The effects of students’ individual characteristics and writing instruction on learning-to-write

Marleen Kieft, Gert Rijlaarsdam, David Galbraith, and Huub van den Bergh

Introduction

The default writing instruction in the Netherlands, both advocated by teachers and in text books as well, is ‘to-plan-and-then-write’. The underlying common notion is that planning improves writing. Therefore, students are generally encouraged to figure out what they want to say, and do not start writing until they do. Students are advised to make a plan first, for example in the form of an ordered list of topics and subtopics, and then apply this while writing the final text (Hayes, 2006). Galbraith and Torrance (2004, p. 64) label this the planning strategy, ‘in which writers concentrate on working out what they want to say before setting pen to paper, and only start to produce full text once they have worked out what they want to say’.

Although it is generally recommended to student writers, the planning strategy has been criticized as well. In his book Writing without teachers, Peter Elbow (1998) described that for many writers, among which himself, writing is not putting down ideas already held, but creating ideas while writing. He recommended not to clarify thoughts before writing, but to start writing at the very beginning and encourage your words gradually to change and evolve: ‘Think of writing not as a way to transmit a message, but as a way to grow and cook a message’ (p.15). Elbow claims that freewriting helps writers to discover better ideas. The writing strategy based on freewriting, in which ‘writers work out what they want to say in the course of writing and in which content evolves over a series of drafts’ is called the interactive or revising strategy (Galbraith & Torrance, 2004, p. 64).

In a series of studies among university students, consistent evidence of both the planning writing strategy and the revising writing strategy was found by Torrance, Thomas and Robinson (1994; 1999). They analyzed students’ questionnaire responses (1994) and complete students’ logs of their writing processes (1999). They found no evidence that one
strategy was more successful than the other. In contrast, empirical studies by Kellogg (1988; 1996) seem to suggest a clear benefit for a planning strategy over an revising strategy.

A limitation of the debate about the best strategy for drafting texts is that previous experimental studies have not taken into account individual differences between students. In these experimental studies, all students in the classroom received the same instruction for drafting texts. In a previous study (Kieft, Rijlaarsdam, & Van den Bergh, 2007) we hypothesized that it could be of great value to borrow some insights from the theory of Aptitude Treatment Interaction (ATI): a research paradigm that attempts to examine how outcome depends on the match or mismatch between specific learner characteristics and the learning environment they are involved in. Cronbach and Snow’s ATI theory (1977) states that optimal learning occurs when instruction matches the aptitudes of the learner. In the ATI paradigm, the Aptitude stands for any individual difference variable that may moderate the effects of a treatment on an outcome. Cronbach considered aptitude as a broad concept, letting it embrace “any characteristic of the person that affects his response to the treatment” (Cronbach, 1975, p. 116). Snow (1992) specified this broad concept of aptitude, including not only cognitive abilities, but also conative and affective characteristics of learners.

In the Kieft et al. (2007) study, we constructed two versions of a writing course in which students learnt to write argumentative texts about short literary stories. The planning version offered planning writing tasks, inviting students ‘to-think-and-then-write’. The course consisted of schemes and lists to help students to figure out what they want to say, and invited students to write afterwards. In contrast, the revising course consisted of free writing tasks, to encourage students to create ideas while writing. The theoretical framework (e.g., some information and assignments about the genre argumentative text, the use of quotes etc.) was exactly similar in both versions of the course. 113 students were randomly assigned to both conditions, and both conditions were present in each classroom. This study showed that the effects of the planning condition depended on the level of students’ planning or revising strategy: the more students preferred a planning or a revising strategy, the larger the effect on writing performance (measured by scoring the text quality). In contrast, the effect of instruction based on a revising writing strategy did not interact with the level of planning or
revising strategy: there was no relationship between the revising condition and the writing strategy on writing performance. Thus, the results of the previous study were somewhat inconsistent and did not confirm the ATI theory\(^1\). Therefore, we designed the present experiment to clarify these results. We improved the course, the method and the testing materials, and included the variable personality characteristic of self-monitoring.

**Self-monitoring**

It is quite unclear what underlying factors are associated with different drafting strategies of students. It could be that writing strategies are simply possible ways of organising the writing process that a particular writers happens to have settled on. However, we suspect that writers’ strategy preferences are related with a more deep-seated individual characteristic: the personality characteristic of self-monitoring. According to Snyder (1987), high self-monitors are predominantly concerned with the situational appropriateness of their self-presentation, and accordingly monitor and control their expressive behaviour to ensure that it satisfies their social goals. In contrast, low self-monitors are much less concerned with the situational appropriateness of their self-presentation, and hence their expressive behaviour is less controlled and is a more direct expression of their inner attitudes and dispositions.

What does the personal characteristic self-monitoring have to do with writing processes? In a series of studies, Galbraith (1992, 1996, 1999) has found consistent differences in the way high and low self-monitors develop their ideas as a function of writing. Galbraith (1992) used the self-monitoring scale to select writers whose writing he assumed would be either directed towards rhetorical goals, that is, taking account of the reader’s requirements, their knowledge, their opinions, and so on (high self-monitors), or dispositional goals, that is, spelling out spontaneously expressed thought (low self-monitors). These groups were then asked either to make notes in preparation for an essay or to write the text itself. The extent to which they developed new ideas as a function of writing in these different conditions

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\(^1\) In another study, Kieft, Rijlaarsdam, & Van den Bergh (in press) was shown that our hypothesis based on the ATI-theory was mainly confirmed. In this study, with the same design and intervention, we focused on writing-to-learn: the effects of the writing course on the literary interpretation skill of the students.
was measured. He found a strong interaction between self-monitoring and mode of writing on the discovery of ideas, with high self-monitors discovering a larger number of new ideas after making notes, but less after writing full text, and low self-monitors discovering a larger number of new ideas after writing full text, but less after making notes. In a later experiment, examining the effect of different forms of planning on writing full text, Galbraith (1996) replicated this interaction. Based on this basic difference, Galbraith (1999) outlined a dual process model of writing suggesting that both dispositionally guided text production (as prioritised by low self-monitors) and rhetorical planning (as prioritised by high self-monitors) are necessary for effective writing.

Consistent with these differences in the conditions under which low and high self-monitors develop new ideas, Galbraith (1996) also found some differences in the drafting strategies that the two groups report using spontaneously when they write. Low self-monitors were: (1) more likely to report writing multiple drafts than high self-monitors; (2) more likely to report generating ideas during text production than high self-monitors; and (3) more likely to report less detailed planning than high self-monitors. However, these relationships, though statistically significant, were small. Galbraith suggested that this could be because these student writers had not developed (or been taught) an explicit writing strategy which matched the way in which they developed their ideas during writing, and predicted, therefore, that low self-monitors would benefit more from learning a revising writing strategy, whereas high self-monitors would benefit more from learning a planning strategy for effective writing.

In the present study, we hypothesize that low self-monitors may benefit from learning to use a revising writing strategy, and that high self-monitors may benefit from learning to use a planning writing strategy when learning-to-write. However, one could also argue that students might benefit most if writing instruction helps to supplement and foster those strategies which students by themselves do not prefer, as was shown by Galbraith, Torrance, and Hallam (2006). They compared low and high self-monitors who wrote either rough drafts of spontaneous text or outline-planned text, and measured not just the amount of new ideas, but also the conceptual coherence of the ideas produced after writing. The key finding was that low and high self-monitors showed increases in conceptual coherence under opposite to
their preferred strategy conditions. Low self-monitors experienced increases in conceptual coherence after writing outline-planned texts but decreases in conceptual coherence after writing rough drafts. In contrast, high self-monitors experienced increases in conceptual coherence after writing rough drafts, but decreases in conceptual coherence after writing outline-planned texts. An explanation for the benefit of the opposite conditions for the low and high self-monitors may be found in the concept of constructive friction introduced by Vermunt & Verloop (1999). They describe that friction occurs when students’ learning strategies and teachers’ teaching strategies are not compatible. The outcomes of friction may be constructive when the friction is representing a challenge for students to increase their skill in a learning or thinking strategy, which apparently was the case for the students in the Galbraith et al. study (2006).

Thus, in the present study we tested two concurrent moderator variable hypotheses: a match hypothesis, derived from ATI-theory (instruction should match the student’s writing preferences) and a compensatory hypothesis (derived from Galbraith’s dual processing theory suggesting a compensatory instructional approach).

Learning-to-write argumentative texts

Learning to write well is not simply a matter of learning how to carry out, and combine, the different components of the writing process. It also involves learning what the norms of a particular form of discourse are, and how to incorporate these into the writing process as goals to be achieved during writing. In this paper we were specifically concerned with learning how to produce argumentative texts. This has become a significant part of the language curriculum in upper secondary education, and is something that high school students in the Netherlands (and elsewhere) often struggle to do effectively (Oostdam, 2005).

There is a range of different theories about what the essential features of argumentative texts are. The particular scheme we have used is derived from the pragma-dialectical argumentation theory of Van Eemeren and Grootendorst (1992). This approach to writing argumentative texts uses an ideal model of a critical discussion as a starting point. Argumentative texts are reconstructed and analysed as contributions to critical discussions, and only those elements that are relevant for resolving a difference of opinion are included in
the analysis. In terms of the pragma-dialectical argumentation theory, writing an argumentative text consists of four stages: (1) taking up a clear standpoint in a certain issue at stake; (2) generating arguments to support a standpoint; (3) selecting main arguments and sub arguments. The writer must also consider possible counterarguments that readers might raise; (4) determining the global text structure (Oostdam, 2005).

The present study

In this study, we examined the effects of a course ‘writing argumentative texts about literature’ in two versions: one tailored towards a planning writing strategy (planning condition), the other tailored towards a revising writing strategy (revising condition). We tested two concurrent hypotheses: a match hypothesis, derived from the ATI-theory (instruction should match students’ preferences) and a compensatory hypothesis (derived from Galbraith et al. (2006), who showed that students might benefit most if writing instruction helps to supplement and to foster strategies which students by themselves do not prefer).

Thus, we tested the following match hypothesis (see Table 1):

1a) the more low self-monitors tend to use a revising writing strategy, the more they profit from the revising condition and the less they profit from the planning condition;
1b) the more high self-monitors tend to use a planning writing strategy, the more they profit from the planning condition and the less they profit from the revising condition.

and the following compensatory hypothesis:

2a) the more high self-monitors tend to use a revising writing strategy, the less they profit from the revising condition and the more they profit from the planning condition;
2b) the more low self-monitors tend to use a planning writing strategy, the less they profit from the planning condition and the more they profit from the revising condition.

[please insert Table 1 about here]

To test the hypotheses, we first designed a course ‘Learning to write argumentative texts about literature’, which consisted of five units introducing students to the basic
ingredients of an argumentative text. By choosing literature as the topic to write about in this course, we integrated the teaching of argumentative writing and the teaching of literature, which are both important but separate curricula in the upper levels of Dutch secondary education (see Kieft et al., 2006; Kieft et al., 2007). We then created two different versions of the course, one based on the kind of planning strategy embodied in Kellogg’s (1988, 1994) research, the other based on the revising strategy described by Galbraith and Torrance (2004). Both versions offered guidance in the generation of ideas in the two kinds of strategies as well as guidance on how to write an argumentative text for an audience. The two resulting courses, therefore, shared a common core designed to attain the goals of argumentative writing, but varied in whether these goals were taught in the context of a planning drafting strategy (planning condition) or a revising strategy (revising condition).

Method

Participants

The experiment took place at three different high schools in three different regions of the Netherlands. The study was part of the regular schedule of eight 10th grade classes. In grade 10 students have some experience in writing argumentative texts; they start learning to write argumentative texts in lower secondary education. At the end of the 9th grade, they know that an argumentative text aims at convincing the audience by introducing a standpoint supported by arguments. The issues that students generally have to write about, in so-called functional texts, cover subjects such as after-school jobs, smoking, having exotic animals as pets etc. Thus, writing about literary stories is usually a new task for 10th grade students (Kieft & Rijlaarsdam, 2002).

Design

We set up an experimental study with a pre-test post-test design with random assignment to conditions. We measured students’ writing performance and their levels of planning and revising writing strategy before and after the intervention.
The lesson materials in the course were completely self-instructing. During the lessons the teacher’s role was to coach students while working. Within classrooms, both conditions were implemented with students randomly assigned to conditions. This design implied that all participating teachers (N = 8) were involved in teaching both conditions, thus avoiding teacher effects. Therefore, possible differences in the way teachers implemented the lessons and possible differences between classrooms did not threaten the validity of the research design.

Procedure
The course was a slightly adapted version of the course used in Kieft et al. (2006). Based on the experiences of the five participating teachers in this study and the lesson observations by the first author, we improved the course in some respects. The main improvements were: (1) more variety in the discovery writing tasks; (2) better fit with time constraints, therefore some assignments were deleted; and (3) replacement of one of the stories that students apparently not appreciated.

The field for discussion is literature: students read a short literary story and learned to generate an issue to discuss in their text, such as: ‘Is this story too old-fashioned for today’s students?’ Furthermore, students learned to present a standpoint, to generate, select and arrange arguments to support their points of view on the issue, and to integrate these elements in a rhetorically attractive text.

Table 1 shows the six phases in each unit of the course. The first phase consisted of reading a literary short story; the same story in both conditions. The stories were unfamiliar to the students and sufficiently challenging (according to the teachers). The stories varied in tone, strategy and structure; the complexity of the stories increased throughout the lessons. The second phase was the phase of discovery. In the revising condition, students discovered ideas by writing full unstructured text, for example by ‘free writing’ (Elbow, 1973). Students wrote down their perceptions, feelings, memories, reactions and responses to the story, while writing continuously, trying to avoid stopping. In the planning condition, students discovered their ideas by filling in note-forms, for example by filling in a ‘thinking scheme’, in which
they wrote down their thoughts in a few words (Skeans, 2000). We based this choice of assignments (free writing versus thinking scheme) on the work of Galbraith (1992).

In the third phase, in both conditions students read short theoretical information about aspects of the argumentative text genre (shown in Table 3) and carried out one or two exercises to apply the theory.

The fourth phase was devoted to planning content. In the planning condition, students planned the content of the text by stimulating students to think about the aim, audience and content of the text and fill in a planning scheme. In the revising condition, students wrote a ‘discovery’ draft. Composing a discovery draft is a way of developing content in writer-based prose; revising the first draft provided an opportunity to develop this text into reader-based prose, improving rhetorical and argumentative aspects (Galbraith & Torrance, 2004).

In the fifth phase, the composing phase, the students in the planning condition had to reread, evaluate and revise the planning scheme and to write their texts. The students in the revising condition students reread, evaluated and revised their first draft, using the same criteria as in the planning condition and wrote the text. In the sixth phase, in both conditions students read and commented on each others’ texts.

**Instruments**

A writing questionnaire was administered to measure students’ planning and revising writing strategies as pre-test and post-test. The questionnaires were tested and improved in previous studies (Kieft et al., 2006; Kieft et al., 2007). Table 4 shows the questionnaire items and the item-total correlations. Students rated how much they agreed with each item on a five-point scale. The questionnaire consisted of 11 planning items and 15 revising items. Because Cronbach’s alfa was sufficient (.75 and .73 respectively), we aggregated planning items and revising items and computed a planning score and a revising score for each student, assuming that students may have mixed strategies. This procedure resulted in two continuous aptitude variables: students’ level of planning writing strategy and students’ level of revising writing strategy. A small but significant correlation ($r = .34, p < .001$) was observed between the
planning writing strategy and the revising strategy. This correlation validated our decision to distinguish between planning and revising strategies.

[please insert Table 4 about here]

To measure writing performance, we implemented a pretest and a posttest, based on the prior study (Kieft et al., 2007). Participants wrote a short argumentative text after having received the following instructions: “You are about to read a short story. Write a text about the story of at least 250 words, in which you tell a classmate what the story is about, and what your opinion about the story is.” To avoid a story effect, four different stories were included in a complete balanced design. First, we determined all possible combinations of stories for pretest and posttest. Next, all participants were randomly assigned to a combination of stories (for example, student 1 received story A for the pretest and story B for the posttest; student 2 received story B for the pretest and story C for the posttest, etc.).

For the raters, the pretest and posttest texts were completely mixed in the set. Three raters received training to score the texts holistically for the quality of argumentative text. Each text was scored on a scale from 0 to 7 by the individually working raters, using anchor texts that illustrated each score from 0 to 7. We demonstrate the coding with the scale used by the raters in Table 5. All texts were scored by three raters. The three independently working raters formed a homogeneous set (reliability analysis conducted with the raters as items resulted in Cronbach’s alfa .72 and .78 for the pretest and the posttest, respectively). This allowed us to use the mean score of the three raters as students’ pre-test score and post-test score.

We measured students’ level of self-monitoring by administering the self-monitoring scale (Snyder, 1987), consisting of 18 true/false self-descriptive statements. Items of the self-monitoring scale typically endorsed by low self-monitors include ‘I would not change my opinion in order to please people or win their favour’ or ‘At parties and social gatherings, I do not attempt to do or say things that others will like’. High self-monitors claim, among other things: ‘I would probably make a good actor’ or ‘In different situations and with different people, I often act like very different persons’ (Snyder, 1987). A small adaptation to Snyder’s self-monitoring scale (consisting of true-false descriptive statements) was that we asked
students to indicate on a five point scale whether they agreed or disagreed with these items. Cronbach’s alpha of the self-monitoring scale was .71, almost equal to the internal consistency Snyder himself reports (.70) (Snyder, 1987, p. 180).

Analyses

First, we split the participants into three groups of about equal size, based on their self-monitoring scores: low self-monitors \((n = 38)\), middle self-monitors \((n = 41)\) and high self-monitors \((n = 40)\). The middle self-monitors were removed from the sample (cf. Galbraith, 1996; and suggested by Kellogg, 1987). This selection procedure resulted in a sample of 78 participants (see Table 6 for the distribution of low and high self-monitors over conditions).

We used a special case of analysis of variance (ANCOVA) to test the interaction effects of condition and writing strategy on writing performance for all groups. In regular ANCOVAs, it is assumed that the regression between the dependent and independent variables is equal in both conditions. But in our case, we hypothesized different slopes for different groups. Therefore, we split the scores for planning strategy and revising strategy each into two scores: the writing strategy score of students in the revising condition and the writing strategy score of students in the planning condition. This means we created the variables ‘score on planning strategy of students in revising condition’, ‘score on planning strategy of students in planning condition’, ‘revising strategy of students in revising condition’ and ‘revising strategy of students in planning condition’.

When interaction effects were observed, we conducted regression analyses to estimate the regression slope (following Cronbach & Snow, 1977) for each of the interactions. Thus, we tested significance and constructed the regression slopes between the degree of writing strategy and writing performance in each of the two conditions for both the low self-monitors and the high self-monitors.

Results

Preliminary analyses

To investigate the hypotheses, a prerequisite was that students would dedicate sufficient effort to the learning condition that they were assigned to. Therefore, we narrowed
down the selection of participants for the study. Two criteria were implemented. First, we selected participants who had attended all the lessons and all the test sessions (pre-test, post-test, writing questionnaire). Second, from this set, we selected students who completed all assignments and clearly put in reasonable effort in the study, as indicated by assignment ratings. Two independently working coders scored all students’ work by rating the quality of 11 key assignments in their work books on a three-point scale from ‘0 = not performed at all’ to ‘3 = performed perfectly’. These 11 key assignments were the distinctive assignments between both conditions, out of a total of 36 ($M = 26.85, SD = 5.10$, the maximum score that could be obtained was 33). Cronbach’s alpha over items was .79; coder reliability was satisfactory (.91). Those students who completed all assignments and clearly put in reasonable effort in the study (with a score of 25 or higher on the quality of workbooks) were selected. This selection procedure resulted in almost equal participants in the revising ($n = 57$) and the planning ($n = 56$) condition. Aptitude scores and writing strategy scores of both the group of selected and nonselected students were similar, $t(146) = -.28, p = .78$, for aptitude scores, $t(117) = -.73, p = .64$ for planning writing strategy, and $t(117) = 1.03, p = .31$ for revising writing strategy.

We analyzed the results of the writing questionnaire (pre-test) to measure students’ level of planning strategy and level of revising writing strategy. We found that students’ writing strategy was a rather stable students’ characteristic (correlations between pre-test and posttest for planning strategy $r = .50, p < .001$, and for revising strategy $r = .52, p < .001$). Third, overall, there was no significant correlation between self-monitoring and writing strategies ($r = -.22, p = .06$ for self-monitoring and planning strategy; $r = .15, p = .20$ for self-monitoring and revising strategy).

We found no significant differences among students assigned to the two conditions in terms of writing performance and writing strategy, for low self-monitors nor high self-monitors (information on means and standard deviations is presented in Table 7). However, the level of self monitoring of the high self-monitors in the planning condition was significantly higher than in the revising condition ($t(38) = -2.28, p = .03$). When interpreting
the results for the high self-monitors, we have to take into account this difference between the two conditions.

Finally, the scores of the complete sample (middle self-monitors included) on the post-test were significant higher compared with the pre-test scores \( t(118) = 14.0, p < .0001 \), whereas the relationship between the scores of the pre-test and the post-test was not strong \( (r = -.01, p = .91) \)

[pseudo text about table 7 here]

**Interaction effects on writing performance**

For the high self-monitors, analysis of covariance and regression analysis of high self-monitors’ score on writing strategy did not result in any significant interaction effect of condition and writing. Neither the match hypothesis \( (F(1,39) = .20, p = .66, \beta = .09) \) nor the complementary hypothesis \( (F(1, 39) = .05, p = .82, \beta = .04) \) could be confirmed. All high self-monitors profited equally from the course, irrespective of level of writing strategy or condition.

However, for the low self-monitors, the compensatory hypothesis was confirmed. Low self-monitors with a strong tendency to a revising strategy, were better off in the planning condition \( (F(1,37) = 11.43, p = .002, \beta = .55) \). Another complementary result was that the less low self-monitors tended to use a planning strategy, the more they profited from the planning condition \( (F(1,37) = 4.79, p = .04, \beta = -.43) \). In Figure 1 and 2 a visual representation of these results is shown.

[pseudo text about figures 1 and 2 here]

**Discussion**

In this study we examined the effects of two different versions of a writing course on the writing performance of students in upper secondary education. Results show that the interaction effects of condition and writing strategy on writing performance were present for the group of low self-monitors. High self-monitoring students benefited from both conditions equally, irrespective of the interplay of writing strategy and condition. In contrast, with the low self-monitors we did observe interaction effects and, moreover, found out that the complementary hypothesis could be confirmed. With low self-monitors with a low planning
strategy, and with low self-monitors with a high revising writing strategy, the planning condition led to the best writing performance. With low self-monitors with a high planning strategy preference and students with a low revising preference, the revising condition led to the best writing performance.

Our findings suggest that low self-monitors are sensitive to different forms of writing instruction. The effective form is not one that matches the revising writing strategy, and diminishes the cognitive load as much as possible (match hypothesis), but rather one that complements them (complementary hypothesis). Galbraith et al. (2006) reported results which also show that low and high self-monitors may benefit from writing strategies that complement their existing writing strategies. However, in the present study, this was only the case for the group of low self-monitors, and not for the high self-monitors. Apparently, the differences between low self-monitors’ writing strategies and the strategies taught in the course challenged the low self-monitoring students to develop their learning and thinking skills (i.e., constructive friction; Vermunt & Verloop, 1999). For high self-monitors, complementing their natural tendency towards top-down control with relatively free text production, as in the revising condition, or providing them with instruction that matches and augments their existing strategy, as in the planning condition, did not benefit their writing performance. The question is why the group of high self-monitors did not appear to be sensitive to differences in writing instruction. We think an explanation for this finding is that high self-monitors in general have greater variability in their behaviour across situations than low self-monitors as suggested by Gangestadt and Snyder (2000) in their review study about self-monitoring. High self-monitors are ‘sensitive to shifts in what constitutes a situationally appropriate performance’ (Gangestadt & Snyder, 2000: 531). Thus, one could possibly say that high self-monitoring students will adapt to whatever you ask them to do in the classroom and therefore, a complementing writing instruction will not complement them in their writing, as possibly happened with the low self-monitors, resulting in better writing performance.

Some issues about the validity of the study should be discussed here. The selection procedure for including students in the data analysis could be a threat to the external validity of the experiment and the results found. However, there are indications for a good external
validity as well, because the participants were from different parts of the country and from different schools, and taught by different teachers. Of course, one could question the validity of a self-reporting questionnaire for measuring writing strategies, because response biases and difficulties in recalling how to approach a writing task will inevitably cause errors in retrospective estimates of writing strategies. Therefore, we did not interpret the absolute values of students’ scores on the questionnaire, but chose to use the writing questionnaire scores only to measure individual differences between students. However, we have some indications that our questionnaire was an instrument of sufficient validity. First, our data showed (cf. Torrance, Thomas, & Robinson, 1994) that self-reports of the writing process detected successfully relevant differences between students. Second, the correlation between writing strategy measured during pretest and posttest five weeks later (\( r = .55 \) for planning strategy and \( r = .53 \) for revising strategy) indicated a certain stability over time, that is test-retest reliability of the questionnaire. Nevertheless, validation studies are welcome.

It may be the case that the writing questionnaire we used to operationalize the variable writing strategy did not measure writing strategy, but rather something like writing preference. Even, if this is the case, we still think the ATI we found is useful for education, because according to Snow (1992) affective characteristics of students ought to be examined as relevant to important instructional goals as well.

Another issue for discussion is that we did not measure any significant correlation between self-monitoring and writing strategy, as reported in the results section. We may conclude that although the Galbraith studies strongly suggested that self-monitoring and writing strategies are related, it is not simply a case of ‘planning is correlated with high self-monitoring’ and ‘revising is correlated with low self-monitoring’. Students’ self-monitoring, which repeatedly has shown to be related to the phase of discovery of ideas as shown in the Galbraith’ studies, can obviously not simply be extended to the complete writing process of planning-translating-revising. Future research may clarify the relation between self-monitoring and writing strategies more in-depth. In such a study, we recommend a testing instrument like the digital logging tool Inputlog (Van Waes & Leijten, 2006). A digital logging tool registering and reconstructing students’ actual writing processes is more suitable
for measuring students’ actual writing processes than an introspective and self-reporting instrument such as a writing questionnaire.

Another issue is the lack of correlation between the pre-test and the post-test on writing performance. The lack of correlation is likely the result of the fact that the pre-test was a difficult and new task for students. This caused a non-normal distribution of pre-test scores: it was shown that 80% of the students scored below 1.6 on the pre-test. However, as seen in the improvement of test scores, students had gained their knowledge and experience in writing argumentative texts about literary stories.

We started this article with the observation that in writing education, all students usually receive the same instructions and assignments. As shown this study, adaptation of writing instruction to students’ individual characteristics like their writing strategy and self-monitoring, could benefit the writing education in secondary education – at least for some groups of students.
References


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Torrance, M., Thomas, G.V., & Robinson, E.J. (1994). The writing strategies of graduate


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<thead>
<tr>
<th>Writing preference</th>
<th>Assumed most effective strategy</th>
<th>According to:</th>
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<tbody>
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<td>Low self-monitors</td>
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<td>Revising strategy</td>
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<td>Match hypothesis (1a)</td>
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<td>Planning strategy</td>
<td>Revising</td>
<td>Complementary hypothesis (2a)</td>
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<td>High self-monitors</td>
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<td>Revising strategy</td>
<td>Planning</td>
<td>Complementary hypothesis (2b)</td>
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<tr>
<td>Planning strategy</td>
<td>Planning</td>
<td>Match hypothesis (1b)</td>
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Table 2
Overview of the learning activities in both conditions

<table>
<thead>
<tr>
<th>Main phases</th>
<th>Learning activities</th>
<th>Revising condition</th>
<th>Planning condition</th>
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<tbody>
<tr>
<td>1. Reading</td>
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<td>+</td>
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<tr>
<td>2. Discovery</td>
<td>Generating ideas</td>
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<td></td>
<td>Free writing</td>
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<td></td>
<td>Thinking scheme</td>
<td>-</td>
<td>+</td>
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<tr>
<td>3. Theory</td>
<td>Reading rhetorical theory</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Applying theory in short writing tasks</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>4. Planning content</td>
<td>Writing discovery draft of the text</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Create a planning scheme</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>5. Composing</td>
<td>Critical rereading and writing a second draft</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Revising planning scheme and write the text</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>6. Sharing</td>
<td>Sharing texts: giving and receiving feedback</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

+ = present; – = not present.
Table 3
Distribution of cumulated learning contents over five instructional units

<table>
<thead>
<tr>
<th>Learning content</th>
<th>Unit 1</th>
<th>Unit 2</th>
<th>Unit 3</th>
<th>Unit 4</th>
<th>Unit 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>To define and formulate the issue</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>To form and base an opinion on the issue</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>To introduce and to conclude</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>To inform</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To quote</td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To argue</td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>To signal argumentation</td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

+ = present.
Table 4

Factor structure of the questionnaire on planning and writing strategies

<table>
<thead>
<tr>
<th>Revising items</th>
<th>Item-Total correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before I hand in my text, I check whether it is structured logically</td>
<td>.45</td>
</tr>
<tr>
<td>* I don’t pay much attention to whether I’m satisfied with my text myself</td>
<td>.42</td>
</tr>
<tr>
<td>Writing helps me to clarify my thoughts</td>
<td>.41</td>
</tr>
<tr>
<td>When I write a text, I question myself from time to time whether the text is</td>
<td>.38</td>
</tr>
<tr>
<td>comprehensible for my readers</td>
<td></td>
</tr>
<tr>
<td>* When I write a text, I find it difficult to form ideas about which I can write</td>
<td>.37</td>
</tr>
<tr>
<td>Before I start to write a text, I prefer to write down some thoughts on a scribbling paper to discover what I think about the topic</td>
<td>.36</td>
</tr>
<tr>
<td>While writing, I regularly check whether my text doesn’t contain sentences that are too long or incorrect</td>
<td>.35</td>
</tr>
<tr>
<td>* I don’t pay much attention to skipping sentences or thoughts</td>
<td>.33</td>
</tr>
<tr>
<td>When I reread and rewrite my text, the structure of the text may change a lot.</td>
<td>.33</td>
</tr>
<tr>
<td>When I rewrite my texts, the content often changes a lot</td>
<td>.30</td>
</tr>
<tr>
<td>* I usually hand in my text without checking whether the paragraphs are well arranged</td>
<td>.29</td>
</tr>
<tr>
<td>When I have finished writing, I reread and improve a lot: this may change a lot in my text</td>
<td>.28</td>
</tr>
<tr>
<td>I have to reread the texts I wrote, to prevent redundancies.</td>
<td>.26</td>
</tr>
<tr>
<td>* Usually, the texts I write are not very creative.</td>
<td>.20</td>
</tr>
<tr>
<td>When I know what to write globally, I write my texts very easily.</td>
<td>.18</td>
</tr>
</tbody>
</table>

Planning items

* Planning a text is not useful for me                                          | .58                    |
* When I start writing, I don’t know what the content of the text will be       | .53                    |
When I write a text, I spend a lot of time thinking on how to approach it       | .50                    |
Before I start to write, it is clear for me what I want to achieve with my readers | .45                    |
Before writing a text, I jot down some notes on a scribbling paper. Later, I elaborate these notes | .41                    |
I always use a diagram before I start to write                                  | .39                    |
Before I start to write, I have to know what the content of the text will be.  | .35                    |
planning is important for my writing.                                            |                        |
I need to have my thoughts clear, before I can start to write                   | .34                    |
* When writing, I sometimes write paragraphs of which I know that they are not yet correct, but I prefer to continue writing | .33                    |
When I reread my texts, sometimes they are very chaotic.                        | .27                    |
Before I write down a sentence, I have it clear in my mind.                     | .23                    |

* Starred items were recoded in the analyses. The more the students agrees with the items (on a 5-point scale), the higher the scores.
Table 5
The criteria for rating the writing performance.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The text consists of no (clear) opinion</td>
<td>1</td>
</tr>
<tr>
<td>- The text consists of one standpoint with at least one argument</td>
<td>3</td>
</tr>
<tr>
<td>- The text introduces an issue, a standpoint and one argument with a subargument</td>
<td>5</td>
</tr>
<tr>
<td>- The text introduces an issue, a standpoint and one argument with a subargument and signals of argumentation and a quote from the story</td>
<td>7</td>
</tr>
</tbody>
</table>
Table 6
Distribution of low and high self-monitors over two conditions

<table>
<thead>
<tr>
<th></th>
<th>Planning condition</th>
<th>Revising condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low self-monitors</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>High self-monitors</td>
<td>16</td>
<td>24</td>
</tr>
</tbody>
</table>
Table 7. Summary of low self-monitors’ and high self-monitors’ characteristics by condition

<table>
<thead>
<tr>
<th></th>
<th>Low self-monitors</th>
<th>High self-monitors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Revising Condition</td>
<td>Planning Condition</td>
</tr>
<tr>
<td>Writing performance (pre-test)</td>
<td>$M = 1.49$ $SD = .47$</td>
<td>$M = 1.61$ $SD = .53$</td>
</tr>
<tr>
<td>Self-monitoring</td>
<td>$M = 2.52$ $SD = .19$</td>
<td>$M = 2.52$ $SD = .14$</td>
</tr>
<tr>
<td>Planning writing strategy</td>
<td>$M = 2.95$ $SD = .63$</td>
<td>$M = 3.30$ $SD = .39$</td>
</tr>
<tr>
<td>Revising writing strategy</td>
<td>$M = 3.18$ $SD = .42$</td>
<td>$M = 3.06$ $SD = .42$</td>
</tr>
</tbody>
</table>
Figure Caption

Figure 1.
Regression slopes for effects of interaction between condition and revising writing strategy on writing performance for low self-monitors.

Figure 2.
Regression slopes for effects of interaction between condition and planning writing strategy on writing performance for low self-monitors.
Figure 1.

![Graph showing the relationship between score on the revision scale of low self-monitors (standardised) and writing performance (standardised). The graph includes a dashed line with a slope of $\beta = 0.55$ for the planning condition and a solid line with a slope of $\beta = 0.28$ for the revising condition.](image)
Figure 2.

![Graph showing the relationship between score on planning scale of low self-monitors (standardized) and writing performance (standardized). The graph includes points for planning condition and revising condition with regression lines.

β = -.43

β = -.15

Score on planning scale of low self-monitors (standardized)

Writing performance (standardized)