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THE EFFECTS OF ADAPTING WRITING INSTRUCTION TO STUDENTS' WRITING STRATEGIES

UNIVERSITEIT VAN AMSTERDAM
Graduate School of Teaching and Learning

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THE EFFECTS OF ADAPTING WRITING INSTRUCTION TO STUDENTS' WRITING STRATEGIES

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
Prof. mr. P.F. van der Heijden
ten overstaan van een door het college voor promoties ingestelde
commissie, in het openbaar te verdedigen in de Aula der Universiteit

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door

Margritha Helena Kieft

geboren te Delft

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Het promotieonderzoek is voorbereid aan het
Instituut voor de Lerarenopleiding van de
Universiteit van Amsterdam.

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VOORWOORD

Het zal zo'n tien jaar geleden zijn, dat er een enquête werd gehouden onder mijn lichting studenten Nederlands aan de Groningse universiteit over hun ideeën voor toekomst en beroep. Toen we later de uitgewerkte resultaten van de enquête onder ogen kregen, viel het antwoord van een van de studenten nogal op door de stelligheid ervan: 'In ieder geval niet het onderwijs in'. U raadt het al: die student was ik, niet vermoedend dat ik nog eens voor de klas zou komen te staan, zou gaan werken aan een lerarenopleiding, en dat juist bij het onderwijs mijn hart zou komen te liggen. Ik hoop van harte dat ik met dit proefschrift een steentje kan bijdragen aan de didactiek van het schoolvak Nederlands.

Het is niet voor niets dat in dit proefschrift steeds wordt gesproken over 'we' en 'wij'. Dit proefschrift zou er niet zijn geweest zonder de hulp van velen. Aan velen ben ik dan ook dank verschuldigd.

De eerste van de velen die ik wil bedanken is natuurlijk Gert Rijlaarsdam. Gert, ik heb erg geboft met jou als begeleider en promotor! Altijd creatieve ideeën paraat, altijd bereid om mee te denken als ik ergens niet uitkwam. Niet alleen denkend vanuit de wetenschappelijke kant van onderzoek doen, maar minstens zo betrokken bij de menselijke kant. Ik ben blij dat we de komende jaren nog zullen blijven samenwerken aan ons nieuwe project rondom 'Onderzoekend leren in het schoolvak Nederlands'.

Zonder de hulp van Huub van den Bergh had dit boek er heel anders uitgezien. Huub, jouw inbreng in dit proefschrift was beslist cruciaal. De snelheid waarmee je ogenblikkelijk de meest complexe problemen doorziet als ik ze je voorleg, verbaast me altijd weer! Dank voor het geduld waarmee je steeds opnieuw de plaatjes en formules hebt uitgelegd en vooral, me steeds hielp te begrijpen wat ze betekenen.

Het werk van David Galbraith ligt voor een groot deel ten grondslag aan dit onderzoek. David, your studies have been a source of inspiration for my work. Thank you for your cooperation, and for your emails full of humour. It has been a pleasure to share our 'self-monitoring hobby'.

Vele collega's op het ILO waren altijd bereid mijn stukken te lezen, en van zinnig commentaar te voorzien, zoals Martine Braaksma, Hein Broekkamp, Michel Couzijn, Tanja Janssen, Anne Toorenaar, en in de eerste jaren van het project ook Bernadette van Hout–Wolters. Jullie hebben me daar erg mee geholpen. Nog een extra woord van dank voor mijn paranimfen Martine en Anne. Martine, vanaf m'n allereerste werkdag op het ILO was er je hartelijkheid en hulp bij van alles, variërend van me introduceren in de wondere wereld van de conferenties tot het uitleggen hoe je handig boekkopieën op het kopieerapparaat maakt. Dank daarvoor! Anne, ik ben blij dat we samen de wetenschappelijke wereld en al zijn eigenaardigheden zo fijn kunnen beschouwen en relativeren. Je nuchtere en humoristische blik op van alles waardeer ik zeer.

Onderwijsonderzoek doen is onmogelijk zonder hulp vanuit de onderwijspraktijk. Grote dank aan alle leerlingen die de lessen hebben gemaakt, en in het bijzonder aan de docenten die hun medewerking hebben verleend: Guus de Bakker, Loes Jonker, Thijs van Tongeren, Ine Zantingh en Jules Zalm (Amsterdam), Carla Malij-

Muller en Henk Lukken (Hoorn), Ann de Jong, Tom Oud en Geerke van ‘t Veer (Veendam), Johan Reijmerink en Henry van den Top (Barneveld), en Jeroen Clemens (Almere). Zonder jullie medewerking zouden er geen data zijn geweest, en dus geen proefschrift.

Dank ook aan Mariëlle de Reuver, voor je hulp bij van alles wat er praktisch gezien komt kijken bij onderzoek doen, en natuurlijk aan alle collega’s die het ILO maken tot een fijne werkplek. Mary Heylema dacht mee over de voorkant van dit boekje: dank dat ik mocht profiteren van je onvolprezen creatieve (kleur)gevoel! Verder hebben heel wat studentassistenten me de afgelopen jaren geholpen bij het scoren en beoordelen van de vele teksten die de leerlingen schreven. Veel dank daarvoor.

Tenslotte: de steun, goede raad en betrokkenheid van vrienden, Ewoud, mijn ouders, en natuurlijk Hans, waren voor mij de afgelopen jaren in alle opzichten onmisbaar. Dank dat jullie er altijd voor me zijn.

Het is steeds meer gebruik dat vakdidactische proefschriften in Nederland in het Engels verschijnen. Dat is niet zo gek, want veel onderzoek is gebaseerd op internationale onderzoeksliteratuur. Zowat overal wordt Nederlands gegeven, zij het dat het in elk land weer anders heet: Frans in Frankrijk, Duits in Duitsland etc. Toch is het eerste doel van dit proefschrift om bij te dragen aan de vakdidactiek Nederlands, in Nederland. Cruciaal in het schoolvak Nederlands zijn de vakdidactische inzichten van docenten. Docenten met weinig studietijd; geen tijd om een Engelstalig proefschrift te lezen. Voor hen deze proloog.

Proloog

SCHRIJFINSTRUCTIE AANPASSEN AAN LEERLINGEN: EFFECTEN OP SCHRIJVEN EN LEREN

Voor leerlingen in de Tweede Fase zijn schrijftaken aan de orde van de dag. Zij schrijven bijvoorbeeld werkstukken voor aardrijkskunde, onderzoeksverslagen bij natuurkunde of scheikunde, leesverslagen voor literatuur, en betogen bij Nederlands. Ook in het literatuuronderwijs wordt in het algemeen veel geschreven door leerlingen. Het doel van zo'n schrijfopdracht bij literatuur is niet zozeer het leren schrijven: het belangrijkste is niet de tekst en de kwaliteit daarvan, maar wat de leerling van de schrijfopdracht heeft geleerd. Dit proefschrift draait om dat tweeledige doel van schrijven, toegepast in het literatuuronderwijs: enerzijds helpt schrijven bij het *leren begrijpen* van literatuur, anderzijds kan, zo denken wij, literatuur ook een heel mooi onderwerp zijn om te gebruiken bij het *leren schrijven*.

Wij leggen u twee teksten van Roos voor, zij is een leerling uit havo 4 op een school in het midden van het land. Zij en haar klasgenoten kregen een kort literair verhaal aangeboden en werden gevraagd een tekst te schrijven waarin zij vertelden waar het verhaal over ging, en wat ze van het verhaal vonden (verderop in deze inleiding zullen we dieper ingaan op de aanleiding voor deze opdracht). De eerste tekst gaat over het verhaal *En toen waren wij aan de beurt* van Kader Abdolah (de tekst is letterlijk weergegeven zoals die is opgeschreven door Roos, inclusief taal- en spelfouten).

Deze proloog is oorspronkelijk als artikel geschreven voor VONK, het Vlaams tijdschrift van de Vereniging voor het onderwijs in het Nederlands. Het is verschenen in VONK, 35(5), 3-14 (juli 2006). Wij danken Rita Rymenans en de redactie van VONK, die ons steeds aanmoedigden en de kans boden om de onderwijspraktijk verslag te doen van onze bevindingen.

x

Tekst 1:

deze tekst gaat over het verhaal ‘toen
waren wij aan de beurt.
het is geschreven door Kader Abdalah.
de hoofdpersonen zijn elf kleine jongentjes
die het verhaal van hun vader aanhoren.
het verhaal is erg verwarrend want in het
begin lijkt het op een gedicht & dan opeens weer
op een verhaal. het onderwerp is ook niet makkelijk
te achterhalen, omdat het in het begin over een
moord gaat, & vervolgens over gedichten en magie
Het boek zelf is niet iets voor jongeren omdat
het een saai & verwarrend verhaal is.
Er gebeurt ook weinig in.
omdat je van de meeste personen zo weinig
weet wordt het verhaal nog saaier.
De schrijver had er meer uitleg bij moeten schrijven
en want meer afwisseling in de zinnen van
kort naar lang.
Daardoor komt er meer aktie in.
Het verhaal is voor volwassenen die van verhalen
houden die een beetje verwarrend zijn.
Ik houd niet van deze genres & daarom zal ik
ook dit boek niet aanraden.

misschien als het verhaal een gedicht was zou
ik hem wel mooi gevonden hebben.

Vijf weken nadat Roos deze tekst schreef, schreef ze weer een tekst over een literair verhaal, ditmaal over *Hoela* van Cees Nooteboom, een verhaal over een jongen die zijn neefje ziet verdrinken (zie tekst 2).

Tekst 2:

‘Hulpeloos verdronken’

Het verhaal ‘hoela’ is geschreven door Cees Nooteboom.
Het gaat over een jongetje die op een verjaardag is
van zijn tante. Hij zit in de kamer bij alle volwassenen
Arthur, zijn neefje speelt buiten. De jongen staart naar
buiten & plotseling ziet hij zijn neefje verdrinken.
Waarom heeft het jongetje niemand geroepen, toen zijn
neefje arthur verdronk? Hij kon uit noodweer niemand
roepen en daardoor verdronk Arthur.

Mijn standpunt is dat hij niet iemand heeft geroepen
omdat hij jaloers was op zijn kleine neefje Arthur.
Ten eerste omdat zijn eigen opa Arthur zelfs beter vond.
Citaat: ;Zijn grootvader zei dat Arthur veel kleiner was,
maar veel flinker. want die speelde buiten, terwijl het mistte
en toch wel een beetje koud was. Ze keken allemaal
naar buiten, naar het rode autootje in het gras, en
lachten.’ Ook vond hij zijn neefje niet zo aardig anders
was hij wel met hem buiten gaan spelen. Citaat: ‘sigarenrook

kwam op hem af, stond achter hem en zei: moet je niet
buiten spelen? En parfum kwam op hem af, stond
achter hem en zei: Arthur is ook buiten. Dat wist hij, maar
hij ging niet naar buiten.' Tenslotte
ging hij, toen zijn neefje Arthur verdronken was,
feest vieren. Dat is toch een teken dat hij jaloers was,
want als hij het erg had gevonden was hij wel in tranen
uitgebarsten. Citaat: 'Hij bleef staan. Pas toen de auto
helemaal weggezonken was, toen Arthur, helemaal nat, nog
een keer boven het water was gekomen en daarna weer
en nu voorgoed, was weggezakt, ging hij bij zijn moeder
zitten, en kreeg een taartje, en nog een glas limonade.
Ook bij dit citaat: 'volstrekt duidelijk had hij gedacht,
hoela, hoela, hoela.

Wat zijn nu de verschillen tussen deze beide teksten? Is er een verschil in kwaliteit tussen tekst 1 en tekst 2? We zullen een paar opvallende punten noemen. Kenmerkend voor tekst 1 is dat Roos van de ene observatie naar de andere springt, er zit niet echt een duidelijke hoofdgedachte in deze tekst. Wat haar wel lijkt bezig te houden is de vraag of het verhaal van Abdolah nu eigenlijk niet meer een gedicht is dan een verhaal: ze schrijft daarover in de eerste alinea en komt daar in de slotzin weer op terug. Daarmee snijdt ze een interessant punt aan, verwijzend naar het opvallende taalgebruik van Abdolah.

Tekst 2 is een stuk beter te volgen dan tekst 1. Dat komt enerzijds door de helderder structuur, maar ook door de informatie over het verhaal die wordt gegeven. Verder is een begin van een zekere kennis van het tekstgenre 'betogende tekst' te bespeuren: Roos neemt een standpunt in en geeft argumenten voor haar standpunt. Wat de tekst niet zo aantrekkelijk om te lezen maakt, is dat het standpunt en de argumenten steeds heel letterlijk worden aangekondigd ("Mijn standpunt is:…"). We zien ook dat Roos citaten gebruikt om haar argumenten te ondersteunen, al zijn de citaten niet allemaal heel goed gekozen, en maakt weer het gebruik van expliciet aankondigen van genreonderdelen ("Citaat:…") de tekst niet erg prettig om te lezen.

Wat is er nu in die vijf weken gebeurd, waardoor deze verandering in Roos' schrijfvaardigheid heeft plaats gevonden? Roos heeft in de klas de lessenserie 'Recensies leren schrijven over literatuur' gevolgd. We maakten deze lessen met een tweeledig doel: enerzijds om leerlingen het genre argumentatieve tekst te leren schrijven, anderzijds om via het schrijven over literatuur het leren begrijpen van korte verhalen te stimuleren. Deze lessenserie is in de afgelopen jaren op verschillende scholen uitgeprobeerd door verschillende docenten. Wij zullen in deze inleiding de lessenserie beschrijven en daarna ingaan op de vraag of de leerlingen door deze lessenserie inderdaad zowel de kwaliteit van de door hen geschreven teksten, als de kwaliteit van hun interpretatie van literaire verhalen toenam.

1. DE LESSEN

De lessenserie 'Recensies leren schrijven' bevat vijf lessen. Elke les bestaat uit een werkboekje dat leerlingen deels zelfstandig, deels samenwerkend met anderen,

doorwerken in 90 minuten. Theorie over het tekstgenre en bijbehorende opdrachten wisselen elkaar af. De kern van elke les is hetzelfde:

1) Leerlingen lezen een kort verhaal, gevolgd door een taak om op het verhaal te reageren;
2) Leerlingen krijgen stukjes theorie over recensies voorgeschoteld, afgewisseld met opdrachten, over het schrijven van een recensie;
3) Leerlingen schrijven zelf een korte recensie.

We zullen de inhoud en opzet van iedere les kort bespreken.

Les 1

In de eerste les staat de *kwestie* centraal. Een kwestie is een discussievraag, waar meerdere meningen over mogelijk zijn. Een kwestie kan ook over literatuur gaan, in de les wordt dat zo uitgelegd:

> Een kwestie kan natuurlijk ook over literatuur gaan. Een paar voorbeelden van mogelijke kwesties bij boeken en verhalen:
>
> 1. In het kinderboek *De griezelbus* van Paul van Loon staan enge en griezelige dingen. Is het boek eigenlijk wel geschikt voor jonge kinderen?
> 2. In *IM* beschrijft Connie Palmen haar privé-leven tot in de details. Is dit wel interessant voor lezers om te lezen?
>
> Deelnemers aan de discussie hebben meestal een mening over de kwestie: die mening noemen we het ***standpunt***. Over een kwestie is altijd meer dan één mening mogelijk. Als dat niet zo is, dan is het geen kwestie.

Leerlingen leren een kwestie bij een verhaal te kiezen en schrijven een kort tekstje van twee alinea's over deze kwestie.

Les 2

In iedere les wordt een nieuw verhaal aangeboden. Na het lezen van het verhaal wordt steeds gevraagd naar de eerste reacties op het verhaal. Zo ook in les 2: in deze les worden leerlingen uitgenodigd om het hoofd van de hoofdpersoon (zie figuur 1) te vullen met gedachten die er volgens hen in het hoofd van de hoofdpersoon omgaan.

In les 2 schrijven leerlingen ook weer een tekst over een kort verhaal. Deze keer leren ze daarbij korte goede informatie over het verhaal te geven zodat een lezer die het verhaal niet kent, de tekst toch kan begrijpen. Daarnaast leren ze een aansprekende inleiding en een goed slot te kiezen.

Les 3

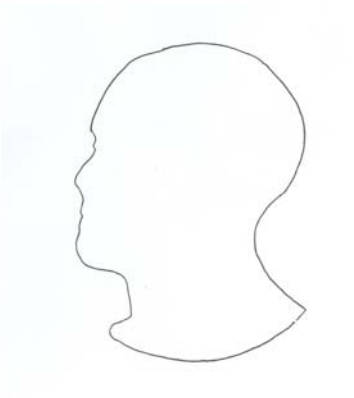
Het doel van de derde les is het leren onderbouwen van een standpunt met behulp van citaten uit het verhaal. In deze les stond het verhaal 'Een onbekende trekvogel' van Kader Abdolah centraal. De eerste opdracht van deze les was 'vrij schrijven' over het verhaal, zie hier de uitleg aan leerlingen over wat vrij schrijven is:

> Een handige manier om na te denken over een verhaal is 'vrij schrijven'. Vrij schrijven betekent dat je een tijdje lang zo snel mogelijk achter elkaar opschrijft wat je te binnen schiet nadat je het verhaal hebt gelezen, net alsof je tegen iemand praat. De truc is dat je

> achter elkaar doorschrijft: stop niet om dingen te verbeteren of te veranderen, alles is goed!

Soufian kon goed uit de voeten met vrij schrijven, ziet u maar wat hij schreef:

> Deze tekst vind ik heel erg leuk, heel spannend. En midden in de tekst wordt het alleen nog maar spannender. In het begin is het niet zo boeiend, niet interessant genoeg. Zodat ik dacht ach wat een saaie tekst. Maar naarmate je verder leest wordt het veel leuker. Hij vertelt op het begin alleen iets over hem en zijn werk. En dat vind ik erg saai. De tekst trekt je aandacht ook niet in het begin. Pas in het midden, maar dan stoppen sommige lezers er misschien mee. Alleen vind ik het wel zielig wat Gerrit met die vogels doet. Maar van ik-perspectief begrijp ik dat wel want dat is een vluchteling, die werkt voor zijn brood en heeft geen andere optie. En toen Kader de vogels beschreef kan je in gedachten meeleven. Als je je fantasie gebruikt! En wat ik ook mooi vond is dat Kader zegt: 'Ik heb ontmoet', en niet gevonden. En op het einde zegt Kader: (tijdens het verlaten van de museum) 'Er vloog een rij trekvogels over, in V-vorm. Maar er was geen begeleider bij.' Dus de dode vogel was de begeleider.



Figuur 1. Opdracht bij les 2.

Les 4
In les 4 stond argumentatie centraal: leerlingen leerden een argumentatieschema maken als steun bij het schrijven van hun recensie. Natuurlijk lazen ze ook weer een verhaal en kregen ze er enkele opdrachten bij.

Les 5
Deze les was bedoeld als toets: in deze les werd geen nieuwe kennis meer geïntroduceerd, maar schreven leerlingen een complete recensie, waarbij ze alle nieuw verworven kennis over recensies samenbrachten en toepasten: van het verzinnen van een aantrekkelijke titel tot het zoeken van passende citaten en het schrijven van een mooi slot.

2. LESSEN IN TWEE VERSIES

Nu duidelijk is geworden wat de inhoud en werkwijze van de lessen is, willen we even met u teruggaan naar wat de doelen van de lessenserie waren: we ontwikkelden de lessen om leerlingen ten eerste te leren hoe betere argumentatieve teksten te schrijven, en ook om door middel van het schrijven over literatuur, de interpretatie van korte verhalen te stimuleren. Nu zou je je kunnen afvragen of deze doelen niet te hoog gegrepen zijn. Ten eerste is schrijven op zichzelf al een complexe taak. Bij de introductie van hun beroemde schrijfmodel definieerden Flower en Hayes (1980) schrijven als het uitvoeren van allerlei taken, zoals het plannen van de tekst, het reviseren van al geschreven tekst, en het verwoorden van gedachten, waardoor '*cognitive overload*' veroorzaakt kan worden. Dit betekent dat schrijvers te veel processen tegelijkertijd uit moeten voeren, of dat ze te veel aandacht moeten besteden aan verschillende tekstkenmerken. Dit probleem zal bij leerlingen die een nieuw tekstgenre (zoals de recensie) leren schrijven, nog veel meer optreden. Is het dan niet veel te veel gevraagd om te verwachten dat leerlingen ook nog zullen *leren* van hun schrijven?

Ons antwoord was: 'Ja, misschien wel'. Daarom zochten we naar een manier om de cognitieve inspanning die schrijven kost te verminderen, zodat meer ruimte en aandacht overblijft voor leren. Uit de wetenschappelijke literatuur over schrijven en leren schrijven is bekend dat het ontwikkelen van een schrijfstrategie helpt om de cognitieve inspanning die een schrijftaak kost te verminderen (Kellogg, 1999; Rijlaarsdam et al., 2005). De meest voorkomende schrijfstrategieën die leerlingen en studenten hanteren zijn een strategie van overwegend plannen of een strategie van overwegend reviseren (Galbraith & Torrance, 2004). Met plannen bedoelen we schrijven door een planning te maken: leerlingen met een plannende strategie bepalen de inhoud van de tekst voordat ze beginnen met schrijven en maken daarbij graag lijstjes of schema's. Leerlingen met een reviserende strategie hebben het schrijven zelf nodig om op ideeën te komen, zij beginnen met het schrijven van een eerste versie van een tekst, en gaan daarna schaven en schrappen, schrijven en herschrijven, om tot de uiteindelijke tekst te komen.

Natuurlijk is het te eenvoudig om te veronderstellen dat elke leerling óf een planner óf een reviseerder is. Een leerling kan een beetje van allebei hebben, of heel veel van allebei. Het kan ook zijn dat nog niet alle leerlingen in de Tweede Fase al een uitgekristalliseerde schrijfstrategie hebben ontwikkeld. Maar, er zijn enkele onderzoeken gedaan die laten zien dat leerlingen en studenten consistent gedrag vertonen als zij schrijftaken uitvoeren (Torrance, Thomas & Robinson, 2000; Levy & Ransdell, 1996).

Opvallend is dat de taalmethodes voor het voortgezet onderwijs leerlingen vrijwel altijd leren schrijven met de planningsstrategie. Stappenplannen, denkschema's, bouwplannen enzovoort zijn in deze methodes meer regel dan uitzondering. Blijkbaar veronderstellen methodemakers dat plannen vóór het schrijven de enige goede manier is om teksten te schrijven, ook al horen we regelmatig van docenten dat veel leerlingen helemaal niet zo goed uit de voeten kunnen met een planningsschema (en schrijven deze leerlingen soms eerst de tekst, om daarna nog een planningsschema in te vullen…).

Wij denken dat het aanpassen van schrijfopdrachten en schrijfinstructie aan de verschillen in schrijfstrategieën van leerlingen kan zorgen voor een verlichting van cognitieve inspanning die een schrijftaak kost. Daarom maakten we van de lessenserie die we hierboven al beschreven, twee verschillende versies: een versie aangepast aan leerlingen die liever plannen, een andere versie aangepast aan leerlingen die graag schrijven en dan reviseren. De beide versies verschillen op drie belangrijke punten van elkaar: de eerste reactie op het verhaal, het voorbereiden van de schrijftaak, en het uitvoeren van de schrijftaak.

(1) De eerste reactie op het verhaal
In beide versies van de lessenserie worden open schrijfopdrachten gebruikt om leerlingen te laten nadenken over het verhaal. Twee voorbeelden heeft u voorbij zien komen in het voorafgaande: het lege hoofd in les 2 en het vrij schrijven in les 3. De opdracht met het 'lege hoofd', waarin leerlingen kort en puntsgewijs kreten kwijt kunnen, is een opdracht uit de versie plannen, waarin leerlingen door het maken van korte aantekeningen bij het verhaal ideeën over het verhaal genereren. De opdracht 'vrij schrijven' bestaat uit het enige tijd achter elkaar doorschrijven in hele zinnen. Deze opdracht is een onderdeel van de versie reviseren. Onze hypothese is dat planners meer hebben aan kort en puntsgewijs al schrijvend nadenken over het verhaal, en reviseerders meer baat hebben bij het schrijven van hele zinnen, in een lopende tekst (ongeveer zoals de eerste tekst van Roos die we aan het begin van dit hoofdstuk presenteerden). Deze hypothese is gebaseerd op het werk van David Galbraith (1992; 1996), een Britse psycholoog die onderzoek doet naar schrijfprocessen. Hij ontdekte dat verschillende typen studenten baat hebben bij verschillende soorten schrijfopdrachten om op nieuwe ideeën te komen.

(2) Voorbereiden van de schrijftaak
Het moge duidelijk zijn waar de verschillen tussen de versie plannen (P) en de versie reviseren (R) liggen in de fase van het voorbereiden van de tekst. In de P-versie, krijgen de leerlingen de opdracht een planningsschema met vragen (zoals: wat is het standpunt? Welke argumenten heb je?) in te vullen. In de R-versie maken de leerlingen aan de hand een eerste kladversie van de tekst, waarna ze een lijstje met dezelfde vragen krijgen om te kijken aan welke eisen hun tekst moet voldoen.

(3) Uitvoeren van de schrijftaak
Nadat de leerlingen tot het schrijven van de definitieve tekst overgaan, kijken ze eerst kritisch naar hun planning, respectievelijk naar hun eerste kladversie. Vervolgens is het verschil tussen beide versies als volgt: in de P-versie schrijven de leerlingen de definitieve tekst op basis van hun planning en hun kritische beschouwing daarop; in de R-versie schrijven de leerlingen de definitieve tekst op basis van hun eerste versie en de reflectie daarop.

Zo hebben we door relatief kleine ingrepen in de lessen, twee versies van de lessenserie gecreëerd, waarvan we denken dat ze toch een cruciaal verschil maken voor

leerlingen. Als planners mogen schrijven op een manier zoals ze dat het liefste doen, en als reviseerders zich niet meer door verplichte schema's en planningen heen hoeven te worstelen, maar mogen schrijven zoals zij dat graag doen, dan denken we dat dat een positief effect zal hebben op de leerresultaten van deze lessenserie. Onze hypothese is dus dat leerlingen met een sterke voorkeur voor plannen, meer leren in de plannende lessenserie, en dat leerlingen met een sterke voorkeur voor reviseren, meer leren in de reviserende lessen. Om deze hypothese te toetsen, hebben we twee experimentele onderzoeken opgezet, dat we in dit proefschrift bespreken in vier artikelen. In hoofdstuk 2 en 3 beschrijven we de resultaten van een uitgebreide voorstudie, in hoofdstuk 4 en 5 doen we verslag van onze bevindingen in de hoofdstudie. In deze inleiding bespreken we in het kort deze hoofdstudie.

3. HET ONDERZOEK

Het onderzoek vond plaats op drie verschillende scholen in Nederland, waar docenten Nederlands de lessenserie gaven in hun eigen derde en vierde klassen uit havo en vwo. Onze onderzoeksvragen waren: (1) leren leerlingen van deze lessenserie literatuur te begrijpen? en (2) leren leerlingen van deze lessen hoe ze betere teksten kunnen schrijven? Om antwoord te kunnen geven op deze vragen, hebben de leerlingen meegewerkt aan het maken van een voortoets en een natoets. Om de leerwinst te kunnen bepalen, werden zowel de voortoets als de natoets door beoordelaars gescoord op de kwaliteit van de interpretatie en op de kwaliteit van de schrijfvaardigheid. Het scoren van schrijfvaardigheid en interpretatie werd geheel afzonderlijk van elkaar gedaan, met verschillende scoremodellen, want het kan immers dat een leerling een hele goede interpretatie van een verhaal geeft, maar vervolgens een niet zo goede tekst schrijft.

Aan het begin van de lessenserie werden de 113 leerlingen aselect toegewezen aan een van beide versies, de P-versie of de R-versie, en zodoende waren beide versies evenwichtig verdeeld over alle klassen. Om vast te kunnen stellen in welke mate een leerling planner of reviseerder is, hebben we de leerlingen gevraagd een vragenlijst over hun manier van schrijven in te vullen. De vragenlijst bestond uit een lijst uitspraken over reviseren en plannen. Leerlingen kruisten aan of ze het meer of minder met de uitspraak eens waren. Een paar voorbeelden: 'Ik maak altijd eerst een schema voordat ik begin met schrijven' of 'Ik herschrijf mijn teksten meestal wel een of meerdere keren'. Iedere leerling kreeg een score voor reviseren en een score voor plannen.

Nu u wat meer weet over de lessen en het onderzoek naar de effecten ervan, kunnen we weer even terugkijken naar de teksten van Roos. Tekst 1 was de tekst die ze schreef bij de voortoets, Tekst 2 was de tekst die ze schreef bij de natoets. Zoals ook bij globale lezing al valt vast te stellen, bleek ook uit de scores van de beoordelaars dat de tekst die ze schreef bij de natoets beter was dan de tekst die ze schreef als voortoets, zowel op schrijfvaardigheid als op literaire interpretatie.

Waarom hebben wij nu de teksten van Roos uitgekozen om u te laten lezen? Wel, vooraf bleek uit de schrijfvragenlijst dat Roos nog niet echt een duidelijke voorkeur voor een schrijfstrategie had: op zowel plannen als reviseren had zij een

gemiddelde score. Vervolgens kreeg zij de versie reviseren van de lessenserie toebedeeld. Het grappige is dat zij, toen zij na afloop van de lessenserie weer dezelfde schrijfvragenlijst invulde, nu een sterke voorkeur voor reviseren liet zien. Blijkbaar was het voor haar een hele ontdekking dat je ook op een reviserende manier kunt schrijven, en heeft dat bij haar ook goede effecten op de kwaliteit van de interpretatie en de kwaliteit van de tekst die ze schreef.

Dit ging overigens niet voor alle leerlingen op. Als we naar de gehele groep leerlingen kijken, en daarbij betrekken (1) welke conditie zij toegewezen hadden gekregen, (2) wat hun voorkeuren voor plannen en/of reviseren waren, en (3) wat hun scores op interpretatie en schrijfvaardigheid waren, dan bleek uit het onderzoek het volgende:

- De gemiddelde tekstkwaliteit van de natoetsen was hoger dan de gemiddelde tekstkwaliteit van de voortoetsen (het gaat dan om *schrijfvaardigheid*);
- De gemiddelde interpretatie in de natoets was gelijk aan de score in de voortoets (hier gaat het om *literaire interpretatie*);
- Kijken we naar de leerlingen met een sterke voorkeur voor plannen, dan blijkt dat deze leerlingen gemiddeld beter interpreteerden bij de natoets als zij in de *plannende conditie* zaten;
- Kijken we alleen naar de leerlingen met een sterke voorkeur voor reviseren, dan blijkt dat zij gemiddeld beter interpreteerden in de natoets als zij in de *reviserende conditie* zaten;
- De combinatie tussen schrijfvoorkeuren van een leerling, en de conditie waar een leerling in zat, had geen invloed op de schrijfvaardigheid in de natoets. Of leerlingen nu graag reviseerden of planden, voor zowel de planningsconditie als de reviseerconditie waren de natoetsen van gemiddeld hogere tekstkwaliteit dan de voortoetsen.

Met andere woorden: als je wilt dat leerlingen leren schrijven, maakt het niet uit of je rekening houdt met hun schrijfstrategieën. Als je wilt dat leerlingen via de schrijftaak leren over het onderwerp, dan is aanpassen van de lessen aan de schrijfstrategie verstandig.

4. SLOT

Dit proefschrift is niet bedoeld als pleidooi om op nog grotere schaal schrijfopdrachten in het literatuuronderwijs in te voeren. We denken niet dat voor het leren interpreteren van literatuur schrijven perse het beste leermiddel is. Voor het leren interpreteren van gelezen teksten zijn andere didactieken waarschijnlijk effectiever, zoals praten over de gelezen teksten. Wel denken wij op grond van onze bevindingen in deze studie dat als schrijven zo'n belangrijk onderdeel van de literatuurlessen is en blijft, de effectiviteit van schrijfopdrachten groter kan worden als bij het geven van schrijfopdrachten rekening wordt gehouden met de individuele verschillen in schrijfstrategie van leerlingen.

Chapter 1

INTRODUCTION

1. WRITING AND LEARNING

In upper secondary school education in the Netherlands, writing is a substantial and important part of students' activities. For example: students learn how to write argumentative texts in the language class, they write research papers for biology, lab reports for science, or an essay for social science, etcetera. The variety of writing tasks that are assigned to students shows that students' writing may serve different functions. First, writing may be aimed at communication: how to decide what information to communicate to whom and how to communicate it. This means that students need to learn to write various text genres for various audiences e.g., learning to write rhetorically, learning how to convince their readers with good arguments, or to attract the readers' attention. In this study we will label this *learning-to-write*.

Second, writing is often promoted as a means of enhancing learning; we will label this *writing-to-learn*. The function of writing-to-learn is not to communicate, but to order, interpret, or clarify learning experiences. In this way, writing assignments can become ways of exploring and making sense of new ideas and experiences. Especially in the United States, there is a strong movement of teachers and researchers (called 'Writing Across the Curriculum' or 'Writing in the Disciplines') claiming that one learns when writing. Writing-to-learn activities can be applied in all school subjects, from science to history, from literature to biology. One important issue should be emphasized: empirical support for the learning effects of writing is weak (Ackerman, 1993; Bangert-Drowns, Hurley & Wilkinson, 2004; Klein, 1999; Ochsner & Fowler, 2004). Besides that, students often don't experience the writing of these type of texts as an informative learning activity (Van der Leeuw, 2006).

In the research project that we report in this thesis we have aimed at constructing and testing writing courses enhancing both writing-to-learn and learning-to-write at

the same time. We chose *literature* as domain-content, because in practice the school subject of literature often consists of writing about reading experiences (Marshall, 1990; Purves, 1991). At the same time, only few empirical studies have been conducted about the role of writing in literature classes (Newell, 1996; Wong, Kuperis, Jamieson, Keller, & Cull-Hewitt, 2002). Furthermore, we chose for the genre of *argumentative text*, because (1) the genre argumentative text is an important genre in the examination requirements for the senior general secondary education track (havo) and the pre-university track (vwo), and (2) the review study about writing-to-learn by Klein (1999) suggested that the teaching of text genres is the most effective way of teaching writing-to-learn. He stated that the operations and forms of organization required by different genres lead to equivalent operations upon content. The learning is supposed to be in dealing with the specific operations and organizations required for writing genres.

An analysis of the text books that are used most often in Dutch language and literature lessons in upper secondary education (Kieft & Rijlaarsdam, 2002) showed that both in the writing class and in the literature class, students in upper secondary education write argumentative texts. This seems a quite desirable learning situation, if it were not for the fact that the students have to write different kinds of argumentative texts. When a writing task is assigned to students in the writing class, they receive rich support for writing the text and in the writing process, by, for example, receiving a scheme of procedural steps, or criteria for a good text, or an evaluation scheme. The topic that students write about can be any topic, including literature. In contrast, in the literature class, students must focus on the content of their text: usually a book or literary work that they have read. They are asked to write about their personal responses, emotions and appreciations of the literary work, and to provide some support for their opinions. Or they write an analytic paper ('book report'), in which they apply literary theory to the literary work they have read; these book reports follow a fixed pattern of content, and a more or less fixed format, i.e., supplying answers to questions. There is not much attention for text genres or how to write in a rhetorically attractive way. In conclusion: in the writing class and in the literature class both definition and methodology of writing argumentative texts are quite different.

It is a pity that learning-to-write and writing-to-learn are taught in such isolation: combining important characteristics of both curricula in writing argumentative texts about literature might result in improved understanding of literature and better written texts[1]. In other words: the aim of our project was to try to build a bridge between the writing class and the literature class (see Figure 1).

[1] *Note that the Dutch language class and the literature class in most schools are taught by the same teacher to the same students.*

Figure 1. The bridge between the writing and literature classes.

2. COGNITIVE DEMANDS OF WRITING

It seems a little strange to expect that a complex activity like interpreting literature could be served by a complex activity like writing. Moreover, it could be said that we are quite ambitious in attempting to construct a course including both writing-to-learn and learning-to-write, writing being such a complex activity for students. In their famous cognitive model of writing, Hayes and Flower (1980) described the writing process as consisting of three components that may continuously interact: *planning* what to say, *translating* those plans into written text and *reviewing* those written texts or plans. All three components of the writing process are cognitively highly demanding, consuming much of the available working memory capacity. As Flower and Hayes (1980, p. 33) put it: "Writing is the act of dealing with an excessive number of simultaneous demands or constraints. Viewed this way, a writer in the act is a thinker on full-time cognitive overload". In writing research, it is generally assumed that the cognitive resources available for the various cognitive processes involved in writing are limited (Kellogg, 1994; Rijlaarsdam et al., 2005; Torrance & Galbraith, 2006). Therefore, we realized that if we aimed to design a writing course which would be beneficial to both writing and learning of students, we had to find ways in which the cognitive demands of writing could be either adapted to or overcome.

A possible way of reducing the high cognitive demands of writing is developing a writing strategy: dividing a writing task into subtasks, and sequencing these subtasks to reduce the number of processes that have to be juggled during composition (Torrance & Galbraith, 2006, p. 74). In general, the two most well-defined strategies that have been found in writing research are 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",

and the revising strategy, in which "writers work out what they want to say in the course of writing and content evolves over a series of drafts" (Galbraith & Torrance, 2004, p.64). Both the planning strategy and the revising strategy may be beneficial to reducing the cognitive load of writing, because both strategies allow content planning to be conducted free of the demands of constructing well-formed and coherent texts. Thus, both strategies may reduce writing processing constraints and may lead to texts of good quality.

We assume that these individual differences in students' writing strategies are relevant for writing instruction. However, when strategy choice in writing instruction in secondary education in the Netherlands is addressed, it almost invariably includes directions to 'design a plan before writing'. Possible alternatives are rarely offered and explicit attention to differences in students' writing strategies is unusual in writing education. Textbooks and teachers tend to provide all students with the same type of writing assignments, both in the case of writing-to-learn and learning-to-write. Nevertheless, we think that students will be better able to manage the complexity of writing when they are assigned writing tasks that match their own writing strategies. Our general hypothesis is that a writing course adapted to students' writing strategy (either planning or revising) is less cognitively demanding, and thus, that more cognitive resources will be left for learning about literature and learning to write a new genre.

To test this general hypothesis, we created two versions of the course 'learning to write argumentative texts about writing', one version adapted to the planning writing strategy and the other version adapted to the revising writing strategy. Both versions offered guidance in the generation of ideas to write about as well as guidance on how to write an argumentative text for an audience (using either a planning strategy or a revising strategy). These two phases in the writing process (the phase of content planning and the phase of constructing a rhetorically appropriate, well-formed and coherent text) were separated in the writing tasks in the course, to reduce the high cognitive demands of writing about literature. Besides that, for the aim of learning-to-write, we made the writing course stronger by not only *adapting* to writing strategies, but also by *strengthening* the weak parts of writing strategies as well. Thus, the writing tasks in the planning condition consisted of planning writing tasks, but also of tasks to strengthen students' revising, for example tasks of critically reviewing and revising a planning scheme. Similarly, the writing tasks in the revising condition consisted of revising writing tasks, but also tasks to strengthen students' planning, for example by using a rough first draft as a planning for a text.

3. WRITING ABOUT LITERATURE

Since we chose literature as the subject matter in our project, we did a search for empirical studies conducted in the field of writing-to-learn about literature. We learned that the role of writing in literature learning has been rather under-exposed in research about writing-to-learn. As Newell (1996, p. 148) puts it: "Given their ubiquity in the English classroom, it seems remarkable that we have only a slender body of empirical research exploring the consequences of writing for students' liter-

ary understanding". When studies focus on writing-to-learn in the field of literature, they generally examine the question how writing might increase students' literary understanding (Boscolo & Carotti, 2003; Marshall, 1987; Newell, 1996; Newell, Suszynski, & Weingart, 1989; Wong, Kuperis, Jamieson, Keller, & Cull-Hewitt, 2002). This is the reason why we chose a skill (literary interpretation skill) and not content as the aim of writing-to-learn in our studies.

In Figure 2, we present an overview of the variables that play an important role in the experimental studies that we conducted (fully described in Chapters 2 to 5). We hypothesize that adapting a course to students' writing strategy improves both writing skill and literary interpretation skill.

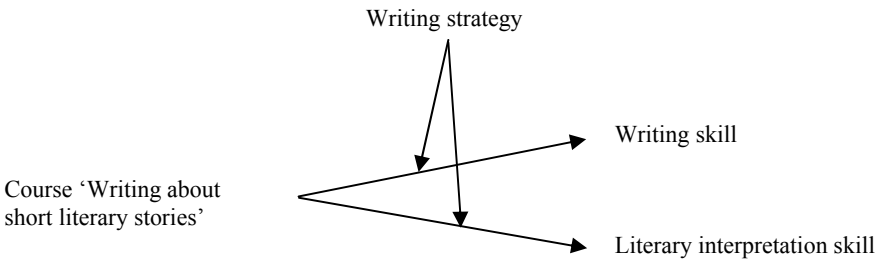


Figure 2. Overview of the main variables in the study.

4. VALUE AND LIMITATIONS OF THIS STUDY

At the beginning of this study it is important to note both its value and its limitations. To start with the latter, we would like to stress a number of things that this study is *not* aimed to be.

First, this is not a study on the best way to teach literature to students in secondary education. The course that we focused on in this study was not primarily a course in learning to interpret literature. It just adopted and revised a writing task widely used in educational practice, and tried to find ways to make it more effective by adapting the task to different writing strategies. We do believe that other learning activities may have more effect on literary interpretation, as for example the activities described in the studies by Janssen and her colleagues (Janssen, Braaksma, & Rijlaarsdam, 2006).

Second, the present study is not a cognitive psychological study, in the sense that it would aim at an in-depth examination of the cognitive processes involved in writing and writing-to-learn. We do not aim to describe which processes are going on in the heads of the students when they are writing-to-learn or learning-to-write. For example, we did not use methods to measure students' cognitive load while writing. The main hypothesis about the interaction between writing strategy and treatment (the type of writing course) stems from cognitive psychology, as does the research design, based on the tradition of Aptitude Treatment Interaction research (Cronbach & Snow, 1977).

Third, the study is not a teacher manual, which a teacher could use in the classroom directly. Although the courses constructed for this study proved to be useful in practice, according to teachers' reports, and is available for teachers on a website, this study describes a number of experimental studies which are not of direct practical interest.

Then, what does this study offer the reader? To start with, this study has an educational goal; it is aimed at enhancing learning and teaching in L1[2] in upper secondary education. A number of practical implications may be derived from it, as will be discussed in Section 6.4.

Furthermore, we think that this study may contribute to different scientific fields. The scientific significance of this study lies in: (1) bringing together two research domains: learning-to-write research and writing-to-learn research. It is fairly novel that a study focuses on the effects of writing-to-learn on writing skill, and on the effects of learning-to-write research on learning profit; (2) introducing different types of writing tasks for different students. In writing-to-learn research and learning-to-write research, different writing tasks are not new, but as far as we know, the effects of assigning different tasks to different students have not been examined in an empirical way before. By studying the effects of different tasks on different types of writers, we may contribute to a better understanding of the learning conditions for learning-to-write and writing-to-learn.

5. ORGANIZATION OF THIS THESIS

This thesis consists of five chapters, two of which are studies on writing-to-learn (Chapters 2 and 4), and two of which are studies on learning-to-write (Chapters 3 and 5), with a concluding chapter (Chapter 6) in which the findings of the previous chapters are discussed. In Chapters 2 and 3 we report the first empirical study that we conducted, and in Chapters 4 and 5 we describe the second experimental study, a replication and elaboration of the first. For this second study the lesson materials and the testing materials had been improved, and more schools, teachers and classes participated. Besides that, we carefully selected students who were genuinely involved in the lessons.

Chapter 2 focuses on the effects of the course 'writing argumentative texts about literature' on students' literary interpretation skill. We tested the hypothesis that adapting a writing course to students' writing strategies increases the effects of writing-to-learn. The results suggest that for almost all students writing assignments of the type 'first-planning-then-writing' are the most beneficial for learning to interpret literary stories.

In Chapter 3 we wondered if students are more competent in managing the complexity of writing argumentative texts when writing assignments have been adapted to their preferred writing strategy, thus resulting in improved writing skill. We found that the planning writing strategy, which is typically taught in writing classes and in writing textbooks, is not for every student the best type of writing instruction.

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[2] *L1 refers to the dominant language in a country, the language of schooling.*

Chapter 4 focuses again on the issue of writing-to-learn; we replicated the research design and hypothesis of the study described in Chapter 2, under better conditions: with an improved writing course, with improved testing materials, and with more schools and groups participating. We examined once more the effects of adaptation of writing instruction to different writing strategies on learning to interpret literature. In contrast with the findings in Chapter 2, our hypotheses were mainly confirmed. Most students learned more about interpreting literature when they had to carry out writing assignments that matched their writing strategy, than when they were assigned writing assignments that did not match their writing strategy.

In Chapter 5 we report the results of our improved course on students' writing skill, and focus on learning-to-write again, as in Chapter 3. In addition, we have included the personality variable of self-monitoring in the study; in other research (Galbraith, 1992; 1996; 1999) the level of self-monitoring has shown to be related to the way students discover ideas to write about. This final experiment showed that a specific group of students is sensitive for differences in writing instruction: the students who can be described as low self-monitors, i.e., students who develop new ideas when they write full text, but not when they plan a text (as shown by Galbraith, 1992; 1999).

As Chapters 2 to 5 are articles that have been submitted separately to different international journals, similarities in the theoretical background presented in the introductions of these chapters may occur, as well as sometimes considerable overlap in the method sections.

Chapter 2

WRITING AS A LEARNING TOOL: TESTING THE ROLE OF STUDENTS' WRITING STRATEGIES

The claim that writing facilitates students' learning, although widely accepted, has little support from empirical research. A possible explanation for the lack of empirical evidence is that writing-to-learn research has disregarded that students use different writing strategies. The purpose of the present experimental study is to test whether it is effective to adapt writing-to-learn tasks to different writing strategies when teaching literature. A course 'Learning to write argumentative texts about literature' was developed in two different versions: one adapted to a planning writing strategy, the other to a revising writing strategy. Participants were 113 tenth-grade high school students in the Netherlands. Our hypothesis is an adaptation hypothesis: we expect that the more a student will use a planning writing strategy, the more the student will profit from the lessons in the planning condition, and that the more a student uses a revising writing strategy, the more beneficial the revising condition will be. However, results show that for improving literary interpretation skill, a course adapted to the planning writing strategy is more effective for almost all students.

1. INTRODUCTION

In secondary school education in the Netherlands, students do much writing. This writing may serve different functions. Students learn to write-to-communicate, for example when they write letters, essays or arguments, usually in the language curriculum. Writing-to-communicate aims to enhance the acquisition of skills and strategies for the production of formal texts for various audiences. Students also write-to-learn, enhancing their acquisition and understanding of content. This function of writing can be found in all kinds of school subjects or disciplines and is promoted by national and international organizations like Writing Across the Curriculum (Anson, 2004). Many educational researchers have tried to find empirical evidence for the claim that writing facilitates learning. However, the results are inconsistent and inconclusive: some studies show positive results, while others show no

This chapter is published as Kieft, M., Rijlaarsdam, G., & Van den Bergh, H. (2006a). Writing as a learning tool: Testing the role of student's writing strategies. *European Journal of Psychology of Education, 21*(1), 17-34.

effect at all (Ackerman, 1993; Klein, 1999; Tynjälä, Mason, & Lonka, 2001). In a recent study, Bangert-Drowns, Hurley, and Wilkinson (2004) show that results are not just scarce, but that effect sizes are very small as well. A possible explanation for the absence of findings writing having major effects on learning could be that writing-to-learn research has disregarded the different writing strategies used by students. In this paper, we report a study on the effects of writing-to-learn about literature, in which two different writing strategies of students are taken into account.

1.1 Writing-to-learn

There are very divergent assumptions about how different writing tasks might lead to learning. In his review of research on writing-to-learn, Klein (1999) classified claims from several studies into four general hypotheses. Three hypotheses refer to components of writing processes; one is on genre. Klein describes the hypotheses as follows:

1) Shaping at the point of utterance (spontaneous text production): This hypothesis claims that the basic process of encoding thought in language leads to a better understanding of material. The learning is in writing freely and expressively.
2) Forward search: The crucial ingredient in this hypothesis is that the learner selects and organizes ideas in a previously written text, written explicitly to discover or generate ideas. The learning is in revising.
3) Backward search: This hypothesis claims that the learning is a result of the goal directed planning before starting to write.
4) Genre hypothesis: According to this hypothesis, the operations and forms of organization required by different genres lead to equivalent operations upon content. The learning is in dealing with the specific operations and organizations required for writing genres. In the writing-to-learn literature, the hypothesis that has been most frequently researched and has produced the most positive results is the genre hypothesis.

The way writing leads to learning might be influenced by personality dimensions, as shown in studies by Galbraith (1996; 1999). He set up experiments to examine the way writers generate ideas to write about. His expectation was that there would be a difference between the writing process of *high self-monitors*, who control their expressive behaviour in order to present themselves desirably to others, and the writing process of *low self-monitors*, who express their affective state directly. The subjects, undergraduate students (both high and low self-monitors) either wrote an essay, without making a plan on paper, or made notes in preparation for an essay, without writing the essay. Galbraith found that high self-monitors produced more new ideas when they made notes in the planning phase, while low self-monitors produced more ideas when they wrote text. He concluded that for generating ideas, writing by planning is useful for some writers and writing by producing text is useful for other students.

1.2 Writing-to-learn and literature

The main review studies and meta-analyses (Ackerman, 1993; Bangert-Drowns et al. 2004; Klein, 1999) show that literature is one of the many subject matters writing-to-learn is used for, among for example science, mathematics and history. Writing has been used for both improving content knowledge and improving skills. In the studies using writing as a learning tool in the domain of literature, writing has been used for improving the skill of understanding literature, whereas studies in subject domains have been mainly focused on content learning.

Klein's review study has shown that teaching how to write genres is the most effective way of teaching writing-to-learn. Few studies focused on genre writing in the literature curriculum. Experimental studies by Marshall (1987) and Newell, Suszynski and Weingart (1989) showed evidence that writing, in both a personal and an impersonal mode, contributes to thinking and learning. Marshall (1987) compared the effects of different genres on the literary interpretation skill: personal analytic writing assignments (students wrote about their feelings in response to an aspect of a story) and formal analytic writing assignments (students focused on textual evidence in their texts). He compared the understanding of short literary stories by the students in both genre-writing conditions with the understanding of students whose writing stayed restricted to answering short questions about literary stories. Participants were students of an eleventh-grade American literature course. After the treatment, Marshall tested students' literary understanding by scoring their interpretative statements in written essays, and by analysing post-test scores on open questions about literary stories. He found that there was no difference in the learning effects of writing personal or formal texts; both were related to higher post-test scores rather than to restricted writing.

Newell et al. (1989) also compared different kinds of genres. Their main question was what kinds of reasoning and thinking about literary texts were fostered by writing different genres. To answer this question, the researchers analysed texts written by tenth-grade students when they wrote in a personal or formal mode. In the formal writing task, students had to interpret the story by drawing their inferences from the text alone (text-based condition). For the personal writing task, students had to interpret a story using their own experiences as well of elements of the story (reader-based condition). The researchers found that in the reader-based condition, students wrote a higher amount of reflexive statements (i.e., statements in which the writer refers to personal experiences and knowledge to illustrate understanding of the text), while in the text-based condition, students used a higher amount of descriptive statements (i.e., statements in which some part of the story is retold or described). They concluded that writing different genres influences the way students write and what they take from a story.

Boscolo and Carotti (2003) compared the effects of two different methods of literary education to ninth-grade students: one group of students, the writing-oriented group, used writing in various ways as a tool for literary comprehension – writing was used as a tool for elaborating, clarifying, and commenting on literary experiences. Another group of students, the traditional group, used writing in a more traditional way, as an end in itself: writing as testing and evaluating their understanding

of literature. At the end of the school year, all students wrote a written summary and a comment on a short literary story, which was rated in terms of comprehension, formal correctness and personal interpretation. The results showed that students in the writing-oriented group outperformed the traditional group in their personal interpretation of a literary text, but not in comprehension of the literal meaning of a text, nor formal correctness. This study shows that using writing as a learning tool in the literature curriculum may help to improve students' literary interpretation skill.

1.3 Writing strategies

Writing is an effortful and complex activity. In order to manage the many constraints, writers need to organize the cognitive activities involved in writing. Research by Rijlaarsdam and Van den Bergh (1996) and Van den Bergh and Rijlaarsdam (1999) showed that individual differences can be identified in the way students construct their writing process. In the present study, we define the writing strategy of an individual as the way that person tends to organise cognitive activities like planning, composing and revising. Several studies, both empirical and anecdotal, describe different writing strategies. In these studies, usually two dimensions are used to describe the differences between writing strategies. The first dimension concerns the degree to which writers tend to *plan* before writing. The second dimension concerns the degree to which writers tend to *rewrite and revise* their texts.

The revision dimension and the planning dimension can be recognized in the study of poet Stephen Spender (1952). Spender distinguished two kinds of poets: Beethovians, who compose to find out what they have to say, and use writing as a way of thinking, and Mozartians, who plan extensively and then execute. Bridwell-Bowles, Johnson and Brehe (1987) moved from Spender's anecdotal descriptions towards a more empirical description of these writing strategies. They analysed composing processes by interviewing and observing adult writers while writing essays. They found that experienced writers can be grouped in three categories: discoverers (Beethovians), executors (Mozartians) and combinations. Biggs, Lai, Tang, and Lavelle (1999) make a similar distinction, which they describe as the difference between sculptors and engineers: sculptors produce an approximate text and reread and revise it; engineers plan first and then produce text.

Torrance, Thomas, and Robinson (1994; 1999; 2000) also provided evidence for the two dimensions. They studied individual differences in the writing behaviour of (under-) graduate students. In the 1994 study, they used cluster analysis on survey data and identified three distinct groups of students in terms of strategies they use when writing a thesis: planners, revisers and mixed strategy writers. Planners prefer to have their ideas clear before they start to write and tend to write fewer drafts than revisers. They decide content at the beginning of the writing process: they think and then write. Revisers use revision to develop content. Writing helps them to make their ideas more clear and to understand their arguments better. They tend to develop content as they write: they think while writing. The third group is the group of mixed strategy writers, who plan content before producing text, just like the planners, but change content during subsequent revisions.

Online self-reports from students while they were writing an essay were used in the 1999 study to obtain more-direct information on writing strategies. Broadly, the same strategies were found; students who make content decisions early in the writing process (i.e., planners), and students who spent a relatively large proportion of the time revising and copying (i.e., revisers). However, in this study the third group was distinct from the third group identified in their earlier study (Torrance et al., 1994); these students showed little planning and revision, just reading references and writing notes (collection) and thinking about wording and writing text (translation) and were called 'non-stop writers' or 'doers'.

Finally, Torrance et al. (2000) performed a longitudinal study by analysing writing strategies of 48 students through the three years of their degree course. During their degree course, students wrote a number of essays about psychological themes. Shortly after they completed an essay, the students were asked to fill in a writing-strategy questionnaire, dealing with the way the essay had been written. Analysis of the questionnaires showed that most frequently used strategies were the outline-and-develop strategy (i.e., writing from an outline, but with possible development in content or structure), and think-then-do strategy, (i.e., thinking prior to writing, not explicit planning or drafting). Most students (85%) had a predominant strategy, which they used in 63% to 71% of the written essays.

The question whether writers show consistency in using writing strategies, stable across task and time, is hard to answer. Empirical evidence about this issue is scarce, because most studies about writing strategies were based on the performance of one writing task. However, studies by Torrance, Thomas and Robinson (1999; 2000), and Levy and Ransdell (1996) showed small empirical evidence that individual differences in writing strategies indicate a certain stability of strategies.

If students show individual differences in writing strategies, then the inconsistent and inconclusive results of writing-to-learn research might be explained by the fact that writing-to-learn research has disregarded individual differences between writing strategies. According to Klein's hypotheses about writing-to-learn, for students using a planning writing strategy, the learning could be in planning (backward search hypothesis). For students using a revising writing strategy, the learning could be in revising (forward search hypothesis). In conclusion: different students may benefit from different kinds of writing assignments for learning.

2. PRESENT STUDY

The purpose of the present study is to test whether it is effective to adapt writing-to-learn tasks to both a revising and a planning writing strategy of high school students when teaching literature. Hence, we developed a short course 'Learning to write argumentative texts about literature' in two versions, one adapted to students with a revising writing strategy; the other adapted to students with a planning writing strategy. Klein's review study (1999) leads us to the hypothesis that students will improve their literary interpretation skill more if the learning activities, i.e. writing activities, are adapted to their writing strategy. The argument for this assumption is that writing activities will result in learning for different students in different ways:

students with a planning writing strategy will learn when planning, students with a revising writing strategy will learn when revising. Thus, our hypotheses are:

1) the stronger a student tends to use a planning writing strategy, the more beneficial the planning condition will be;
2) the stronger a student tends to use a revising writing strategy, the more beneficial the revising condition will be.

To answer the research question we set up an experiment with a pre-test/post-test design.

3. METHOD

3.1 Participants

The experiment took place at school and was part of the regular lessons in tenth grade. Participants were 121 students at a school for secondary education in Amsterdam, Netherlands. In total, 113 students were included in the analyses; eight participants were excluded from the initial sample (they missed more than half of the lessons). Five tenth-grade classes were involved: two groups (n = 52) were from the senior general secondary education track, and three from the pre-university track (n = 61). Within classes, students were randomly assigned to either the revising (n = 56) or the planning condition (n = 57). The participants came from various ethnic and linguistic backgrounds, including Dutch, Moroccan, Surinamese, Turkish and Antillean. Nevertheless, L1/L2 differences between conditions are not to be expected, because all students spoke Dutch fluently, had attended Dutch primary education and were participating in the upper levels of secondary education.

Table 1. Distribution of gender (number of male and female students), mean age (in years), and aptitude score of the participants in the conditions (standard deviations in parentheses)

Variable	Revising condition	Planning condition
Male / female	30 / 26	34 / 23
Age	16.18 (.74)	16.27 (.77)
Aptitude	542.81 (3.75)	544.07 (3.48)

There was no difference between the conditions in gender (χ^2 (1, N = 113) = 0.43, p = .52). Furthermore, there was no difference in age (t (111) = -.61, p = .55), or aptitude (t (111) = -1.79, p = .08) found between conditions (see Table 1). Aptitude was indicated by students' scores on the Primary Education Final Test, a standard test in the Netherlands, administered in grade 6. For 89 of the 113 students these data were available in the school administration records; scores ranged between 533 and 550. We estimated the missing aptitude scores by regression analysis by using all relevant

student variables[1]. Most participants can be characterized as inexperienced literary readers; in Dutch secondary education, students are not used to reading and discussing adult literature before tenth-grade.

3.2 Aim of the course

The aim of the lessons was to stimulate students to develop their literary interpretation skill; the skill to construct a personal meaning from a literary text. For a better understanding of our choices, some relevant context information about the Dutch language and literature curriculum in upper secondary education must be presented here. The most recent data stems from a national survey by Janssen (1998). The literature curriculum combines in almost equal parts four different approaches to literature: cultural heritage, literature as orientation on the world, literature as orientation on aesthetics, and literature as a means to explore and develop the individual reader (reader response theory). Formal teaching of literature starts at the age of 16. According to teachers, 50-67% of the students were non-readers when they start reading literature; only 16-26% of the students were eager readers. Learning activities in the literature curriculum are more or less equally distributed: listening to a teacher's presentation, reading texts and discussing texts. Most teachers include writing in the literature curriculum, with tasks such as creative writing assignments, book report and thesis paper. These tasks are perceived as test assignments, rather than as learning tasks.

The literature curriculum in the Netherlands is dealing with several problems, one being the depth and quality of interpretation. Most students must write book reports or literary reviews to show their capacity to understand literary texts according to literary theory (theme, perspective, motives etc.). However, the reading responses of tenth-grade students often are limited to very global statements and one-word utterances such as 'boring' or 'thrilling'.

We developed an introductory literature course that stimulates the elaboration of personal responses. Therefore, we wanted students to read interesting, short texts and we included writing tasks to support them in thinking about these texts. In each lesson, students read a literary story, and wrote a literary review about it. We chose stories that were unfamiliar to the students (according to the teachers), and were sufficiently challenging. The stories differed greatly in tone, strategy and structure, and the complexity of the stories increased through the lessons. Our choice for literary reviews as writing-to-learn tasks is grounded in Klein's (1999) review of research on writing as a learning tool. He concluded that the teaching of text genres is the most effective way of teaching writing-to-learn. Hence, in the present study we teach students to write literary reviews: argumentative texts about short literary stories.

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[1] *We used regression analysis to estimate the relation between aptitude and sex, age, school type, pre-test, quality of learning, evaluation of workbooks, and writing strategy. By means of this regression equation an aptitude score was estimated for students who did not take the aptitude-test (compare Little & Rubin, 1987). Correlation between estimated aptitude score and real aptitudes is .52.*

Table 2. Distribution of cumulating learning contents over five instructional units (+ =present)

Learning content	Unit 1	2	3	4	5
To define and formulate the issue	+	+	+	+	+
To form and base an opinion on the issue	+	+	+	+	+
To introduce and to conclude		+	+	+	+
To inform		+	+	+	+
To quote			+	+	+
To argue				+	+
To signal argumentation				+	+

Teaching the writing of argumentative texts in this course was inspired by the pragma-dialectic perspective on argumentation, advocated by Van Eemeren and Grootendorst (1992). This perspective is the leading theory underlying reading and writing argumentative texts in the language arts curriculum in Dutch upper secondary education. Central in this theory is the assumption that an argumentative text is a contribution to a discussion. Therefore, students must learn to find an *issue* to write about. The advantage of this perspective is the framing of argumentation within the social situation of a discussion. Students must learn to formulate and contextualize the issue, to formulate their stance in the discussion, to provide argumentation for their point of view, and to write these matters in a rhetorically attractive literary review.

The course consisted of five units of 90 minutes, one unit a week. The lesson material was completely self-instructing. The teacher did not instruct, but coached the students while working. The structure was identical for all units: students read a story, got the opportunity to jot down personal reactions, did a few short tasks and read some theory, wrote an argumentative text about the story and gave and received feedback from a classmate. In each unit, a new aspect of writing an argumentative text was introduced. The last lesson integrated all learning contents; students wrote a complete text about a story. In Table 2 the content of the units is shown.

3.3 Adaptations to writing strategies

We developed two different versions of the short course. One was adapted to the revising writing strategy, the other to the planning writing strategy. Table 3 shows the similarities and differences between the two courses.

3.3.1 Idea generation

In the units adapted to the revising writing strategy, students got the opportunity to use writing as a thinking tool, by ‘free writing’ (Elbow, 1973). Students were asked to read a story and to write without stopping for a short time. They were invited to

write down all their perceptions, feelings, memories, reactions and responses to the story. Later in the unit, students were asked to read over what they had written, and to pull out ideas and phrases they thought they could use in their text. According to Galbraith's theory and empirical studies (Galbraith, 1996; 1999), spontaneous exteriorization of thought in full text supports students with a revising writing strategy in generating ideas. Students with a planning writing strategy generate more ideas by planning in note form. Hence, in the course adapted to a planning writing strategy, students discovered their ideas by filling in a thinking-scheme, based on the think-link chart developed by Skeans (2000). In a thinking scheme, students can write down their thoughts in a few short words.

Table 3. Overview of the sequence of learning activities for both conditions (+ = present, − = not present)

Main phases	Learning activities	Condition	
		Revising	Planning
Reading	Reading a literary story	+	+
Discovery: Generating ideas	Free writing	+	−
	Thinking scheme	−	+
Theory	Reading rhetorical theory	+	+
	Applying theory (short writing tasks)	+	+
Composing: Planning	Writing discovery draft of the text	+	−
	Planning the text	−	+
Composing: Writing, revising	Rereading and revising the text	+	−
	Writing the text	−	+
Sharing texts	Give and receive feedback	+	+

3.3.2 Producing a text

Students with a revising writing style tend to write a text by producing a loosely organised initial draft of a text and revising it at a later stage. Hence, they are helped by assignments that ask them to critically reread and evaluate their first draft. In the revising course, students wrote a 'discovery' draft, and were asked to reread, evaluate and revise this draft. Composing the discovery draft is a way of thinking about the content in writer-based prose, revising the first draft gives the opportunity to refine the text into reader-based prose, improving rhetorical and argumentative aspects. On the other hand, students with a planning writing style prefer to plan first, and then write text. The course caters for these students in this regard. In the planning units, students composed their text by planning it first. Students were invited to think about the aim of the text and the audience, using a scheme, and writing down in a few words the content of each paragraph of the text that they planned to write. After students had finished planning, they wrote the text.

3.4 Testing materials

To measure revising and planning writing strategies, we administered a writing questionnaire before the course started. We measured the level of planning and the level of revising of the students by selecting 22 items concerning planning and revising from a writing process questionnaire tested and validated by Janssen and Overmaat (1990). Table 4 shows 10 key items of the writing questionnaire.

*Table 4. Five key items in the writing questionnaire indicating revising writing strategy and planning writing strategy, with mean score and standard deviations (between brackets). Items with * were recoded in the analyses. The more the student agrees with the items, the higher the scores on the revising writing strategy. Selection of items was based on best item rest correlations (varying from .40 to .69)*

Revising writing strategy:	
Before I hand in my text, I check whether it is convincing enough	3.48 (1.00)
Usually I rewrite and revise my text at least once	2.88 (1.20)
I read my texts regularly while writing, to check whether I am satisfied with it	3.90 (.69)
Before I consider my text as finished, I read it again to be certain it is worth reading for someone else to read	3.21 (.94)
While writing, I don't pay attention to the question whether I express my opinion clear enough*	2.49 (1.00)
Planning writing strategy:	
When I'm going to write a text, I just jot down a few words and then I work up my notes into an essay	3.20 (1.34)
I always make a writing plan before I start to write	2.18 (.98)
Before I start to write I think carefully about what I want to achieve and how I'm going to approach it	3.47 (1.03)
When I'm going to write a text, I do not need to write down first what I think about the topic*	3.08 (1.15)
I never make notes before I start to write*	2.93 (1.26)

Students were asked to rate on a five point scale how much they agreed with each item: from 5 = definitely true to 1 = definitely not true. We computed all scores for all the students on both the planning and the revising items, leaving open that writing strategy is not uni-dimensional, or that students reported mixed strategies. See Table 5 for internal consistency of the questionnaire.

To measure literary interpretation skill we administered a pre-test and a post-test. We chose a test that was independent of the curriculum and avoided the interference of writing skill and literary interpretation skill, namely a test with a few open questions about literary stories. Four short literary stories that were unfamiliar to the students (500-1000 words) were chosen from a larger sample of stories selected and tested by Janssen, Braaksma, Rijlaarsdam, and Couzijn (2003). Each student read these four stories, two as pre-test, and two as post-test. To avoid the students being influenced by the type of story, the stories were distributed in a complete balanced

design. The students were asked to read the stories and answer three questions: (1) Explain the title of this story; (2) What do you consider the theme of this story? (3) Think of a question about this story that you could bring up for discussion. The responses were coded on the quality of the interpretation on a scale from 0 (no response at all) to 3 (response indicating complete understanding). The scoring system was framed in cooperation and discussion with colleagues. To determine the reliability of the coding, two independent coders scored a sample of 162 (= 28%) of pretests and post-tests. In the analyses, we applied the score of the best story of each student in each test session, because of the low correlations between the scores on the different stories (varying from r = -.10 to r = .39 on pre test, and r = .07 to r = .38 on post test). Coder reliability was .86.

The participation of the students was indicated by evaluating their workbooks. The quality of all the tasks in all the lessons was scored on a scale from 0 (task is not carried out at all) until 3 (task carried out with great detail and in depth).

It is conceivable that students appreciated the two versions of the lessons differently. To check for the possibility that a difference in appreciation of the lessons would influence the conditions, we collected participants' evaluation of the specific revising and planning tasks of the lessons. We used a five point scale with scores from 1 'I did not find this task useful' to 5 'I did find this task useful'. Internal consistency proved satisfactory (see Table 5).

3.5 Analyses

To test the hypothesized interaction between condition and writing strategy we used regression analysis, which allowed us to evaluate the contribution of condition and writing strategy. For condition, we construed a dummy variable (D_PC_i) which is 'on' (equals 1) if a student was in the planning condition, otherwise this dummy was turned 'off' (equals 0) if a student wrote his texts in the revising condition. For each of the two conditions, we construed a condition-specific score for each writing strategy.

Table 5. Quality of the testing materials: internal consistency of scales (number of items and Cronbach's alpha)

Dependent variable	Instrument	Nr. of items	Alpha
Revising writing strategy	Writing questionnaire	15	.71
Planning writing strategy	Writing questionnaire	7	.68
Literary interpretation skill	Test about short literary stories	3	.70
Quality of learning	Evaluation of workbooks	33	.83
Evaluation of courses	Questionnaire	8	.80

For example, to compute the effects of planning and revision writing strategies on literary interpretation skill, we used four predictive coefficients: a constant (to be interpreted as the mean score in the revising condition for students with a zero score for planning condition), a dummy for condition (to be interpreted as the mean score in the planning condition as deviation from the revising condition for students with a zero score for revising condition), level of planning writing strategy in planning condition, and level of planning writing strategy in the revising condition.

We estimated the regression weight for planning writing strategy on the dependent measures for each of the conditions separately, tested significance, and where appropriate, the difference between the regression weights. We can describe the writing score of a student as a function of the planning score (PS_i):

$$Y_i = CONS + \beta_1 * D_PC_i + \beta_2 * PS_i + \beta_3 * D_PC_i * PS_i + e_i$$

where Y_i is the writing score of student i and D_PC_i is a dummy-variable for the planning condition. In the equation above, two separate effects are formulated for the planning score PS_i and $D_PC_i * PS_i$. The first refers to the effect in the revising condition, and the second to the effect in the planning condition (i.e., D_PC_i). The same procedure was applied for the revising writing strategy. Furthermore, we included pre-test scores in the analyses to dismiss possible pre-test effects. Consequently, pre-test score (PTS_i) was used as a covariate in all subsequent analyses, resulting in this formula:

$$Y_i = CONS + \beta_1 * D_PC_i + \beta_2 * PS_i + \beta_3 * D_PC_i * PS_i + \beta_4 * PTS_i + e_i$$

4. RESULTS

4.1 Preliminary analyses

We did not expect any initial differences between conditions in relevant variables, because students were randomly assigned to conditions. However, to control for a priori differences between conditions, we tested initial differences, to be sure that effects on post-tests cannot be attributed to initial differences between conditions or to implementation of conditions.

To choose the appropriate statistical procedures necessary to test the interaction between the experimental conditions and the writing strategies on the dependent variable, literary interpretation skill, we analysed the three student variables included in the research design. The students' variables in the analyses were general schooling aptitude, level of planning writing strategy and level of revision writing strategy.

General schooling aptitude was included in the design to avoid conclusions about writing strategy effects due to aptitude. However, no correlation was observed between aptitude and writing strategy (for planning writing strategy, $r = -.11$, $p = .25$ and for revising writing strategy, $r = .09$, $p = .23$). This result implies that if we ob-

serve an interaction between condition and writing strategy, this interaction cannot be caused by general schooling aptitude.

We analysed the results of the writing questionnaire to measure the level of planning and revising writing strategy. First, a significant but small correlation was observed between the planning writing strategy and the revising writing strategy, $r = .38$, $p < .001$. This small correlation urged us to analyse the contributions of writing strategy and condition for each strategy separately. Hence, the decision to compute both planning and revising writing strategy scores was validated.

All relations reported in this section were tested for non-linearity. Only in one case there proved to be a curvilinear relationship i.e., in the case we used students' scores on the literature post-test and their scores on the revising writing strategy, of the students in the planning condition. However, including the curvilinear component in the regression did not affect the reported results.

4.2 Participation and evaluation

With an analysis of variance, we tested possible differences between conditions regarding quality of students' learning and evaluation of the lessons (see Table 6). In both conditions, no differences were found between the two implementation variables (variable quality of learning $F(1, 112) = 2.57$, $p = .11$, variable evaluation of the lessons $F(1,112) = .41$, $p = .52$). This implies that we succeeded in constructing two versions of a course that were appreciated equally.

Table 6. Means and standard deviations for literary interpretation skill (pre-test), quality of learning and evaluation of lessons per condition

Condition	Quality of learning		Evaluation of lessons	
	M	*SD*	*M*	*SD*
Revising condition ($n = 56$)	56.66	11.45	3.32	.70
Planning condition ($n = 57$)	60.29	12.60	3.23	.71

For the revising writing strategy, there was no significant correlation observed for quality of learning or evaluation of lessons, neither in the planning condition, nor in the revising condition. For the planning writing strategy, there was a significant but small negative correlation in the revising condition for evaluation of lessons, but not for quality of learning. We conclude that students in both conditions delivered similar quality of work. When interpreting the results, we have to take into account the correlation between evaluation of lessons and the planning writing strategy of students in the revising condition (see Table 7).

Table 7. Correlations between writing strategies and implementation measures (Quality of learning and Course valuation in two conditions (n= 56 or 57, dependent of the condition)

	Condition			
	Revising		Planning	
Writing strategy	Quality	Evaluation	Quality	Evaluation
Revising strategy	.17	-.11	.01	.09
Planning strategy	.21	-.31*	-.06	-.01

Note: * $p < .05$

4.3 Main analysis: Effects on literary interpretation skill

Our hypothesis is an interaction hypothesis. Nevertheless, we found a main effect of the planning condition, $t(111) = -2.00$, $p = .05$ (see Table 8). Table 8 shows also that the students in general did not improve their literary interpretation skill by following the course described in this study ($t(112) = .19$, $p = .85$). The next question is whether this main effect is the same for all students with all writing strategies, or if the effect is caused by a specific group of students.

Table 8. Mean score and standard deviation of pre-test and post-test scores on literary interpretation skill

Condition	Pre-test		Post-test	
	M	*SD*	*M*	*SD*
Revising ($n = 56$)	3.09	.64	2.86	(.52)
Planning ($n = 57$)	3.11	.67	3.05	(.52)

We expected an interaction between writing strategy and condition with students achieving better results under the condition adapted to their writing strategy. The results show that the level of planning writing strategy and revising writing strategy contributed to the prediction (see Figure 1 and 2 and Table 9)[2].

[2] *No significant correlations were observed between writing strategy and literary interpretation skill for each strategy and each condition, besides the correlation between literary interpretation skill and revising writing strategy of students in the planning condition: r = . 20, p = . 04*

Table 9. Effects of condition and writing strategies on literary interpretation: Standardized regression coefficients (N = 113)

	β	*Std.error*	*t*	*p*
Effects for planning writing strategy:				
Revising condition	-.09	.11	-.85	.40
Planning condition	.31	.15	2.0	.05
Pre-test score	-.03	.08	-.42	.68
Level of planning writing strategy in revising condition	-.04	.11	-.37	.71
Level of planning writing strategy in planning condition	.02	.12	.16	.88
Effects for revising writing strategy:				
Revising condition	-.09	.11	-.84	.40
Planning condition	.31	.15	2.04	.04

From Figure 1 it appeared that participants with relatively high scores on revising writing strategy learned the most when in the planning condition (β = .28, p = .04), where they learn to generate ideas in a thinking scheme and are thinking-and-then-writing.

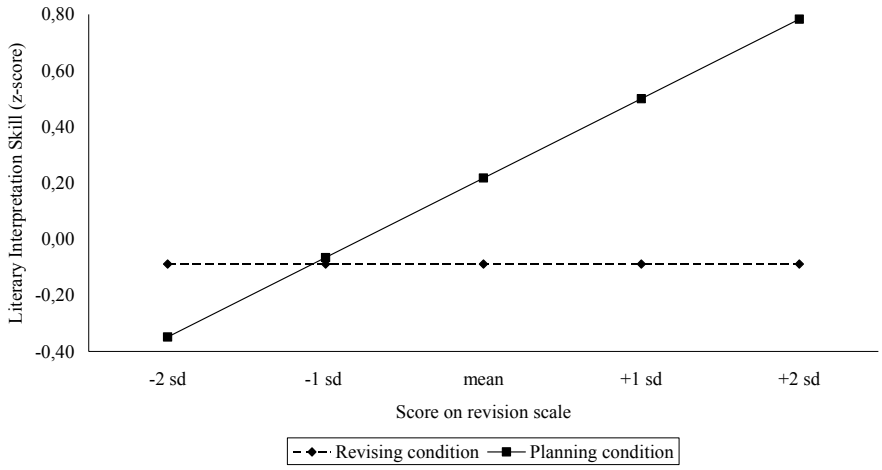

Figure 1. Effects of conditions and interaction between score on revision scale and condition on literary interpretation.

No interaction was observed between condition and planning writing strategy (Figure 2); irrespective of the level of planning, the planning condition appears to be the most effective for learning to interpret literature (β = .31, p = .05). As mentioned, we observed that students with a higher planning score in the revising condition did

evaluate the revising condition lower than students with a lower score on planning writing strategy. However, this result did not reflect lower scores on literary interpretation skill compared to students with a lower score on planning writing strategy.

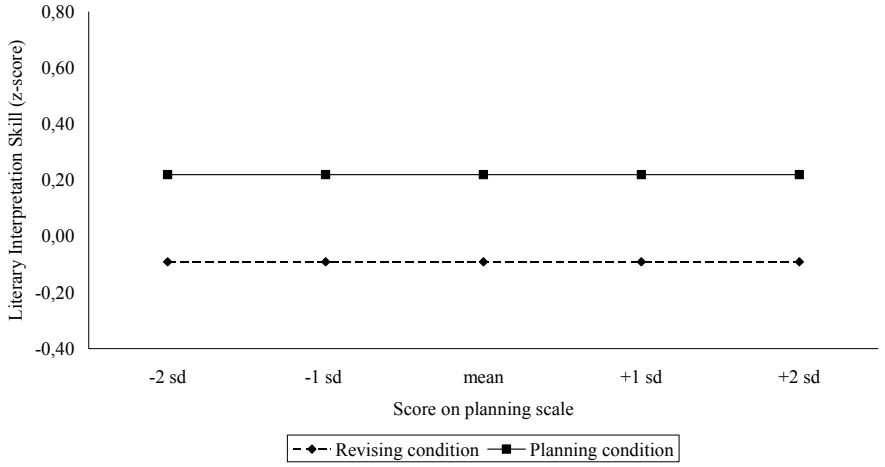

Figure 2. Effects of conditions and interaction between score on planning scale and condition on literary interpretation.

Finally, as expected, we did not find a main effect of writing strategy on literary interpretation skill. No correlations were observed between writing strategy and score on literary interpretation skill (r = .11, p = .25 for revising writing strategy, and r = -.01, p = .94 for planning writing strategy).

Overall, these results show a main effect of the planning condition, with an extra effect for students with a high level of revising writing strategy. The adaptation hypotheses we formulated must be rejected.

5. DISCUSSION

We hypothesized that disregarding writing strategies in writing-to-learn research could explain the lack of consistent effects of writing on learning. This study shows that adapting writing tasks to writing strategy does not lead to significant differences in learning. For most students, writing tasks adapted to a planning writing strategy seem to be superior to writing tasks adapted to a revising writing strategy for improving literary interpretation skill. Supporting students to generate ideas in note form, and providing writing tasks with planning-then-writing, seems more useful for the literary curriculum than free writing and providing writing tasks with thinking-while-writing. For further theoretical development we have to take into account that in our course two elements were adapted to writing strategy: the phase of generating ideas and the phase of planning and writing. One could argue that for improving the literary interpretation skill of students, the phase of generating ideas is the most important distinctive feature in the planning condition. However, Klein (1999) showed

that genre writing is the most effective for writing-to-learn, and not personal writing. The question is, to be the subject of another study, whether the activity of discovery or the activity of planning and writing is sufficient for fostering these effects. Is it possible to distinguish between the effect of discovery and the act of genre writing on learning? Is the learning in the discovery and/or in the planning and writing?

In the Dutch writing curriculum, students are used to the planning approach of writing. This could explain the main effect of the course adapted to the planning writing strategy. However, in Dutch textbooks for the literature curriculum, writing tasks are just writing tasks, without any instruction on how to perform the task. Almost no attention is paid to supporting the student in writing these texts: no planning tasks are offered; the writing process or rhetorical strategies are neglected (Kieft & Rijlaarsdam, 2002). Considering the results of present study, i.e., the course adapted to the planning writing strategy was more beneficial for students' literary interpretation skill, it may well be that changing the current writing tasks in the textbooks for the literature curriculum into genre-based writing tasks embedded in a planning writing pedagogy is more effective for learning to interpret literary stories.

A few observations on important issues of methodology and definition should be made. Firstly, students' writing strategy was diagnosed by means of a writing questionnaire. Introspective self-reports of the writing process inevitably have some limitations. Yet, although absolute values reported by students should be interpreted cautiously, we assume that possible variations between self-reported writing strategies and actual writing strategy are present in all students, in both writing strategies. Thus, a self-reporting writing questionnaire can be useful for discriminating between groups. Other researchers applying self-reporting writing questionnaires showed that it is possible to detect individual differences between writers with self-reporting writing questionnaires (Galbraith, 1996; 1999; Janssen & Overmaat, 1990; Lavelle, Smith & O'Ryan, 2002; Torrance et al., 1994; 1999; 2000).

Secondly, there is the problem of measuring literary interpretation skill. The lack of correlation between the pre-test scores and post-test scores, combined with the lack of general improvement in literary interpretation skill is puzzling. As researchers and as teachers we regret that the mean literary interpretation skill of the students in general did not improve. A possible explanation could be that the students in our study were unfamiliar with adult literature. According to Ackerman (1993), writing will hardly result in learning when the writer is unfamiliar with the topic of writing. In addition, writing an argumentative text about a literary story is a kind of discourse that requires a very high level of abstraction (Moffett, 1983). It might be that the writing could not result in learning because students in tenth-grade are not familiar enough with composing abstract discourse. We intend to improve our instrument for measuring literary interpretation skill and to improve our lesson series on the specific aspect of students' literary interpretation.

Furthermore, more research is required on the aspect of writing strategies as well. A major finding of our study is that students do not fit neatly into categories of writing strategies, but can display high or low levels of revising and planning writing strategies at the same time. It might be that a proportion of high school students do not have a fully developed and persistent writing strategy yet. There is certainly a need to analyse the different writing strategies. For example, a validation study that

combines questionnaires and writing processes could throw more light on this issue. Another question that arises, is whether following the course influences the writing strategies of students. It might be that, for example, students with a high score on planning writing strategy changed their writing strategy, when they were confronted with the lessons in the revising condition. In a subsequent study, pre- and post-test measures for writing strategy should be included.

In this study, we were interested in writing-to-learn and not in learning-to-write. Thus, we did not study the effects of our lesson series on the quality of the texts the students wrote. In another study, we will focus on the relationship between writing strategies and the effects on learning-to-write. It is conceivable that taking into account students' writing strategies in a writing course can have substantial effects on the quality of the texts students write.

Chapter 3

THE EFFECTS OF ADAPTING A WRITING COURSE TO STUDENTS' WRITING STRATEGIES

When writing a text, students are required to do several things simultaneously. They have to plan, translate and review, which involve demanding cognitive processes. In order to handle this complexity, writers need to develop a writing strategy. The two most well defined writing strategies that have been identified, are those of a planning strategy and a revising strategy. In this study, we aimed to establish whether students will be more competent in managing the complexity of writing when writing instruction is adapted to their habitual writing strategy, thus resulting in better texts. 113 high school students (10th grade) were randomly assigned to either the planning or the revising condition. To identify writing strategies, students completed a questionnaire concerning their planning and revising tendencies. To measure the level of writing skill, students' texts written during pre-test and post-test were analysed. The results showed that the effect of instruction based on a *planning* strategy interacted with the level of planning or revising strategy: the greater the use of such a strategy, the larger the effect on writing skill. In contrast, the effect of instruction based on a *revising* writing strategy did not interact with the level of planning or revising strategy. Results imply that students with strong tendencies to plan or revise profited from writing instruction based on a planning strategy, while students with a low tendency to plan or revise profited more from instruction based on a revising strategy.

1. INTRODUCTION

In 1980, Hayes and Flower introduced their cognitive model of writing which has profoundly influenced the vocabulary people use when talking about writing processes. According to this model, the writing process consists of three components that may continuously interact: *planning* what to say, *translating* those plans into written text and *reviewing* those written texts or plans. All three components of the writing process are cognitively highly demanding, consuming much of the available working memory capacity (Kellogg, 1994). A writer's working memory may even be overloaded when simultaneously planning, translating, keeping in mind the genre, editing for spelling, and so on (McCutchen, 1996). The complexity of the model and

This chapter is a slightly adapted version of Kieft, M., Rijlaarsdam, G., Galbraith, D., & Van den Bergh, H. (in press). The effects of adapting a writing course to students' writing strategies. *British Journal of Educational Psychology.*

the high working memory requirements often raised questions of how writers manage the demands of writing tasks. To manage these demands, writers can, and often do, "break the writing process into separate stages such as planning thoroughly before beginning to write or writing a rough draft and revising later" (McCutchen, Covill, Hoyne, & Mildes, 1994, p. 264). In other words, writers develop a *writing strategy* that allows them to partition and sequence the planning, translating and revising, to manage the complexity of orchestrating the components of the writing process (Torrance, Thomas & Robinson, 1994).

1.1 Different writing strategies

In general, the two most well defined strategies that have been found in writing research are a 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", and a revising strategy, in which "writers work out what they want to say in the course of writing and content evolves over a series of drafts" (Galbraith & Torrance, 2004, p.64). Consistent evidence of the planning writing strategy and the revising writing strategy, as well as less well-defined combinations of planning and revision, was found by Torrance, Thomas, and Robinson (1994; 1999; 2000). In a cluster analysis of questionnaire responses produced by postgraduate students when writing their theses, Torrance et al. (1994) identified three distinct groups: planners, revisers and mixed strategy writers. Planners reported that they preferred to have their ideas clear before they started to write and did not develop their ideas much during writing. They made detailed plans before writing and wrote only one, or at most, two drafts of the text. Revisers, by contrast, reported that they could not think without writing and that it was only after writing something down that they felt they understood their own arguments. They planned less and wrote more drafts than the planners. The third group, mixed strategy writers, both planned and wrote multiple drafts.

In a later study, Torrance et al. (1999) used no questionnaires, but more direct information on writing strategies and their effects; undergraduate writers were asked to complete logs of the processes they engaged in, while writing coursework essays. Evidence of similar planning and revising strategies as observed among postgraduate writers was found. However, in this study, the third group, unlike the mixed strategy writers in the previous study, showed low rather than high levels of both planning and revision, in essence writing single drafts without much pre-planning. Furthermore, Torrance et al. recorded the marks students received for their essays, and found no significant relationship between writing strategy and essay mark. They conclude that "there was no evidence that one strategy was more successful than the others, either in terms of efficiency of working or in terms of the quality of the final product" (Torrance et al., 1999, p.198).

In high school students' writing, the three components of the Hayes and Flower (1980) model do not seem to be connected. In studies among intermediate grade writers (Whitaker, Berninger, Johnston, & Swanson, 1994) and junior high writers (Berninger, Whitaker, Feng, Swanson, & Abbott, 1996) students were given a se-

quence of tasks, each indicating planning, translating or revising. Results showed that skills in planning, translating and revising were not linked. Thus, the cognitive processes involved in writing may be unevenly developed in students of different grades, as is suggested by the above studies describing writing strategies (Torrance et al., 1994; 1999).

Planning and revising without assistance may be difficult for students. Consequently, guided conditions were added in the studies by Berninger, Whitaker, et al. (1996) and Whitaker et al. (1994). Students were assigned to different conditions in which to perform the writing tasks: a guided and a non-guided condition. The guided condition consisted of scaffolding in the form of structured cues. Results showed that guidance of planning did not result in better quality of writing for both types of students. Guidance of revising resulted in better scores of intermediate grade writers, but not for the junior high school students. However, Berninger, Whitaker, et al. (1996, p. 47) suggest that guidance in planning and / or revising might be beneficial after all, but in other and longer interventions.

1.2 Stability of writing strategies

A crucial question considering students' writing strategies is whether these writing strategies are necessarily *stable* characteristics of students. In an experiment with a longitudinal design, Torrance et al. (2000) examined drafting strategies used by undergraduate students. Evidence for a similar set of writing strategies as in their earlier research was found. They also reported on the stability of students' writing strategies, and found that 85% of the students had a predominant writing strategy. No evidence of systematic change in writing strategy from year to year among these students was observed.

Similarly, in a study examining the transitions between components of the writing process Levy and Ransdell (1996) found evidence of distinctive "writing signatures" for individual writers. These writing signatures reflected a characteristic way of combining processes across different writing sessions. Self-report studies of experienced writers, which investigate habitual writing methods, rather than those employed on a specific writing task, have also found consistent individual differences (Hartley & Branthwaite, 1989). Thus, the scarce research that has been done on this subject supports the idea that to at least some extent, there is stability in the different writing strategies students tend to use.

1.3 Learning to write a new genre

Learning to write well is not only a matter of learning how to carry out, and combine, the different components of the writing process. It also involves learning what the particular form of discourse is, and how to incorporate these genre features into the writing process. This increases the complexity of the writing process and the demands on working memory resources even more. This can be illustrated by the finding that, when learning a new genre, even skilled adult writers sometimes rely on the less demanding process of knowledge telling instead of the recursive ap-

proach Hayes and Flower (1980) described (Berninger, Fuller, & Whitaker, 1996, p. 214).

In this study, we were specifically concerned with learning how to write 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 complete effectively (Oostdam, 2005). The approach for learning to write argumentative texts in Dutch secondary education text books is derived from the pragma-dialectical argumentation theory of Van Eemeren and Grootendorst (1992). This theory uses an ideal model of a critical discussion as a starting point; argumentative texts are reconstructed and analysed as contributions to critical discussions. In terms of the pragma-dialectical argumentation theory, writing an argumentative text consists of four stages: (1) taking a clear standpoint on the issue at state; (2) generating arguments to support a standpoint; (3) selecting main arguments and sub arguments, and considering the possible counterarguments readers might raise; (4) determining the global text structure (Oostdam, 2005).

2. THE PRESENT STUDY

When strategy choice in writing instruction in secondary education in the Netherlands is addressed, it almost invariably includes directions to 'write a plan before writing'. Possible alternatives are rarely offered. The emphasis on planning before writing has also been supported by several experimental studies (Kellogg, 1988; 1994; Lavelle, Smith & O'Ryan, 2002; Piolat & Roussey, 1996). However, we assume that students will be better able to manage the complexity of learning to write in a new genre, when they write in a way that matches their own writing strategy. To test this contention 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 teaching literature, which are both important but separate learning goals in upper levels of Dutch secondary education (see Kieft, Rijlaarsdam, & Van den Bergh, in press). We then created two different versions of the course, based on either the kind of planning strategy embodied in Kellogg's (1988, 1994) research or the revising strategy described by Galbraith and Torrance (2004). Both versions offered guidance in the generation of ideas in the two kinds of strategies (thinking scheme or free writing) as well as guidance on how to write an argumentative text for an audience (using either a planning strategy or a revising strategy). The two resulting courses, therefore, shared a common core designed to explicate 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 revision drafting strategy (revision condition). To identify individual differences between writers, students completed a questionnaire about drafting strategies used previously in research with Dutch high school students (Janssen & Overmaat, 1990).

This enabled us to test two hypotheses. We expected students to be better able to manage the complexity of learning-to-write a new genre when the writing tasks were

presented in the context of a writing strategy that matched their habitual writing strategy. Thus, we hypothesize that:

1) the more strongly students tended to apply a planning strategy, the more they would benefit from the planning condition;
2) the more strongly students tended to apply a revising strategy, the more they would benefit from the revising condition.

3. METHOD

3.1 Participants

Our study was conducted in real classrooms, as a part of the regular language and literature curriculum in 10th grade. The initial sample was 121 students from 10th grade classes at a secondary school in Amsterdam, the Netherlands. The scores of eight participants were excluded (they missed more than half of the lessons). The participants came from various ethnic and linguistic backgrounds (including Dutch, Moroccan, Surinamese, Turkish and Antillean), but all spoke Dutch fluently, had attended Dutch primary school and were enrolled in upper secondary education. Five classes were involved: two (n = 52) were from the higher general secondary education track, and three from the pre-academic secondary education track (n = 61). Within classes, students were randomly assigned to either the revising (n = 56) or the planning condition (n = 57), so that condition and classroom did not confound.

Table 1. Distribution of gender (number of male and female students), mean age (in years), and aptitude score of the participants in the conditions (standard deviations in parentheses)

	Condition	
Variable	Revising	Planning
Male / female	30 / 26	34 / 23
Age	16.18 (.74)	16.27 (.77)
Aptitude	542.81 (3.75)	544.07 (3.48)

No differences were observed between conditions on gender (see Table 1): ($\chi^2(1, N = 113) = .43$, $p = .52$), age ($t(111) = -.61$, $p = .55$), or aptitude ($t(111) = -1.86$, $p = .07$)). Aptitude was determined by students' scores in the End of Primary School Test, a standard test in the Netherlands, administered in sixth grade. This test contains multiple-choice items measuring academic skills in four areas: language, mathematics, study skills and world orientation. For 89 of the 113 students, this data

was available from the school administration records. We estimated missing aptitude scores with regression analysis by using all relevant student variables[1].

3.2 The course

We developed a course on learning to write complete and convincing argumentative texts about short literary stories. In the lessons, the argumentative text is considered as a contribution to a discussion (cf. pragma-dialectic perspective on argumentation, Van Eemeren & Grootendorst, 1992). The topic for discussion is literature: students read a short literary story and learn to formulate a question to discuss in their text. An example of this is: 'Is this story too old-fashioned for today's students?'. Furthermore, students learn to present a standpoint, to generate, select and arrange arguments to support their point of view, and to integrate these elements in a rhetorically attractive text. Students' prior knowledge of writing argumentative texts about literature was limited: in the Netherlands, students start to read adult literature in the 10th grade. Students start learning to write argumentative texts in lower secondary education. At the end of the 9th grade, they know that an argumentative text aims to convince the audience by introducing a standpoint that is supported by arguments. The issues students generally have to write about, cover subjects such as after-school jobs, smoking, having exotic animals as pets - but do not include literature (Kieft & Rijlaarsdam, 2002).

The course consisted of five 90-minute units, once a week. The lesson material was completely self-instructing. The teachers' role was to coach students while they worked independently.

3.3 Adaptations to writing strategies

Table 3 in Chapter 2 (p. 17) shows the five phases in each unit of the course. The first phase consists of reading a short literary story and is the same in both conditions. The second phase is the phase of discovery. In the units in the revising condition, students discovered ideas by using writing as a thinking tool, by 'free writing' (Elbow, 1973). Students wrote down their perceptions, feelings, memories, reactions and responses to the story, while writing without stopping for at least five minutes. In the planning condition, students discovered their ideas by filling in a thinking scheme, in which they write down their thoughts in a few short words (Skeans, 2000). In the third phase, students in both conditions read some theory about aspects of the argumentative text genre (shown in Table 2 in Chapter 2, p.16) and carried out one or two exercises to apply the theory.

The fourth phase consisted of composition. In the planning condition, students composed their text by planning it first. Creating a scheme stimulated students to

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[1] *We used regression analysis to estimate the relation between aptitude and sex, age, school type, pre-test, quality of learning, evaluation of workbooks, and writing strategy. By means of this regression equation, an aptitude score was estimated for students who did not take the aptitude-test (compare, Little & Rubin, 1987). Correlation between estimated aptitude score and observed aptitudes was .52.*

think about the aim, audience and content of the text. After that, students reread, evaluated and revised the scheme, and wrote the text. In the revising condition, students wrote a 'discovery' draft, and reread, evaluated and revised the text using the same criteria as in the planning condition. Composing the discovery draft is a way of thinking about the content in writer-based prose; revising the first draft provides the opportunity to refine the text into reader-based prose, improving rhetorical and argumentative aspects. In the fifth phase, students read and commented on each other's texts in both conditions.

3.4 Testing materials

To measure the planning and revising strategies of the students, we implemented a writing questionnaire. We selected 22 items concerning planning and revising from a writing process questionnaire (Janssen & Overmaat, 1990), and administered the questionnaire before the course started. Table 4 in Chapter 2 (p. 18) shows ten key items of the questionnaire. Students rated how much they agreed with each item on a five point scale. We computed the scores on both the planning and the revising items, assuming that writing strategy is not uni-dimensional, and that students can have mixed strategies. See Table 2 for internal consistency of the questionnaire.

Table 2. Quality of testing materials: number of items, internal test reliability and interrater reliability

Dependent variable	Instrument	Nr of items	Cronbach's alpha	Interrater reliability
Revising strategy	Questionnaire	15	.71	n.a.
Planning strategy	Questionnaire	7	.68	n.a.
Evaluation of courses	Questionnaire	8	.80	n.a.
Quality of learning	Evaluation workbooks	33	.83	n.a.
Writing skill (pre-test)	Scoring instructions	5	.61	.93
Writing skill (post-test)	Scoring instructions	10	.73	.92

To measure writing skill, we administered a pre-test and a post-test, in which students wrote an argumentative text about a literary story. Four different stories were used, in a completely balanced design, to prevent a story-effect. Three independently working coders scored the texts on argumentative quality on several items (each on a three point scale) (for quality indices of the instrument, see Table 2).

To check for other variables that could influence the results on writing skill, we measured students' appreciation of the specific revising and planning tasks in the course (by self-reported rating on a five point scale) and students' participation (by evaluating the quality of students' workbooks). Quality of these testing materials is shown in Table 2. The first author attended all lessons and observed that the circumstances under which the lessons were assigned were good; students paid enough

attention to the lessons and worked independently. Regular classroom diversions did not threaten the differences between conditions.

4. ANALYSES

To test the effects of condition and writing strategy on writing skill, we used Analysis of Covariance (ANCOVA). To partial out initial scores and aptitude scores, we included pre-test scores and aptitude as covariates. To compute the interaction effect of condition and writing strategy on writing skill with an ANCOVA-analysis, we divided the scores for the variable writing strategy into two scores: the score in condition 1 and the score in condition 2. This means we created the variables 'planning strategy in revising condition', 'planning strategy in planning condition', 'revising strategy in revising condition' and 'revising strategy in planning condition'. In addition, we computed the beta-weight via regression analysis to indicate the direction and strength of the interaction[2].

5. RESULTS

5.1 Preliminary analyses

No initial differences between conditions in relevant variables were expected, because of the random assignment of participants to conditions. However, we tested initial differences to check that effects on the post-test are not attributable to initial differences between conditions. No differences between conditions were observed in planning strategy or revising strategy (respectively $t(111) = -.05$, $p = .96$ and $t(111) = 1.34$, $p = .18$)). General schooling aptitude was included in the design to avoid conclusions being drawn about writing strategy effects due to aptitude. No correlation was observed between aptitude and writing strategies (planning strategy $r = -.10$, $p = .31$, revising strategy, $r = .10$, $p = .28$) or between aptitude and pre-test ($r = .04$, $p = .67$).

A significant but small correlation was observed between the planning and the revising strategies ($r = .38$, $p < .001$). The smallness of the correlation validated our decision to compute both the planning and revising strategies.

With an analysis of variance (ANOVA), we tested possible differences between conditions, regarding the quality of students' learning and the evaluation of the lessons (see Table 6).

For both conditions, no differences were found between the two implementation variables (variable quality of learning $F(1,112) = 2.57$, $p = .11$, and variable evaluation of the lessons $F(1,112) = .41$, $p = .52$). This implies the two versions of the course were generally appreciated equally.

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[2] *Furthermore, all relations between writing strategy and writing skill were tested for non-linearity. None of them proved to be non-linear.*

Table 3. Mean and standard deviation for quality of learning and evaluation of lessons per condition

Condition	Condition			
	Revising		Planning	
	M	*SD*	*M*	*SD*
Quality of learning	56.66	11.45	60.29	12.60
Evaluation of lessons	3.32	.70	3.23	.71

5.2 Main analyses

Our first hypothesis was whether the more strongly students tended to apply a planning strategy, the more they would benefit from the planning condition. Analysis of covariance of students' score on planning strategy and condition, on writing skill, with pre-test on writing skill and aptitude as covariates, resulted in a significant effect for planning writing strategy in the planning condition ($F(1,111) = 4.40$, $p = .04$, $\beta = .30$). No main effect of condition was observed ($F(1,111) = 1.10$, $p = .30$). The first hypothesis was confirmed: there is a positive relation between planning writing strategy and writing skill in the planning condition. Therefore, the effect of the planning condition depended on the level of planning strategy: the intervention resulted for high planners in higher scores on the writing skill post-test than for low planners (see Figure 1).

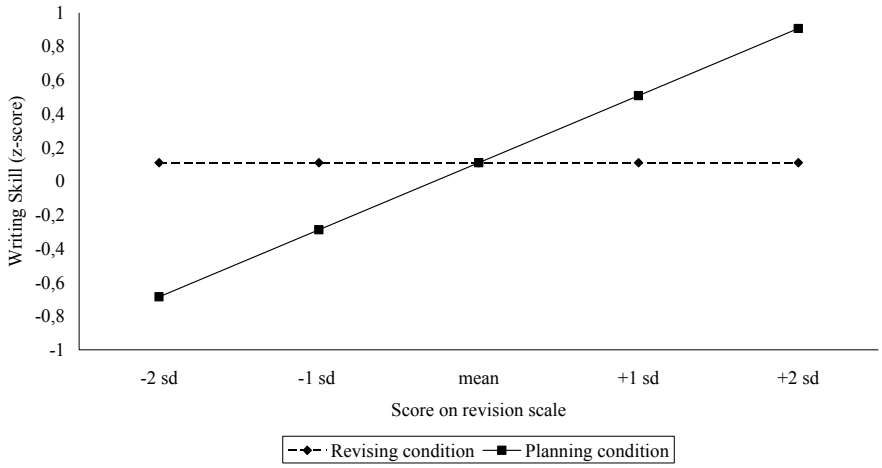

Figure 1. Regression slopes for effects of interaction between condition and revising writing strategy on writing skills.

Our second hypothesis was whether the more strongly students preferred a revising strategy, the more they would benefit from the revising condition. Analysis of covariance of students' score on revising strategy and condition, on writing skill, with pre-test and aptitude as covariates did not confirm our hypothesis. No significant effect was found for the revising condition ($F(1,112) = .26$, $p = .61$), nor a main effect of condition ($F(1,112) = 1.16$, $p = .28$). However, the analysis resulted in a significant effect for revising strategy in the planning condition ($F(1,112) = 6.64$, $p = .01$, $\beta = .40$). In the planning condition, students with high scores on revising have high scores on the writing skill post-test, and students with low scores on revising have low scores on the writing skill post-test (see Figure 2).

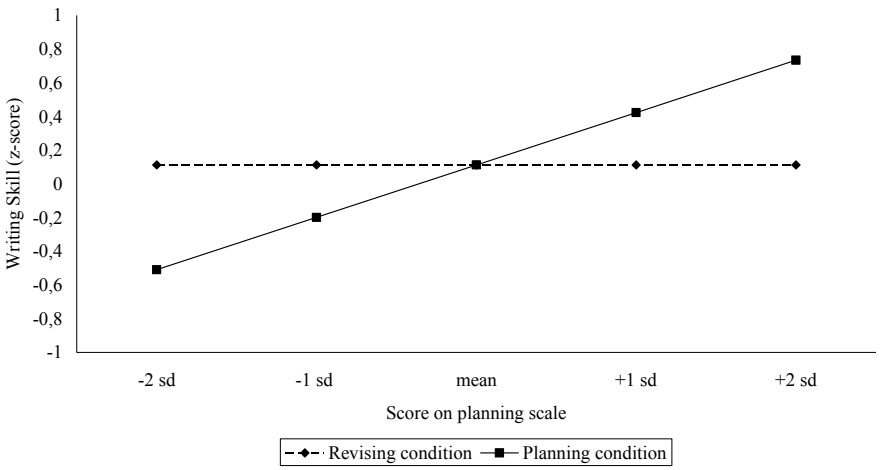

Figure 2. Regression slopes for effects of interaction between condition and planning writing strategy on writing skill.

5.3 Exploratory analyses

As not all of the results are as expected, some questions arise. An exploratory analysis may shed some light on our findings. First, how can we determine that students with a high score on the revision strategy benefited from the planning condition instead of the revising condition? It could be that high revising students worked better in the planning condition than in the revising condition, or that they appreciated the planning condition more. However, analysis of covariance showed that the score on revising strategy is not related to the quality of working in the planning condition ($F(1, 112) = .57$, $p = .45$) and that the score on revising strategy is not related to the evaluation of planning lessons ($F(1,112) = .003$, $p = .96$).

6. DISCUSSION

In this paper we question whether the traditional planning strategy that is typically taught in schools, is necessarily the best way to teach writing. To answer this question, we studied the effects of two types of writing instruction: the first providing guidance in planning writing strategy, the second, guidance in revising writing strategy. We observed no differential effect of the planning condition or the revising condition we implemented; teaching the revising strategy generally led to similar results as teaching by the traditional method of planning. However, we hypothesized no main effect, but interactions between condition and writing strategy: participants reporting a relatively strong planning writing strategy would profit more from a planning condition, while participants with a relatively strong revising strategy would profit more from the revising condition.

The present experiment showed that the effectiveness of the planning form of writing instruction interacted with students' writing strategies. The higher students scored on the planning and / or revising scales, the better the results were in the planning condition. Performance in the revising condition, by contrast, was unrelated to individual differences: the results on writing skill in the revising condition were the same, irrespective of score on both writing strategies. These results imply that the planning condition is successful for students who tend to good planning and/or revising, while the revision condition gives rise to improved performance for students who tend to low revising and/or planning. This may suggest that a revision condition could be effective for those with an undeveloped writing strategy, while a planning condition could be effective for those with a relatively developed writing strategy.

Contrary to our hypothesis, the revising writing strategy interacted with the planning condition: the higher the score on revising strategy, the better the writing performance in the planning condition. This unexpected result led us to reflect on the revising writing scale. The planning and revising writing scales were positively correlated, albeit relatively weakly. Post hoc inspection of the items included in the revising scale suggests that this may result from the revising scale measuring not so much the extent to which writers re-drafted their initial text, but rather the extent to which writers monitored their text while writing. Thus, the items receiving the highest weighting on this scale were "I read my text regularly while writing to check whether I am satisfied with it" and (negatively scored) "While writing, I don't pay attention to the question of whether I am expressing my opinion clearly enough". By contrast, the item that most directly reflected re-drafting "Usually I rewrite my text at least once" was on average a point of minor contention. In other words, we suspect that our revising scale reflects what Galbraith and Torrance (2004) called reactive revision – "evaluating the extent to which the text satisfies the writer's pre-established goals" (p.65). In their view, reactive revision is intrinsically related to a planning strategy, which would explain the correlation between our planning and revising scales.

Students with low scores on planning writing strategy, who do not impose goals on planning and text production, do not appear to benefit when they are taught a pre-planning strategy as in our planning condition. Indeed, despite the fact that they write just as well as students with high scores on planning and revising before writing instruction (as shown in the pre-tests), after instruction, they performed relatively the worst. Intuitively, a teacher might believe this group needs encouragement to learn to plan their writing. However, our results suggest that this would be a mistake. Instead, such writers should be allowed to produce text freely, as in the revising condition, and receive instruction on how to adapt what they have produced to the goals of the genre they are learning thereafter.

The results of this study might both affirm various findings of earlier studies on writing models, whilst at the same time leave some gaps in the theory. In addition to the earlier described studies reporting that the different components of the writing process do not seem to be connected (Berninger, Whitaker, et al., 1996; Torrance et al., 1994; 1999; Whitaker et al., 1994) we observed that planning strategy and revising strategy are only slightly correlated. This finding corresponds with the differences between competent writers described by Hayes and Flower (1980, p. 19). They distinguish different monitor configurations, each describing a global way in which the monitor organises the interaction between the different components of the writing process, resulting in different ways of producing an essay. Our study supports their idea that writers divide and sequence their planning and revising processes differently and independently.

Second, a question arises as to whether writing instruction affects the planning and revising writing strategies. Where students who tend to low revising and students who tend to low planning seem to profit most from the revision condition, one may conceive that learners developed their writing strategy towards a revision or planning strategy. Therefore, despite illustrations of other research (e.g., Torrance et al., 2000) stating that writing strategy is quite a persistent students' characteristic, in future studies we plan to administer the questionnaire twice; not just prior to course commencement as we did, but also after course completion.

Third, in this study we utilised writing questionnaires to measure students' writing strategies. Introspective self-reports of the writing process inevitably have limitations. Despite a cautious approach to the interpretation of the absolute values reported by students, we assume that possible variations between self-reported writing strategies and actual writing strategy are present in all students, in both writing strategies. Thus, a self-reporting writing questionnaire can be useful for discriminating between groups. However, validation of questionnaire scores could also be undertaken. It might be worthwhile to use a keystroke logging program such as Inputlog (Leijten & Van Waes, 2005) to gather writing process data as well.

Finally, as discussed in the introduction, in earlier research (Berninger, Whitaker, et al., 1996) guidance in planning did not result in better writing performance. In the current study, it has been shown that guidance in planning may result in better writing performance for some students, after all, e.g., students who developed a strong tendency towards a planning or revising writing strategy. We conclude that studying interactions between relevant learner characteristics and interventions could contribute to a more nuanced writing instruction theory.

Chapter 4

ADAPTING WRITING-TO-LEARN TASKS TO STUDENTS' WRITING STRATEGIES: EFFECTS ON LITERARY INTERPRETATION SKILL

The claim that writing facilitates learning is widely accepted. However, it seems quite remarkable that a complex activity like learning could be served by a complex activity like writing. This study examined the effects of a writing-to-learn course aimed at reducing the high cognitive demands of writing tasks by adapting these tasks to either a planning writing strategy or a revising writing strategy. We hypothesized that students would be better able to manage the complexity of writing-to-learn, when they were assigned to writing tasks that match their own writing. Results indicate that adapting writing tasks to students' writing strategies increases their learning in the field of literature.

1. INTRODUCTION

Writing is a complex activity, requiring the coordination of a variety of cognitive processes. The complexity of the processes associated with writing is clearly expressed by Flower and Hayes (1980), who described writing as 'juggling constraints' when they introduced their influential model of writing. In their model, writing is viewed as a process involving the cognitive skills of planning, translating, and reviewing which are applied recursively. As Flower and Hayes (1980, p. 33) put it: "Writing is the act of dealing with an excessive number of simultaneous demands or constraints. Viewed this way, a writer in the act is a thinker on full-time cognitive overload".

If writing is such an complex process, it seems surprising that in education writing is not only used as an aim in itself, but also as a means to enhance learning. Teachers, text book writers and researchers often assume that the act of writing leads to learning (Tynjälä, Mason, & Lonka, 2001). However, review studies examining the effects of writing-to-learn (Ackerman, 1993; Klein, 1999) have revealed that the relationship between writing and learning is complex and the results of studies con-

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fusing: some studies have shown positive results, other studies have reported no results or mixed findings. In their meta-analysis about writing-to-learn, Bangert-Drowns, Hurley, and Wilkinson (2004) show not only that results are scarce, but also that effect sizes are minor as well.

The insignificant effects of writing-to-learn may be explained by the assumption that there are only few cognitive resources left over for the process of learning because of the high cognitive demands of writing. Thus, the question is how to reduce the high cognitive demands of writing. This question has been examined frequently in writing research. One possible way to reduce the cognitive load while writing is to increase the fluency of the components of the writing process – planning, translating, and reviewing – which are the three cognitive processes in the well-known writing model developed by Hayes and Flower (1980). McCutchen, Covill, Hoyne, and Mildes (1994) investigated the effect of improving the fluency of translating to help students manage the attentional overload. They concluded that if the students' translating processes (sentence generation and lexical retrieval) operate fluently, and draw little on limited working memory resources, they would have more resources available for other processes. Another example of reducing the cognitive load of writing was provided by McCutchen (2000). She showed that learning to write in genres facilitates the writing process, because this accesses a macro structure for the text on which a writer is working. This may leave more cognitive resources available for learning.

Another way to minimize concurrent demands on the writer's resources is to develop a writing strategy, i.e., how to divide a writing task into subtasks, and how to sequence these subtasks (Torrance & Galbraith, 2006, p. 74). In general, the two most well-defined strategies that have been found in writing research are a 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", and a revising strategy, in which "writers work out what they want to say in the course of writing and content evolves over a series of drafts" (Galbraith & Torrance, 2004, p. 64). Consistent evidence of the planning writing strategy and the revising writing strategy was found by Torrance, Thomas, and Robinson, when they analyzed students' questionnaire responses (1994) and complete students' logs of their writing processes (1999).

In general, both the planning writing strategy and the revising writing strategy may lead to texts of good quality, because both strategies allow for content planning to be conducted free of the demands of constructing a rhetorically appropriate, well-formed and coherent text (Torrance & Galbraith, 2006). The meta-analysis by Graham (2006) supported the assumption that both planning and revising strategy instruction are effective in improving students' writing performance. The effects on students' writing (mean effect size 1.15) were not related to the type of strategy taught (Graham, 2006, p. 204).

We think that if taking into account students' individual writing strategies when teaching writing-to-learn reduces the high cognitive demands of writing, then this would leave more cognitive resources for the process of learning. This assumption is based on the Aptitude x Treatment Interaction (ATI) theory by Cronbach and Snow (1977). This theory states that optimal learning occurs when instruction matches the

aptitudes of the learner. An ATI exists whenever 'the regression of outcome from Treatment A, upon some kind of information about the person's pre-treatment characteristics, differs in slope from the regression of outcome from treatment B on the same information' (Cronbach & Snow, 1977, p. 5). In the sixties and seventies, many studies focused on finding ATI's. However, well-substantiated findings regarding ATI are scarce (Cronbach, 1975; Cronbach & Snow, 1977). The strongest ATI effect that was found involved general ability; students with above-average intellectual development profited from instruction that provided them with considerable responsibility for organizing and interpreting, while those below average profited from a highly structured learning environment (Snow, 1989). As far as we know, ATI studies have never been conducted in the context of writing-to-learn in school context.

1.1 Writing-to-learn about literature

Our research interest centers on writing in the literature curriculum. In secondary education, the school subject of literature consists of reading literary texts, and various actions related to reading the texts; often writing about reading experiences. It seems that literature teachers and textbook writers are convinced that writing is a good means for achieving students' understanding of literature (Marshall, 1990; Purves, 1991). However, the role of writing in literature learning has been rather under-exposed in research about writing-to-learn. This has been illustrated in the recent meta-analysis of Bangert-Drowns et al. (2004); only one of the 48 reported studies has literature as a subject matter[1]. As Newell (1996, p. 148) puts it: "Given their ubiquity in the English classroom, it seems remarkable that we have only a slender body of empirical research exploring the consequences of discussion and writing for students' literary understanding". Only few studies show that writing increased students' literary understanding (Boscolo & Carotti, 2003; Marshall, 1987; Newell, 1996; Newell, Suszynski, & Weingart, 1989; Wong, Kuperis, Jamieson, Keller, & Cull-Hewitt, 2002). Marshall (1987) compared the effects of writing different genres on the literary interpretation skill: personal analytic writing assignments (students wrote about their feelings in response to an aspect of a story) and formal analytic writing assignments (students focused on textual evidence in their texts). He tested the understanding of short literary stories by the students in both genre-writing conditions with the understanding of students whose writing stayed restricted to answering short questions about literary stories. Participants were students of an eleventh-grade American literature course. After the treatment, Marshall tested students' literary understanding by scoring their interpretative statements in written essays, and by analyzing post-test scores on open questions about literary stories. He found that there was no difference in the learning effects of writing personal or formal texts; both were related to higher post-test scores rather than restricted writing.

Newell et al. (1989) also compared different genres. Their main question was which kinds of reasoning and thinking about literary texts were fostered by writing

[1] *A dissertation study by Becker (1996).*

different genres. To answer this question, the researchers analyzed texts written by tenth-grade students when they wrote in either a personal or in a formal mode. In the formal writing task, students had to interpret the story by drawing their inferences from the text alone (text-based condition). For the personal writing task, students had to interpret a story using their own experiences as well as elements of the story (reader-based condition). The researchers found that in the reader-based condition, students wrote a higher number of reflexive statements (i.e., statements in which the writer refers to personal experiences and knowledge to illustrate understanding of the text), while in the text-based condition, students used a higher number of descriptive statements (i.e., statements in which some part of the story is retold or described). They concluded that writing different genres influences the way students write and what they take from a story.

Newell (1996) investigated two different instructional tasks (consisting of writing and discussion) on students' understanding of a short story: reader-based versus teacher-centered tasks. In the reader-based tasks, the teacher focused on helping students to develop their own interpretations of a short story. In the teacher-centered tasks, the teacher focused on getting students to share the teachers' interpretation of a short story. Results suggested that students given reader-based tasks outperformed students who received the teacher-centered tasks.

Boscolo and Carotti (2003) compared two literature courses for ninth-grade students: one using writing as a tool for elaborating, clarifying and commenting on literary texts, the other using writing in a more traditional way, as an exercise in the expression of ideas and as a tool for evaluating students' understanding. Students in the writing-oriented group outperformed the traditional group in their personal interpretation of a literary text, but not in comprehension of the literal meaning of a text.

Wong et al. (2002) investigated the effects of guided journal writing on students' understanding of themes and main characters in a complex novel, compared with a non-writing group of students. Students in the writing condition gave superior posttest scores than students in the non-writing condition. Furthermore, students' interview data indicated that students believed that the writing stimulated them to think more deeply about the story.

In sum, there is some empirical evidence that writing can be an effective learning tool in the literary classroom. The fact that writing is so often used in the literary classroom, while so little empirical research has been conducted about writing-to-learn in the literature curriculum, is our reason for choosing literature as the subject of writing-to-learn research.

2. HYPOTHESIS

If writing is such a complex and difficult activity, it seems quite illogical to expect students to learn by writing. We hypothesize that writing tasks will be more effective for learning when writing-to-learn tasks are less cognitively demanding for students. Therefore, we adapted writing tasks to students' writing strategies, to make students better able to manage the complexity of writing-to-learn. We designed a course 'Writing argumentative texts about literature', consisting of five units of 90

minutes in which students wrote about short literary stories. We created two versions of the course, one based on the planning strategy (planning condition), and one the revising strategy (revising condition). Both versions consisted of guidance in discovery (idea generation) and guidance in text production (including planning or revising).

We hypothesize that the effect of writing activities on learning depends on the interaction between condition and level of students' writing strategy. Thus, our interaction hypotheses are:

1) the more students tend to use a revising strategy, the better they will learn to interpret literary texts in the revising condition, and the less they will learn in the planning condition;
2) the more students tend to use a planning strategy, the more they will learn to interpret literary texts in the planning condition, and the less they will learn in the revising condition.

An experimental study with pre-test / post-test design was set up to test these hypotheses.

3. METHOD

3.1 Participants

The experiment took place at three different high schools in three different regions (West, North, Central) of the Netherlands. The study was part of the regular lessons in 10th grade; 220 students, from eight different classes, were involved. Both conditions were present in each classroom; individual students were randomly assigned to conditions.

To investigate the effects of the two conditions, a prerequisite for our study was that students would dedicate sufficient effort to the writing assignments. Therefore, we chose to narrow down the selection of participants for the study. Two criteria were implemented. First, we selected students who had attended all the lessons and for whom a complete dataset was available (pre-test, post-test, questionnaire).

Second, two independently working coders scored all students' work during the course 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 assignments were the discriminating assignments between both conditions ($M = 26.85$, $SD = 5.10$, with a max. of 33). Cronbach's alpha over items was .79, and coder reliability was .91. Only those students who clearly put in a lot of effort in the study (with a score of 25 or higher on the quality of workbooks) were selected[2]. From these 113 participants we rated literary interpretation skill. There were no indications of systematic selection: selected and non-selected students had similar scores on the writing strategy inventory and aptitude test (measured by students' scores on Primary Education Final Test, a standard test in the Netherlands).

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[2] *It is unlikely that selection of participants worked in favour of confirming our hypothesis, because statistical power decreased.*

This selection procedure resulted in almost equal numbers in the revising (n = 57) and the planning (n = 56) condition. Participating students were from the senior general secondary education track (n = 42), and from the pre-university track (n = 71).

3.2 Procedure

All students participated in a course 'writing argumentative texts about literature, consisting of five units of 90 minutes, once a week. In each unit, students wrote an argumentative text about a short literary story. We focused on teaching students the genre of argumentative text because Klein (1999) concluded that the teaching of text genres is the most effective way of teaching writing-to-learn. According to his genre hypothesis, the operations and forms of organization required by the different genres lead to equivalent operations upon content. The learning is in dealing with the specific operations and organizations required for writing genres.

In a pilot study (Kieft et al., 2006a) the course was implemented among 113 participants from 10th grade (from a different school and with different teachers than in the present study). Based on the experiences of the five participating teachers 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) more interaction between students by asking them to read and exchange each others' written texts; (3) better fit with time constraints, therefore some assignments were deleted; and (4) replacement of one of the stories that was apparently not appreciated by the students.

The students' prior knowledge of writing argumentative texts about literature was limited: in the Netherlands, students start to read adult literature in the 10th grade. Students 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 – but usually do not include literature (Kieft & Rijlaarsdam, 2002).

In our course, the argumentative text is considered to be a contribution to a discussion (cf. Van Eemeren & Grootendorst, 1992). The field for discussion is literature: students read a short literary story and learn to generate an issue to discuss in their text, such as: 'Is this story too old-fashioned for today's students?'. Furthermore, students learn to present a standpoint, to generate, select and arrange arguments to support their point of view, and to integrate these elements in a rhetorically attractive text. The lesson material was completely self-instructing. During the lessons the teachers coached students while working. This self-instructing character of the material made it possible to implement two different versions of the course in each classroom.

Table 3 in Chapter 2 (p. 17) shows the five phases in each unit of the course. The first phase consisted of reading a literary short story; the same story in both conditions. We selected stories that were unfamiliar to the students (according to the teachers), and that were sufficiently challenging. The stories differed greatly 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 text, for example by 'free writing' (Elbow, 1973). Students wrote down their perceptions, feelings, memories, reactions and responses to the story, while writing without 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). In the third phase, students in both conditions read some theory about aspects of the argumentative text genre (shown in Table 2 of Chapter 2, p. 16) and carried out one or two exercises to apply the theory.

The fourth phase was devoted to composition. In the planning condition, students composed their text by planning it first. Creating a scheme stimulated students to think about the aim, audience and content of the text. Then students reread, evaluated and revised the scheme, and wrote the text. In the revising condition, students wrote a 'discovery' draft, and reread, evaluated and revised the text using the same criteria as in the planning condition. Composing the discovery draft is a way of thinking about the content in writer-based prose; revising the first draft provides an opportunity to develop the text into reader-based prose, improving rhetorical and argumentative aspects (Galbraith & Torrance, 2004). In the fifth phase, students read and commented on each others' texts in both conditions.

3.3 Instruments

We constructed a writing questionnaire to measure students' planning and revising writing strategies. In a pilot study (Kieft et al., 2006a) the questionnaires were tested; we extended the questionnaire items for the planning scale and we improved the operationalisation of the revising scale, as discussed in Kieft et al. (in press). Appendices A and B show questionnaire items. In the present study, we decided to administer the writing questionnaire twice: before and after the course. This made it possible to check whether writing strategy is a relatively stable student characteristic.

To measure literary interpretation skill, we constructed a pre-test and a post-test, based on the pilot study (Kieft et al., 2006a). In that study the test consisted of questions about a short literary story. Internal consistency was not high (a reasonable .70), but there were some indications that the measurement was not valid: no general improvement of literary interpretation skill over time was observed, and pre-test and post-test scores did not correlate. Therefore, we felt the need to improve the measurement of students' literary interpretation skill. We decided to use in the present study a more global way of scoring students' literary interpretation skill, namely writing a short text about a story in pre-test and post-test. To avoid a story effect, four different stories were included in a complete balanced design. Participants received the following instruction: "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".

All the texts gathered in pre-test and post-test were completely mixed in the sample. A team of three raters received a training to score the texts holistically on the level of literary interpretation (*not* on text quality). Each text was scored on a scale from 0 to 5 by the individually working raters, using anchor texts, who illustrated each score from 0 to 5. The inter-rater reliability was .69. In the appendices, we demonstrate the coding with an example of one of the stories (Appendix C), and the scale used by the raters for this story (Appendix D), and two examples of anchor texts (Appendix E). For quality indices of the tool, see Table 1.

Finally, we measured students' evaluation of the lesson units, to check whether a difference in appreciation of the lessons would have affected the effect of the conditions. We collected participants' evaluation of the specific revising and planning tasks of the lessons by asking students to indicate their appreciation on a five point scale with scores from 1 'I did not find this task useful' to 5 'I did find this task useful'. Internal consistency proved satisfactory (see Table 1).

Table 1. Quality of the testing materials

Dependent variable	Instrument	Nr of items/raters	Reliability
Revising writing strategy	Writing questionnaire	15 items	.73
Planning writing strategy	Writing questionnaire	11 items	.71
Literary interpretation skill (pre-test)	Holistic rating	3 raters	.83
Literary interpretation skill (post-test)	Holistic rating	3 raters	.89
Evaluation of courses	Questionnaire	20 items	.72

4. ANALYSES

We used analysis of covariance (ANCOVA) to test the effects of condition and writing strategy on literary interpretation skill. To discount possible pre-test effects we included pre-test scores on literary interpretation as a covariate. To compute the interaction effect of condition and writing strategy on literary interpretation skill with an ANCOVA-analysis, we split up the scores for the variable writing strategy into two scores: the score in the revising condition and the score in the planning condition. This means we created the variables 'planning strategy in revising condition', 'planning strategy in planning condition', 'revising strategy in revising condition' and 'revising strategy in planning condition'.

When interaction effects were observed, we conducted regression analysis 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 planning and literary interpretation skill in the two conditions, and between the degree of revising and literary interpretation skill in the two conditions. For more details about the regression analyses, see Appendix F.

Finally, we tested all relations between writing strategy and literary interpretation skill for curvi-linearity. None of them proved to be curvi-linear.

5. RESULTS

5.1 Preliminary analyses

We analyzed the results of the writing questionnaire (pre-test) to measure students' level of planning strategy and level of revising writing strategy. First, a significant but small correlation was observed between the planning writing strategy and the revising strategy ($r = .34$, $p < .001$). This small correlation validated our decision to distinguish between planning and revising strategies instead of considering them as complementary. Second, we found that students' writing strategy was a rather stable students' characteristic (correlations between pre-test and posttest: for planning strategy $r = .55$, $p < .001$, for revising strategy $r = .53$, $p < .001$).

We tested possible differences between conditions regarding evaluation of lessons. It was shown that students generally appreciated both conditions equally: $t(111) = -.56$, $p = .58$. ($M = 3.34$, $SD = .50$ in planning condition; $M = 3.29$, $SD = .56$ in revising condition). Furthermore, there was a small but significant correlation between pre-test and post-test on literary interpretation skill ($r = .20$, $p = .03$).

5.2 Main analyses: Effects on literary interpretation skill

For the revising strategy we hypothesized that the more students tended to use a revising strategy, the more they benefited from the revising condition, and the less from the planning condition for learning literature. Analysis of covariance and regression analysis of students' score on revising strategy and condition on literary interpretation skill (see Table 2), with pre-test as covariate, resulted in a significant effect for the revising strategy in the revising condition ($F(1,112) = 4.85$, $p = .03$, $\beta = .41$). Similarly, a significant negative effect for the revising writing strategy in the planning condition was observed ($F(1,112) = 4.04$, $p = .047$, $\beta = -.22$).

Table 2. Means and standard deviations of writing strategies and literary interpretation skill in pre-test and post-test

	Pre-test				Post-test			
	Revising condition		Planning condition		Revising condition		Planning condition	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Revising writing strategy	3.20	.35	3.09	.55	3.00	.45	3.00	.40
Planning writing strategy	2.88	.63	3.00	.53	2.80	.52	2.96	.43
Literary interpretation skill	2.01	.74	2.29	.93	2.18	1.01	2.14	.91

In Figure 1, we show a visual representation of these results. The regression slope of the revising condition shows that for learning literature, the revising condition is a better choice for students with higher scores on revising skill than for students with lower scores on revising skill. The regression slope of the planning condition shows that for learning literature, the planning condition is a better choice for students with a low score on revising skill than for students with a high score on revising skill. Thus, our hypothesis that students learn more by writing when they write in a condition in which writing assignments are adapted to their revising writing strategy was confirmed.

For the planning strategy, we hypothesized that the more the students tended to use a planning strategy, the more they benefited from the planning condition, and the less from the revising condition. Analysis of covariance and regression analysis of students' score on planning strategy and condition (see Table 2), with pre-test as covariate, showed that there was no effect for the level of planning strategy in the planning condition, but there was a significant negative effect for the planning strategy in the revising condition ($F(1,112) = 6.23$, $p = .01$, $\beta = -.32$). In Figure 2, we visualized these results. The regression slope of the planning condition is horizontal, thus showing that there is no interaction effect of condition and planning writing strategy on literary interpretation skill. The regression slope of the revising condition shows that the revising condition is a better choice for students scoring relatively low on planning strategy: the lower on planning strategy, the better result in the revising condition. Thus, our hypothesis was partly confirmed: the more the students tended to use a planning strategy, the less they learned in the revising condition.

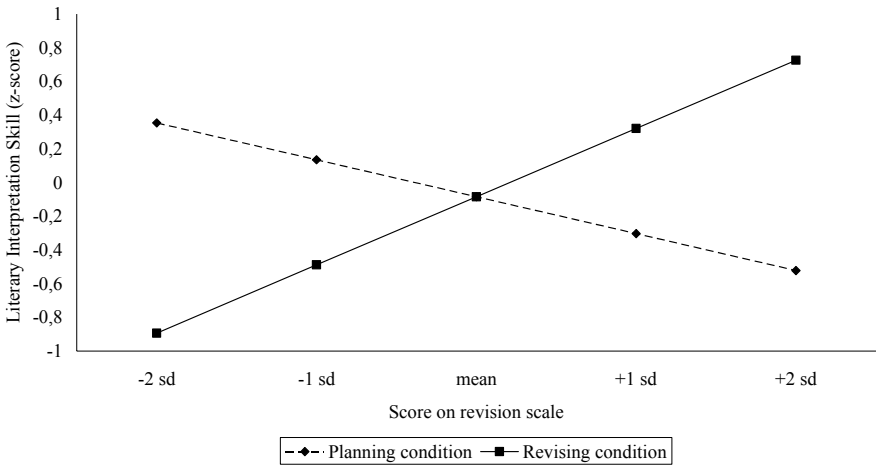

Figure 1. Regression slopes for effects of interaction between condition and revising writing strategy on literary interpretation skill.

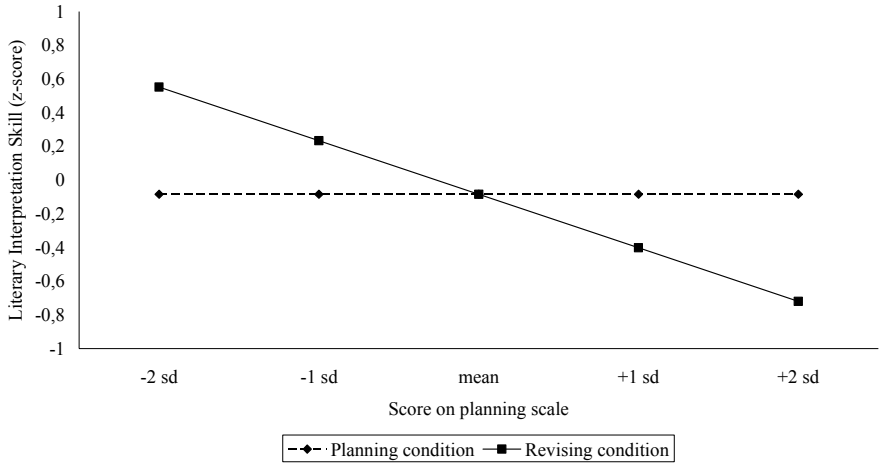

Figure 2. Regression slopes for effects of interaction between condition and planning writing strategy on literary interpretation skill.

6. DISCUSSION

This study examined the effects of writing instruction adapted to different writing strategies on learning to interpret literature. We anticipated that such an instruction would have a beneficial impact on students' learning, because it reduces the high cognitive demands of writing, leaving more cognitive resources available for learning. As expected, there was an interaction effect of revising writing strategy and condition on learning; for planning writing strategy, the interaction effect on learning was limited to the revising condition. That is, for students with high scores on revising strategy the revising condition is the best choice, for students with low scores on revising strategy, the planning condition can be recommended. Students with low scores on planning strategy are better off in the revising condition, but the planning condition leads to equal results for all levels of planning strategy.

The lack of interaction effects of planning condition x planning writing strategy on literary interpretation skill may be explained by the fact that planning is the default writing instruction in secondary education. When strategy choice is addressed in writing instruction in the Netherlands it usually includes directions to plan before writing full text. Thus, it may be possible that students who reported a high planning strategy are in part students who think it is appropriate to plan, and not students who prefer to plan and actually do plan before writing. Apparently, adapting a writing course to a writing planning strategy which does not really match natural preference does not reduce the cognitive load, and thus does not facilitate learning. Hence, another possible reason might be that for all students, irrespective of their level of planning, the planning condition teaches them what they are usually taught in the writing classroom and therefore is not really surprising or challenging for them. This may lead to a lack of effect on learning.

Using a writing questionnaire for measuring writing strategy inevitably has some limitations. 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 have to be cautious when we interpret absolute values of students' scores on the questionnaire. Nevertheless, our data show (cf. Torrance, Thomas, & Robinson, 1994, p. 386) that self-reports of the writing process can be successfully used to detect differences between students. Furthermore, the correlation between writing strategy measured during pre-test and post-test five weeks later (r = .55 for planning strategy and r = .53 for revising strategy), indicates a certain reliability of the questionnaire. Nevertheless, validation studies are welcomed. Gathering writing process data, for example by using a digital tool such as *Inputlog* (Leijten & Van Waes, 2005), next to self-report data could ensure the validity of our writing strategy inventory.

At first sight, another limitation of the present study seemed to be the lack of reasonable correlation between pre-test and post-test on literary interpretation (r = .20). However, it should be noted that reading literary stories, and writing about them, were completely new tasks for the participants in this study. Hence, the pre-test could not really measure students' skill yet, because it was the first time they had performed such a task. This might cause the smallness of the correlation.

Compared with the pilot study (Kieft et al., 2006a), in the present study more hypotheses were confirmed. The only interaction effect that we observed in the pilot study was that for students with a high score on revising strategy, the planning condition was the most effective for improving literary understanding. We consider the results of the present study to be more valid, because in the pilot study we were not satisfied with the writing questionnaire and the tool for measuring literary interpretation skill. Moreover, we have more confidence in the current study, because (1) more schools participated, (2) more and different teachers and classes participated, and (3) we carefully selected students who dedicated sufficient effort to the lessons.

The results of this study may have implications for the use of writing as a learning tool in the literature curriculum in secondary education. In Dutch literature textbooks most writing tasks are just assignments without any instruction on how to carry them out (Kieft & Rijlaarsdam, 2002). The present study provides support for an educational practice of assigning writing-to-learn tasks which (1) show students how to write a specific genre, and (2) are adapted to different writing strategies. Our results indicate that reintroducing the concept of Aptitude x Treatment Interaction may be a valuable contribution to the practice and research of writing-to-learn.

APPENDIX A

QUESTIONNAIRE ITEMS IN THE WRITING QUESTIONNAIRE INDICATING REVISING WRITING STRATEGY WITH ITEM-TOTAL CORRELATION HIGHER THAN .30 (IN ALPHABETIC ORDER)

	M	*SD*
Before I hand in my text, I check whether it is structured logically	3.77	.99
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	2.57	1.22
* I don't pay much attention to skipping sentences or thoughts	3.63	3.63
* I don't pay much attention to whether I'm satisfied with my text myself	4.01	1.01
* I usually hand in my text without checking whether the paragraphs are well arranged	3.98	1.00
When I have finished writing, I reread and improve a lot: there may change a lot in my text	1.59	.55
When I rewrite my texts, the content often changes a lot	2.29	.89
* When I write a text, I find it difficult to form ideas about which I can write	3.56	1.08
When I write a text, I question myself from time to time whether the text is comprehensible for my readers	2.89	1.22
While writing, I regularly check whether my text doesn't contain sentences that are too long or incorrect	3.28	1.19
Writing helps me to clarify my thoughts	2.47	1.16

Note. Items with * were recoded in the analyses. The more the student agrees with the items (on a five point scale), the higher the scores on the revising writing strategy.

APPENDIX B

QUESTIONNAIRE ITEMS IN THE WRITING QUESTIONNAIRE INDICATING PLANNING WRITING STRATEGY WITH ITEM-TOTAL CORRELATION HIGHER THAN .30 (IN ALPHABETIC ORDER)

	M	*SD*
Before I start to write, I have to know what the content of the text will be. Therefore, planning is important for my writing.	1.80	.67
Before I start to write, it is clear for me what I want to achieve with my readers	3.43	1.13
Before writing a text, I jot down some notes on a scribbling paper. Later, I elaborate these notes	3.42	1.20
I always use a diagram before I start to write	2.17	1.19
I need to have my thoughts clear, before I can start to write	3.04	1.10
* Planning a text is not useful for me	3.81	1.12
* When I start writing, I don't know what the content of the text will be	3.52	1.19
When I write a text, I spend a lot of time thinking on how to approach it	2.89	.97
* When writing, I sometimes write paragraphs of which I know that they are not yet correct, but I prefer to continue writing	3.00	1.25

Note. Items with * were recoded in the analyses. The more the student agrees with the items (on a five point scale), the higher the scores on the revising writing strategy.

APPENDIX C

SHORT DESCRIPTION OF ONE OF THE STORIES USED IN PRE-TEST AND POST-TEST

HULLAY BY CEES NOOTEBOOM

The main character of *Hullay* is a boy who visits his aunt on her birthday. The boy seems locked up in his own thoughts and he silently watches from behind the window his little cousin Arthur, who is outside in the garden, playing with, and pretending to be a car. The boy describes his family by their scents: 'Cigar smoke came to him and asked him: why don't you play outside in the garden?'. 'And perfume came to him, stood behind him, and said: 'Arthur is outside too'.

Then something terrible happens: the boy sees Arthur drown in the pond, but he does not take any action: 'He keeps watching, he says nothing'. The story ends quite puzzling: 'Later, much later, after many nightmares, in which he drowned, and drowned, and drowned, he could remember what he thought that afternoon: Hullay, hullay, hullay'.

APPENDIX D

EXAMPLE OF THE INSTRUCTION FOR RATING THE INTERPRETATION OF THE FOUR STORIES IN PRE-TEST AND POST-TEST

Score	Definition
1	Brief and shallow, with no effort at interpreting the story. Student mainly retells the story.
2	Students does not recognize the crux of the story, but shows minor interesting or insightful thoughts.
3	Students recognizes the crux of the story, but does not provide specific text support.
4	Student recognizes the crux of the story, and provides specific text support.
5	Student recognizes the crux of the story, provides specific text support and also offers additional interesting or insightful thoughts.

APPENDIX E

TWO EXAMPLES OF ANCHOR TEXTS FOR THE STORY *HULLAY*

ANCHOR TEXT OF SCORE 1

I have read a realistic story about a small boy, traveling with his father. The boy is sleepy; as he falls asleep he thinks "hullay, hullay". The boy falls asleep and gets a nightmare about visiting his aunts' birthday party. There are a lot of people at the party and his little cousin Arthur is one of them. Arthur is playing in the garden with a little toy, a car. His aunt asks him whether he does not want to play in the garden as well. However, he stays watching through the window. He heard people talking loudly, but kept watching Arthur through the window. After a while, his mother brought him some lemonade. He still kept watching little Arthur, playing in the garden. The toy that Arthur was playing with disappeared into the pond. Arthur moved slowly into the thick water. Arthur kept looking at him, while he was moving into the water further and further. He saw him moving his mouth, and then he disappeared completely. He kept watching and when Arthur had totally disappeared, he went to his mother to eat cake.

ANCHOR TEXT OF SCORE 5

"Chinking of teacups, scraping of cake forks". This makes it obvious that the story takes place at a birthday party. The main character (first-person narrator) is standing at the window, watching his little cousin, who is pretending to be a car. At some point, the cousin falls into the pond. The first-person narrator keeps watching until his cousin does not emerge anymore. He does not realize what has happened. Doesn't he do anything to save him? No, he can't do anything, he is probably is too young to understand what has happened (he can't pronounce the word 'hurray' well). Or maybe he is jealous, because all his family praises his little cousin for playing outside. Not until much later does he understand what has happened, he remembers that his thoughts at the moment were: 'Hullay, hullay, hullay'. Later he thought that his thoughts were contradictory He often dreamed about the incident. He probably feels very guilty. Even though he couldn't have helped. After all, he was only a little boy.

APPENDIX F

REGRESSION ANALYSIS

To test the hypothesized interaction between condition and writing strategy we used regression analysis, which allowed us to evaluate the contribution of condition and writing strategy. For condition, we construed a dummy variable (D_PC_i) which is 'on' (equals 1) if a student was in the planning condition, otherwise this dummy was turned 'off' (equals 0) if a student wrote his texts in the revising condition. For each of the two conditions, we construed a condition-specific score for each writing strategy. For example, to compute the effects of planning and revision writing strategies on literary interpretation skill, we used four predictive coefficients: a constant (to be interpreted as the mean score in the revising condition for students with a zero score for planning condition), a dummy for condition (to be interpreted as the mean score in the planning condition as deviation from the revising condition for students with a zero score for revising condition), level of planning writing strategy in planning condition, and level of planning writing strategy in the revising condition.

We estimated the regression weight for planning writing strategy on the dependent measures for each of the conditions separately, tested significance, and where appropriate, the difference between the regression weights. We can describe the writing score of a student as a function of the planning score (PS_i):

$$Y_i = CONS + \beta_1 * D_PC_i + \beta_2 * PS_i + \beta_3 * D_PC_i * PS_i + e_i$$

where Y_i is the writing score of student i and D_PC_i is a dummy-variable for the planning condition. In the equation above, two separate effects are formulated for the planning score PS_i and $D_PC_i * PS_i$. The first refers to the effect in the revising condition, and the second to the effect in the planning condition (i.e., D_PC_i). The same procedure was applied for the revising writing strategy. Furthermore, we included pre-test scores in the analyses to dismiss possible pre-test effects. Consequently, pre-test score (PTS_i) was used as a covariate in all subsequent analyses, resulting in this formula:

$$Y_i = CONS + \beta_1 * D_PC_i + \beta_2 * PS_i + \beta_3 * D_PC_i * PS_i + \beta_4 * PTS_i + e_i$$

Chapter 5

THE EFFECTS OF STUDENTS' INDIVIDUAL CHARACTERISTICS AND WRITING INSTRUCTION ON WRITING PERFORMANCE

In this study we examined the effects of two different versions of a writing course on the writing skill of students in upper secondary education. By adapting writing instruction to students' writing strategies and the underlying level of the personality characteristic of self-monitoring, we aimed to reduce the cognitive load of learning-to-write a complex genre such as an argumentative text about literature. Our assumption is that optimal reduction of the cognitive load of writing tasks results in better quality of written texts. We expected the course adapted to revising writing strategy to be the most beneficial for low self-monitors with a revising writing strategy; the planning course is expected to be the most beneficial for high self-monitors with a planning writing strategy. Results show that only low self-monitors are sensitive to different forms of writing instruction. However, in contrast to what we predicted, the effective form is not one that matches the revising writing strategy, and diminishes the cognitive load, but rather one that complements them: the writing instruction adapted to a planning writing strategy.

1. INTRODUCTION

A growing number of studies in the field of writing research has shown evidence that there is a lot of variation in writing processes and in the effectiveness of these processes (Rijlaarsdam et al., 2005). Yet, explicit attention for the differences in students' writing processes is unusual in writing education. Textbooks, for instance, tend to provide every student with the same instructions. In this study, we focus on adapting a writing course to the different writing strategies that students apply, aimed at improving their writing performance.

This chapter is an article in preparation: Kieft, M., Rijlaarsdam, G., Galbraith, D., & Van den Bergh, H. (in preparation). *The effects of students' individual characteristics and writing instruction on writing performance.*

1.1 Writing strategies

Writing is a cognitively demanding activity. It requires a complex combination of planning, translating, and reviewing (Flower & Hayes, 1980). To manage the cognitive constraints, and to reduce the cognitive demands of complex writing tasks, writers need to determine how to divide a writing task into subtasks and how to sequence these subtasks, i.e., they need to develop a writing strategy (Torrance & Galbraith, 2006, p. 76). The most widely given advice to student writers in the writing classroom is that they must make a plan first, for example in the form of an ordered list of topics and subtopics, and then apply this it 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. Elbow (1973) described that for some writers, 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' (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 strategy (Galbraith & Torrance, 2004, p. 64). In this chapter, we will label this the *revising strategy* (as we did in the other chapters of this book).

Several studies have explored the effects of both the revising strategy and the planning strategy. One of the earliest studies of different writing strategies was conducted by Glynn, Britton, Muth, and Dogan (1982). They identified four different writing strategies and examined the number of arguments generated by students writing a first draft in (1) polished sentences, (2) complete but unpolished sentences, (3) organized notes, or (4) unorganized notes. Glynn et al. found that the more the writers were required to do, the fewer arguments resulted. Thus, the fewest ideas were generated in the polished sentences condition and the most ideas were generated in the unorganized sentences condition.

In an experimental study Kellogg (1988) reported compelling evidence that outlining (i.e., generating and organizing ideas in note-form prior to writing) is more beneficial for writing performance than no-outlining. He compared the writing performance of students in an outlining condition, in which participants were asked to prepare an ordered list of points and sub points before writing, and students in a no-outlining condition, in which participants were directed to begin writing without preparing an outline. Kellogg found that participants in the outlining condition wrote texts that were rated significantly higher in overall quality than in the no-outline condition. A similar study (1990) replicated this finding. Kellogg (1994) concludes that the superiority of the outlining strategy is a consequence of easing of the attentional overload, allowing the writer to focus more on translating ideas effectively in text, and organizing their ideas better in writing.

Kellogg's studies seem to suggest a clear benefit for a planning strategy over a revising strategy and seems to offer, therefore, clear support for the educational practice of encouraging writers to prepare outlines before starting to write. However, there are at least two constraints on this recommendation. First, the effect of planning on text quality in his experiments might be attributed entirely to time-on-task (Hayes, & Gradwohl Nash, 1996). Second, Galbraith and Torrance (2004) have suggested that the lack of support for the revising strategy stems from the way Kellogg operationalised this strategy in his studies. They argue that a proper implementation of the revising strategy involves producing an unorganised initial draft which is then gradually rewritten over a series of drafts, while production and editing of participants in Kellogg's data were alternated. Accordingly, Galbraith and Torrance (2004) designed an experiment in which they compared conditions in which students were invited to use an outlining strategy (in which planning and text production were carried out at the same time), and an revising strategy (in which an unorganised initial draft was revised into well-organised text). They found that more ideas were produced in the revising condition, but that students in the outlining condition produced higher quality texts (corresponding with Kellogg's findings).

Consistent evidence of the planning writing strategy and the revising writing strategy was also found by Torrance, Thomas and Robinson, when they analyzed students' questionnaire responses (1994) and complete students' logs of their writing processes (1999).

Torrance et al. (1999) recorded the marks that students received for their essays and found no significant relationship between writing strategy and essay mark. They conclude that 'there was no evidence that one strategy was more successful than the other, either in terms of efficiency of working or in terms of the quality of the final product'. Finally, in an experiment with a longitudinal design, Torrance et al. (2000) examined drafting strategies used by undergraduate students. Evidence for a set of writing strategies similar to their earlier research was found. They also found no evidence of systematic change of students' writing strategy; most students used the same strategy from year to year.

1.2 Self-monitoring

What is much less clear, however, is what the origins are of these different drafting strategies. 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 a consequence of some 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 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 (high self-monitors) or dispositional goals (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 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 large number of new ideas after making notes, but not after writing full text, and low self-monitors discovering a large number of new ideas after writing full text, but not after making notes. In later experiments, examining the effect of different forms of planning on writing full text, Galbraith (1996; 1999) replicated this basic difference. He suggested that these differences reflect a contrast between a top-down, rhetorically driven approach to writing and a bottom-up, dispositionally-driven approach to writing. High self-monitors, in order to control the way they present themselves to other people, employ a relatively top-down approach, adapting their ideas to the rhetorical context during planning and then focusing on realising these established ideas in the text. Hence, they are able to adapt their ideas better when making notes, and are then more free to focus on global planning than when producing full text, where planning has to be combined with text production. Low self-monitors employ a relatively bottom-up approach, allowing their ideas to emerge as they produce text, and modifying their global plans for the text in response to their emerging ideas. Hence, when making notes, they discover fewer new ideas than when they are able to constitute their thoughts in full text.

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 very 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 low self-monitors would benefit more from learning a planning strategy.

Based on the Galbraith 1992 and 1996 studies, our basic assumptions were that low self-monitors, who generate their ideas best when composing a rough draft and who are more likely to report multiple drafts than high self-monitors, may benefit more from a revising writing strategy. Similarly, we assumed that high self-monitors, who generate their ideas best by taking notes in advance and report more detailed planning than low self-monitors, may profit more from a planning writing strategy. We hypothesize that if students use a writing strategy that matches their level of self-monitoring, they can manage the cognitive demands of writing tasks

better, which will result in better quality of written texts. This hypothesis is tested with students performing a complex writing task: an argumentative text about short literary stories.

1.3 Learning a new genre: 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).

2. THE PRESENT STUDY

In this study, we examined the effects of a course 'writing argumentative texts about literature' in two versions: one adapted to a planning writing strategy, the other adapted to a revising writing strategy. As in previous chapters of this thesis, our basic idea is that adapting writing instruction to students' writing strategies will reduce the cognitive load of their writing process. In this study, we extend this basic idea with the factor of self-monitoring. We assume that if students' writing strategies match their level of self-monitoring, the cognitive load of writing is optimally reduced, resulting in improved quality of written texts. Based on the Galbraith studies (1992, 1996) we suppose that for low self-monitors the revising writing strategy is the matching strategy, and for high self-monitors, the planning writing strategy is the matching strategy. Thus, in present study we hypothesize that:

1) the more the low self-monitors tend to use a revising strategy, the more they will benefit from the revising condition;
2) the more the high self-monitors tend to use a planning strategy, the more they will benefit from the planning condition.

To test these 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, Rijlaarsdam & Van den Bergh, 2006a). 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).

3. METHOD

The experiment took place at three different high schools in three different regions (West, North, Central) of the Netherlands. The study was part of the regular lessons in 10th grade. 220 students, from eight different classes, were involved. Both conditions were present in each classroom; individual students were randomly assigned to conditions.

To detect the effects of the two conditions, a prerequisite for our study was that students put sufficient effort in the writing assignments. Therefore, we chose to narrow down the selection of participants for the study. First, we selected students who attended all lessons and of whom a complete dataset was available (pre-test, post-test, questionnaire). Second, only those students who clearly put an effort in the study were selected[1]. Therefore, two independently working coders scored all students' work during the course 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 assignments were the discriminating assignments between both conditions (M = 26.85, SD = 5.10). Cronbach's alpha over items was .79, and coder reliability was .91. Students with a score of 25 or higher on the quality of workbooks were selected. No indications of systematic selection were observed: selected and non-selected students had similar scores on the writing strategy inventory and aptitude test (measured by students' scores on Primary Education Final Test, a standard test in the Netherlands).

This selection procedure resulted in almost equal numbers of students in the revising (n = 59) and in the planning (n = 61) condition. Participating students were from the senior general education track (n = 49) and from the pre-university track (n = 71).

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[1] *It is unlikely that selection of participants worked in favour of confirming our hypothesis, because statistical power decreased.*

3.1 Procedure

All students participated in a course 'writing argumentative texts about literature', consisting of five units of 90 minutes, once a week. In each unit, students wrote an argumentative text about a literary story. Students' prior knowledge of writing argumentative texts about literature was limited: In the Netherlands, students start to read adult literature in the tenth grade. Students start learning to write argumentative texts in lower secondary education. At the end of the ninth 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 cover subjects such as after-school jobs, smoking, having exotic animals as pets – but usually do not include literature (Kieft & Rijlaarsdam, 2002).

In a pilot study (Kieft et al., in press) the course was implemented among 113 participants from 10th grade (from different schools and with different teachers than in the present study). Based on the experiences of five participating teachers and the lesson observations by the first author, we improved the course in some respects. The main improvements were: (1) more variety in the writing tasks; (2) more interaction between students in the course by asking them to read and exchange each others' written texts; (3) better fit with time constraints, therefore some assignments were deleted; and (4) replacement of one of the stories that was apparently not appreciated by the students.

In the course, the argumentative text is considered to be a contribution to a discussion (cf. Van Eemeren & Grootendorst, 1992). The field for discussion is literature: students read a short literary story and learn to generate an issue to discuss in their text, such as: 'Is this story too old-fashioned for today's students?'. Furthermore, students learn to present a standpoint, to generate, select and arrange arguments to support their point of view, and to integrate these elements in a rhetorically attractive text. The lesson material was completely self-instructing. During the lessons the teachers coached the students while they worked. This self-instructing character of the materials made it possible to implement two different versions of the course in each classroom.

Table 3 in Chapter 2 (p. 17) shows the five phases in each unit of the course. The first phase consisted of reading a short literary story; the same story in both conditions. We selected stories that were unfamiliar to the students (according to the teachers), and were sufficiently challenging. The stories differed greatly in tone, strategy and structure; the complexity of the stories increased through the lessons.

The second phase was the phase of discovery. In the revising condition, students discovered ideas by writing full text, for example by freewriting (Elbow, 1973). Students wrote down their perceptions, feelings, memories, reactions and responses to the story, while writing without stopping. In the planning condition, students discovered their ideas by filling in note-forms, for example a thinking scheme in which they wrote down their thoughts in a few short words (Skeans, 2000). In the third phase, students in both conditions read a theory about aspects of the argumentative text genre (shown in Table 2 in Chapter 2, p. 16) and carried out one or two exercises to apply the theory.

The fourth phase was devoted to composition. In the planning condition, students composed their text by planning it first. Creating a scheme stimulated the students to think about the aim, audience and content of the text. Then the students reread, evaluated and revised the scheme, and wrote the text. In the revising condition, students wrote a 'discovery' draft, and reread, evaluated and revised the text using the same criteria as in the planning condition. Composing a discovery draft is a way of thinking about the content in writer-based prose; the first draft provides an opportunity to refine the text into reader-based prose, and improving rhetorical and argumentative aspects (Galbraith & Torrance, 2004). In the fifth phase, students read and commented on each other's texts in both conditions.

3.2 Instruments

We constructed a writing questionnaire to measure students' *planning and revising strategies*. In a pilot study (Kieft et al., 2006a) the questionnaires were tested; we then extended the questionnaire items for the planning scale and improved the operationalisation of the revising scale, as discussed in Kieft et al. (in press). Appendix A and B in Chapter 4 show questionnaire items (see page 51-52). In the present study we decided to administer the writing questionnaire twice: before and after the course. This made it possible to check whether writing strategy is a relatively stable students' characteristic.

To measure writing skill, we constructed a pre-test and a post-test, based on the test used in the pilot study (Kieft et al., in press). We administered a pre-test and a post-test, in which students wrote an argumentative text about a literary story. Four different stories were used, assigned to students in a completely balanced design, to prevent story-effects. A team of three raters participated in a training session to score the texts holistically on the level of argumentative text quality. Mainly, the persuasive force, the goals-directedness, and the rhetorical force of the argumentative texts were rated. Each text was scored on a scale from 0 to 5 by the individually working raters, using anchor texts that illustrated each score from 0 to 5. For quality indices of the instrument, see Table 1.

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). Students were asked 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).

Table 1. Quality of the testing materials

Dependent variable	Instrument	Nr of items/raters	Reliability
Revising writing strategy	Writing questionnaire	15 items	.73
Planning writing strategy	Writing questionnaire	11 items	.71
Writing skill (pre-test)	Holistic rating of text quality	3 raters	.72
Writing skill (post-test)	Holistic rating of text quality	3 raters	.78

4. 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 2).

Table 2. Distribution of low and high self-monitors over two conditions

	Planning condition	Revising condition
Low self-monitors	23	15
High self-monitors	16	24

We used a special case of analysis of variance (ANCOVA) to test the interaction effects of condition and writing strategy on writing skill 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.

5. RESULTS

5.1 Preliminary analyses

We analyzed the results of the writing questionnaire (pre-test) to measure students' level of planning strategy and level of revising writing strategy. First, a significant but small correlation was observed between the planning writing strategy and the revising strategy (r = .34, p = .002). The smallness of the correlation validated our decision to distinguish between planning and revising strategies instead of considering them to be complementary. Second, we found that students' writing strategy was a fairly 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).

Finally, there was no significant correlation between writing skill on pre-test and writing skill on post-test (r = -.05, p = .69). The lack of correlation means that we cannot compare the pre-test scores and the post-test scores with each other. A consequence is that we cannot measure whether students improved their writing skill; the pre-test scores on writing skill can only be used for checking a priori differences on writing skill between the two conditions. We found no significant differences among students assigned to the two conditions in terms of writing skill and writing strategy, for low self-monitors nor high self-monitors (information on means and standard deviations is presented in Table 3). 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.

Table 3. Summary of low self-monitors' and high self-monitors' characteristics by condition

	Low self-monitors				High self-monitors			
	Revising Condition		Planning Condition		Revising Condition		Planning Condition	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Writing skill (pre-test)	1.49	.47	1.61	.53	1.34	.32	1.54	.51
Self-monitoring	2.52	.19	2.52	.14	3.41	.18	3.59	.29
Planning writing strategy	2.95	.63	3.30	.39	2.87	.68	2.74	.42
Revising writing strategy	3.18	.42	3.06	.42	3.24	.32	3.23	.66

5.2 Interaction effects on writing skill

For the *low self-monitors*, we hypothesized that the more they tended to a revising strategy, the more they would benefit from the revising condition. Analysis of co-variance and regression-analysis of low self-monitors' score on revising writing strategy and condition, did not result in a statistically significant effect for revising strategy in the revising condition. In Figure 1 and 2 a visual representation of these results is shown.

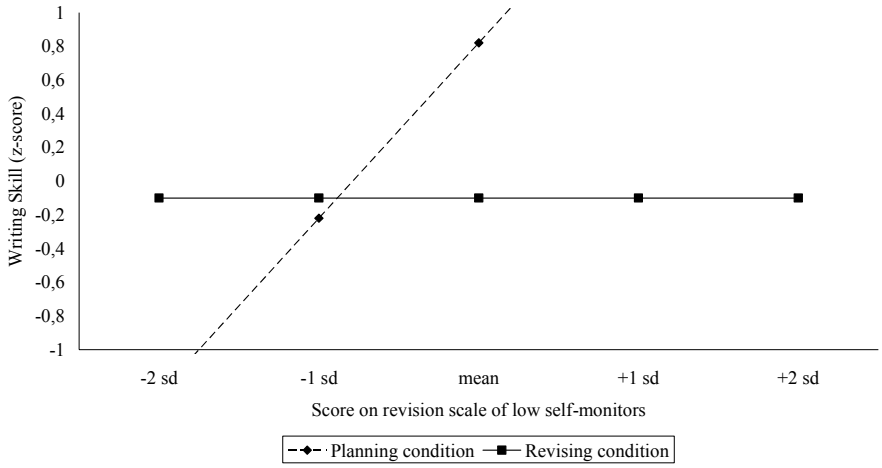

Figure 1. Regression slopes for effects of interaction between condition and revising writing strategy on writing skill for low self-monitors.

However, the analyses revealed an effect in the complementary condition: low self-monitors with a strong tendency to a revising strategy, were better off in the planning condition ($F(1,37) = 11.18$, $p = .002$, $\beta = .55$). Another unexpected and complementary result was that the less low self-monitors tended to use a planning strategy, the more they profited from the planning condition ($F(1,37) = 4,69$, $p = .04$, $\beta = -.43$).

For the *high self-monitors*, we hypothesized that the more they tended to a planning strategy, the more they would benefit from the planning condition. Analysis of covariance and regression-analysis of high self-monitors' score on planning writing strategy did not result in any significant interaction effect of condition and writing. All high self-monitors profited equally from the course, irrespective of level of writing strategy or condition.

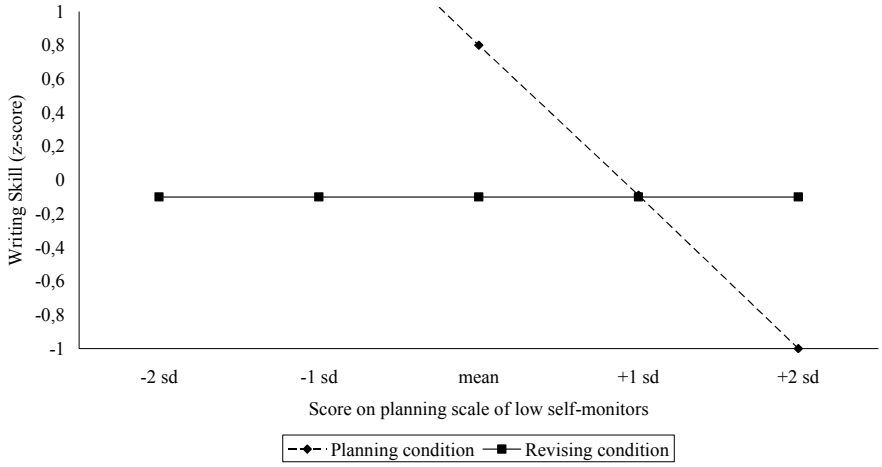

Figure 2. Regression slopes for effects of interaction between condition and planning writing strategy on writing skill for low self-monitors.

6. DISCUSSION

In this study we examined the effects of two different versions of a writing course on the writing skill of students in upper secondary education. The aim of adapting writing instruction to students' writing strategies and the underlying level of self-monitoring was to reduce the cognitive load of learning-to-write a complex genre such as an argumentative text about literature. Our assumption is that optimal reduction of the cognitive load of writing tasks results in better quality of written texts. We anticipated that the two different versions of the course would have a different impact on students' writing performance. We expected the course adapted to revising writing strategy to be the most beneficial for low self-monitors with a revising writing strategy; the planning course is expected to be the most beneficial for high self-monitors with a planning writing strategy.

Results show that the interaction effects of condition and writing strategy on writing performance were dependent on the variable of self-monitoring. If self-monitoring was left out in our analyses, there were no interaction effects. However, this was only the case for the group of relatively low self-monitors; for the relatively high self-monitors, there were no interaction effects at all. 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; 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 instruction.

Our findings suggest that low self-monitors are sensitive to different forms of writing instruction. However, in contrast to what we predicted, the effective form is not one that matches the revising writing strategy, and diminishes the cognitive load

as much as possible, but rather one that complements them. Taken at face value, these results could suggest that these students benefit from instruction that *complements* the revising strategy rather than, as we initially assumed, from instruction that "goes with the grain" of the revising strategy, and relieves the cognitive load while writing. In other words, low self-monitors may benefit from learning how to carry out more planned writing. Apparently, our basic idea to reduce the cognitive load of writing tasks may be crucial for 'writing-to-learn' (as shown in Chapters 2 and 4), but is not the crucial ingredient for improving students' writing performance; for low self-monitors it is more effective to offer complementary writing instruction.

Our findings correspond with the findings of Galbraith, Torrance, and Hallam (2006). In a recently completed experiment, they focused on a specific text characteristic: the conceptual coherence. They compared low and high self-monitors writing 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 experienced increases in conceptual coherence under opposite 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.

Galbraith et al. (2006) reported results which 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 why the group of high self-monitors did not appear to be sensitive to differences in writing instruction remains unanswered.

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 problem is the lack of correlation between the pre-test and the post-test on writing skill. The lack of correlation is probably caused by 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. This means that we can not draw any conclusions about whether students in general learned to write argumentative texts in the lesson series. The only thing we can say is that the mean score for the complete sample (middle self-monitors included) on the post-test on writing skill is significantly higher than the mean score on the pre-test ($t(118) = 14.01$, $p < .001$).

We started this article with the observation that in writing education, all students usually receive the same instructions and assignments. As shown in the previous chapters, and as has been replicated in this chapter as well, adaptation of writing instruction to students' individual characteristics like their writing strategy and self-monitoring, could benefit the writing education in secondary education.

Chapter 6

DISCUSSION

From the start of this research project, we felt motivated to build a bridge between the writing class and the literature class. In the previous chapters we described how we tried to build this bridge. Now, at the end of the project and this thesis, the question arises as to whether we did succeed, and whether we used the right building methods. In this final chapter we will try to find an answer to these questions. In Section 6.1 we will present an overview of the findings of the two experimental studies we conducted and we will try to interpret these results. Then, a number of methodological issues will be put forward for consideration (6.2). Finally, we will offer some suggestions for future research (6.3) and classroom practice (6.4).

1. AN OVERVIEW OF THE RESULTS

In this section we first present the findings concerning writing-to-learn, and second, the findings concerning learning-to-write. We will try to synthesize the findings of the studies described and discuss what conclusions are justified to be drawn from these studies.

1.1 Writing-to-learn

In two studies (Chapters 2 and 4), we presented effects of a course 'Writing argumentative texts about literature' on *literary interpretation skill*. We aimed at reducing the high cognitive demands of writing tasks by adapting these tasks to either a planning writing strategy or a revising writing strategy. Our basic idea was that students would be better able to manage the complexity of *writing-to-learn*, when they were assigned writing tasks that matched their own writing strategy. We assumed that in the case of a learning situation in which writing tasks are adapted to one's writing strategy, the cognitive demands of the writing task are reduced, and thus that more cognitive resources would be available for learning. The expectation was that the more students tended to use a certain writing strategy, the more beneficial a course adapted to that strategy would be. In this study, we distinguish two well-documented strategies, a planning strategy and a revising strategy. In general terms,

these strategies are characterized by Kellogg (1988) (the planning strategy) and by Galbraith and Torrance (2004) (the revising strategy). We applied our basic idea to each of the two strategies, and labelled this the *Adaptation hypothesis*:

1) the more students tend to use a planning writing strategy, the more they profit from a course that is adapted to the planning writing strategy (i.e., the planning condition);
2) the more students tend to use a revising writing strategy, the more they would profit from a course that is adapted to the revising writing strategy (i.e., the revising condition).

However, there is more going on in the interplay between writing strategies and learning condition than the Adaptation hypothesis describes. Therefore we designed the study in such a manner that other hypotheses could be explored. In Figure 1 we present a visual representation of the ideal hypothesized situation.

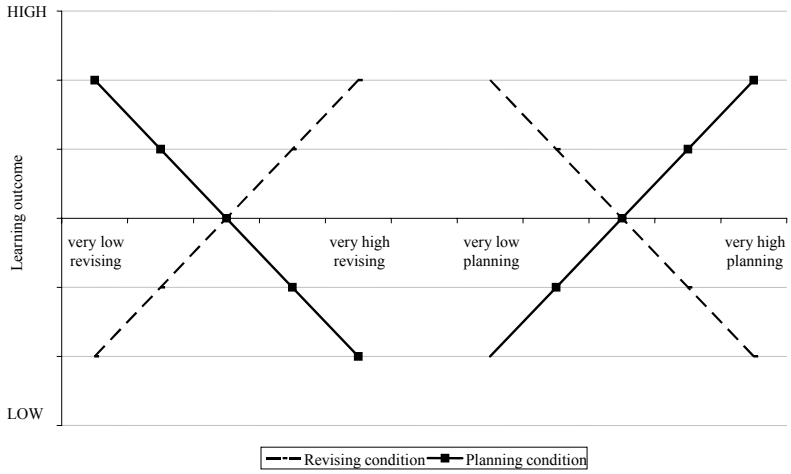

Figure 1. Adaptation hypothesis (increasing slopes) and Friction hypothesis (decreasing slopes): learning outcome as an effect of condition and writing strategy[1].

The first point to consider is that in our Adaptation hypothesis, we assume a relation between the level of a certain writing strategy and the adaptive learning condition (for example: 'the stronger the planning strategy, the more learning in the planning condition'). But what about a 'friction' situation: students with low scores on that writing strategy placed in the opposite condition: for example, participants with low scores on planning strategy, placed in the revision condition. What should we expect

[1] *In the figure, the effect of both hypotheses is visualized as equal: the steepness of the adaptation slopes and the friction slopes is similar. This does not reflect our theoretical expectations: there is no indication that the adaptive situation has the same affect as the Friction situation. We will explore the differences in effect.*

from this friction situation? To explore this question we extended our hypothesis with what we called the *Friction hypothesis*[2]:

1) the less students tend to use a planning strategy, the better they will score on the learning variable in the revising condition;
2) the less students tend to use a revising strategy, the better they will score on the learning variable in the planning condition.

Our Adaptation hypothesis for writing-to-learn was partly confirmed in Chapter 2. We found that for students with a high planning strategy, the learning condition 'planning' was more beneficial for literary interpretation skill than the learning condition 'revising' (conform Adaptation hypothesis). For students with a high revising strategy, the planning condition was more beneficial than the revising condition as well (not conform Adaptation hypothesis). Nevertheless, in a replication of this study, reported in Chapter 4, the Adaptation hypothesis was confirmed. For students with a high revising writing strategy, the revising condition was the best of both conditions, and for students with a high planning strategy, the planning condition was more beneficial than the revising condition (see Table 1). The basic idea of 'the better the condition matches the students' writing strategy, the larger the learning gain', was confirmed; probably due to the reduction of cognitive load.

For the Friction hypothesis, we found in the first experimental study that this hypothesis was not confirmed: for students with low scores on planning writing strategy, the planning condition was more beneficial, and for students with low revising strategy, there was no difference in benefit of planning or revising strategy. However, in the replication of this study, described in Chapter 4, the Friction hypothesis was confirmed: for students with low revising writing strategy the planning condition was most beneficial, for students with low planning strategy, the revising condition was most beneficial (see Table 1).

Table 1. Overview of the main results for writing-to-learn[3]

Writing strategy:	Better off in condition:
High planning	Planning
Low planning	Revising
High revising	Revising
Low revising	Planning

[2] *We are aware that we introduce the notion of 'Friction hypothesis' rather late in the thesis. Nevertheless, the concept of the friction hypothesis was discussed in the earlier chapters, albeit without a clear label.*

[3] *We prefer to present the results of Chapter 4 as main results, because of the improvements in the course and in the testing materials compared to the first experimental study in Chapter 2 (see also the end of Section 6.1)*

Note that the fact that we used four different stories for pre-test and post-test, in a completely balanced design, decreased the size of the effects we found. A part of the variance is explained by the different texts, and not by the conditions. `Therefore, the presented effects due to condition might be an underestimation. Thus we feel confident that the reported effects in fact exist.

An issue to consider is that students' writing strategies have shown to be multi-dimensional, as indicated by the correlation between planning and revising strategy (corrected for attenuation[4]); in experimental study 1: $r = .55$, $p < .001$; in experimental study 2: $r = .47$; $p < .001$[5]. Thus, in the group of participants we found students with relatively low or high scores on both strategies. What may we expect for these students and their writing and learning? There is no theoretical basis to assume why a student with high scores on both writing strategies would perform better in the planning or revision learning condition. Similarly, there is no basis to expect in which condition students perform better when they have low scores on both strategies. Nevertheless, when we explore the data to get some first insights, then the best possible advice for these two groups of students is (see the figures in Chapter 4, right-handed part of the X-axis):

- for students with relatively high scores on revising and high planning strategy: Based on their revising score, the advice would be revising condition; based on the planning score, the advice would be to follow the planning condition. However, for these students the revising condition is preferable, because for this group the scores of the revising condition in absolute values are higher than the scores in the planning condition;
- for students with relatively low scores on planning and low revising strategy: Based on their revising score, the advice would be the planning condition; based on the planning score, the advice would be the revising condition. For these students both conditions lead to similar results. In this case, a simple solution is to let the student choose which type of writing assignments is preferred[6].

In conclusion, when a writing course has a double aim, namely that students both learn-to-write (improving writing performance), and write-to-learn (knowledge acquisition), then the second aim can be realised when the writing course reduces cognitive overload by adapting instruction to students' writing strategies.

1.2 Learning-to-write

In the studies reported in Chapters 3 and 5, we aimed at examining the effects of the course 'Writing argumentative texts about literary stories' on students' writing skill. The basic idea again was that students would be more competent in managing the complexity of writing when writing instruction was adapted to their reported writing strategy, thus resulting in better texts. Besides that, we tried to strengthen the writing

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[4] *All correlations reported in this chapter were corrected for attenuation*

[5] *Observed correlations: r = .38 in experiment 1 and r = .34 in experiment 2*

[6] *It could be that these students (without any strategy to manage the demands of a writing task) suffer from considerable cognitive overload, and therefore, show low scores on learning outcome. However, they did not score significantly lower than the other groups.*

course by not only adapting to students' writing strategies, but also to slightly improve the weaker sides of the writing strategies by teaching students with a planning strategy to revise (by critically reviewing their planning schemes), and by teaching students with a revising strategy to plan (by critically reviewing their first draft). This emphasizes that the course was actually a writing course, aimed at optimizing students' writing processes and writing performance.

Our Adaptation hypothesis for learning-to-write was similar to the Adaptation hypothesis for writing-to-learn: the more students tend to use a planning writing strategy, the more beneficial the planning condition will be; and the more students tend to use a revising writing strategy, the more they will profit from the revising condition. Similar to the Friction hypothesis for writing-to-learn, we formulated such a Friction hypothesis for learning-to-write as well. Thus, we hypothesized that the lower students' scores on planning strategy, the more beneficial the revising condition would be, and the lower the students' scores on revising strategy, the more beneficial the planning condition would be.

When looking at the interaction effects between writing strategy and condition on writing skill, the findings of both experimental studies were not unambiguous. In the study reported in Chapter 3, we found that the more the students tended to use a planning strategy, the more beneficial the planning condition was (conform the Adaptation hypothesis). In contrast, for students with a high revising writing strategy, the planning condition was the most beneficial as well (contrary to the Adaptation hypothesis). Results imply that students with strong tendencies to either planning or revising profited from writing instruction based on a planning strategy.

The results of Chapter 3 showed that students with low planning scores were better off in the revising condition (conform the Friction hypothesis), and that for students with low-revising scores the revising condition was more beneficial as well (contrary to the Friction hypothesis). Thus, for students with a low tendency to either planning or revising, the revising condition was the best choice (see Table 2).

In Chapter 5, we presented an elaboration of the study reported in Chapter 3, and in contrast to our predictions, we found no interaction effects of writing strategy and condition on students' writing skill. In other words, adapting the instruction to writing strategy did not result in better writing skill. Both conditions resulted in the same level of writing skill, regardless of the level of writing strategy. Adaptation nor Friction hypothesis were confirmed (see Table 2).

However, for an interesting subgroup of writers, the low self-monitors, we did observe interaction effects. The personality characteristic of self-monitoring (Snyder, 1987) has clearly shown to interact with the mode of writing in several studies (Galbraith, 1992; 1996; 1999). According to Snyder, high self-monitors are predominantly concerned with the situational appropriateness of their self-representation, and accordingly monitor and express their expressive behaviour to ensure that this satisfies their goals. In contrast, low self-monitors are much less concerned with the situational appropriateness of their self-representation, and hence their expressive behaviour is less controlled and more a direct expression of their inner attitudes and dispositions. Galbraith (1992; 1996; 1999) has found that low self-monitors generate their ideas best when composing a rough draft. Their idea production was poor when asked to plan by taking notes during prewriting. In con-

trast, high self-monitors showed the opposite pattern. Taking notes in advance helped them to generate more ideas compared to composing a rough draft directly.

Based on these studies, we assumed that writing strategies are not the only variable relevant for optimal writing instruction. We assumed that the main factor is whether the writing strategy of the writers matches their underlying processes, indicated by their level of self-monitoring. We assume that the basic processes of high self-monitors match a planning writing strategy, and that the basic processes of low-self monitors match a revising writing strategy. Therefore, we hypothesized that if students' writing strategy and level of self-monitoring match, the Adaptation hypothesis will be confirmed: learning results (i.e., writing skill) will be better in a learning condition that matches the writing strategy, than if the learning condition does not match the writing strategy.

Results revealed interaction effects for low self-monitors. As shown in the figures in Chapter 5, for low self-monitors with low revising writing strategy, the planning condition is beneficial for learning-to-write (contrary to the Adaptation hypothesis), and for low self-monitors with high revising writing strategy, the planning condition is the best choice (contrary to the Friction hypothesis) (see Table 2). These findings suggest that for some reason, low self-monitors experienced increases in learning-to-write under opposite conditions than was expected in view of their writing strategy. The differences between low self-monitors' writing strategies and the strategies taught in the course apparently challenged the low self-monitoring students to develop their learning and thinking skills (i.e., constructive friction; Vermunt & Verloop, 1999).

Table 2. Overview of the main results for learning-to-write

Writing strategy:	Better off in condition:		
	Chapter 3 (all students)	Chapter 5 (all students)	Chapter 5 (low self-monitors)
High planning	Planning	Planning / revising	Revising
Low planning	Revising	Planning / revising	Planning
High revising	Planning	Planning / revising	Planning
Low revising	Revising	Planning / revising	Revising

1.3 Adapted writing instruction

In our studies, we tried to find out what the most effective writing instruction is by adapting the instruction to students' characteristics. This idea of 'different treatments for different students' has a long tradition: In 1957, Cronbach challenged scientists in the field of (educational) psychology to find for individuals the treatment to which they can most easily adapt, instead of giving everyone the same treatment.

He suggested that consideration of treatments and individuals together would result in the best payoff: "In general, unless one treatment is clearly best for everyone, treatments should be differentiated in such a way as to maximize their interaction with aptitude variables[7]" (Cronbach, 1957, p. 681). Many years later he offered a 'progress report' on studies on Aptitude x Treatment Interaction (ATI) related to instruction. He concluded that ATI research, although flourishing, found "strangely inconsistent results from year to year and from course to course" (Cronbach, 1975, p. 119). Our current study could be considered to be a successful ATI study; we found that different writing treatments were the most effective for students with different aptitudes (i.e., writing strategies). However, the inconsistent results of ATI research are recognized by us as well: When evaluating the results of the two experiments that we reported in this thesis, the question arises how to deal with the differences between the results of the two experiments (Chapters 2 and 3 versus Chapters 4 and 5).

To start with, the experiments are replications (same design, same variables), but differ in other aspects: different students, different teachers, and different schools were involved. Nevertheless, if we leave this objection aside for a moment, we consider the second experiment (Chapters 4 and 5 of this thesis) to be more valid than the first experiment. Compared to the first experiment (Chapters 2 and 3), we improved the lesson materials and the testing materials; there were more schools, teachers, and students involved, and we carefully selected as participants students who put sufficient effort into the lessons. We will discuss this issue more in-depth when discussing the validity of the study (Section 6.2.2).

Finally, we return to our main aim when we started this project, the building of a bridge between two pedagogies or two curricula. Did we succeed in building a bridge between writing education and literary education? Could the course integrate both learning-to-write and writing-to-learn? Indeed, our study shows that a writing course may also be used as a learning instrument in literary education, with one prerequisite: the writing-to-learn tasks need to be adapted to students' writing strategies. When students receive writing tasks matching their own writing strategies, then the literary interpretation skill of students in an adaptation-situation is better than the literary interpretation skill of students in a friction-situation.

2. METHODOLOGICAL ISSUES

In this section a number of methodological issues will be put forward for consideration. Successively, we will discuss the variables and their operational definitions, the internal and external validity, and the design we chose for this study. We will give some possible indications for future research as well.

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[7] *Cronbach provided a general meaning to the term aptitude, letting it embrace "any characteristic of the person that affects his response to the treatment" (Cronbach 1975: 116).*

2.1 The variables and their operational definitions

Writing strategy. A crucial variable in this study is the variable of students' writing strategy. Several critical remarks may be made about this variable and its operational definition. A reviewer of one of the articles that we submitted to a research journal had serious objections against our assumption that tenth-grade students would have realized a stable writing strategy (he/she actually rejected the paper for it). This is a crucial question indeed: to what extent are students' writing strategies stable characteristics of students? If a writing strategy is not a stable characteristic, it seems rather pointless to adapt writing instruction to it. There are two reasons why we think that – in general – a writing strategy might be a quite stable characteristic.

First, several researchers described that students' writing strategy is quite stable. Torrance et al. (2000) analysed writing questionnaires filled in by students during the three years of their degree course; Levy and Ransdell (1996) used keystroke logging to study the composing processes of undergraduate students (during ten weeks in which the students wrote one text a week, in different genres), and Harthley and Branthwaite (1989) studied self-reports of experienced writers. It must be mentioned that the students in these experimental studies were older than our participants. It is possible that for tenth grade students writing strategy is less stable, or that some students of that age have stable writing strategies, but others do not, as Van Weijen, Van den Bergh, Rijlaarsdam, and Sanders (2005) showed among ninth-grade students.

Second, in the second experiment (reported in Chapters 4 and 5) we administered the writing questionnaire twice: before and after the course. Test-retest correlation was .82 for planning writing strategy and .76 for revising writing strategy[8]. These correlations suggest that overall there were no enormous shifts in the rank order of writing strategy scores, despite the fact that the course offered guidance in either planning or revising writing strategy[9]. Thus, we conclude that students' writing strategy was stable enough for adaptation of writing instruction.

Another disputed issue is that our operational definition of the variable of writing strategy is participants' score on a writing questionnaire. This choice might be questioned in many ways, because introspective self-reports of the writing process inevitably have limitations. Students may have difficulty in recalling how they approach a writing task, or simply do not know how they approach a writing task, or may respond in a way that they think is desirable. We are fully aware that a writing questionnaire is not a perfect way of measuring students' writing strategy. However, for the aims of our study, the use of this questionnaire seems warranted. First, we did not use the absolute values reported by the students, but we used the questionnaire for detecting differences between students. Variations of the sort described above can be reasonably assumed to be present to the same extent for all students. We argue that a measure of writing strategies in this way can be useful as a means of

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[8] *Observed correlation: $r = .55$ for planning strategy, $r = .53$ for revising strategy*

[9] *Students' mean score on planning writing strategy did not change, mean score on revising strategy decreased significantly ($t(112) = 3.57$, $p = .001$)*

comparing students (cf. Torrance et al., 1994; 2000). Second, the reported pre-test/post-test correlations of .76 and .82 on the writing questionnaire (for the revising scale and the planning scale respectively) indicate that we did measure a construct that matters.

In this respect, it should be stressed that in this study, for reasons of convenience we speak of 'students with a revising strategy' or 'students who tend to use a planning strategy' etcetera. These terms should always be understood as: 'students *who reported* a revising writing strategy'. It is obvious that we do not know whether students actually do use the reported strategy. Thus, the above-mentioned correlation scores for planning and revising writing strategies show that students' *own observation or judgment* on their writing strategy is quite stable. Whether this represents their actual writing process, is a question that remains unanswered in this study.

For future research, we recommend to use a digital logging tool like Inputlog (Van Waes & Leijten, 2006) to register, reconstruct and analyse students' writing processes[10]. A digital logging tool makes it possible to examine, for example, whether students who report to use a revising strategy, actually write and revise their texts a lot. This could contribute to validation of the writing questionnaire. We analysed (very roughly and exploratory) some of the writing data gathered by our colleague Martine Braaksma; in her experiment with high school students of the same age, she administered the same writing questionnaire as used in the present study, and she also registered students' writing processes by using Inputlog. We found some aspects in which the reported writing questionnaire and the registered writing process were quite similar, for example: students reporting a planning writing strategy, showed a significantly higher pause time (i.e., the session time minus the production time), than the students reporting a revising strategy. This is a first indication that the writing questionnaire is probably not measuring something unrelated to the actual writing process.

A possible way of integrating the two different students' characteristics (planning and revising) into one variable is shown by Galbraith and Torrance (2004). They refer to writing strategy as consisting of different ways of combining the basic processes of planning and revising. For example, they define a planning strategy as the combination of high planning and low revising; an interactive strategy is defined as the combination of low planning and high revising. Our main reason for not following Galbraith and Torrance in this respect was theoretically driven. Given the fact that we hypothesized an interaction between type of lessons and writing strategy, i.e., that students with a higher level of strategy X would profit more from the X-lessons than students with a lower level of strategy X, we formulated a continuous interaction, without a restriction of the range of levels. In other words, we did not know in advance how much of strategy X is needed for lessons X to work better than lessons Y. Therefore, we decided to include the variable of writing strategy as a continuous variable in our analyses, and not to break down the writing strategy scores into groups.

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[10] *We tried to implement Inputlog at one of the participating schools in a third experiment, not reported in this thesis, but didn't succeed due to technical limitations of the schools' computer systems.*

Literary interpretation skill. Another issue to discuss is the choice we made for literary interpretation skill as the learning result of the writing task. This seems to deviate from the default learning output in writing-to-learn research, which is usually *content knowledge* within a school subject or discipline, and not a *skill*. Yet, in writing-to-learn research about literature, the learning output has been generally defined as learning to interpret literature (for example, Marshall, 1987; Newell, Suszynski, & Weingart, 1989), this being the most important educational aim of literature education.

A relevant methodological issue as well is the way in which the variable of literary interpretation skill is operationalized. It was a really difficult task to construct a pre-test and post-test suitable for measuring students' literary interpretation skill in a satisfying way. In the study reported in Chapter 2, we constructed a pre-test and a post-test consisting of questions about a short literary story. Reliability over three items was reasonable (Cronbach's alpha .70), but there were some indications that the measurement was not as valid as one would wish: no general improvement of literary interpretation skill over time was observed, and pre-test and post-test scores did not correlate at all (r = .00). The reported correlation between pre-test and post-test was so low, that the pre-test was virtually useless for statistical purposes. Therefore, we felt the need to improve the instrumentation. In the second study, reported in Chapter 4, we decided to use a more global way of scoring students' literary interpretation skill, namely writing a short text about a story in pre-test and post-test. The texts were holistically scored on the level of literary interpretation (*not* on text quality). This resulted in a good reliability over raters (Cronbach's alpha = .87), and the correlation between pre-test and post-test improved, but was still low (r = .23, p = .03[11]).

Writing skill. We met the same problem of the lack of reasonable pre-test/post-test correlation in the studies in which we aimed at measuring writing skill. The correlation between pre-test and post-test in these studies was very small as well (study reported in Chapter 3: r = .30, and study reported in Chapter 5: r = -.09[12]). A possible explanation for the lack of pre-test/post-test correlations could be that the students had so little knowledge of the subject matter and genre of argumentative text about literature that their pre-test responses are not consistent with a meaningful scale. This seems a plausible explanation, because both the genre argumentative text about literature, and interpreting adult literature were new tasks for the students: The pre-test was both difficult and new for them. This can be supported by looking at the distribution of the pre-test scores. Above 80% of the students scored below 1.6 on the pre-test (on a five point scale). This can be interpreted as an indication of a so-called bottom-effect.

We have a few more remarks about the variable writing skill. First, a more in-depth analysis of the variable writing skill might be the explanation for the earlier discussed inconsistent findings of the two experiments (Chapter 3 versus Chapter 5).

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[11] *Observed correlation: r = .20.*
[12] *Observed correlation: r = .20 in Chapter 3, r = -.05 in Chapter 5.*

This difference may be explained by the operational definition of the variable of writing skill that we used in both experiments. In the study reported in Chapter 3, the operational definition was guided by the question 'Are features of the genre argumentative text used in the text?'. For example, we rated whether students' texts consisted of an introduction, a standpoint with at least two arguments, a conclusion, etcetera. In the study reported in Chapter 5, the writing variable was operationalized more globally and more rhetorically: more directed to what the text *does* than to what characteristics the texts displayed. We evaluated the persuasive force, the goal-directedness and the rhetorical force of the argumentative texts. This change of definition may explain the difference in results. The considerable effects of this change of operational definitions on the results of these experimental studies, show that this study is quite vulnerable in this respect. It seems that there is some evidence for our interaction hypothesis if the learning variable implements different aspects of writing argumentative texts (or, in other words: The knowledge about argumentative texts), but not when it is about the skill of argumentative and persuasive writing.

One could object to our decision in the second experimental study to use one text per student for measuring both writing skill and literary interpretation skill. It is conceivable that both variables could not be measured independently from each other. However, the correlation between writing skill and literary interpretation skill was limited, both in pre-test ($r = .34$, $p < .001$) and in post-test ($r = .32$, $p = .01$). The reason for the low correlation at pre-test could be the bottom-effect as described above; however, for the post-test scores bottom-effects are less likely, and not indicated by the distributions of observed scores.

2.2 Internal and external validity

In this section, we will discuss the issues of internal and external validity of this study. Following Cook and Campbell (1979, p. 37) we will focus on the concept of validity "to refer to the best available approximation to the truth or falsity of propositions". Below we will not merely present a list of some possible threats to the validity of our study, but also how we tried to control them.

First, in this experimental study we chose a real-life school setting. The lesson series was administered as part of the regular curriculum and students were taught by their own teachers and in their own classrooms. The ecological validity was also supported by the fact that we did not have any problems to find teachers who were willing to participate: The lesson materials fitted apparently in their educational programs.

Nevertheless, an experimental study conducted in the real classroom has disadvantages as regards validity and reliability as well. For example, the reliability of treatment (Cook & Campbell, 1979, p. 43) could be a threat to the validity of the study. One could easily think that the fact that so many teachers (12 teachers from 4 different schools) were involved in the experiment, all with their own teaching style and hobby horses, caused a difference in the way the treatment was implemented. However, this threat was mainly controlled by (1) the lesson material, designed for independent working in the classroom by all students in both conditions and (2) the

research design of random assignment of participants to conditions within classes. Moreover, a possible difference in the way the lessons were implemented by the teachers did not threaten the differences between conditions, because both conditions were present in all classrooms. Possible differences between classrooms influenced both conditions equally (if we suppose that the possible differences in teacher behaviour do not benefit one condition above the other). A check on the effect of teachers (within conditions, within school type) revealed that no more than 15% of students' variance in writing and literary interpretation scores were explained by the teacher factor.

In contrast, two conditions implemented in one classroom could also threat the internal validity of the experimental study. It is not hard to imagine that students could easily cooperate and discuss some assignments or, worse, copy the answers from each other. We controlled these issues in several ways. In the studies reported in Chapters 2 and 3, the lesson materials did not include assignments in which students were asked to cooperate with each other, resulting in students independently working in their workbooks. Good circumstances for our experimental aims, indeed, but ecologically and practically not the most ideal. Some teachers and students complained about the lack of cooperative learning in the lessons. Therefore, in the second experiment (Chapters 4 and 5) we changed some of the assignments in the workbooks into assignments where students were invited to work and discuss together (about 10 to 15 percent of the learning time). We controlled the interaction between students in two ways: (1) a student always cooperated with another student in the same condition. Thus, the differences in conditions did not become a topic of discussion during class; (2) the assignments consisting of cooperative working were the tasks about the theory (similar in both conditions). The writing tasks, however, were performed individually. Finally, note that students worked individually and under test circumstances during pre-test and post-test.

Another threat to the external validity of this study is the extent to which findings from this experiment can be generalized beyond the scope of this specific experiment. In the first experiment, 113 participants from one school in Amsterdam were involved. All students from five classes were participating; we did not select students on the level of effort they put into the lessons. In the second study, there were eight classes and 220 students involved in the lessons. This made it possible (and desirable for practical and financial reasons) to select those students who put enough effort into the lessons, resulting in a selection of 120 participating students. Although there were several indicators for a good external validity (participants were from different parts of the country and from different schools, and taught by different teachers; aptitude scores and writing strategy scores of both the group of selected students and non-selected students were similar), we must keep in mind that the findings of the second experimental study are the findings among students who participated well in the lessons.

Although our main goals were to test the Adaptation and Friction hypotheses (as discussed in Section 6.1), a question relevant for educational purposes is whether students' learning and writing in general, irrespective of writing strategy and condition, has improved in this lesson series. However, we cannot draw any conclusions about the general learning outcomes of the lesson series due to the lack of correla-

tion between pre-test and post-test; subtracting two non-correlating variables is similar to subtracting a number of apples from a number of pears. Nevertheless, we would like to make one exception: For learning-to-write we found that in both experimental studies (Chapters 3 and 5), the mean score on writing skill at post-test was significantly higher than at pre-test. Thus, in some respects, the quality of the texts written at post-test was better than the texts written at pre-test.

Finally, in this study we used the variable 'skill' as learning outcome. In fact, we doubt we are allowed to do so, because the measurement of 'writing skill' is based on just one task per student. In the field of writing, we know from other research (for example, Van den Bergh, 1989) that much of the variance is explained by tasks. For measuring writing skill in point of fact we would need to collect more texts per student (see also Meuffels & Van den Bergh, 2005). Possibly the same is true for literary interpretation skill: we may expect a certain task effect caused by the specific literary work the student had to read. We could have tackled this issue of generalization by administering multiple tasks per participant. This, however, is hardly feasible in educational research: learning time and testing time would be unbalanced. To avoid that our results were restricted to just one task, we have implemented another research strategy: We administered four different literary stories, in a completely balanced design.

2.3 Design

When we planned the design for this study, we intended to construct a study with a post-test only design, with random assignment of participants to conditions, and with a predicted interaction effect between condition and writing strategy on the dependent variables of writing skill and literary interpretation skill. Pre-test scores were only meant for checking a priori differences between the two conditions. They were not meant for measuring learning gains, as we expected that the pre-test would not reveal much, due to the newness of the variables involved for participants. Our view on the unsuitability of the pre-test was confirmed by the low correlation between the pre-test and post-test scores. This lack of reasonable correlation on the dependent variables made it quite impossible to measure the students' learning gains. However, we had to consider peer reviewers acting as reviewers of our articles. It appeared to be difficult to communicate our design to colleagues involved in reviewing one of our articles; they specifically asked for including pre-test scores as covariates in the analyses. Therefore, to satisfy the reviewers, we changed the design label into a pre-test/post-test design. This position did not influence the results: Including the pre-test scores as covariates in our regression analyses and Analyses of Covariance did not affect the results.

One could make ethical objections to the design of our study. We intended to measure the difference between a treatment matching students' characteristics and a treatment not matching students' characteristics. Thus, we deliberately assigned a part of the students to a condition that we did not expect to be most beneficial for them. This could be judged to be ethically objectionable. However, the course we constructed consisted of two versions *both* intended to be instructive for students.

We did not hypothesize that one of the courses was absolutely *not* beneficial for students; in fact, we hypothesized that one of the courses would be *less* beneficial than the other course, given the level of writing strategy reported by the participant. This makes us feel that we did not do badly from an ethical point of view. In addition, what about a design with a hypothesis that one experimental group will perform better than another control group, the common design of most (quasi-) experimental studies?

3. FUTURE RESEARCH

In the previous sections concerning the methodology of this study, we already made a few suggestions for future research. In this section we will offer some indications for future research, based on the theoretical insights gained in this study.

We would be very interested in generalizing over the output variable in this study, literary interpretation skill. For example, we suggest studying the question whether adapting writing assignments to students' writing strategies is also relevant when the output variable of writing-to-learn is knowledge, instead of skill. In addition, it could be worthwhile to test to which extent our findings can be applied to other subject matters. In another domain, where writing can be used as a learning tool for acquiring knowledge, instead of for complex skill like interpreting literature, it is possible that writing assignments adapted to students' writing strategies have larger, and more consistent effects.

Also worth examining in future is the choice of genre. It could be that another text genre than argumentative text is more sensitive to differences in writing instruction. For example, creative writing tasks in the science classroom in two different versions (adapted to different writing strategies) seem in our view a good option for learning (Levin & Wagner, 2005).

Furthermore, in our study the participants were students in upper levels of the senior general secondary education track (havo) and the pre-university track (vwo). One could question whether the students of these educational levels are the most in need of adaptations in writing instruction. One of the teachers involved in the project suggested that for students in pre-vocational education, writing instruction adapted to their writing strategy would be more useful, because they have more difficulties with writing and learning. It is possible be that students in the higher educational levels will learn and write, irrespective the type of instruction provided. For students in pre-vocational education writing instruction adapted to writing strategies could be more meaningful. Therefore, a replication of this study in the context of pre-vocational education, and with a slightly different methodology, could bring interesting insights.

4. PRACTICAL IMPLICATIONS

What is the value for daily school practice? Does this study offer any advice or new insights that teachers and text book writers can use in their work? First, we think we succeeded in constructing a course in which students learn to write argumentative

texts, and learn about the subject that they write about (if writing tasks are adapted to their writing strategy). We think it could be good advice for teachers and text book writers to pay more attention to the combination and interaction of both writing and learning, by providing writing instruction when writing-to-learn, and providing an interesting and challenging subject to write about when learning-to-write.

An important implication of this study for writing education in upper secondary education, is that the default writing instruction 'to-plan-and-then-write' is not by definition the best instruction for all students. Teachers recognize that some students have difficulties with such a planning approach of writing. In the last few years, when we presented at teacher conferences and in-service training sessions, and had discussions with teachers, they frequently told us that part of the students in their classrooms tend to write a text first, and afterwards fill in the planning schemes or building plans, because 'it is in the textbook'. Possibly, these are the students with a low planning writing strategy and/or a high revising writing strategy (although this is only a hypothesis and we did not test it). For these students, writing instruction in a planning mode would not be beneficial if the aim is to teach not only writing, but also to learn from writing.

Furthermore, as described in the general introduction and in the introduction of Chapters 2 and 4, writing has been used very frequently in literature education. The results of this study suggest that writing is not *the* most wonderful remedy for learning to interpret literary stories. In general, the quality of students' literary interpretation was at post-test not better than at pre-test. Thus, this study is not a plea to add more writing tasks in the literary classroom. We think that other learning activities than writing, for example a methodology based on student-questions (described by Janssen, Braaksma, & Rijlaarsdam, 2006) possibly are more effective. However, when teachers still insist on writing (book reports, essays, reviews), we can recommend that they take into account students' writing strategies and vary the writing assignments and procedural steps according to these writing strategies. Offering students different possibilities for generating of ideas to write about, and offering them different paths leading to an argumentative text, may be valuable in writing education in upper secondary education.

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SAMENVATTING

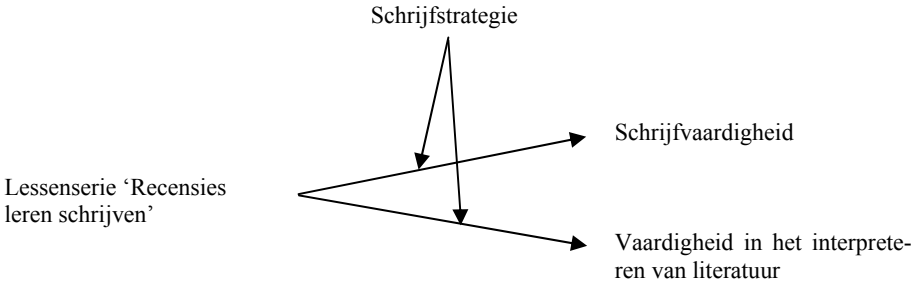
Dit proefschrift gaat over het leren schrijven van argumentatieve teksten over literaire verhalen. We legden leerlingen uit gymnasium 3, havo 4 en vwo 4 een lessenserie voor om hen te leren schrijven over literaire verhalen, en bestudeerden twee verschillende soorten effecten: de effecten op de schrijfvaardigheid en de effecten op de vaardigheid in het interpreteren van literaire verhalen. In de hoofdstukken 2 tot en met 5 rapporteren we deze studies. Hoofdstuk 1 vormt de algemene inleiding, met de uitgangspunten en achtergronden van deze studie. In dit hoofdstuk komen ook de aanleidingen vanuit de schoolpraktijk aan bod. In hoofdstuk 6 vatten we de uitkomsten van de studies samen, proberen we de uitkomsten te interpreteren en doen we enkele aanbevelingen voor de schoolpraktijk.

In hoofdstuk 1 beschrijven we de lessenserie 'Recensies leren schrijven'. Met deze lessenserie wilden we leerlingen leren (1) betere argumentatieve teksten te schrijven, en (2) via het schrijven over literatuur korte verhalen te interpreteren. We kozen voor literatuur als onderwerp om over te schrijven, omdat er in het literatuuronderwijs in het algemeen veel wordt geschreven door leerlingen. Het doel van zo'n schrijfopdracht bij literatuur is niet zozeer het leren schrijven: het belangrijkste is niet de tekst en de kwaliteit daarvan, maar wat de leerling van de schrijfopdracht heeft geleerd.

Hoewel het vrij algemeen aanvaard is om schrijven te zien als een manier om te leren, stellen we die aanname ter discussie. Schrijven is immers op zichzelf al een cognitief complexe taak. Het is wellicht veel gevraagd te verwachten dat leerlingen ook nog zullen *leren* van hun schrijven. Daarom zochten we naar een manier om de cognitieve inspanning die schrijven kost te verminderen, zodat meer ruimte en aandacht overblijft voor leren. Uit de wetenschappelijke literatuur over schrijven en leren schrijven is bekend dat het ontwikkelen van een schrijfstrategie helpt om de cognitieve inspanning die een schrijftaak kost te verminderen (Kellogg, 1999; Rijlaarsdam et al., 2005). De meest voorkomende schrijfstrategieën die leerlingen en studenten hanteren zijn een strategie van overwegend *plannen* of een strategie van overwegend *reviseren* (Galbraith & Torrance, 2004). Leerlingen met een plannende strategie bepalen de inhoud van de tekst voordat ze beginnen met schrijven en maken daarbij graag lijstjes of schema's. Leerlingen met een reviserende strategie hebben het schrijven zelf nodig om op ideeën te komen, zij beginnen meteen met het schrijven van een eerste versie van een tekst, en gaan daarna schaven en schrappen, schrijven en herschrijven, om tot de uiteindelijke tekst te komen.

Opvallend is dat de schoolboeken Nederlands voor het voortgezet onderwijs leerlingen vrijwel altijd leren schrijven via de planningsstrategie. Stappenplannen, denkschema's, bouwplannen, enzovoort zijn in deze schoolboeken meer regel dan uitzondering. Blijkbaar veronderstellen schoolboekenauteurs dat plannen vóór het schrijven de beste manier is om teksten te schrijven. Toch blijkt uit onderzoek van bijvoorbeeld Torrance, Thomas en Robinson (1999) dat ook schrijven via een reviserende strategie tot goede teksten kan leiden.

In schemavorm zien de variabelen die een rol spelen in deze studie er als volgt uit:



De centrale aanname in dit proefschrift is dat schrijfopdrachten die zijn aangepast aan de schrijfstrategieën van leerlingen minder cognitieve inspanning kosten, zodat meer cognitieve inspanning besteed kan worden aan het leren schrijven van een nieuw genre (de argumentatieve tekst over een literair verhaal) en het leren begrijpen van literaire verhalen.

Dankzij de medewerking van docenten Nederlands die lesgaven aan gymnasium 3, havo 4 en vwo 4 hebben we twee studies kunnen doen naar de effecten van de lessenserie. De opzet van de studies was hetzelfde: in de gewone lessituatie werkte de ene helft van een klas aan een lessenserie die tegemoet kwam aan de plannende strategie, terwijl de andere helft dezelfde lessenserie volgde, met dezelfde inhoud, maar nu tegemoet komend aan een reviserende schrijfstrategie. Belangrijk was dat beide versies van de lessenserie in iedere klas aanwezig waren: hierdoor voorkwamen we dat bijvoorbeeld verschillen tussen de docenten de resultaten zouden beïnvloeden. In beide studies hebben we gemeten wat de effecten van de twee varianten van de lessen waren op het leren schrijven van betogende teksten, en op het leren begrijpen van literaire verhalen, steeds gerelateerd aan de schrijfstrategie van de leerling.

De eerste studie wordt beschreven in de hoofdstukken 2 en 3. In hoofdstuk 2 bespreken we de resultaten van de lessen op het leren begrijpen van literaire verhalen, in hoofdstuk 3 gaan we in op de resultaten van dezelfde lessen bij dezelfde leerlingen op het leren schrijven van betogende teksten. Vervolgens herhaalden we de eerste studie (met betere meetinstrumenten) op andere scholen en bij andere leerlingen. De resultaten van deze tweede studie staan in de hoofdstukken 4 en 5. In hoofdstuk 4 draait het om het leren begrijpen van literaire verhalen door de leerlingen, in hoofdstuk 5 kijken we naar de effecten op de vaardigheid van het leren schrijven van betogende teksten.

STUDIE 1

Deelnemers aan deze studie waren alle leerlingen van havo 4 en vwo 4 van een school in Amsterdam. Zij kregen aselect een van beide condities toegewezen: ze

maakten of de lessen aangepast aan de planningsstrategie (planningsconditie), of de lessen aangepast aan de reviseerstrategie (revisieconditie)[1].

De schrijfstrategie van leerlingen werd gemeten met een schrijfvragenlijst. Een van onze eerste bevindingen was dat de scores van leerlingen op plannen, en hun score op reviseren, slechts zwak met elkaar samenhingen: de correlatiecoëfficiënt was .38. Dat betekent dat leerlingen niet gekarakteriseerd worden door één dimensie, maar door twee dimensies: wie zegt veel vooraf te plannen, kan evenzogoed veel reviseren. Daarom spreken we, net als in de andere hoofdstukken, steeds over twee verschillende kenmerken van de leerlingen en behandelen we ze apart van elkaar: de mate van plannen, en de mate van reviseren[2].

Effecten op literaire interpretatie. In dit hoofdstuk beschrijven we een experimentele studie waarin de effecten van onze lessenserie op het leren begrijpen van literaire verhalen centraal staan. We toetsten twee hypotheses:

1) hoe meer leerlingen neigen naar een plannende schrijfstrategie, hoe meer zij leren in de planningsconditie;
2) hoe meer leerlingen neigen naar een reviserende schrijfstrategie, hoe meer zij leren in de reviseerconditie.

Om vast te stellen hoe goed leerlingen literaire verhalen konden interpreteren, gebruikten we een meetinstrument bestaande uit het lezen van een verhaal en het beantwoorden van een drietal vragen over het verhaal (naar titel, thema en kwestie).

De eerste hypothese kon niet worden bevestigd: het bleek dat de mate waarin leerlingen beweerden te plannen niet van belang was voor de leerresultaten: alle leerlingen scoorden in de planningsconditie beter op de literaire interpretatie dan in de reviseerconditie. De tweede hypothese kon ook niet worden bevestigd, we vonden juist het tegenovergestelde: hoe hoger leerlingen scoorden op reviseren, hoe beter ze presteerden in de planningsconditie. Voor leerlingen die laag scoorden op reviseren maakte het niet veel uit in welke conditie ze zaten: deze leerlingen presteerden in beide condities ongeveer even goed.

Effecten op schrijfvaardigheid. Het derde hoofdstuk berust op dezelfde dataverzameling, maar nu concentreerden we ons op de effecten van de lessen op de vaardigheid van de leerlingen in het schrijven van betogende teksten. Onze twee hypotheses waren:

1) hoe meer leerlingen neigen naar een plannende schrijfstrategie, hoe beter zij leren schrijven in de planningsconditie;
2) hoe meer leerlingen neigen naar een reviserende schrijfstrategie, hoe beter zij leren schrijven in de reviseerconditie.

---

[1] *Voor meer informatie over de lessenserie verwijzen we naar de proloog.*

[2] *Ter wille van de leesbaarheid, spreken we in deze samenvatting bijvoorbeeld van 'leerlingen die hoog scoren op reviseren', of 'de neiging tot plannen'. Het gaat dus om scores gebaseerd op zelfrapportage en niet om scores gebaseerd op geobserveerde schrijfstrategieën.*

De afhankelijke variabele schrijfvaardigheid hebben we gemeten door de teksten die leerlingen schreven te scoren op tien kenmerken, bijvoorbeeld: de kwaliteit van de inleiding, het aantal argumenten etc.

De resultaten wezen uit dat de planningsconditie de meest effectieve conditie was voor leerlingen met een relatief sterk ontwikkelde strategie: een relatief sterke neiging tot reviseren of een relatief sterke neiging tot plannen. Deze beide groepen leerlingen schreven betere teksten als ze in de planningsconditie zaten. De revisieconditie was de betere keuze voor de leerlingen die weinig zeiden te plannen of te reviseren.

STUDIE 2

Studie 2 was in grote lijnen een replicatie van studie 1. De lessenserie werd op kleine punten verbeterd, zo werd gezorgd voor meer afwisseling in de schrijftaken, en konden leerlingen bij sommige opdrachten samenwerken. We verbeterden echter vooral de instrumentatie: de schrijfvragenlijst werd verbeterd en uitgebreid. In studie 2 maakten 220 leerlingen (uit gymnasium 3, havo 4 en vwo 4) van drie verschillende scholen in Nederland de lessen. Na een selectieprocedure hielden we een onderzoeksgroep over van 113 leerlingen, die alle toetsen hadden gemaakt, in alle lessen aanwezig waren geweest, en die redelijk serieus aan de lessen hadden gewerkt (gemeten aan de volledigheid waarmee de werkboekjes ingevuld waren). Weer hebben we de vaardigheid in het interpreteren van korte verhalen en de schrijfvaardigheid van de leerlingen gemeten.

Effecten op literaire interpretatie. De studie in dit hoofdstuk is een verbeterde herhaling van het experiment in hoofdstuk 2. Naast de aangepaste schrijfvragenlijst, werd ook het toetsinstrument om de literaire vaardigheid te meten veranderd: die werd in deze studie niet meer gemeten door leerlingen vragen bij een verhaal te laten beantwoorden, maar door ze een tekst te laten schrijven die globaal werd gescoord op kwaliteit van interpretatie. De hypotheses waren dezelfde als die in hoofdstuk 2:

1) hoe meer leerlingen neigen naar een plannende schrijfstrategie, hoe meer zij leren in de planningsconditie;
2) hoe meer leerlingen neigen naar een reviserende schrijfstrategie, hoe meer zij leren in de reviseerconditie.

Onze hypotheses werden grotendeels bevestigd: hoe sterker leerlingen een voorkeur hadden voor reviseren, hoe beter ze op literaire interpretatie scoorden in de revisieconditie; hoe minder ze een voorkeur hadden voor reviseren, hoe beter ze scoorden in de planningconditie. Voor de planningsstrategie vonden we dat hoe minder de leerlingen aangaven te plannen, des te beter ze af waren in de revisieconditie.

Effecten op schrijfvaardigheid. Hoofdstuk 5 betreft een herhaling en uitbreiding van de studie beschreven in hoofdstuk 3. We verbeterden het meetinstrument om de schrijfvaardigheid te meten: we scoorden schrijfvaardigheid niet meer op het niveau van allerlei verschillende items die tezamen het genre kenmerkten, maar gaven een

globale score voor de teksten die leerlingen schreven op overtuigingskracht en argumentatie.

Daarnaast breidden we de studie zoals we die hebben uitgevoerd in hoofdstuk 3 uit met een nieuwe variabele: *self-monitoring*. Zoals herhaaldelijk aangetoond door Galbraith (1992; 1996; 1999) lijkt er een verband te bestaand tussen het schrijfproces (specifiek het genereren van ideeën om over te schrijven) en een persoonlijkheidskenmerk, de mate van self-monitoring. Self-monitoring wordt door Snyder (1987) gedefinieerd als de mate waarin iemand zijn gedrag afstemt op anderen (*high self-monitors*), of dat juist niet doet en zijn eigen gang gaat en ideeën volgt (*low self-monitors*). De mate van self-monitoring hebben we gemeten door het afnemen van de self-monitoring scale van Snyder (1987) en we verdeelden de leerlingen in twee groepen: low self-monitors en high self-monitors. Gebaseerd op het onderzoek van Galbraith, veronderstellen wij dat een plannende schrijfstrategie past bij high self-monitors, en dat een reviserende schrijfstrategie past bij low self-monitors. Vervolgens stelden wij de volgende hypotheses op:

1) hoe meer high self-monitors neigen naar een plannende schrijfstrategie, hoe beter zij leren schrijven in de planningsconditie (want er is dan sprake van een goede 'fit': persoonlijkheidskenmerk en schrijfstrategie passen goed bij elkaar);
2) hoe meer low self-monitors neigen naar een reviserende schrijfstrategie, hoe beter zij leren schrijven in de reviseerconditie (want ook dan is er sprake van een goede 'fit': persoonlijkheidskenmerk en schrijfstrategie passen goed bij elkaar).

We vonden sterke effecten voor één groep leerlingen: de low self-monitors. Onverwacht was dat low self-monitors met een hoge reviseerstrategie veel beter scoorden in de planningsconditie, en dat low self-monitors met een lage planningsstrategie ook beter af waren in de planningsconditie. Opvallend is dat deze twee strategieën goed passen bij low self-monitors: van low self-monitors wordt immers verwacht dat zij weinig plannen aan het begin van een tekst, het schrijven van een tekst nodig hebben om op gedachten te komen, en veel moeten reviseren aan het einde van het proces om tot een retorisch aanvaardbare tekst te komen. Leerlingen die low self-monitors zijn en een passende schrijfstrategie hebben ontwikkeld, zijn dus kennelijk toe aan een leerconditie die complementair is aan wat ze al doen. Voor de andere groep leerlingen, de high self-monitors, werden dergelijke effecten niet waargenomen.

Discussie. In hoofdstuk 6 beschouwen we de uitkomsten uit de hoofdstukken 2 tot en met 5. We bespreken de operationalisaties van de variabelen, de kwaliteit van de meetinstrumenten, en het onderzoeksontwerp. Tenslotte schetsen we mogelijk vervolgonderzoek en bespreken we de relevantie van deze studie voor de onderwijspraktijk.

We concluderen dat als het onderwijsdoel de schrijfvaardigheid is, het niet nodig is om rekening te houden met schrijfstrategieën van leerlingen: beide lessenseries leiden tot even goede teksten. Is het onderwijsdoel het leren interpreteren van literaire teksten, en wordt schrijven dus gezien als leeractiviteit, dan is aanpassen van de lessen aan de schrijfstrategieën wel verstandig. We baseren ons voor deze conclusie

op studie 2, die we qua ontwerp wat hoger achten dan studie 1, omdat er meer leerlingen en meer leraren van meer scholen aan deelnamen, maar ook omdat de meetinstrumenten betrouwbaarder waren.

Natuurlijk zijn er ook bedenkingen tegen deze studies in te brengen. Zo bespreken we of het eigenlijk wel zinvol is om schrijfstrategie te meten met een schrijfvragenlijst, en gaan we in op het probleem dat de voor- en natoetsen op de afhankelijke variabelen (schrijfvaardigheid en literaire interpretatie) niet of nauwelijks correleerden. Ook gaan we in op de voor- en nadelen van het verrichten van onderzoek in authentieke klassensituatie.

Tenslotte zetten we op een rijtje wat de waarde van dit onderzoek nu eigenlijk is voor de praktijk van het schoolvak Nederlands. In de eerste plaats denken we dat we met dit onderzoek hebben laten zien dat het niet nodig is om, als je wilt dat leerlingen leren schrijven, hen te dwingen de in methodes gangbare instructie van ‘eerst plannen, dan schrijven’ te gebruiken. Schrijven via een strategie van ‘schaven en schrappen’ kan tot net zulke goede teksten leiden.

Tenslotte benadrukken we dat het niet onze bedoeling is om het onderwijs met nog meer schrijfopdrachten te overladen dan nu al gebeurt. We denken niet dat schrijven perse het beste leermiddel is om in te zetten als je wilt dat leerlingen leren. Maar als docenten schrijfopdrachten willen geven, bijvoorbeeld voor literatuur, en ze willen dat hun leerlingen ook nog wat leren van die schrijftaken, dan pleiten wij voor schrijftaken die zijn aangepast aan verschillende schrijfstrategieën van leerlingen.

CURRICULUM VITAE

Marleen Kieft (1974) studied Dutch Language and Culture at the University of Groningen and graduated on a study about stimulating language acquisition of young children with a language delay by improving the parent-child interaction (1998). Subsequently she attended teacher training at the University of Groningen. She then was a teacher trainer at the Marnix Academie, a primary teacher training college (Utrecht; 1999 – 2001).

Marleen took her PhD at the Graduate School of Teaching and Learning of the University of Amsterdam (2001 – 2006) in the field of writing education and writing-to-learn in upper secondary education. She published several papers, both in research journals and in journals aimed at high school teachers, and presented at several national and international conferences on (writing) education. She combined research with teaching various courses like 'youth literature', 'academic writing', and 'journalism' at the Graduate School of Teaching and Learning, and contributed to a study on creative writing and reading of literature.

Currently, Marleen works at the Graduate School of Teaching and Learning as a post-doc researcher on the project 'Learning by writing and inquiry in the pre academic language curriculum', a research project supported by a grant from the Dutch Society of Scientific Research (NWO).

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