.)
- The reading of words: from picture to word
- The reading of sentences (matching a sentence with a picture)
- Cloze-test – (The children tried to make the toad eat ... i) cake ii) sausage iii) pizza iv) pancake)
- Other tasks related to the interpretation of the story read.

National reading tests concentrate on the following three aspects of reading:

- Finding information in the presented text
- Interpreting and understand the text
- Reflecting over and assessing the form and content of the text.

Example from the national reading test (5th grade):

Opp-ned musene ('The upside-down mice' by Roald Dahl)

[A story about an old man who wants to get rid of the mice in his house. He glues mouse traps and chairs in the ceiling, upside-down. When the mice see this, they first laugh, but then they suddenly "understand" that they themselves are standing in the ceiling, and that the world is turned upside-down. They decide to stand upside-down, too. After a while, they all fall unconscious. The old man can then pick them up and get rid of them.]

Questions in the test (multiple choice)

- Where did the man put he mouse traps?
- Why did the mice slap each other on the shoulder and point to the ceiling when they came out of theirs holes the first night?
- In what way does the story show you what the mice thought was about to happen?
- Why were the mice laying all over the floor when the man came down the last morning?

The type of competence needed to answer these questions presupposes other sub-competences like decoding, understanding parts of words and parts of speech (morphemes and words), and a good understanding of syntax (coordination, subordination, etc.) (more about these aspects in Øzker 2008: "Språkutvikling, lesing og innholdsforståelse – en presentasjon av NEIS-modellen").

A student text

For my project, texts are collected and studied throughout the period (2008-2011). Here only one text is shown. It is clear that to get a proper understanding of the student's writing, also compared to the student's reading capacity, more texts have to be studied. For the purpose of this paper, however, one text suffices in order to show how the analysis may be carried out. The text example shown here is a fiction text of a 3rd grade student with Norwegian as a second language. The text is written as a task in class. The task is to write about an animal, for example what it looks like, where it lives and what it eats:

Katt

(English gloss)	(Norwegian original)
cat	katt
1. the most cat are black or brown	de fleste katt er svarte eller brune
2. and catts are very small also is it	og kater er veldig små også er det
3. not dangerous and go near cat-the becaused	ikke farlig og gå nær katten fordi
4. some catt-s own someone and some live outside	noen kater eier noen og noen lever ute
5. kat-the eat mice, meat and animals	katten spiser mus, kjøtt og dyr
6. i like catt-s mor than the other animals but	jeg liker kater mere enn de andre dyr men
7. if we are wicked	hvis vi er slem
8. at cat-the then	mot katten så
9. bitts it us	bitter den oss
10. on legg ours	på benne vårt
11. or maybe a difrnt plc	eller kanskje et ant ste
12. hwen catt-s shall	vhis kater skal
13. tallk or shall	snake eller skal
14. say something then say	si noe da sier
15. it only miau	den bare miau
16. then know all ouwners	da vet alle æierne
17. that they will say or	at de vil si eller
18. tallk something therefore	snake noe derfor
19. say they just miau	sier de bare miau
20. because they manage not	fordi de klarer ikke
21. tallk or say something	snake eller si noe

Analyzing the *Katt*-text with regard to the proposed variables

With regard to the variable text grammar, the text can be assessed in one sense to be well composed, in that the student does not merely list the answers to the questions posed by the teacher (*What does the animal look like? Where does it live? What does it eat?*), she rather answers the questions by folding the bits of information into a naturally flowing text. On the other hand, the text lacks a well-formulated ending, it just stops.

With regard to syntax, we see that each sentence is well-formed, although the student does not use punctuation and capital letters that separate the sentences in a correct manner. If we insert full stops after each period, with the proper succeeding capital letter, we can better discover the sentence structures:

Katt

De fleste katt er svarte eller brune og kater er veldig småe. Også er det ikke farlig og gå nær katten fordi noen kater eier noen og noen lever ute. Katten spiser mus, kjøtt og dyr. Jeg liker kater mere enn de andre dyr men hvis vi er slem mot katten så bitter den oss på benne vårt eller kanskje et ant ste. Vhis kater skal snake eller skal si noe da sier den bare miau. Da vet alle æierne at de vil si eller snake noe. Derfor sier de bare miau fordi de klarer ikke snake eller si noe.

The text actually exhibits a wide selection of syntactic structures. We see examples of coordinated sentences (e.g. line 1-2), contrasting coordination (i.e. with *men* ('but') line 6-7), subordinated sentences (e.g. line 2-4 and 16-17), comparison (line 6), etc. The problem with lacking punctuation and capital letters can be viewed as an important, but superficial problem for this student's writing, since she truly has good syntactic competence in her oral language, reflected in her writing. She only needs to become aware of the writing conventions of marking the end of the periods.

As for morphology, again, the way the student inflects the verbs, nouns and adjectives is close to perfect if we abstract away spelling mistakes and probable slips of the pen. In the first line, for example, the noun *katt* ('cat') is in the singular, while the phrase, with the determinative *de* ('they') and the adjective *fleste* ('most'), makes up a plural setting. However, immediately after the word *katt*, the verb *er* ('is') appears. This verb incidentally consists of exactly the same two letters (-*er*) that are missing for a plural marking on *katt*. Since the distinction between singular and plural on the noun is otherwise mastered by the student, this mistake is probably a superficial slip of the pen. In line 6 there is however an example of a non-idiomatic phrase, the lack of a double definite marking (in the text: *de andre dyr*, idiomatic: *de andre dyrene*), which may be a general problem for the student and something for the teacher to look at if it persists in later texts. There also is an apparent mistake in the number inflection on the adjective *slem* ('wicked'/'bad')(in line 7), but this may actually be due to the nearly silent *-e* in rapid speech in these cases, and might therefore rather be an example of a more general observation, namely the oral, phonetic, aspect of spelling in the text.

As mentioned, the student writes in an oral manner, i.e. the spelling in the text is more phonetically based than the spelling norm allows for (e.g. *æierne* ('the owners') in line 16). The student is however trying out some orthographic rules, like "silent g" (which results in the correct *farlig* ('dangerous'), but also results in the writing mistake with the extra g in *fordig* ('because') in line 3, double consonant (is lacking some places, some places it is correctly used and some places she writes a double consonant where there should have been a single consonant), which shows that she is aware that there are differences between her oral language and the conventional written language. She is also partly aware of what some of the rules are, but she needs to work somewhat more to see what the detailed criteria of the orthographic rules are. For a third grade student she is on good track, however, since such spelling mistakes also, like the punctuation problems, are of a superficial nature. Her oral skills and her approach to trying out some of the conventions of the written language shows a language competent student with good potential. One must also take into account that Norwegian is her second language, although her mistakes are age-typical also for students with Norwegian as first language.

With regard to word choice, the student seems to have a reasonable understanding of the words and a relatively good vocabulary, although it is hard to tell from this small text alone. Nevertheless, she shows some confusion as to the hierarchical ordering of the semantics of some of the words, as shown by the sentence "katten spiser mus, kjøtt og dyr" ('the cat eats

mice, meat and animals'), since *meat* here should rather be used more or less as a synonym with *animal*, not a different kind of food altogether. Also, lack of precise vocabulary may have led to the rather non-specific formulation *ant ste* in the sentence "hvis vi er slem mot katten så biter den oss på benne vårt eller kanskje et ant ste" ('if we are mean to the cat, it will bite us in the leg or maybe in a different place').

Potential objections

An objection may be made as to whether it is possible to assess the writing competence of children, since writing presupposes an array of competences, both on the micro level (orthographical and grammatical competence) and macro level (ability to communicate with the reader, text grammatical competence, aptitude to choose a proper form for presenting a certain type of content, etc.). The various parts of this array of competences are often counted and assessed differently by different assessors, i.e. the assessment of the same text may vary quite a bit from assessor to assessor (Berge et al. (2005) report of a correlation of 0.69 for the assessors of the final written exams (15 year-olds) in Norway in the period 1998-2001). Also, the relevance of the variables may vary, depending on the acts of writing. These differences in the assessment of the aspects of writing make it difficult to design a perfect national writing test once and for all. Having studied the model underlying the national writing test of 2005, Fasting (2006) and Fasting and Thygesen (to appear) conclude that it is difficult, although not impossible, to ensure an outcome that yields comparable information about the writing competence of the students on a national level, and also yields information about what steps should be taken on a local level in order to strengthen particular competences where needed. Fasting and Thygesen hold that to improve the national writing tests in these aspects, more detailed and nuanced information should be given locally, whereas on a national level, the information can be more general.

In my project, only a small part of the possible writing competence factors are selected, mostly micro level factors, in order to focus on those factors or variables that best seem to match those tested for in the diagnostic reading test and the national reading test. I do not attempt to find a national fixed way of assessing the writing competence of students, I pick the variables for the writing assessment for other, methodological and didactic, reasons.

Summing up

The project, which is to be further developed, is motivated by an interest in a further exploration and specification of the correlation between students' reading and writing, i.e. to specify the correlation in a more detailed, particularly linguistic, manner. Such an exploration and specification is valuable for the theoretical and methodological advances in literacy research. It may also encourage educators to engage their students more in specific writing activities, and to combine reading and writing in meaningful mixed activities. In the present paper I have presented the reported correlation between reading and writing, and I have argued for a didactic potential for this correlation in literacy enhancement in school. An example was presented of what a detailed reading-writing correlation may reveal of specific linguistic information, potentially useful for the teacher who needs to track down particular problems in a student's reading or writing. The detailed information was here tentatively elicited from the assessed writing of a student's text on the one hand and the reading test administered for the students on the other.

Literature:

- Alleklev og Lindvall, 2003: "Listiga Råven smyger vidare – Litteraturen som väg till kunskap från år 4". En bok för alla AB.
- Alleklev, B. Olsson, I. og Lindvall, L. (1998): "Listiga Råven. Ett treårig läs- och skrivprojekt i Kvarnby skolan och Rinkeby bibliotek". Rinkeby: Kvarnby skolan.
- Armbruster, Bonnie B., Sarah J. McCarthy og Sunday Cummins (2005): "Writing to learn in elementary class rooms" in Indrisano og Paratore: *Learning to write and writing to learn – Theory and research in Practice*, Editors, Boston University, MA, USA.
- Axelsson, Mona (2000): "Framgång för alla. Från att inte kunna – till att inte kunna låta bli att läsa" i Hans Åhl (red.) *Svenskan i tiden – verklighet og visioner*. HLS Förlag.
- Begnum, A. C., Daal, V. v., Gabrielsen, N. N. og Solheim, R. G. (2007): *PIRLS. Norske elevers leseinnsett og leseferdigheter. Resultater for fjerde og femte trinn i den internasjonale studien PIRLS 2006*. Lesesenteret, Universitetet i Stavanger.
- Elley, Warwick B., 1991: Acquiring Literacy in a Second Language: The Effect of Book Based programs", i *Language Learning*, Vol. 41, No. 3, pp. 375-411.
- Fasting, Rolf B, 2006, "Kan skriveferdigheter måles?", in Norsk pedagogisk tidsskrift, årgang 90, p. 372-381.
- Fasting, Rolf B. and Ragnar Thygesen, to appear, "National assessment of writing proficiency among Norwegian students in the compulsory school", in Scandicavian Journal of Education Research, vol 52, no. 6.
- Langer, J. A. (2001): "Beating the odds: Teaching middle and high school students to read and write well". *American Educational Research Journal*, 1 (38) 837-880.
- Langer, Judith A. and Sheila Flihan, 2000: *Writing and Reading Relationships: Constructive Tasks*, <http://www.albany.edu/cela/publication/article/writeread.htm>.
- Loban, W, 1963: The language of elementary school children, Research report no. 1, campaign, III, National Council of Teachers of English.
- Morrow, L. M., M. Pressley, J.K. Smith og M. Smith (1997): "The effect of a literature-based program integrated into literacy and science instruction with children from diverse backgrounds." *In Reading Research Quarterly*, 32, 54-76.
- PIRLS-rapporter: <http://lesesenteret.uis.no/forskning/leseundersokelser/pirls/>
- Roser, Nancy L. og Katherine Bomer (2005): "Writing in Primary Classrooms: A Teacher's Story", in Indrisano and Paratore, red. *Learning to write and writing to learn – Theory and research in Practice*, Editors, Boston University, MA, USA.
- Øzerk, Kamil, 2008: "Språkutvikling, lesing og innholdsforståelse – en presentasjon av NEIS-modellen". Oslo Kommune, Utdanningsetaten (rapport).

