Knowledge of Writing and L2 Writing Performance

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Abstract

Writing instruction is based on the assumption that knowledge of writing and writing competence are related, and that an increase in the former will lead to an increase in the latter. However, although theory supports these assumptions, there has been little research into the role of knowledge during writing, especially for writing in a foreign language. This study therefore examined whether there is a relation between writing knowledge and text quality in the English writing of Dutch secondary school students. It was found that older students write better and that they have more and different knowledge of writing than students in their first year of secondary school. Better students give more advice about the writing process and about text characteristics, and less about mechanics. Furthermore, these three types of advice are all positively related to text quality. The relation between text quality and text characteristics and mechanics is stronger for better students. These findings support the recent shift towards process-oriented writing instruction, but show that text characteristics and mechanics should not be excluded. Furthermore, the link between knowledge of writing and writing competence opens up possibilities for separating the act of writing from learning about writing.

Keywords: L2 writing, knowledge, performance, writing instruction
Introduction

In recent years, Dutch educators have been concerned about students’ writing proficiency. In primary education, the majority of the students perform below the expected level (Henkens, 2010) and although there has been some improvement this century, writing instruction is still often of insufficient quality (Inspectie van het Onderwijs, 2012). The suspicion is that the situation in secondary education is similarly worrisome, although a project aimed at measuring the quality of current instructional practice has yet to be completed (Rijlaarsdam et al., 2013).

Of special concern are the foreign languages, for students perform below expectations in these subjects. Text quality is often considerably lower than that of texts written in the mother tongue (Tillema, 2012). In itself this is no reason for concern, as it might be expected that students find it more difficult to express themselves in a language that they have not yet mastered. However, even when the final level of writing that students are expected to achieve is adjusted accordingly, students do not meet the standards. In a study researching the final level achieved in the main foreign languages – English, German and French – Fasoglio et al. (2014) examined the two highest levels of Dutch secondary education: havo and vwo. Both prepare students for higher education, although vwo is more demanding and more theoretically oriented. Fasoglio et al. (2014) found that only English havo students reached the target level. In all other cases, including English vwo, less than 75% of the students acquire writing proficiency at the expected level.

Low writing proficiency is problematic because of the increasing importance of literacy in modern society. Writing is an important tool in daily life, for social interaction through the new media, but also for further learning. Weaker writers are at a disadvantage, because in both secondary school and in further education, writing is a tool for assessing and even for increasing knowledge in many subjects (Graham & Perin, 2007; Newell, 2006). Moreover, the ability to write well in English as well as Dutch is gaining in importance, because of globalisation in general but particularly because English is increasingly prominent in higher education (Onderwijsraad, 2011).
English-Taught Programmes (ETPs) are becoming more popular across Europe, and in the Netherlands alone there were over a thousand ETPs in 2014 (Lam & Wächter, 2014). This number will only increase due to the commitment of the universities of Maastricht, Groningen, and Twente to make English the official language of education and communication (Bonger, 2015). Thus, poor writing skills in Dutch and English could have a negative impact on students’ lives and on their educational careers.

It is therefore important to make writing education as effective as possible. In recent years, the belief has grown that the way forward lies in shifting from product-oriented towards process-oriented instruction (e.g. Pullens, 2012; van Weijen, 2009). This type of instruction centres on reflection on the writing process and on the conscious use of writing strategies, but it also includes the necessary attention for text characteristics. Meta-analyses indicate that strategy instruction is highly effective (Graham & Perin, 2007; Koster, Tribushinina, & van den Bergh, in press), and that the effects are maintained over time and even generalised to additional genres (Rogers & Graham, 2008). Furthermore, strategy instruction may be extra effective when paired with instruction aimed at increasing students’ capability to regulate their own writing process (Graham, McKeown, Kiuhara, & Harris, 2012). Even so, while attention for orientation before and revision after writing are becoming a regular part of writing instruction, there is still little attention for reflection on the writing process (Bonset, Jansma, Meestringa, & Ravesloot, 2014).

The content of process-oriented instruction is based on theoretical models that describe what goes on in a writer’s mind during composition. They show that the writing process is very complex and demanding. Both Hayes and Flower's (1980) model and Bereiter and Scardamalia’s (1987) model of “knowledge transformation” suggest that advanced writers undertake three basic writing activities: they plan, translate their ideas into text, and review in no fixed order. Simultaneously, they take into account the task environment and knowledge of the topic, the audience, and what texts should look like. The multitude of factors that have to be considered concurrently is the reason
why many writers find composition so demanding. Even so, “during normal composition, writers –
including young and not particularly proficient ones – are not operating near the threshold level of
overload” (Bereiter & Scardamalia, 1987, p. 139). However, additional complicating factors, such
as a lack of automatisation of lower-order processes (e.g. spelling, sentence construction), further
increase the demands on the working memory and may thus overload it. Bereiter and Scardamalia
(1987) propose that such overload leads writers to adopt a simplified tactic, knowledge telling,
decreasing the number of activities involved. When writing through knowledge telling, writers
generate content based on cues related to the “topic, discourse schema, and text already produced”
(Bereiter & Scardamalia, 1987, p. 7). This tactic is thus marked by a lack of higher-order processes
related to goal setting, problem solving, and planning. Development of writing competence should
make the simplified approach of knowledge telling redundant.

Process-oriented writing instruction is based on two basic assumptions: there is a relation
between students’ knowledge of the writing process and their writing performance, and increasing
this knowledge will also improve performance (Graham, 2006). It is expected that increasing
students’ knowledge of the writing process and providing them with ways to deal with its
complexity may help them in the transition from knowledge telling to knowledge transformation.
Process-oriented instruction is aimed at teaching students strategies that they can consciously
employ during writing to engage in higher-order processes without overloading the working
memory. Knowing more about the writing process can thus help it run smoothly. In addition, it is
probably also necessary to develop more knowledge about what to write besides how to do it. Since
knowledge of the content and of discourse conventions play an important part in the writing
process, increasing students’ knowledge in these areas may therefore also improve their
performance. Graham (2006) suggests that text quality may be influenced by knowledge of the
“topic, intended audience, genre, task schemas, [and] linguistic awareness” (p. 466). While these
theoretical considerations might sound convincing, it should be kept in mind that knowledge and
performance are separate constructs, and that changes in one of these constructs are not necessarily reflected in the other (Fidalgo, Torrance, & García, 2008).

Although it is difficult to prove a causal relationship between an increase in knowledge and an increase writing proficiency, research provides some evidence that there is a relation between the two. Benton et al. (1995) found that students who know more about the topic write a better text. Although Kellogg (1987) did not find a similar relation to text quality, the results of his study did indicate that the students who knew more about the topic expended less effort on writing. Furthermore, a series of studies asked students to give advice about writing to examine the link between knowledge and text quality. They found that there is variation in the amount and type of knowledge that students have about writing: better students tend to give more advice about text characteristics, whereas weaker students tend to focus on superficial aspects related to grammar and mechanics (Rasenberg, 2014; Schoonen & de Glopper, 1996; Takala, 1987). These differences in knowledge appear to be related to differences in text quality. Rasenberg (2014) found that students’ knowledge explained 17% of the variance in text quality. Fidalgo, Torrance, and García (2008) found similar results, finding that knowledge explained 25% of the variance. Lastly, several studies found that instructional programs aimed at increasing writing proficiency and knowledge succeed in both (Zumbrunn, 2010; De la Paz & Graham, 2002; Graham, Harris, & Mason, 2002). This is encouraging for the explicit instruction of writing knowledge.

However, these studies all researched the role of knowledge during writing in the mother tongue, whereas knowledge may have a different impact on L2 writing because of cognitive overload. Composition in a foreign language is more challenging, resulting from the fact that the language used for writing is still in the process of acquisition. Lower-order processes related to local decisions about vocabulary and grammar that have become automatised in the mother tongue still require more attention, which places additional demands on the working memory and increases the chance of cognitive overload (Tillema, 2012; van Weijen, 2008). Potentially, these additional
demands may lead students to adopt different writing strategies. Research suggests that, while writing in an L2, students seem more concerned with language problems (Broekkamp & van den Bergh, 1996; Schoonen et al., 2003) and they orchestrate the writing process differently (Tillema, 2012; van Weijen, 2008). Language proficiency thus has an impact on text quality beyond linguistic correctness, and it may be that it changes not only the activities that students engage in, but also the impact of metaknowledge on the writing process.

If explicit writing instruction is to be effective in foreign language education, there needs to be a relation between knowledge of writing and writing performance similar to the relation found in L1 writing. Despite the differences in text quality and writing processes in both languages, the first indications are that knowledge is also related to writing performance in an L2. Sasaki and Hirose (1996) investigated English texts written by 70 Japanese university students, and concluded that metaknowledge of L2 writing explained 11% of the variance in text quality. The present study expands on this research, examining whether the relation between knowledge and performance is also present in the L2 writing of secondary school students, in spite of the fact that they are likely to be less experienced both in writing and in using a foreign language. Dutch students in their first and fourth year of secondary school are asked to write an English letter to a fictitious new classmate, in which they give advice about writing. The letters and advice thus acquired serve as a basis for answering the following research questions:

1. Do students who write better letters also give more advice than their struggling fellows?
2. Do better writers give different types of advice than weaker ones? More specifically: do better writers give more advice about higher-order concerns related to structure and to the writing process, and less about mechanics?
3. Do students give more advice and write better texts if they have higher grades for English, or are the effects of advice independent of language proficiency?
Method

Participants

The participants consist of Dutch secondary school students. In total, 90 students participated, divided across four classes. Two classes (N = 45) were in their first year, and their level was a combination of havo and vwo. The other two classes consisted of fourth-years, one class at havo level (N = 19) and one of vwo students (N = 26). The first-year classes had a mean age of 12.5 years old (SD = .6). The mean age of the students in 4 havo was 16.0 years (SD = .8) and in 4 vwo it was 15.5 (SD = .5). The genders were not equally represented: excluding three students who did not give information about their gender, 51 males and 36 females participated. An overview of the distribution can be found in Table 1.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>27</td>
<td>15</td>
<td>42</td>
</tr>
<tr>
<td>4 havo</td>
<td>8</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>4 vwo</td>
<td>16</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>36</td>
<td>87</td>
</tr>
</tbody>
</table>

Tasks and Materials

Students’ knowledge of writing was measured indirectly. For this purpose, the students received a writing task asking them to write a letter to a fictitious new classmate called Like, in which they should give advice on how to write a good text. The assignment has been included in Appendix A. The type of advice that might help Like is intentionally left unspecified, so that students are not influenced in this respect. Schoonen (1986) lists a few advantages of measuring knowledge of writing through a letter of advice. Firstly, the assignment gives insight into both the
students’ knowledge of writing and their competence, since they produce a letter that can be graded. Secondly, measuring both constructs simultaneously has the advantage of being less demanding for participating schools and students. In addition, Bereiter and Scardamalia (1987) note that young writers are not well-acquainted with introspection, but that they seem to be better at prescribing than at describing the writing process. Even so, it should be kept in mind students may know more than they manage to put into words.

Before starting with their letter students were asked to fill in their name, age, class, and gender. The writing task was then provided by the researcher, who introduced the task orally but provided no more information than that which is included in the written version. The students were allowed to ask the researcher or their teacher questions, but no examples of advice were given.

Writing took place digitally and students were allowed to use a dictionary so that the setting was as realistic as possible and so that students were able to use all their knowledge of writing. Writing the letter on paper would limit students’ in their use of strategies that involve final editing and the use of resources. Students were asked to work in silence without consulting each other’s work for inspiration. Due to the classroom setting, some cooperation could not be avoided but the assignment was mostly completed solitarily. In three out of four classes a screen could be placed between the computer screens so that students were discouraged from looking at those of their neighbours. Writing could take until the end of class, leaving a maximum of 45 minutes. In all four classes, several students took the full 45 minutes and a small number had to be told to stop because time was up. However, most students were finished before then, and they were asked to work on different assignments in silence to allow the others to continue writing.

**Analysis**

The letters acquired through the writing task described above were analysed in two ways. Firstly, each letter was graded by the researcher and by a volunteer who was highly proficient in English as a result of her educational career. Grading was supported by comparison to a letter which
was estimated to be of average quality in an initial reading of all letters, accompanied by a list of its merits and shortcomings (see Appendix B). The criteria were related to content (to what extent is the question answered), correctness (orthography, punctuation, grammar), structure (letter format, use of paragraphs and linking words), and tone and style. This text was awarded an arbitrary score of 100 points. After discussing the model text, the two graders scored six letters together to create a common frame of reference. It was decided that letters that did not answer the question would receive 0 points and that the maximum score would be 200. The graders processed the letters individually and in random order, so that if they unconsciously changed their grading criteria throughout the process then this would have an equal impact on letters from all four classes.

Secondly, the advice given by the students was divided into seven main categories, some of which were divided into subcategories. The classification rubric (Appendix C) is a version of the one used by Schoonen and de Glopper (1996), but it is highly condensed since the number of participants is smaller and does not allow for such detailed analysis. The main categories used in this study are Product, Process, Grammar & Mechanics, Behaviour, Resources, Miscellaneous, and Not classifiable. Mechanics is used as an umbrella term for the technical aspects of writing, which are here operationalised as orthography, punctuation, and capitalisation. Most of these categories are divided into subcategories. Product, for example, consists of Content, Structure & Organisation, Style & Tone, and Presentation. Initially, a category for wrong advice was also included, but since none of the letters included advice that could be considered indisputably wrong this category has been excluded. The category Not classifiable will not be included in the analysis, for it is not possible to draw any sensible conclusions about this type of advice.

To increase reliability, classification was supported by a set of guidelines. All advice was underlined and placed in at least one category. Some advice fit multiple categories and was therefore counted twice. Furthermore, sometimes one sentence consists of multiple pieces of advice and each is then counted separately. The following example may illuminate these two guidelines:
“When your done with writing your text, read the whole thing again and check if you made some mistakes in your grammar or interpunction.” Participant 75 gives three pieces of advice in this sentence: pay attention to grammar, pay attention to punctuation, and make sure to do this after writing. Repetition of the same advice is not counted. An example of a classified letter can be found in Appendix D.

Results

In total, the students wrote 90 letters. Of these, two were lost due to technical problems. A further seven have been excluded from analysis because they were graded together or served as a model for grading. This leaves 81 letters which have been assigned scores individually by both graders. There is a high correlation between the graders (Cronbach’s $\alpha = .93$), so that an average of both scores has been assigned to each letter for further analysis.

Text Quality, Length, and Advice

This section describes the variables of text quality, text length, and advice, before the relations between these variables are explored in section 3.2. An overview of the values for the variables, split by year, can be found in Table 2 below.

There was a significant difference between the letters of students in year 1 and in year 4, both in terms of length and quality. Students wrote significantly longer letters in year 4 ($M = 234.7$ words, $SD = 77.9$) than in year 1 ($M = 127.4$ words, $SD = 81.3$); $t(79) = -6.1$, $p < .001$. Furthermore, their letters are also better. Although students wrote letters of greatly varying quality – the minimum score was 0 and the maximum was 195 – a significant difference was found between the scores for year 1 ($M = 62.2$, $SD = 42.1$) and year 4 ($M = 138.8$, $SD = 29.0$); $t(79) = -9.6$, $p < .001$. These results suggest that, as expected, fourth-year students produce significantly better texts than first-years. The high standard deviations show that, even within one year, there is great variation in text quality.
Altogether, 989 pieces of advice have been classified, with a mean of 9.5 (SD = 7.6) per letter in year 1 and 14.7 (SD = 8.1) in year 4. This shows that fourth-year students give more advice. A mixed-design ANOVA was used to examine whether they also give different advice. Are there significant differences between the various categories of advice (Product, Process, Grammar & Mechanics, Behaviour, Resources, Miscellaneous, Not classifiable), and do these differences depend on what year students are in? Mauchly’s Test of Sphericity indicated that the assumption of sphericity had been violated; \( \chi^2 (20) = 668.8, p < .001 \). Degrees of freedom were therefore modified using the Greenhouse-Geisser estimate of sphericity (\( \varepsilon = .3 \)). There is a significant interaction effect between the factors of advice category and year (\( F(1.9, 146.2) = 17.6; p < .001, \eta^2 = .2 \)), which indicates that students in different years give advice in the various categories with a different frequency. This interaction effect is clearly visible in Figure 1 below.
As Figure 1 illustrates, the mean amount of advice increases from year 1 to year 4 for some categories, while it decreases for others. Product advice is more frequent in year 4 (M = 9.8, SD = 8.0) than in year 1 (M = 2.8, SD = 4.3). Advice about Process also increases from a mean of 0.6 (SD = 1.3) per letter to 1.3 (SD = 2.3) in year 4. The other categories, on the other hand, are better represented in letters written by first-years. Advice about Grammar & Mechanics decreases from 3.4 (SD = 4.8) to 2.0 (SD = 1.9) per letter from year 1 to year 4. Behaviour, already rare in year 1 (M = .1, SD = .4) is mentioned even less in year 4 (M = .02, SD = .2). Resources decreases from 1.3 (SD = 2.0) in year 1 to 0.3 (SD = 0.7) in year 4, Miscellaneous decreases slightly from 1.2 (SD = 1.7) to 1.2 (SD = 1.5), and advice that is not classifiable only occurs in letters from first-years. An overview of the mean amount of advice per category, accompanied by standard deviations, can be found in Table 2 above.

Very little advice was given about Behaviour (N = 6). Overall, students gave most advice about the end product (N = 522), but this type of advice is only most frequent in year 4. First-years dedicate most of their advice to Grammar & Mechanics. These results confirm the expectation that
fourth-year students are likely to give more advice about *Product* and *Process*, and first-years more about *Grammar & Mechanics*.

Table 2 also includes values for the relative frequency with which students give each type of advice. For example, if a hypothetical student gives four pieces of advice about grammar and one about text structure, then the value for %*Grammar & Mechanics* is 80% and the value for %*Product* is 20%. These relative frequencies become important when examining the relations between variables.

**Relation between Text Quality and Advice**

Students in year 4 wrote letters that were significantly longer and better than those in year 1, and they also included more and different advice. The question remains, however, whether these differences are related to each other. Initial exploration through bivariate analysis indicates that there is a relation between the amount and type of advice that students give and the quality of their letter. The total amount of advice is positively correlated to text quality (r = .6, p < .001). Furthermore, the correlation is not equal for all the categories of advice. There is a positive correlation between text quality and the amount of advice that students give about the end product (r = .6, p < .001) and about the writing process (r = .4, p < .001). Text quality is also strongly related to text length (r = .8, p < .001). This correlation complicates analysis of the relation between advice and quality, since longer texts also contain more advice (r = .745, p < .001). The aim is to analyze the independent impact of advice on text quality, and therefore this interaction effect of text length is problematic. A solution can be found in the use of relative rather than absolute frequencies of advice, calculated by dividing the amount of advice in a category by the total amount of advice given in that letter. By using the relative frequencies, longer letters with more advice are no longer overrepresented in the regression analysis. As a result, it is possible to analyze whether text quality improves when certain categories of advice are mentioned more frequently, regardless of text length.
After these initial explorations, further analysis was conducted by means of regression. The variance in the dependent variable of score was first predicted through the variables of year, word count, and the relative frequency with which advice is given for each main category. Relative frequencies are chosen over absolute numbers to ensure that the contribution of advice is independent of text length. This is especially important because students write significantly longer letters in year 4 (M = 234.7 words, SD = 77.9) than in year 1 (M = 127.4 words, SD = 81.3); t(79) = -6.1, p < .001. The results of the regression have been included in Table 3.

Table 3

| Regression Results Model 1: Year, Word Count, Relative Frequency Advice |
|---------------------------|-------------------|------------------|
|                          | Regression Weight (B) | Standard Error (SE) | Significance (p) |
| (Constant)               | 19.96             | 6.22             | .002*            |
| Year 4                   | 40.84             | 7.09             | <.001*           |
| Word count               | .29               | .05              | <.001*           |
| %Product                 | .49               | .58              | .40              |
| %Process                 | 3.98              | 1.47             | .02*             |
| %Grammar&Mechanics       | .87               | .80              | .28              |
| %Behaviour               | 13.01             | 8.97             | .15              |
| %Resources               | -.27              | 2.27             | .90              |

This model is capable of predicting approximately 83% of score variance. It predicts that a hypothetical text with no words and no advice will have an average score of 20.0, provided it is written by a student in year 1 (p = .002). Should the text be written by a fourth-year student instead, the score is predicted to go up by 40.8 (p < .001), leading to an average score of 60.8. With every additional word, the score goes up by 0.3 (p < .001). The last significant predictor of text score is the relative frequency with which students give advice about the writing process (B = 4.0, p = .02). For every additional percent of Process advice, the score of a letter is expected to increase by 4.0.

A second regression analysis was run to see whether text length and the various types of advice have a different impact on text quality depending on the year a student is in. Regression model 2 contains the word count and the relative frequency of the main categories; additionally, it
includes dummy variables that take a value of 0 for first-years but are identical to the normal variable for fourth-years. For example, 4*Word count has value 0 for all students in year 1, but is identical to Word count for the others. These additional variables will show whether each predictor has a different effect depending on what year a student is in. Originally, the model also included a variable for year, but upon including the special variables, the year students are in became so insignificant that SPSS excluded it. The results of the regression analysis can be found in Table 4.

Table 4

Regression Results Model 2: Word Count, Relative Frequency Advice, Year-effect

<table>
<thead>
<tr>
<th></th>
<th>Regression Weight (B)</th>
<th>Standard Error (SE)</th>
<th>Significance (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-14.13</td>
<td>13.26</td>
<td>.29</td>
</tr>
<tr>
<td>Word count</td>
<td>.32</td>
<td>.04</td>
<td>&lt;.001*</td>
</tr>
<tr>
<td>%Product</td>
<td>.50</td>
<td>.17</td>
<td>.01*</td>
</tr>
<tr>
<td>%Process</td>
<td>1.22</td>
<td>.31</td>
<td>&lt;.001*</td>
</tr>
<tr>
<td>%Grammar&amp;Mechanics</td>
<td>.41</td>
<td>.16</td>
<td>.01*</td>
</tr>
<tr>
<td>%Behaviour</td>
<td>1.41</td>
<td>.72</td>
<td>.06</td>
</tr>
<tr>
<td>%Resources</td>
<td>.004</td>
<td>.18</td>
<td>.98</td>
</tr>
<tr>
<td>Year 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4*%Word count</td>
<td>-.08</td>
<td>.06</td>
<td>.17</td>
</tr>
<tr>
<td>4*%Product</td>
<td>.53</td>
<td>.18</td>
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<td>.20</td>
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<td>.61</td>
</tr>
<tr>
<td>4*%Grammar&amp;Mechanics</td>
<td>.44</td>
<td>.16</td>
<td>.01*</td>
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<tr>
<td>4*%Behaviour</td>
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</tr>
<tr>
<td>4*%Resources</td>
<td>.83</td>
<td>.39</td>
<td>.04*</td>
</tr>
</tbody>
</table>

* marks significant results

This extended model can predict 89% of the observed differences in text quality, and indicates that the effect of the predictors varies according to what year students are in. According to this model, every percent of Product advice leads to an increase of the letter’s score by .5 for first-year students (p = .01), and an additional .5 for fourth-year students (p = .004). Advice about the end product is thus about twice as beneficial for text quality when given by a student in year 4, with a total increase of 1.0 per percent.

A second variable that predicts variance in text quality is the relative frequency with which students give advice about Process. Unlike for the category Product, there is no interaction effect
with year. No matter what year students are in, advice about *Process* is significantly correlated to text quality (B = 1.2, p < .001). The regression weight of 1.2 makes this variable the strongest predictor of text quality for students in both years.

*Grammar & Mechanics* is also a significant predictor of score in this model, with an increase of .4 for each percent for first-years (p = .01) and an additional .4 for fourth-years (p = .01), giving a total increase of .9 for each percent grammar advice. Thus, while the older students include less advice about mechanics in their letters, the score of their letter increases more when they do so than for their younger fellow students. Lastly, advice about resources only has a significant influence on text quality when provided by older students (B = .8, p = .04). In short, process advice is most influential, followed by advice in the categories of *Product* and *Grammar & Mechanics*, and advice in the latter two categories, as well as in the category of *Resources*, has a more beneficial effect when given by fourth-year students.

Lastly, it is important to ascertain whether the relation that was found between advice and text quality is independent of L2 proficiency. To ascertain this, students’ average grade for English was used. This measurement gives no insight into differences in proficiency between year 1 and year 4, since teachers assign grades based on different scales depending on what year students are in. Grades do offer an indication of the relative proficiency of students within years. Surprisingly, there is no significant correlation between students’ average grade for English and any of the other variables, including text quality (r = -.1, p = .5). This relation is also absent when performing a separate analysis for year 1 (r = .2, p = .2) and year 4 (r = .2, p = .1). Students with higher L2 proficiency thus do not tend to write letters that are longer, better, or with different advice. There is therefore no evidence for the theoretical consideration that a lack of L2 proficiency might lead to cognitive overload during writing so that students either produce texts of lesser quality or benefit differently from their writing knowledge.

**Discussion and Conclusion**
This study examined the relation between knowledge of writing and writing competence in the L2 writing of Dutch students in their first and fourth year of secondary school, by asking them to write an English letter to a new classmate with advice about writing. The results suggest that there is indeed a relation between writing knowledge and performance.

Before interpreting the relations that were found between the variables, it is important to examine whether the data that was gathered through the writing task is similar to that found in other studies. As might be expected after three additional years of education, fourth-year students wrote letters that are longer, better, and contain different advice. More advanced students give more advice related to the end product and about the writing process, and less about mechanics, both in absolute and in relative terms. Although comparison to other studies is complicated by differences in classification rubrics, this distribution of advice appears to be similar to the results of other studies. Better writers generally tend to give more advice about text characteristics (Rasenberg, 2014; Sasaki & Hirose, 1996; Schoonen & de Glopper, 1996) and less about mechanics (Takala, 1987). Comparison to the results of others thus gives no reason to doubt the measurements.

A relation was indeed found between text quality and the amount and type of knowledge that students display through their advice. The strength of this relation depends on the year that students are in. It remains when controlling for text length by looking at the relative frequency with which students mention various types of advice. Advice about the writing process was most strongly related to text quality. Furthermore, a positive relation to text quality was also found for advice about the end product and about mechanics, and this relation was stronger for more advanced writers. The interaction effect between year and the relation between type of advice and text quality suggests that there may be differences not only in the quantity of knowledge, but also in the quality. It may be that the advice given by first-years is on average more superficial. This would mean that it is important what knowledge students have, both across and within categories.

The results of this study differ from those of Rasenberg (2014) and Schoonen and de
Glopper (1996), for these studies only found a beneficial effect for product advice. The positive effect for advice about the writing process was nonetheless expected on the basis of theories about writing (Bereiter & Scardamalia, 1987; Hayes & Flower, 1980) as well as the recent trend towards process-oriented writing instruction in Dutch education that was based on these models. The relation between mechanics and text quality may be an indirect effect of lower language proficiency: unlike the studies by Rasenberg (2014) and Schoonen and de Glopper (1996), this thesis analysed writing in a foreign language. Awareness of grammar, spelling, and punctuation may be particularly relevant not necessarily in L2 writing but in L2 education, because non-native teachers tend to have a stronger focus on correctness than native speakers (Hyland & Anan, 2006; Schmitt, 1993; Sheorey, 1986).

No relation was found between students’ average grade for English and any other variable. There is thus no evidence for the proposition that additional demands on the working memory resulting from a lack of language proficiency change the role of knowledge in the writing process. Students with a better command of English are not necessarily better writers, nor do they have more or different metaknowledge. However, although no evidence was found, this does not prove that no such relation exists. Students’ command of English was measured through their average grade for English, and this is a rather imprecise measurement, because little is known about what the students were tested on. To be able to say more about the influence of language proficiency on the writing process, including the role of knowledge, it would be necessary to measure students’ proficiency directly. By including linguistic tests in the research model, it is better possible to control what constructs are measured. Only then, more firm conclusions can be drawn about these constructs.

In short, there appear to be differences in the knowledge of writers at different levels. Better writers know more about text characteristics and about the writing process. Furthermore, a relation was found between text quality and knowledge of the writing process, of the end product, and of mechanics. There was no reason to believe that this relation was dependent on language proficiency
or that it differed from L1 composition. These results raise a few additional questions, however. Firstly, although the results of this study give no evidence for a language barrier limiting the accessibility of writing knowledge below a certain level, this can also not be taken as evidence that no such barrier exists. To gain further insight into the role of knowledge in the writing of less proficient students, it might be worthwhile to conduct a study with students of a similar age but in a language that students are less fluent in, such as Spanish. Secondly, the relation between knowledge and performance does not prove the correctness of the assumption that an increase of knowledge will lead to an improved performance. More insight into the role of knowledge in the development of writing competence might be gained by doing longitudinal research. The results of this study indicate that older students write better and know more, and that their knowledge is differently related to text quality. By measuring the same students at different moments in time, more might be learned about the role of knowledge in the development of writing competence. Lastly, measurement of writing competence was limited to a single writing task, and it might be worthwhile to conduct further research to analyse the relation between knowledge and text quality for different text types. Stylistic and structural characteristics vary across text types, and they might therefore require different types of knowledge. A further advantage is that by including multiple text types, writing competence is measured more comprehensively and more reliably.

Limitations

Because of limited resources, both knowledge of writing and writing competence were measured through the same writing task. While this method of elicitation is highly efficient, there are two considerable limitations. Firstly, the score of a single letter cannot be considered a very reliable measurement of a student’s writing competence. Judging composition is notoriously problematic in terms of stability, inter-rater reliability, and score reliability (van den Bergh & Meuffels, 2000). This study used two strategies for optimizing reliability. Firstly, randomisation of the order of the letters was intended to
limit the impact of any instability in grading. Secondly, in this study scores were awarded by comparison with a model text, resulting in a strong correlation between both graders. Although there is no reason to doubt the validity of the scores thus awarded, they can still not be considered an adequate measure of students’ writing competence. Van den Bergh and Meuffels (2000) note that the correlation between the scores of texts written by one person is often quite low, which may be caused by differences in text type, writing task, topic, and similar issues. They stress that a measurement of writing competence is only reliable when the test consists of a large number of items. The scores awarded to each letter are therefore best considered as a measurement of text quality. Treated with caution, these scores may also be regarded at least as a rough indication of students’ writing competence, at least relative to the other students. Since 81 letters were analysed, a relation between text quality and advice is not likely to be strongly influenced by individual variation in performance.

Secondly, the letter of advice may measure a different construct than intended. Although measuring knowledge, it probably measured only a subset of students’ knowledge. Inspired by Schoonen and de Glopper (1996), the writing task was selected as a method for simultaneously measuring writing proficiency through the letter and knowledge of writing through the advice. This was done with the reservation that although this method is efficient, there is a possibility that students know more than they manage to put into words. Analysis adds the suspicion that there may be knowledge that students might be able to put into words but decide not to translate. Fourth-year students gave more advice overall, especially Product advice, but the frequency with which they mentioned advice about grammar, mechanics, and resources actually decreased. After three additional years of education, it seems unlikely that they know less about these aspects, and scanning their letters also gives the impression that most fourth-years have a better command of the rules of grammar and mechanics than first-years. The fact that they mention these aspects less is therefore probably not caused by a lack of knowledge, but rather by a shift in focus. It may be that
part of the writing process has become automatised for these students, and no longer receives deliberate attention. As in the transition from knowledge telling to knowledge transforming, these basic operations disappear to the background, while the focus shifts to more complex concerns. If a student does not mention lower-order processes in his/her letter, there is therefore no way of knowing whether this knowledge is absent or simply deemed unimportant. The letter of advice, then, may be better suited for measuring students’ perception of what is important during writing, a purpose for which it previously been used already (e.g. Crismore, 1982; Schoonen, 1986). The link between knowledge and advice is likely to be a one-way connection: knowledge is required for giving advice, but advice is not required for having knowledge. It is therefore important to analyse the results in terms of what knowledge students display rather than what knowledge they possess.

Implications for Writing Instruction

This study found that, in order of decreasing importance, knowledge of the writing process, text characteristics, and grammar and mechanics are all conducive to text quality. Since process-advice was most strongly related to text quality, the findings support the recent call for a shift towards process-oriented instruction. Students gave relatively little advice about the writing process, however, showing that current instructional practice is more efficient at making students aware of what they should write than of how this is best accomplished. More explicit instruction of writing strategies, combined with instruction about text characteristics, might be able to remedy this deficiency. Grammar instruction is already well-represented in English education outside of writing instruction. In contrast, the other subcategories (orthography, punctuation, and capitalisation) are only relevant to writing. These types of knowledge should therefore not be disregarded in writing instruction. Even so, since knowledge of process and text characteristics are more strongly related to text quality that grammar and mechanics combined, the focus should be on the former two categories. This section offers a few suggestions of how the combined instruction of process and product characteristics may best be approached.
If knowledge and writing competence are related, then this creates a possibility for separating the act of writing from learning about it. Rijlaarsdam and Couzijn (as cited in Bouwer, Koster, & van den Bergh, 2015) point out that writing is so demanding that there are few cognitive resources available to devote to learning while writing. It would therefore be better to increase students’ knowledge through instruction that does not require them to write. This can only be effective if differences in knowledge lead to differences in writing behaviour, as might be predicted on the basis of the results of this study. One possible way of separating learning and writing is observational learning, which provides students with a model, i.e. examples of other people carrying out tasks while thinking out loud, that they can observe and discuss. This method leads to an increase in both writing competence and self-regulatory skills, especially when students are presented with a model of a similar level: good students learn from mastery models (professional writers), but weaker students learn better from coping models (struggling writers) (Bouwer, Koster, & van den Bergh, 2015; Braaksma, 2002; Zimmerman & Kitsantas, 2002).

Process-oriented instruction, the development of knowledge about text characteristics, and observational learning can all be combined in a version of Self-Regulated Strategy Development (SRSD). A meta-analysis of the effects of this instructional approach for students with learning disabilities indicated that SRSD is highly effective (Graham, Harris, & McKeown, 2003). Zumbrunn (2010) also found that SRSD was effective for teaching regular students to write. Lesson sequences based on SRSD consist of six stages in which students are gradually introduced to a writing strategy: Develop Background Knowledge, Discuss It, Model It, Memorise It, Support It, and Independent Performance (for a detailed description see Graham, Harris, & McKeown, 2003). The first stage, which is aimed at developing the background knowledge required for the acquisition of the strategy under instruction, should include activating background knowledge of text characteristics as well. After all, strategies are not sufficient if students do not know to what end they should be employed. After introducing and discussing the writing strategy and text
characteristics, the teacher models the use of the strategy in stage three. Graham, Harris, and McKeown (2003) warn that for some students it is necessary to model the strategy multiple times. Because students learn best when there is model-observer similarity, it would be best to use this repetition as a chance to include not only the teacher, but also a video of both a mastery model and a coping model. After guided practice with using the strategy in stages four (Memorise It) and five (Support It), the students are required to use the strategy independently in the sixth stage. Due to this set-up, students are stimulated to focus on developing their knowledge rather than on composing. By employing the various stages in preparation of individual writing, the acts of writing and learning are effectively separated. The relation between knowledge and writing performance that was found in this study does not prove causation. Even so, it is probable that a lesson sequence that includes instruction about the writing process and text characteristics and that separates learning from writing will lead to an improvement in writing performance.
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Appendix A

Writing Task

Please answer the following questions.

Name: ............................................................................................................

Age: ........ years

Class: .............................................................................................................

Gender: male / female

-- Next Page --

Writing Task

Next week, a new student will join your class: Like. Like is from Belgium and school is different there. Like does not know how to write a good text in English, because there are many things to pay attention to.

Please write a letter to Like. Explain how to write a good text in English. Give as much advice as possible.

When you are done, please print your letter and hand it in.
Appendix B

Average Text for Reference during Grading

"Dear like,

You asked me to send you a letter with explanation about a letter. Here it is: The first thing you do is say the name (Mister or Madam and the surname). Here’s a tip: start with ”Dear”. That is a nicer start. The second thing you have to rite is: your question, piece of tekst or whatever you want to send to that person. You have to be nice to that person (the teacher), otherwise it’s annoying to read. And last sign up regards, your first and last name and in which class you sit. I hope I have helped you so.

Regards

[Name]

1HA1”

Score: 100

Merits

- Good opening (apart from lack of capital letter: like)
- The author starts with her reason for writing
- The author gives quite a lot of advice
- The author explains why some of the advice is important
- The letter is friendly and helpful
- Appropriate ending, including author’s name
• Structure: use of *the first thing*, ...etc

**Shortcomings**

• Most tips are superficial, especially *say the name*

• Structure: no paragraphs, just one block of text

• Unusual use of blank lines

• Punctuation: e.g. comma lacking after *Regards*

• Spelling: e.g. *tekst, like (for Like)*

• Dutchisms, e.g. *in which class you sit*
## Appendix C

Classification Rubric

<table>
<thead>
<tr>
<th>Code</th>
<th>Main Category</th>
<th>Subcategories</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Content</td>
<td>Example for the subject: how do you write a good tekst in English (43).</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Structure and organisation</td>
<td>You need to write an introduction (36). The first thing you have to do is writing the day it is (69).</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Style and tone</td>
<td>Always be polight offcourse, to a friend you can write more common (60).</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Presentation</td>
<td>I like it best when there are some illustrations (72). Something you might want to consider using is a nice fond (78).</td>
<td></td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Pre-writing</td>
<td>First think about what is your subject (15).</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Writing: general</td>
<td>When you start writing the text, you should pay attention to the grammar (72).</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Post-writing</td>
<td>When your done with writing your text, read the whole thing again and check if you made some mistakes in your grammar or interpunction (75).</td>
<td></td>
</tr>
<tr>
<td><strong>Grammar &amp; Mechanics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Grammar</td>
<td>Make sure that every single sentence is grammatically correct (87).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Orthography</td>
<td>You also have to spell all the words right (58).</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Punctuation</td>
<td>As second you have to look if your punctuation is correct, like you put a question mark after every question (56). Don’t forget to put periods after every sentence, and try to use commas every so often, to prevent huge, annoying, sentences (70).</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Capitalisation</td>
<td>First you Need a capital (43).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Behaviour</strong></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Participation</td>
<td>For good grades you really have to study hard (12).</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Other</td>
<td>Pay much attention to your letter (49).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Resources</strong></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Linguistic knowledge</td>
<td>Don’t use google translate often (76). If you don’t know the word, just look it up in a dictionary (90).</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Content</td>
<td>If you don’t know how to begin just looking for inspiration in books or on the internet and you will know (30).</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Correctness</td>
<td>If you want to know if the letter is good you can ask your parents (29).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Miscellaneous</strong></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Related to writing</td>
<td>But mostly just write a letter like you would in Dutch just with English words (64).</td>
<td></td>
</tr>
</tbody>
</table>
| 62 | Not related to writing | If there is a tekst to learn you need to read the
<table>
<thead>
<tr>
<th>71</th>
<th>Not classifiable</th>
</tr>
</thead>
</table>
| tekst at least 5 times (12).  
I have some advice at learning English, watch English movies with Dutch subtitles (29). |
| As you make interrogative sentences than you look of you see to be, can as they sit in the sentences you most to be, can for into the sentences (39). |
Appendix D

Example of a Letter with Classified Advice

Dear Like,

I’m looking forward to seeing you in class next week! I think you will learn a great deal at our school and that you will have a lot of fun with me and my classmates.

I heard you don’t know how to write a proper English text and that I need to give you some tips.

When you write a text it is important to [1] **always start with the text** and [2] **make up the title at the end**. [3] The first sentence of the text always has to be provocative so the reader wants to continue reading. [4] **Don’t use sentences that are too long** because than your text will be boring to read. [5] **Don’t forget to use capitols at the beginning of each sentence**. [6] **Make sure you always have an introduction, main part and ending**. In the ending [7] **you can’t give new information**, [8] **you have to summarize the plot** and [9] **close the text with a good ending sentence**! And [10] **don’t forget that you can do a grammar and spelling-control if you are working with word**. And [11] **if you still aren’t sure afterwards you can always ask your parents to check it for you**!

I’ll see you next week!

Greetings, [Name]

[1] **always start with the text** = 1 process: writing, general

[2] **make up the title at the end** = 1 process: post-writing
<table>
<thead>
<tr>
<th>Rule</th>
<th>Count</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>The first sentence... to be provocative</td>
<td>2</td>
<td>1 x product: content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 x product: structure</td>
</tr>
<tr>
<td>Don’t use sentences that are too long</td>
<td>1</td>
<td>miscellaneous</td>
</tr>
<tr>
<td>Don’t forget to ... of each sentence</td>
<td>1</td>
<td>grammar and mechanics: capitals</td>
</tr>
<tr>
<td>Make sure you ... part and ending</td>
<td>3</td>
<td>1 x introduction = product: structure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 x main part = product: structure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 x ending = product: structure</td>
</tr>
<tr>
<td>In the ending you can’t give new information</td>
<td>1</td>
<td>product: content</td>
</tr>
<tr>
<td>You have to summarize the plot</td>
<td>1</td>
<td>product: content</td>
</tr>
<tr>
<td>Close the text with a good ending sentence</td>
<td>1</td>
<td>product: structure</td>
</tr>
<tr>
<td>Don’t forget that ... and spelling-control</td>
<td>1</td>
<td>resources: correctness</td>
</tr>
<tr>
<td>If you still ... it for you</td>
<td>2</td>
<td>1 x process: post-writing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 x resources: correctness</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>