Interventionen im schriftsprachlichen Bereich bei Kindern und Jugendlichen mit dem Förderschwerpunkt Lernen

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Özlem Büyüknarci
Aus Bonn (Nordrhein-Westfalen)

Köln
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Zweite Gutachterin: Prof. Dr. Anna-Maria Hintz

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1. Einleitung

Der Manteltext erläutert das Vorgehen meiner kumulativen Dissertation. Es handelt sich um den Themenschwerpunkt „Interventionen im schriftsprachlichen Bereich bei Kindern und Jugendlichen mit dem Förderschwerpunkt Lernen“. Die Dissertation setzt sich aus vier Artikeln zusammen, welche das Themenfeld aus unterschiedlichen Blickwinkeln beleuchten.

Zu Beginn meiner Dissertation war ich als Lehrkraft für besondere Aufgaben am Lehrstuhl Prof. Dr. Grünke tätig. Die Ausrichtung meiner Dissertation – als Sonderpädagogin – sollte sich im weitesten Sinne mit dem deutschen Schulsystem beschäftigen.

„Menschen mit Beeinträchtigungen wollen genau so leben wie nicht beeinträchtigte Menschen auch. Niemand darf wegen einer Behinderung benachteiligt werden“ (Hess, Ruland, Meyer & Steinwede, 2019, S. 5). Dies ist die wichtigste Aussage, die verdeutlicht, dass das gemeinsame Leben von Menschen mit und ohne unterschiedlichen Unterstützungsbedarfen einen zentralen Stellenwert in unserer Gesellschaft einnehmen muss. Dieses Paradigma muss auch bzw. gerade in der Schule stets Berücksichtigung finden. Die UN-Behindertenrechtskonvention legt fest: „Artikel 24 dieses internationalen Abkommens verpflichtet die Vertragsstaaten ein inklusives Bildungssystem zu schaffen“ (Bundeszentrale für politische Bildung, 2015). Seit der Ratifizierung dieses völkerrechtlichen Abkommens im Jahre 2009 (vgl. ebd.) hat das gemeinsame Lernen von Schülerinnen und Schülern mit und ohne unterschiedlichen Unterstützungsbedarfen zugenommen. Diese Änderung führte zu einer Ausweitung der inklusiven Beschulung. Allerdings kann die empirische Fundierung eines gemeinsamen Unterrichts von Kindern und Jugendlichen mit und ohne besonderen Unterstützungsbedarf nicht als sonderlich solide bezeichnet werden (vgl. Hess, Ruland, Meyer & Steinwede, 2019). Der Ausbau der inklusiven Beschulung geschah in einem kurzen Zeitraum, sodass tragfähige Konzepte in Schulen oftmals nicht entstehen konnten (vgl. ebd.). Ein weiteres Problem sind die derzeit im Rahmen der Inklusion nicht verfügbaren Ressourcen, wie z.B. fehlende Lehrkräfte und Räume (vgl. Felten, 2017; Muñoz, 2020).

An dieser Stelle setzt die vorliegende Dissertation an. Sie soll einen Beitrag zu den fehlenden unterrichtlichen Konzepten vor allem im Bereich der Schriftsprache leisten. Das Schreiben ist eine der wichtigsten Kompetenzen, die Kinder und Jugendliche im Laufe ihrer Schullaufbahn erwerben (vgl. Becker-Mrotzek & Böttcher, 2012). Lehrkräfte vermitteln diese in heterogenen Lerngruppen an Schülerinnen und Schüler, die unterschiedliche Unterstützungsbedarfe und Voraussetzungen aufweisen. Die vorhandenen Förder- und Unterrichtsansätze entstammen meist nicht dem deutschsprachigen Raum. In der Datenbank PSYNDEX liegt die Zahl der deutschsprachigen Arbeiten zum expressiven Schreiben unter 50 (vgl. Grünke & Leonard-Zabel, 2015). Da jedoch jede Förderung sprachspezifisch ist, lassen sich die Erkenntnisse aus anderen Teilen der Welt nicht einfach auf das Deutsche übertragen.

2. Das deutsche Schulsystem

2.1 Aufbau des deutschen Schulsystems

Das deutsche Schulsystem variiert aufgrund des „historisch gewachsenen Föderalismus und der damit verbundenen Kulturhoheit der Länder [...]“ (Ackeren & Klemm, 2009, S. 47) von Bundesland zu Bundesland. Generell lässt sich das deutsche Schulsystem in folgende Bereiche unterteilen: die Primarstufe, die Sekundarstufe I und die Sekundarstufe II. Die vorschulische Bildung, die Betreuung von Kindern, die noch nicht schulpflichtig sind, erfolgt in Krippen (unter drei Jahren) oder in Kindergärten (bis zum sechsten Lebensjahr). Denn die Schulpflicht beginnt mit der Vollendung des sechsten Lebensjahres (vgl. Ackeren & Klemm, 2009). Die Dauer der Schulpflicht variiert von neun bis zehn Jahren an allgemeinbildenden Schulen (vgl. ebd.). Der Eintritt in das Schulsystem erfolgt in allen Bundesländern mit dem Besuch der Grundschule (gemeinsame Grundschule), welcher je nach Bundesland vier bis sechs Jahre andauert (vgl. ebd.). Die Grundschulen haben den Doppelauftrag, „allen Kindern ein Basiswissen in den grundlegenden Kulturtechniken zu vermitteln und auf den im Anschluss zu wählenden Bildungsgang vorzubereiten“ (Ackeren & Klemm, 2009, S. 49). Im Anschluss ist der Besuch der Sekundarstufe verpflichtend. Diese umfasst die Klassenstufen 5 bzw. 7 bis 10 (vgl. Ackeren & Klemm, 2009) und wird je nach Bundesland in unterschiedlichen Schulformen umgesetzt (Hauptschule, Realschule, Gymnasium, Gesamtschule).

„Die Schule soll den ganzen Menschen formen“ (Brenner, 2006, S. 7). Die Kultusministerkonferenz (KMK) hat den Bildungsauftrag aller Schulformen spezifiziert. Sie bezeichnet den Bildungsauftrag der Hauptschule als Vermittlung einer grundlegenden allgemeinen, den der Realschule als Vermittlung einer erweiterten allgemeinen Bildung (vgl. Ackeren & Klemm, 2009). Es zeichnet sich laut Gewerkschaft Erziehung und Wissenschaft (GEW) ein Abwärtstrend der Hauptschulen ab: Von zuvor 800 existierenden Hauptschulen in Nordrhein-Westfalen existieren derzeit nur noch 300 (vgl. GEW, 2018). Von diesen stehen 150 vor der Auflösung (vgl. ebd.). Die Gymnasien, die zu einer vertieften allgemeinen Bildung und zur allgemeinen Hochschulreife führen sollen, unterrichten ihre Schülerinnen und Schüler im Sekundarstufenbereich I im Klassenprinzip und in der gymnasialen Oberstufe in Kursstufen (vgl. Ackeren & Klemm, 2009). Es existiert eine weitere Schulform, die diese Schulformen miteinander verbindet: die Gesamtschule. „Sie ist eine ergänzende Schulform innerhalb des gegliederten Systems und vermittelt die Bildungs- und Erziehungsziele der Schulen des gegliederten Schulwesens“ (Ackeren & Klemm, 2009, S. 51). Die Annahme, dass eine heterogene Schülerschaft lediglich ein reines „Gesamtschulproblem“ sei, ist hinfällig, denn wie Trautmann und Wischer (2011) schon feststellten, ist jede Lerngruppe, ob nach Leistung oder irgendeinem anderen Kriterium homogenisiert, [...] immer hinsichtlich vieler Aspekte heterogen“ (Trautmann & Wischer, 2011). In NRW sind die zuvor genannten Schulformen und auch „Schulen des Zweiten Bildungsweges“ (Ackeren & Klemm, 2009, S. 51) vorhanden.

Inklusion orientiert sich nach Hinz (2014) an den universellen Menschenrechten und der Bürgerrechtsbewegung. Sie ist somit keine rein pädagogische, sondern eine „weltweite gesamtgesellschaftliche Entwicklungsperspektive mit der Vision einer inklusiven Gesellschaft“ (S. 17f.). 2009 wurde die UN-Behindertenrechtskonvention in Deutschland ratifiziert. Nach Sasse ist dadurch der gemeinsame Unterricht von Kindern und Jugendlichen mit und ohne sonderpädagogischen Unterstützungsbedarfen in den Fokus der öffentlichen Aufmerksamkeit geraten (vgl. Sasse, 2014). Nach Reich (2017) ist es wichtig, dass jeder Mensch das Recht auf eine Bildung hat, die möglichst gleiche und gerechte Chancen eröffnet (vgl. Reich, 2017).

Die Umsetzung der Inklusion in Schulen erfordert, neben praxistauglichen Konzeptionen, das Vorhandensein räumlicher, personaler und pädagogischer Ressourcen. Wie weit die Umsetzung der UN-Behindertenrechtskonvention gehen sollte,

wird kontrovers diskutiert. Ob das Fortbestehen spezieller Förderschulen dem Inklusionsgedanken tatsächlich widerspricht, ist umstritten (vgl. Ahrbeck, 2014; Felten, 2017). Die Abschaffung von Förderschulen würde nicht dem inklusiven Gedanken gerecht, denn es ginge nach Hillenbrand vielmehr darum, den Bedürfnissen aller Lernenden gerecht zu werden (vgl. Ahrbeck, 2014).

„Das deutsche Bildungswesen steht in der Kritik“ (Klippert, 2007). Derzeit herrscht ein Mangel an Sonderpädagoginnen und Sonderpädagogen. Die sonderpädagogische Förderung von Schülerinnen und Schülern, vor allem im gemeinsamen Lernen, muss immer öfter auch durch Quereinsteigerinnen bzw. Quereinsteiger und multiprofessionelle Teamstellen abgedeckt werden, die vermehrt an deutschen Schulen zum Einsatz kommen.

Ein Beispiel von vielen inklusiv arbeitenden Schulen stellt hierbei die Integrierte Gesamtschule Bonn-Beuel dar, meine Referendariatsschule und mein derzeitiger Arbeitsplatz. Eine Schule, die seit 1985 im gemeinsamen Lernen lehrt. Die ehemaligen Bedingungen des Schulversuchs wurden im Jahre 1999 von der Landesregierung Nordrhein-Westfalen als erfolgreich bewertet und beendet (vgl. Wingenroth-Franke & Kulhavy, 2014). „Die Integrationsklassen haben eine Klassenstärke von 25 Kindern, von denen fünf nachgewiesenen Förderbedarf[1] haben. Eine der sechs Klassen eines Jahrgangs der Sekundarstufe 1 wird als Integrationsklasse geführt. Möglichst viele Förderschwerpunkte sind in einer Klasse vertreten; es wird sowohl zielgleich als auch zieldifferent gearbeitet. Der Unterricht ist weitgehend mit einer Regelschul- und einer Förderschullehrkraft doppelt besetzt. Die Förderschullehrkraft ist mit allen Stunden an der IGS Bonn-Beuel tätig und als Tutorin bzw. Tutor gleichberechtigte Lehrkraft in der Integrationsklasse“ (Wingenroth-Franke & Kulhavy, 2014, S. 175). Die Anzahl an Klassen des gemeinsamen Lernens liegt derzeit bei drei Klassen pro sechszügigem Jahrgang. Dabei wurde und wird weiterhin auf eine Verzahnung von Schulentwicklung und demokratischen Strukturen geachtet (vgl. ebd.). Eltern erhalten ein ausführliches Beratungsgespräch, bevor sie sich an der IGS anmelden, um entscheiden zu können, ob sie die Inklusion den Förderschulen vorziehen. Die Klassenzusammensetzung berücksichtigt gleichermaßen die Förderschwerpunkte, das Geschlecht und

[1] Der Begriff „Förderbedarf“ existiert seit dem 9. Schulrechtsänderungsgesetz (SchRÄG) von 2013 nicht mehr in NRW. Stattdessen wird von „Unterstützungsbedarfen“ gesprochen.

die Leistungsgruppen (vgl. ebd.). Obwohl Wingenroth-Franke und Kulhavy schon 2014 schrieben, dass die Fortführung des erfolgreichen Modells der Doppelbesetzung infrage steht, gibt es bisher keine verlässlichen Zahlen, die eine ausreichende Lehrkraftzuweisung für die Zukunft sicherstellen. Dies gilt sowohl an der IGS als auch an anderen Schulen.

2.2 Kinder mit unterschiedlichen Unterstützungsbedarfen

„Der sonderpädagogische Förderbedarf[2] wird in Deutschland über folgende Förderschwerpunkte konkretisiert: körperlich-motorische, geistige Entwicklung sowie Sehen und Hören. [...] Darüber hinaus gibt es die Förderschwerpunkte Lernen, Sprache, und emotional-soziale Entwicklung. Sonderpädagogischer Förderbedarf in diesen Förderschwerpunkten geht auf Beeinträchtigungen zurück, die im sozialen Bereich zu verorten sind bzw. bei Nichtanpassung zwischen den schulisch gesetzten Anforderungen und Erwartungen sowie den biografischen Erfahrungen und Milieus der Schüler/-innen“ (Sturm, 2013) entstehen.

Kinder, die aufgrund unterschiedlicher Unterstützungsbedarfe dem Unterricht an allgemeinbildenden Schulen nicht folgen können, besuchen unterschiedliche Typen von Förderschulen (vgl. Ackeren & Klemm, 2009). Es gibt Schulen mit den Förderschwerpunkten Lernen, emotionale und soziale Entwicklung, Sprache, Hören, Sehen und körperliche und motorische Entwicklung sowie geistige Entwicklung, aber auch Schulen mit zusammengelegten Förderschwerpunkten (vgl. VBE, 2016). Seit vielen Jahren (und vermehrt nach der Ratifizierung der UN-Behindertenrechtskonvention im Jahre 2009) findet in Deutschland eine Ausweitung des gemeinsamen Lernens statt (vgl. Beauftragte der Bundesregierung für die Belange von Menschen mit Behinderungen, 2017). 2014 mahnte Ahrbeck (2014) an, dass die schulische Inklusion von Schülerinnen und Schülern mit Behinderungen „nicht bedingungslos geschehen und unter allen Umständen als der ausschließlich richtige Weg gelten“ darf (S. 6).

Das Ministerium für Schule und Bildung des Landes Nordrhein-Westfalen veröffentlicht im jährlichen Turnus Statistiken, die Auskunft darüber geben, welche Schulen von wem besucht werden. Beim Vergleich der Statistiken der Jahre 2009/10 (Tabelle 1) mit denen aus den Jahren 2018/19 (Tabelle 2) ist erkennbar, dass die Anzahl

[2] Vgl. Fußnote 1.

der Schülerinnen und Schüler an Förderschulen von 108.021 auf 83.302 gesunken ist.

Nordrhein-Westfalen: Schulen, Klassen, Schüler(-innen)									
2009/10	Schulen			Klassen			Schüler(-innen)		
	alle	öffentlich	privat	alle	öffentlich	privat	alle	öffentlich	privat
Alle Schulen	**6 501**	**6 035**	**466**	**112 289**	**104 548**	**7 741**	**2 799 259**	**2 588 413**	**210 846**
Grundschule	3 223	3 179	44	29 394	29 123	271	680 770	674 609	6 161
Volksschule	1	–	1	17	–	17	450	–	450
Hauptschule	671	664	7	9 350	9 283	67	201 525	200 136	1 389
Realschule	559	511	48	11 430	10 646	784	316 411	293 330	23 081
Gesamtschule	221	204	17	6 867	6 565	302	234 958	225 729	9 229
Gymnasium	630	518	112	14 306	12 069	2 237	596 672	498 920	97 752
Förderschule insgesamt	727	649	78	10 468	8 968	1 500	108 021	94 111	13 910
Förderschule G/H	704	643	61	9 433	8 577	856	99 971	92 139	7 832
Förderschule R/Gy	2	2	–	47	47	–	530	530	–
Förderschule BK	21	4	17	988	344	644	7 520	1 442	6 078
Fr. Waldorfschule	52	–	52	747	–	747	18 218	–	18 218
Weiterbildungskolleg	56	48	8	453	395	58	27 344	23 804	3 540
Berufskolleg	361	262	99	29 257	27 499	1 758	614 890	577 774	37 116
Allgemein bildende Schulen: alle Schulen ohne Berufskolleg und ohne Förderschule im Bildungsbereich Berufskolleg									
Allg. bildende Schulen	6 119	5 769	350	82 044	76 705	5 339	2 176 849	2 009 197	167 652
Berufliche Schulen: Berufskolleg und Förderschule im Bildungsbereich Berufskolleg									
Berufliche Schulen	382	266	116	30 245	27 843	2 402	622 410	579 216	43 194

Tabelle 1: Ministerium für Schule und Bildung des Landes NRW (2009/10)

2018/19	Schulen			Klassen			Schülerinnen und Schüler		
	alle	öffentlich	privat	alle	öffentlich	privat	alle	öffentlich	privat
Schulen	**5.518**	**4.978**	**540**	**98.609**	**90.685**	**7.924**	**2.478.880**	**2.270.769**	**208.111**
Grundschule	2.781	2.716	65	27.153	26.753	400	636.863	627.728	9.135
Volksschule	1	-	1	11	-	11	277	-	277
PRIMUS-Schule	5	5	-	99	99	-	2.338	2.338	-
Hauptschule	243	236	7	2.984	2.924	60	62.827	61.662	1.165
Realschule	429	375	54	7.801	7.087	714	210.609	190.402	20.207
Sekundarschule	114	105	9	2.466	2.276	190	60.730	56.203	4.527
Gemeinschaftsschule	7	7	-	141	141	-	3.423	3.423	-
Gesamtschule	340	307	33	9.821	9.325	496	319.587	304.984	14.603
Gymnasium	625	511	114	11.864	9.931	1.933	511.957	425.968	85.989
Freie Waldorfschule	57	-	57	817	-	817	18.751	-	18.751
Förderschule und SfK	497	418	79	8.011	6.603	1.408	83.302	70.479	12.823
Schule für Kranke	36	30	6	425	388	37	2.381	2.103	278
Förderschule G/H	440	383	57	6.764	5.922	842	75.100	66.960	8.140
Förderschule R/Gy	2	2	-	33	33	-	443	443	-
Förderschule BK	19	3	16	789	260	529	5.378	973	4.405
Berufskolleg	370	255	115	27.003	25.149	1.854	547.869	509.988	37.881
Weiterbildungskolleg	49	43	6	438	397	41	20.347	17.594	2.753
Allgemeinbildende Schulen: alle Schulen ohne Berufskolleg und ohne Förderschule BK									
Allgemeinbildende Schulen	5.129	4.720	409	70.817	65.276	5.541	1.925.633	1.759.808	165.825
Berufliche Schulen: Berufskolleg und Förderschule BK									
Berufliche Schulen	389	258	131	27.792	25.409	2.383	553.247	510.961	42.286

Tabelle 2: Ministerium für Schule und Bildung des Landes NRW (2018/19)

2.3 Förderschwerpunkt Lernen

Bei meinen Forschungsarbeiten standen Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen im Mittelpunkt.

„Lernstörungen bezeichnen nichts anderes als Minderleistungen beim absichtsvollen Lernen. Sie äußern sich darin, dass das gewünschte Können, Wissen und Verhalten (z.B. Lesen, Rechnen, Schreiben, Mitarbeit) nicht in ausreichender Sicherheit sowie nicht in der dafür vorgesehenen Zeit erworben wird: Die erwarteten Leistungsergebnisse werden trotz angemessener Lernangebote nicht erreicht, sodass den betroffenen Schülerinnen und Schülern mehr oder minder umfangreiche Störungen des Lernen zugeschrieben werden.“ (Lauth, Brunstein & Grünke, 2014, S. 17)

Laut ICD-10 (Internationale Klassifikation psychischer Störungen der Weltgesundheitsorganisation) oder DSM-5 (Diagnostisches und statistisches Manual psychischer Störungen der American Psychiatric Association) liegen Lernstörungen vor, wenn gravierende Leistungsdefizite in einem Bereich festgestellt werden, die nicht mit dem IQ erklärbar sind (vgl. Lauth, Brunstein & Grünke, 2014; Hasselhorn & Schuchardt, 2006; WHO, 2019; American Psychiatric Association, 2015). Sowohl Mängel in der Beschulung als auch Sinnesstörungen oder neurologische Schädigungen sind bei Lernstörungen auszuschließen (vgl. Lauth, Brunstein & Grünke, 2014).

Klauer und Lauth (1997) haben die verschiedenen Arten von Lernstörungen klassifiziert und unterscheiden dabei bereichsspezifische, allgemeine, vorübergehende und überdauernde Lernstörungen (vgl. Lauth, Brunstein & Grünke, 2014). Bereichsspezifische, auch partielle Lernstörungen genannt, betreffen einzelne Bereiche. In den sonstigen Fächern hingegen liegen keine Probleme vor. Allgemeine Lernstörungen betreffen das Lernen „auf breiter Front“ (Lauth, Brunstein & Grünke, 2014, S. 18). Die Autoren sprechen von vorübergehenden (passageren) Lernstörungen, wenn die Leistungen der Schülerinnen und Schüler aufgrund kritischer Ereignisse (wie z.B. wegen eines Todesfalls) in der Schule nachlassen, und von überdauernden Lernstörungen, wenn die Schwierigkeiten persistieren. Durch gezielte und frühzeitige Förderungen kann beeinflusst werden, wie lange eine Lernstörung anhält.

Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen haben Rückstände in verschiedenen Unterrichtsfächern, die andauernd sind und persistieren. Grünke und Grosche (2014) haben weitere Merkmale der Schülerinnen und Schüler zusammengetragen. Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen zeichnen sich demnach durch eine mangelnde metakognitive Handlungssteuerung, durch eine mangelnde Beherrschung von Lernstrategien, durch eine mangelnde Motivation und Konzentration und durch ein mangelndes bereichsspezifisches Wissen aus. Löser (2013) beschreibt ähnliche Phänomene. Er benennt eine fehlende Motivation, Konzentration und Ausdauer. Schülerinnen und Schüler haben Probleme bei der Aufnahme und Verarbeitung von Informationen, der Bildung von Analogien und Defizite im Arbeitsverhalten und ihrer Lernorganisation. Das kann zu fehlendem Vertrauen in eigene Fähigkeiten führen (vgl. Löser, 2013).

Arten von Lernstörungen (Klassifikation nach Klauer & Lauth, 1997)

	Bereichsspezifisch (partiell)	**Allgemein (generell)**
Vorübergehend (passager)	Lernrückstände in Einzelfächern	Schulschwierigkeiten Neurotische Störung
Überdauernd (persistierend)	Lese-Rechtschreib-schwäche Rechenschwäche	Lernschwäche Lernbehinderung Lernbeeinträchtigung Geistige Behinderung

Tabelle 3: Vgl. Lauth et al., 2014.

3 Stand der Forschung

Im Folgenden wird der Stand der Forschung im Bereich der Förderung der Schriftsprachkompetenzen beschrieben. Die Fähigkeit, Texte zu schreiben, ist ein wesentlicher Teil einer erfolgreichen schulischen Bildung bzw. Ausbildung, weil durch das Schreiben neue Kontexte erschlossen werden können, Wissen kreiert und kommuniziert werden kann, verschiedene Perspektiven eingenommen und soziale Netzwerke gebildet werden können (vgl. Becker-Mrotzek & Böttcher, 2012; Jakobs & Perrin, 2014). Grünke & Leonard-Zabel (2015) und Santangelo (2014) betonen die Wichtigkeit, dass Schülerinnen und Schüler beim Lernen, Texte für verschiedene Anlässe, Leser oder Kontexte zu verfassen, unterstützt werden. Die Anzahl der Kinder und Jugendlichen, die Schwierigkeiten mit dem Schreiben haben, ist weitaus größer als im Falle der Rechen-, Rechtschreib- oder Lesestörungen (vgl. Mayes & Calhoun, 2006). Einige Studien gehen davon aus, dass bis zu 15% aller Schülerinnen und Schüler im Bereich der Textproduktion massive Probleme aufweisen (vgl. Katusic, Colligan, Weaver & Barbaresi, 2009). Das Schreiben entwickelt sich nach Kame'enui und Simmons (1990) als letzte Kulturtechnik und gilt als komplizierteste nach dem Hören, dem Sprechen und dem Lesen. Vor allem Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen haben Schwierigkeiten, Schreibaufgaben zu erfüllen oder umzusetzen (vgl. Tomas, Englert & Gregg, 1987). Diese Kompetenz ist jedoch in allen Unterrichtsfächern von großer Bedeutung und wird auch immer wieder eingefordert, auch z.B. in den Naturwissenschaften. Ohne die Fähigkeit, „auf dem Papier zu denken", würden viele Schülerinnen und Schüler in vielen Fächern nicht die Leistungen erbringen, die sie erbringen könnten (vgl. Grünke & Leonard-Zabel, 2015). Im Gegenteil – die Wahrscheinlichkeit, diese Fächer nicht zufriedenstellend abschließen zu können, ist sehr hoch (vgl. ebd.). In der Grundschule werden Grundlagen für die Textproduktion gelegt. Gedanken zu Papier bringen zu können verlangt viele Kompetenzen, die über das rein Inhaltliche hinausgehen (vgl. Graham & Harris, 2005). Neben der grammatikalischen Struktur und den Kenntnissen über die Konventionen einer Textsorte sollte man die eigenen Ideen in einen Text einfließen lassen, der so formuliert ist, dass eine potenzielle Leserin oder ein Leser diesen verstehen kann (vgl. ebd.). Um dies realisieren zu können, benötigt die Autorin oder der Autor unter

anderem die Fähigkeit, sich zu konzentrieren, die eigene Aufmerksamkeit zu fokussieren, und Vokabel-, Rechtschreib- und Grammatikkenntnisse gemäß gängiger Konventionen (vgl. Feifer & De Fina, 2002).

Bereiter und Scardamalia (1987) haben die Wichtigkeit der Automatisierung der linguistischen Prozesse beim Schreiben betont, da diese es ermöglichen, dass eine Autorin oder ein Autor die eigene Aufmerksamkeit nicht alleine auf den Schreibprozess richten muss. Diese Automatisierung erleichtert den Schreibprozess und führt zu längeren und qualitativ hochwertigeren Texten (vgl. Bereiter & Scardamalia, 1987; Berninger et al., 2010; Kreiner, 1996; Van der Hoeven, 1999). Rodríguez, Grünke, González-Castro, García & Álvarez-García (2015) stellen Defizite im Planungsprozess als einen weiteren Grund heraus, der es erschwert, dass Texte entstehen. Becker-Mrotzek und Böttcher (2012) haben verschiedene Textsorten, die zunehmende Anforderungen mit sich bringen, aufgelistet. In der Grundschule stehen einfache Geschichten/Erzählungen im Vordergrund. Mit zunehmendem Alter der Kinder werden Essays oder argumentative Texte thematisiert (vgl. Becker-Mrotzek & Böttcher, 2012).

Rechtschreibfehler, die Länge eines Textes und die Handschrift haben eine Auswirkung auf die Bewertung geschriebener Texte (vgl. Englert & Raphael, 1988; Greifeneder, Zelt, Seele, Bottenberg & Alt, 2012; Rose, 2009; MacArthur & Graham, 1987). Da das Schreiben ein so komplexer Prozess ist (vgl. Anderson & Keel, 2002; Kaufer, Hayes & Flower, 1986; Ortega, 2009; van Wijk & Sanders, 1999) und Lehrkräfte vor einer Herausforderung bei der Vermittlung des Schreibprozesses stehen, gerät dieses Thema in den Hintergrund (vgl. Schlagal, 2013). Lassonde und Richards (2013) schlagen vor diesem Hintergrund verschiedene Techniken vor, die das Planen eines Textes unterstützen.

Eine besonders vielversprechende Möglichkeit zur Verbesserung der Fähigkeit zum Planen von Schreibprodukten stellt das Story Mapping dar (vgl. Li, 2007). Bei einer Story Map handelt es sich um eine graphische Vorlage, welche die wichtigsten Elemente eines Textes visualisiert. Im Falle einer Erzählung kann es hier z.B. um die Hauptperson, die Zeit, den Ort, das Problem, das Ziel, den Ablauf und die

Ergebnisse gehen. Die Methode des Story Mappings hat bislang vornehmlich im Bereich der Förderung des Leseverständnisses Einsatz gefunden. Hier hat sie sich sehr gut bewährt (vgl. z.B. Gardill & Jitendra, 1999; Grünke, Wilbert & Calder Stegemann, 2013). Im Kontext der Verbesserung von Planungskompetenzen bei der Textproduktion ist sie noch recht wenig berücksichtigt worden. Eine entsprechende Verwendung kann jedoch ohne Zweifel als sehr sinnvoll bezeichnet werden.

Zusammenfassungen sind eine weitere Textsorte, die Schülerinnen und Schüler im Laufe ihrer Schulbahn kennenlernen sollten. Die Fähigkeit, die Inhalte eines Textes auf das Wesentliche zu reduzieren und die Essenz schriftlich festzuhalten, spielt in vielen schulischen Kontexten eine entscheidende Rolle (vgl. Graham & Harris, 2012). Zusammenfassungen sind viel kürzer als der Originaltext (vgl. Fritzsche, 1998; Melenk & Knapp, 2001; Reid, Lienemann & Hagaman, 2013). Dies macht die darin enthaltenen Informationen einfacher abrufbar (vgl. Graham & Harris, 2012). Schülerinnen und Schüler können eigene Vorstellungen zu den Inhalten des Textes bilden (vgl. Melenk & Knapp, 2001; Reid, Lienemann & Hagaman, 2013). Zusammenfassungen sind sowohl für die Entwicklung eines ausreichenden Leseverständnisses, für Schreibkenntnisse als auch für den Informationsabruf wichtig (vgl. Graham & Harris, 2012). Möchte man Schreibprodukte aggregieren, so erfordert dies eine Vielzahl an kognitiven Aktivitäten (wie das Lesen und Verstehen eines Textes, das Identifizieren von wichtigen Inhalten und das Generieren einer verkürzten Version des Originaltextes) (vgl. Melenk & Knapp, 2001). Fritzsche unterscheidet drei verschiedene Arten von Zusammenfassungen: informierende, argumentative und wertende (vgl. Fritzsche, 1998).

Schülerinnen und Schüler zum kritischen Denken heranzuführen und zu effektiven Problemlöserinnen bzw. Problemlösern zu machen, ist das übergeordnete Ziel von Bildung. Den eigenen Standpunkt zu vertreten, ist eine wichtige Fähigkeit von Menschen, die über Problemlösekompetenzen verfügen (vgl. Erickson, 2005). Eine wichtige Art, dieses Wissen an Schülerinnen und Schüler weiterzugeben, kann durch das Lehren von argumentativen Schreibstrategien erfolgen (vgl. Crowhurst, 1990). Einen Text zu formulieren, der Leserinnen oder Leser überzeugt, muss reflektierte und verständliche Ideen enthalten und in der sprachlichen Ausformulierung explizit

sein (vgl. Graham et al., 2019). In diesem Bereich weisen Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen und/oder dem Förderschwerpunkt Hören und Kommunikation besondere Schwierigkeiten auf. Dies hängt u.a. mit der hohen Belastung des Arbeitsgedächtnisses bei derartigen Aufgabenstellungen zusammen (vgl. Easterbrooks & Stoner, 2006; Graham, Collins & Rigby-Wills, 2017). Naff (2010) hat herausgestellt, dass das Hören eine besondere Wichtigkeit für das Schreiben besitzt. Dennoch wird sie oftmals unterschätzt. Schülerinnen und Schüler mit audiologischen Schwierigkeiten können mit Hilfe einer metakognitven Strategie beim Erwerb dieser Kenntnisse unterstützt werden. Eine Möglichkeit hierfür stellt das von Sherman und De La Paz (2015) entwickelte FIX dar. FIX steht für **F**ocus on essay elements, **I**dentify problems und e**X**ecute changes (vgl. ebd.).

4 Theoretischer Hintergrund

4.1 Das Lernen

4.1.1 *Grundlagen*

„Lernen ist ein aktiver, konstruktiver Prozess, in dessen Verlauf Lernende neue Informationen mit vorhandenem Wissen verknüpfen, um neue Ideen und Sinneszusammenhänge zu konstruieren“ (Konrad & Traub, 2012, S. 5). Stern, Schalk und Schumacher (2016) charakterisieren diesen Vorgang als eine „relativ stabile Veränderung des Verhaltens eines Lebewesens in Abhängigkeit von seiner Erfahrung“ (S. 106). Das schulische Lernen im inklusiven Setting und in Förderschulen ist seit Anbeginn der wichtigste Faktor einer erfolgreichen schulischen Laufbahn. Dieses steht daher im Fokus der Medien und Publikationen (vgl. Brenner, 2006). Nach dem Modell der individuellen Voraussetzungen erfolgreichen Lernens von Hasselhorn und Gold (2013) bestimmen fünf Faktoren den erfolgreiche Wissens- und Kompetenzerwerb: (1) die Motivation und das Selbstkonzept, (2) die Volition und lernbegleitenden Emotionen, (3) das Vorwissen, (4) Strategien und metakognitive Regulation und (5) die selektive Aufmerksamkeit sowie das Arbeitsgedächtnis. Das Arbeitsgedächtnis, der Flaschenhals der menschlichen Informationsverarbeitung (vgl. Hasselhorn & Gold, 2013), ermöglicht es, verschiedene Informationen zeitgleich zu behalten und somit zueinander in Beziehung zu setzen. Es spielt somit eine zentrale Rolle beim Erwerb der Basisfertigkeiten im Lesen, Schreiben und Rechnen und somit im Leben (vgl. Hasselhorn & Schumann-Hengsteler, 2001; Mayer, 2010). Das Kurzzeitgedächtnis unterscheidet sich vom Arbeitsgedächtnis dadurch, dass dort Informationen nicht bearbeitet werden. Baddeleys (1992; 2000) Modell des Arbeitsgedächtnisses unterteilt diese Speicherstruktur in zwei Komponenten: das fluide und das kristalline System (s.u.). Die zentrale Exekutive selber besitzt keine Speicherkapazität und überwacht die visuell-räumliche Notiztafel (verarbeitet visuelle Aspekte), den episodischen Puffer (temporäres Abspeichern von Episoden) und die phonologische Schleife (verarbeitet akustische Aspekte). Die visuelle Semantik, das episodische Langzeitgedächtnis und die Sprache sind Teil des kristallinen Systems (vgl. Baddeley, 2000).

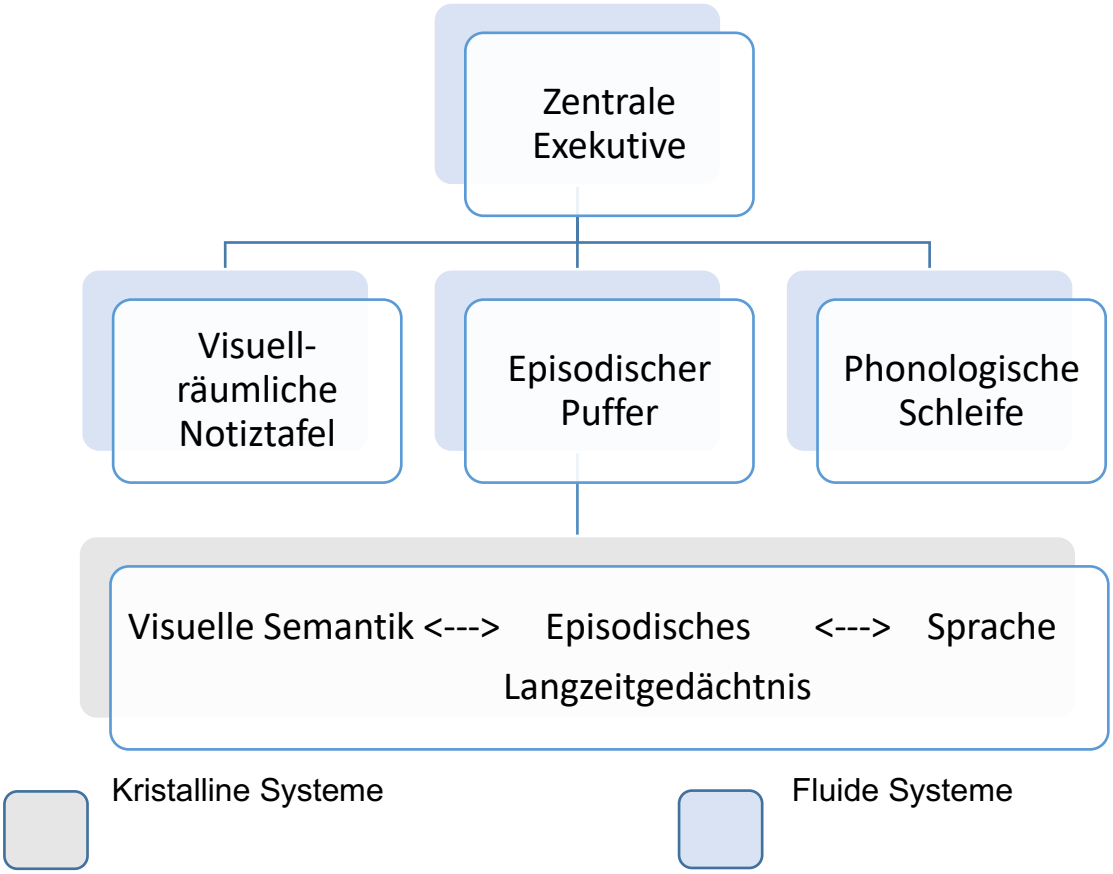

Abbildung 1: Vgl. Baddeley, 1992; 2000.

Nach Grünke und Grosche (2014) zeichnen sich Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen in erster Linie dadurch aus, dass sie sich beim absichtsvollen Erwerb von Kenntnissen, Fähigkeiten und Fertigkeiten vergleichsweise schwertun. Dies hat Relevanz für die Praxis, z.B. für die Lehrkräfte und Lerntherapeutinnen bzw. Lerntherapeuten. Sie müssen darauf achten, dass das Material differenziert und reduziert angeboten wird und es motivierend auf die Schülerinnen und Schüler wirkt. Inhalte können qualitativ, quantitativ, zeitlich auf der Ebene der Methoden oder Sozialformen differenziert werden. Die Handlungsorientierung ist unumgänglich. Eine Ritualisierung erleichtert in vielen Fällen die Vermittlung der Inhalte (vgl. Schmidt, 2018). Die Inhalte und Ziele sollten nach Schmidt (2018) für jede Schülerin und jeden Schüler individuell auf den Unterstützungsbedarf abgestimmt werden. Es kann reichen, die gleichen Ziele anzuvisieren und dabei mehr Zeit für die Bearbeitung der Aufgaben zur Verfügung zu stellen. Manchmal ist jedoch auch eine Anpassung erforderlich. Die Differenzierung kann auf verschiedenen Ebenen erfolgen (vgl. Schmidt, 2018).

Die Lernpsychologie hat nachgewiesen, dass wir lediglich 10% dessen behalten, was wir lesen, 20% dessen, was wir hören, 30% dessen, was wir sehen. Rund 50% der Inhalte können behalten werden, wenn wir es hören und sehen. Wenn wir selbst sprechen, kann rund 70% dessen behalten werden. Mit 90% kann am meisten behalten werden, wenn wir die Inhalte selber ausprobieren und ausführen (vgl. Wisniewski, 2019).

4.1.2 *Lernformen*

Guter Unterricht zeichnet sich nach Meyer (2010) durch verschiedene Merkmale aus. Ein wichtiger Faktor guten Unterrichts stellt demnach die klare Strukturierung des Lehr- und Lernprozesses dar. Es geht also um eine Art „roter Faden“, welcher den Unterricht strukturiert. Ebenso ist es nach Meyer (2010) wichtig, dass die Lernzeit aktiv genutzt wird. Denn die so genannte echte Lernzeit (also die von den Schülerinnen und Schülern tatsächlich aufgewandte Netto-Zeit) fällt oft relativ kurz aus, da u.a. Unterrichtsstörungen diese verkürzen. Allerdings kann auch ein Abschweifen vom Thema durch die Lehrkraft zu einer verkürzten Lernzeit führen (vgl. Meyer, 2010). Zu einer erhöhten aktiven Lernzeit führen u.a. gutes Zeitmanagement, eine Rhythmisierung des Unterrichts und Routinen. Ein weiteres wichtiges Kriterium ist nach Meyer (2010) die inhaltliche Klarheit (Verständlichkeit der Aufgabenstellung, Vernetzen mit dem Vorwissen) und die transparente Leistungserwartung bei einer gegebenen Methodenvielfalt. Nicht zu unterschätzen sind ein lernförderliches Klima, die sinnstiftende Kommunikation und das individuelle Fördern. Dies wird bei Schülerinnen und Schülern mit einem sonderpädagogischen Unterstützungsbedarf oftmals durch die Förderpläne gewährleistet. Das intelligente Üben wird ebenfalls von Meyer (2010) als ein weiteres Merkmal guten Unterrichts genannt. Eine vorbereitete Umgebung würde ebenfalls zu einem guten Unterricht beitragen. Diese unter anderem von Meyer (2010) zusammengetragenen Merkmale guten Unterrichts eröffnen nach Helmke (2012) „eine Vielzahl von Möglichkeiten für die Diagnose und Verbesserung des Unterrichts“ (ebd. S. 169).

Hatties Studie (2008) hat die Lehrkräfte als wirksamsten Faktor für den schulischen Lernerfolg herausgestellt und plädiert für deren Professionalisierung (vgl. Perkhofer-Czapek & Potzmann, 2016). Denn „effektstarte Lehrer/innen haben hohe Erwartungen an und ein großes Vertrauen in das Leistungsvermögen ihrer Schüler/innen, pflegen zu ihnen eine wertschätzende Beziehung und wenden aktivierende Unterrichtsmethoden an“ (Perkhofer-Czapek & Potzmann, 2016, S. 18).

Meyer (2016) unterscheidet zwischen geschlossenen und offenen Unterrichtsformen. Bei geschlossenen Unterrichtsformen erfolgt der Unterricht lehrkraftzentriert. Ein Beispiel ist hierfür die Explicit Instruction nach Engelmann (vgl. Adams & Engelmann, 1996). Bei offenen Unterrichtsformen erfolgt der Unterricht schülerinnen- und schülerzentriert. Hierbei erarbeiten sich die Kinder oder Jugendlichen die Inhalte selber.

Die Explicit Instruction ist nach Rosenshine (1987) „a systematic method of teaching with emphasis on proceeding in small steps, checking for student understanding, and achieving active and successful participation by all students” (zitiert nach Archer & Hughes, 2001). Damit eignet sich diese Lernform für Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen, da sich lediglich auf die wichtigen Inhalte konzentriert wird (vgl. Archer & Hughes, 2001). Des Weiteren muss beachtet werden, dass die zu erlernenden Fähigkeiten in logischer Abfolge erfolgen und dass komplexe Fähigkeiten im Explicit Instruction in kleinere und überschaubare Einheiten eingeteilt werden (vgl. ebd.). Ein weiteres Merkmal der Explicit Instruction ist die schrittweise Demonstration und das geführte und unterstützende Üben der neuen Fähigkeiten (vgl. ebd.).

Bildungsexpertinnen und -experten in Deutschland sind sich einig, dass das schulische Lernen und Lehren in einigen Faktoren verändert werden muss, um den veränderten Familien- und Arbeitsverhältnissen gerecht zu werden (vgl. Klippert, 2007). Nötig ist eine Öffnung des Unterrichts, welche Projektarbeiten, Wochenplanarbeiten und auch andere Varianten der offenen Lernformen zulässt (vgl. ebd.). Pädagoginnen und Pädagogen hingegen haben in diesen Punkten Vorbehalte. Sie geben zu bedenken, dass diese offenen Unterrichtsformen Methodenkompetenz voraussetzen, um die Schülerinnen und Schüler nicht zu überfordern und zu frustrieren (vgl. ebd.). Dies hat zur Folge, dass eventuelles eigenverantwortliches Lernen und

Arbeiten kleinschrittig mit der Schülerschaft eingeübt werden muss, damit diese die notwendigen methodischen Routinen erwerben (vgl. ebd.).

„Unter kooperativem Lernen wird eine Form des Wissenserwerbs verstanden, bei der zwei oder mehr Personen gemeinsam lernen“ (Dillenbourg, 1999, zitiert nach Krause, 2007, S. 75). Das kooperative Lernen ist eine bekannte Lernform, die gleichzeitig mehrere Ziele verfolgt (vgl. Souvignier, 2012). Neben den schulischen Lernzielen steht sowohl die soziale Kompetenz als auch die Lernfreude im Fokus (vgl. Souvignier, 2012). Hierbei findet ein Lernen ohne ständige Supervision und Kontrolle durch eine Lehrperson statt (vgl. Krause, 2007). Brüning und Saum (2006) nennen hierbei fünf Basiselemente, die bedeutsam für einen nachhaltigen Lernprozess sind: positive Abhängigkeit, individuelle Verantwortlichkeit, partnerbezogene Kommunikation, soziale Kompetenzen und die Reflexion des Gruppen- und Arbeitsprozesses. Nach Souvignier müssen sich die Schülerinnen und Schüler zunächst mit dem Lerninhalt auseinandersetzen, damit sie die Inhalte verstehen und in eigenen Worten wiedergeben bzw. den Mitschülerinnen und Mitschülern erklären können. Die Kommunikation mit der Lernpartnerin bzw. dem Lernpartner fordert und fördert dabei sowohl die soziale Kompetenz als auch weitere Fähigkeiten wie „Kommunikationsfähigkeit, Perspektivenwechsel, Zuhören, Kompromissfähigkeit, Geduld, Hilfeleistung und Kritikfähigkeit“ (Souvignier, 2012, S. 452). „Die eigenständige Auseinandersetzung mit dem Lerngegenstand und die damit verbundene Möglichkeit, selbst zu entscheiden, welche Inhalte sie vertiefen wollen, sollte zu größerer Lernfreude führen und die intrinsische Motivation fördern“ (Souvignier, 2012, S. 452). Das Arbeiten in einer Gruppe führt zu einem Gefühl der Sicherheit und des Aufgehobenseins (vgl. ebd.).

4.2 Die Schriftsprache

Bei dem ungestörten Schriftspracherwerb handelt es sich nach Mayer (2010) um einen Entwicklungsprozess, der sich in unterschiedliche Phasen gliedern lässt. Diese Phasen bzw. Stufen sollten nicht als voneinander getrennte, sondern in einander übergehende bzw. parallel verlaufende Stufen gesehen werden (vgl. ebd.). Die von Mayer (2010) zusammengetragene Tabelle (s.u.) stellt die verschiedenen und bekanntesten Entwicklungsmodelle zum Schriftspracherwerb dar. Das erste Modell stammt von Frith aus dem Jahre 1986 und das letzte Modell von Kirschhock aus dem

Jahre 2004. Bei Betrachtung der sechs verschiedenen Modelle lässt sich feststellen, dass die drei Phasen („logographisch“, „alphabetisch“ und „orthographisch“, wie Frith sie nennt) in allen Modellen vorhanden sind. Die präliteralen Vorläuferfertigkeiten, die u.a. im Modell von Günther (1986), Scheerer-Neumann (1987) und Kirschhock (2004) vorhanden sind (vgl. Mayer, 2010), gelten als „präliteral-symbolische Voraussetzung [...] für einen erfolgreichen Schriftspracherwerb“ (Mayer, 2010, S. 23). Diese Phase wird beschrieben als das „Nachahmen äußerer Verhaltensweisen“ (S. 23). Dabei „kritzeln“ (S. 23) Kinder und bezeichnen dieses als Schreiben, sie praktizieren ein „Als-ob-Vorlesen“ oder können Bilderbücher betrachten und daraus Informationen entnehmen (S. 23). Somit sind Bilderbücher für die frühkindliche Sprachförderung und für den zukünftigen Schriftspracherwerb von großer Bedeutung. Der Sprung in die logographische Strategie wird durch die Motivation zum Lesen ausgelöst (vgl. Mayer, 2010). Diese Phase ist, so Mayer (S. 26) auf Ehri (1992) verweisend, durch das sogenannte „visual-cue-reading“ gekennzeichnet. Dabei wird die Bedeutung eines Wortes durch visuelle Merkmale der Graphemfolge assoziiert (vgl. Mayer, 2010). Dies kann dazu führen, dass diese Assoziationen verwechselt oder aber auch schnell wieder vergessen werden können. Logos von bekannten Marken können in dieser Phase erkannt werden, auch wenn die typischen visuellen Eigenschaften dieser nicht behalten werden (vgl. ebd). Kinder probieren sich am Lesen ihrer Namen bzw. der Namen der Bezugspersonen und gehen dabei rein visuell vor. Versuche des Schreibens werden auf die Buchstaben reduziert, die im Wort vorkommen. Dabei wird oftmals der erste Buchstabe korrekt aufgeschrieben (vgl. ebd.). Es wird aufgrund der Phonem-Graphem-Korrespondenz davon ausgegangen, dass sich die logographische Strategie im deutschen Sprachraum auf das Vorschulalter beschränkt (vgl. ebd.). In der Phase der alphabetischen Strategie erlernen die Kinder die Phonem-Graphem-Korrespondenz, das phonologische Rekodieren und das lautgetreue Aufschreiben (vgl. ebd.). Ehri (1992), Scheerer-Neumann (1987) und Kirschhock (2004) haben diese Phase in mehrere Einheiten unterteilt (vgl. Mayer, 2010). Dem Arbeitsgedächtnis kommt hier eine große Bedeutung zu, da die Kinder während des Leseprozesses die Buchstaben zwischenspeichern müssen. Die orthographische Phase zeichnet sich dadurch aus, dass nun die „ganzheitliche Verarbeitung größerer Einheiten der Schriftsprache (Morpheme, Silben, häufig vorkommende Graphemfolgen)“ (Mayer, 2010, S. 31) erworben und nicht einzelne Laute analysiert werden. Dies ist

ein sehr wichtiger Schritt, um das Lesen automatisiert ablaufen zulassen. Die korrekte Rechtschreibung hingegen wird erst im Laufe der Schulzeit, oftmals bis in die SEK I hinein, erworben, da die Phonem-Graphem-Korrespondenz beim Schreiben schwieriger ist als die Graphem-Phonem-Korrespondenz beim Lesen (vgl. Mayer, 2010). Die letzte Stufe der Entwicklungsmodelle zum Schriftspracherwerb ist bei Frith (1986) und Kirschhock (2004) nicht vorhanden. Diese sogenannte integrativ-automatisierte Strategie drückt aus, dass die Automatisierung der Schriftsprache länger andauert. Diese Phase kann sich aber auch positiv auf die Lautsprache auswirken, denn die Kinder werden in dieser Phase mit komplexeren Inhalten und Grammatiken konfrontiert.

Entwicklungsmodelle zum Schriftspracherwerb

Frith 1986	Günther 1986	Scheerer-Neumann 1987 (zitiert nach Valtin 2000)	Ehri 1992	Klicpera et al. 2003	Kirschhock 2004
	präliteral-symbolische Phase	Nachahmung äußerer Verhaltensweisen			präliteral-symbolische Strategie
logographisch	logographemische Phase	Kenntnis einzelner Buchstaben anhand figurativer Merkmale	Visual-cue-reading (prealphabetic phase)	Präalphabetische Phase (rudimentäre logographische Phase)	logographemische Strategie
alphabetisch	alphabetische Phase	- Beginnende Einsicht in den Buchstaben-Laut-Bezug - Einsicht in den Buchstaben-Laut-Bezug	Phonetic-cue-reading (rudimentary alphabetic phase, partial alphabetic phase)	Alphabetische Phase mit geringer Integration	alphabetische Strategie - beginnende - teilweise entfaltete - weitgehend entfaltete - voll entfaltete

orthographisch	orthographische Phase	Verwendung orthographischer bzw. sprachstruktureller Elemente	full alphabetic phase	Partiell lexikalisches Lesen	Orthographische Strategie - beginnende - teilweise entfaltete - weitgehend entfaltete - voll entfaltete
	integrativ-automatisierte Phase	Automatisierung von Teilprozessen	Consolidated-alphabetic-reading (cipher-sight-word-reading)	Alphabetische Phase mit voller Integration	

Tabelle 4: vgl. Mayer, 2010

Das bekannteste Prozessmodell des Schreibens stammt aus dem Jahre 1980 von Hayes und Flower (1980). Dieses unterteilt den Prozess in drei Phasen: Planen, Formulieren und Überarbeiten. Die Autorin oder der Autor eines Textes plant in der ersten Phase den Schreibprozess, listet Ideen auf, ordnet sie und überlegt sich eine mögliche Struktur. In der zweiten Phase wird der eigentliche Text formuliert, und in der abschließenden Phase wird der Text überarbeitet. Diese Phasen müssen nicht in dieser Reihenfolge ablaufen und können sich bei geübten Schreiberinnen und Schreibern überlappen. Während des Prozesses der Textproduktion kann auf das im Langzeitgedächtnis gespeicherte Wissen zurückgegriffen werden (vgl. ebd.). Bei jedem Schritt wird der Schreibvorgang mittels Monitor überwacht und es wird an die Schreibaufgabe erinnert (vgl. ebd.).

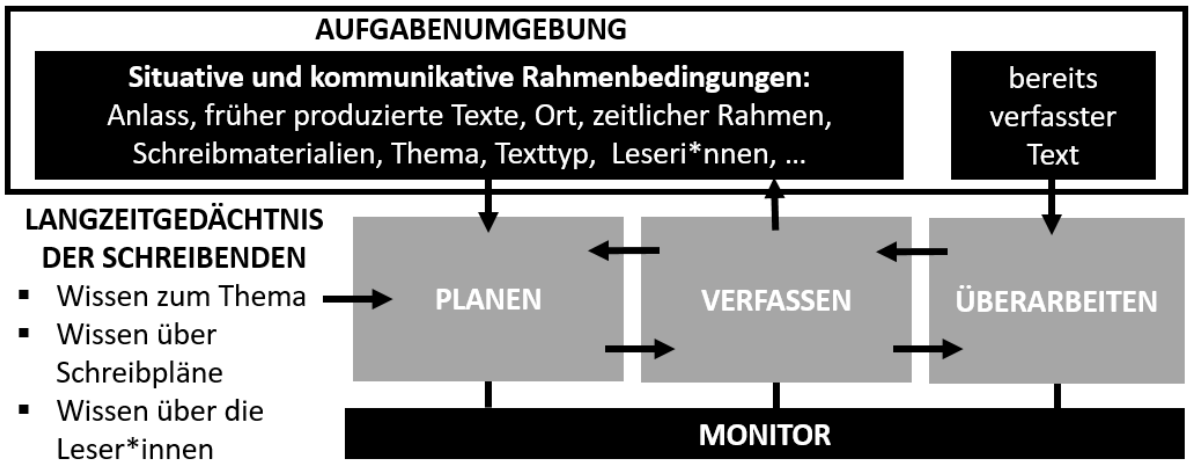

Abbildung 2: Vgl. Hayes & Flower, 1980.

4.3 Relevanz

Mich hat vor allem die schriftsprachliche Entwicklung und Förderung von Schülerinnen und Schülern mit und ohne unterschiedlichen Unterstützungsbedarfen interessiert. Dieses Themenfeld steht im Fokus verschiedenster Unterrichtsfächer, unter anderem in Deutsch, Gesellschaftslehre, Naturwissenschaften und auch in Mathematik, und ist daher mit dem Erfolg des schulischen Lernens verbunden. „Der Kompetenzaufbau bei der Entwicklung kognitiver Fähigkeiten und der Erwerb funktionaler Kulturtechniken hat im Unterricht Vorrang“ (Bezirksregierung Münster, 2015). Die Schriftsprache ist somit von besonderer Bedeutung, da sie eine Grundvoraussetzung für Menschen zur gleichberechtigten Teilhabe an der Gesellschaft darstellt. Somit ist dieses Gebiet bei allen Schülerinnen und Schülern, vor allem aber bei solchen mit dem Förderschwerpunkt Lernen von größter Wichtigkeit. Angemessene Fähigkeiten in diesem Bereich erhöhen die Wahrscheinlichkeit, dass diese jungen Menschen im Anschluss an ihre Schullaufbahn eine Ausbildungsstelle finden und ihren Lebensunterhalt eigenständig bestreiten werden.

4.4 Förderung der Schreibkompetenz

Fördermaßnahmen oder Interventionen haben nach Hager und Hasselhorn (2008) vier Funktionen. Sie dienen (1) der allgemeinen Förderung oder (2) der Prävention. Sie können aber auch (3) eine kurative oder (4) eine rehabilitierende Funktion erfüllen. „Das Schreiben – so wie auch das Lesen – sind [nach Köller] kulturelle Tätigkeiten, die insbesondere die Schule vermitteln muss, da sie sich zumeist nicht von selbst, ohne Instruktion einstellen“ (Goer & Köller, 2016, S. 141). Die in der Dissertation dargestellten Fördermaßnahmen sind so ausgewählt und konzipiert worden, dass sie im Schulalltag gut anwendbar sind und dem „integrative[n] Charakter des Deutschunterrichts“ (ebd.) gerecht werden.

4.5 Problemstellung

Die Dissertation soll Anhaltspunkte zur Verbesserung der schulischen Förderung im schriftsprachlichen Bereich im deutschsprachigen Raum liefern. Die Unterstützung von leistungsschwachen Schülerinnen und Schülern beim Erwerb der Schriftsprache bereitet Lehrkräften oftmals aufgrund fehlender Konzepte und der heterogenen Schülerschaft Schwierigkeiten. Wie in Kapitel 1 erwähnt, gibt es im deutschsprachigen Raum wenige Ansätze, auf die die Lehrkräfte zurückgreifen können (vgl. Grünke & Leonard-Zabel, 2015). Da jedoch jede Förderung sprachspezifisch ist und sich die Erkenntnisse nicht einfach auf das Deutsche übertragen lassen, ist das Entwickeln von Fördermaßnahmen für das Deutsche sehr wichtig. Die Dissertation will dazu beitragen, dass die dem angloamerikanischen Raum entstammenden Befunde auf den deutschen Sprachraum adaptiert werden.

Die Wichtigkeit des Forschungsgebietes konnte ich selbst im Rahmen der letzten Jahre erfahren. Nach meinem Lehramtsstudium habe ich an der Universität zu Köln als Lecturer gearbeitet. Bevor ich jedoch meine Dissertation abschloss, habe ich mein zweites Staatsexamen erworben und arbeite derzeit als Sonderpädagogin an einer Gesamtschule. Die Arbeit macht sehr viel Spaß, jedoch ist mir mit der Zeit aufgefallen bzw. fällt mir immer wieder auf, dass es zu wenig Förderprogramme oder -konzepte gibt, die ohne einen großen Aufwand in der „Basis“ implementierbar sind. Dies gilt nicht nur für den Bereich der Schriftsprache. Ebenfalls muss der Unterricht

und damit die Lehrkraft auf die verschiedenen Bedürfnisse aller Schülerinnen und Schüler eingehen.

Ich habe daher den Fokus meiner Dissertation auf Einzelfallstudien gelegt, die das Themenfeld Schriftsprache aus unterschiedlichen Blickwinkeln betrachten. Das gemeinsame Lernen von Schülerinnen und Schülern mit und ohne Unterstützungsbedarfen ist in den letzten Jahren durch die Umsetzung des Artikels 9 (vgl. Beauftragte der Bundesregierung für die Belange von Menschen mit Behinderungen, 2017) des Menschenrechtsabkommens deutlich angestiegen. Das menschliche Recht auf Bildung, der Elternwille und die wohnortnahe Beschulung wurden in den vergangenen Jahren sehr stark gewichtet. Dies hat jedoch dazu geführt, dass die Schulen, die das gemeinsame Lernen vor vielen Jahren exklusiv durchführten, deutlich besser ausgestattet waren als die Schulen jetzt. Die Bedingungen, unter denen Schulen die Inklusion umsetzen, sind, wie ich es auch erlebe, schlechter. Umso mehr kommt der praktikablen Förderung der Schriftsprache von Schülerinnen und Schülern mit und ohne einen sonderpädagogischen Unterstützungsbedarf eine wichtige Rolle zu.

5 Übersicht über die in der Dissertationsschrift enthaltenen Publikationen

Titel	Autoren	Jahr	Zeitschrift
To What Extent Do Certain Characteristics of a Child's Written Story Influence the Way It Is Rated?	Grünke, M., Büyüknarci, Ö., Wilbert, J., Breuer, E.	2015	Insights into Learning Disabilities
Helping Children with Specific Learning Disabilities to Improve their Narrative Writing Competence by Teaching Them to Use the Story Maps Strategy	Hennes, A., Büyüknarci, Ö., Rietz, C., Grünke, M.	2015	Insights on(!)[3] Learning Disabilities
Teaching Children with Learning Disabilities How to Write Concise Summaries of Stories	Büyüknarci, Ö., Hennes, A., Rietz, C., Grünke, M.	2015	Insights into Learning Disabilities
The Effects of a Metacognitive Strategy on the Persuasive Writing Skills of Adolescents With Hearing Impairment and Learning Disabilities	Büyüknarci, Ö., Grünke, M.	2019	Insights into Learning Disabilities

[3] Hier wird sich auf den Artikel bezogen, der in der Zeitschrift „Insights into Learning Disabilities" veröffentlicht wurde. Der Fehler im Artikel, der den Namen der Zeitschrift falsch darstellt, beruht auf der Zeitschrift.

5.1 Artikel 1 „To What Extent Do Certain Characteristics of a Child's Written Story Influence the Way It Is Rated? Insights Into Features Necessary for Supporting Struggling Writers"

Der erste Artikel der Dissertation „To What Extent Do Certain Characteristics of a Child's Written Story Influence the Way It Is Rated? Insights Into Features Necessary for Supporting Struggling Writers" soll als Ausgangspunkt der Dissertation dienen. Hierzu ist mit Hilfe des Artikels zunächst einmal festzustellen, welche (theoriebasierenden, text- oder personenbezogenen) Variablen einen Einfluss auf die Bewertung von Texten besitzen. Dies soll Entscheidungen im Hinblick darauf erleichtern, in welchem Gebiet die Schülerinnen und Schüler gefördert werden sollten. Hierzu wurden 60 Kinder im Alter von zehn bis dreizehn Jahren gebeten, Erzählungen zu schreiben. Anschließend bewerteten acht unabhängige Rater die erstellten Texte. Strukturgleichungsmodelle wurden genutzt, um den Einfluss der sieben unabhängigen Variablen auf die Textqualität zu erfassen. Die Ergebnisse zeigen auf, dass kurze und unleserliche Erzählungen eher ungünstig bewertet wurden, wohingegen andere Faktoren (wie die Fähigkeit der Autorin oder des Autors das Alphabet aufzulisten) eine untergeordnete Rolle spielen. Lehrkräfte sollten sich den Ergebnissen nach mit der Frage beschäftigen, wie sie ihren Schülerinnen und Schülern vermitteln können, Ideen besser zu generieren und damit längere Texte zu kreieren. Ebenfalls sollte auf eine leserliche Handschrift geachtet werden.

5.2 Artikel 2 „Helping Children with Specific Learning Disabilities to Improve their Narrative Writing Competence by Teaching Them to Use the Story Maps Strategy"

Der zweite Artikel „Helping Children with Specific Learning Disabilities to Improve their Narrative Writing Competence by Teaching Them to Use the Story Maps Strategy" stellt eine Interventionsstudie dar, welche sich aufgrund der Ergebnisse des ersten Artikels mit graphischen Hilfsmitteln, den sogenannten „Story Maps", auseinandersetzt. Schülerinnen und Schüler mit Schwierigkeiten im Aufsatzschreiben sollen dabei unterstützt werden, ihre Texte gründlicher als bisher zu planen und dadurch längere Schreibprodukte abzuliefern. Es ist davon auszugehen, dass effektive Maßnahmen mit der eben genannten Zielsetzung wesentlich dazu beitragen, dass Schülerinnen und Schüler hinsichtlich ihrer Schreibentwicklung nicht zurückfal-

len (vgl. Grünke & Leonard-Zabel, 2015; Santangelo, 2014). Entsprechende Förderansätze finden in Deutschland – anders als in den USA – bisher wenig Beachtung. Vor diesem Hintergrund erachten die Autorinnen und Autoren des genannten Artikels eine Adaptierung des Story Map-Verfahrens im deutschsprachigen Raum als lohnenswert. Mit Hilfe des Story Map-Verfahrens nach Li (2007), einer strukturierten Anleitung zum Verfassen von Texten, konnten die 41 Schülerinnen und Schüler über einen Zeitraum von zwei Wochen das strukturiertere Schreiben üben. Da es sich bei dieser Studie um 8- bis 14-jährige Schülerinnen und Schüler handelte, wurde das Genre „Erzählungen" gewählt. Diese Textgattung ist Mädchen und Jungen dieses Alters in aller Regel gut bekannt, während davon auszugehen ist, dass sie mit verschiedenen sophistizierteren Darstellungsformen noch nicht unbedingt sonderlich intensive Erfahrungen gemacht haben. Im Rahmen der Studie wurden den Schülerinnen und Schülern Fotos präsentiert, zu welchen sie eine Erzählung schreiben sollten. Die Autorinnen und Autoren werteten die Texte der Schülerinnen und Schüler mit Hilfe der NAEP-Skalen (National Center of Education Statistics, 2011) und eines curriculumbasierten Indexes (Total Words Written, TWW) aus. Es konnte belegt werden, dass die Schülerinnen und Schüler mit Hilfe der Story Maps längere Texte erstellten.

5.3 Artikel 3 „Teaching Children with Learning Disabilities How to Write Concise Summaries of Stories"

Der dritte Artikel „Teaching Children with Learning Disabilities How to Write Concise Summaries of Stories" beschreibt eine experimentelle Interventionsstudie, die mit 51 Schülerinnen und Schülern aus Förderschulen mit dem Förderschwerpunkt Lernen in NRW durchgeführt wurde. Die Schülerinnen und Schüler waren zwischen 8 und 14 Jahre alt. Es wurde ihnen über einen Zeitraum von zwei Wochen beigebracht, informative Texte präzise schriftlich zusammenzufassen. Die hierbei vermittelte Kompetenz stellt gemäß Graham und Perin (2007) eine der wichtigsten Fähigkeiten im Bereich der schriftsprachlichen Entwicklung dar. Das Schreiben von Zusammenfassungen ist nicht nur im Deutschunterricht von großer Wichtigkeit, sondern auch in einer ganzen Reihe anderer Schulfächer (Graham & Harris, 2012). Nach Melenk und Knapp (2001) sowie nach Reid, Lienemann und Hagaman (2013) können durch Textzusammenfassungen die wichtigsten Informationen eines Textes isoliert bzw. eigene Schemata der Konzepte in den Texten erstellt werden. Dies erleichtert

die Abspeicherung und die Wiedergabe der zentralen Inhalte enorm (Graham & Harris, 2012). Um eine möglichst effiziente Intervention zu gestalten, wurden Aspekte der direkten Instruktion angewandt. Ein solches Vorgehen hat sich in diesem Kontext sehr bewährt (Melenk & Knapp, 2001; Alharbi, Hott, Jones & Henry, 2015). Die Autorinnen und Autoren griffen auf eine von Fritzsche (1998) stammende Einteilung von Zusammenfassungen zurück und orientierten sich an der dortigen Beschreibung von kurzen schriftlichen Darstellungen informierender Texte. Die Vorgehensweise entsprach in weiten Teilen der bei Nelson, Smith und Dodd (1992) skizzierten, bei der zunächst die Hauptideen bzw. Hauptinformationen eines Textes identifiziert werden. Anschließend sind die wichtigsten Punkte, die zur Hauptidee passen, aufzulisten. Zu guter Letzt lernen die Schülerinnen und Schüler die Zusammenfassungen zu schreiben. Es konnte gezeigt werden, dass die Mädchen und Jungen in der Experimentalgruppe nach der Intervention mehr relevante Informationen nannten als die in der Kontrollgruppe.

5.4 Artikel 4 „The Effects of a Metacognitive Strategy on the Persuasive Writing Skills of Adolescents With Hearing Impairment and Learning Disabilities“

Artikel vier „The Effects of a Metacognitive Strategy on the Persuasive Writing Skills of Adolescents With Hearing Impairment and Learning Disabilities“ ist eine Einzelfallstudie, die mit Jugendlichen durchgeführt worden ist, die Schwierigkeiten mit der Fähigkeit des Schreibens, vor allem von „persuasive essays“ und dem Verbessern von Texten aufwiesen. Es wurde überprüft, inwieweit die „FIX-Strategie“ von De La Paz und Sherman (2013) (Sherman, C. K. & De La Paz, S. 2015), eine metakognitive Routine, die es Schülerinnen und Schülern möglich macht, dass sie den Verbesserungsprozess eines Textes strukturieren, Effekte aufweist (ebd.) Die an der Studie teilnehmenden Schülerinnen und Schüler hatten die Förderschwerpunkte Lernen und Hören und Kommunikation.

6 Diskussion

Im Folgenden werden die wichtigsten Erkenntnisse der durchgeführten Studien und die Limitationen dieser dargelegt. Im Anschluss wird auf der Grundlage des Forschungsvorhabens auf Implikationen für die pädagogische Praxis und Forschung eingegangen.

6.1 Zusammenfassung

Wie im Kapitel 1 dargestellt, ist die Schreibfähigkeit eine Grundvoraussetzung für den erfolgreichen Abschluss der schulischen Laufbahn für Schülerinnen und Schüler und für Erwachsene zur gleichberechtigten Teilhabe an der Gesellschaft (vgl. Bundeszentrale für politische Bildung, 2015). Die fehlenden Konzepte, die heterogene Gruppe von Schülerinnen und Schülern, die immer schlechter werdenden Ressourcen vor allem im Bereich der Inklusion stellen in diesem Bereich eine große Herausforderung dar (vgl. Muñoz, 2020). Die vier Artikel im Rahmen meiner kumulativen Dissertation beschäftigen sich mit diesem Themenfeld und versuchen, einen Beitrag zu den fehlenden Förderkonzepten im Bereich der Schriftsprache zu liefern.

Der erste Artikel thematisierte die Frage, welche Charakteristika die Bewertung von Erzählungen von Kindern beeinflussen. Dazu wurden von 10-jährigen oder älteren Kindern geschriebene Erzählungen von unabhängigen Expertinnen und Experten bewertet. Im Anschluss wurden diese durch Strukturgleichungsmodelle analysiert und der Einfluss von sieben text-, theorie- oder personenbezogenen unabhängigen Variablen beschrieben. Es konnte gezeigt werden, dass die Textlänge und die Leserlichkeit einen großen Einfluss auf die Bewertung der Texte haben, wohingegen die Rechtschreibfehler und die Fähigkeit des Kindes, das Alphabet aufzulisten, eine untergeordnete Rolle spielen. Die Autorinnen und Autoren empfehlen, dass Kinder im Bereich einer leserlichen Handschrift unterstützt werden. Ebenso ist es wichtig, dass Kinder längere Texte schreiben und hierfür bei der Ideengenerierung unterstützt werden müssen.

Artikel Nummer zwei beschäftigte sich mit den Effekten von graphischen Hilfsmitteln, den „Story Maps“. Diese sollen, wie schon im ersten Artikel herausgearbeitet, zu längeren Texten führen, indem Kinder und Jugendliche beim Planen ihrer Aufsätze unterstützt werden, was zu längeren Texten führen soll. Diese Studie wurde mit 8-

bis 14-jährigen Schülerinnen und Schülern durchgeführt. Kinder und Jugendliche in der Fördergruppe verfassten am Ende der Studie deutlich ausführlichere Geschichten als diejenigen in der Vergleichsgruppe. Als wesentliche Wirkfaktoren können an dieser Stelle das häufige Wiederholen der Strategie und die Orientierung der Texte an den Interessen der Schülerinnen und Schüler genannt werden.

Das Schreiben von Zusammenfassungen haben Kinder und Jugendliche im Alter von 8 bis 14 Jahren im Rahmen einer Interventionsstudie im dritten Artikel eingeübt. Die Schülerinnen und Schüler, die innerhalb einer kurzen Zeitspanne von nur zehn Einheiten an der Studie teilnahmen, konnten mehr relevante Informationen aus Texten identifizieren und diese in ihren Zusammenfassungen auflisten als die Kontrollgruppe.

Artikel vier stellte die Effekte der FIX-Strategie bei Schülerinnen und Schülern des zehnten Jahrgangs in einem Peer-Tutoring dar. Die Daten weisen durch eine visuelle Analyse und Non-Overlap-Indizes darauf hin, dass ein kurzer Förderzeitraum ausreicht, um positive Effekte zu erreichen. Die teilnehmenden Schülerinnen und Schüler empfanden viel Spaß bei der Studie, äußerten, stolz auf die erreichten Resultate zu sein, und gaben an, die FIX-Strategie auch in Zukunft weiter anwenden zu wollen.

6.2 Limitationen

Es ergaben sich vielversprechende Ergebnisse im Rahmen der vorliegenden kumulativen Dissertation. Dennoch muss eine Reihe an Limitationen berücksichtigt werden, die sich im Rahmen der vier Forschungsprojekte ergaben. Im ersten Artikel wurde thematisiert, welche Charakteristika die Bewertung von Erzählungen beeinflussen, und aufgrund des Nicht-Vorhandenseins eines offiziellen Ratinginstruments wurde von den Autoren ein Ratinginstrument zur Erfassung der Textqualität eingesetzt, welches nicht alle Faktoren der Textqualität berücksichtigte. Obwohl die Validität des genutzten Instruments thematisiert werden kann, erzielten die Rater der Texte ein hohes Maß an Übereinstimmung. Die Ratings wurden von Lehramtsstudierenden des Faches durchgeführt, sodass die Frage, ob fertig ausgebildete Lehrkräfte zu anderen Ergebnissen gekommen wären, ebenso interessant gewesen wäre. Aufgrund

des Designs der Studie gilt die Übertragbarkeit der Ergebnisse dieser Studie als eingeschränkt auf das Genre Erzählungen.

Der zweite Artikel, der die Ergebnisse der ersten Studie aufgriff und die Förderung der schriftsprachlichen Kompetenzen mit Hilfe der Story Maps thematisierte, umfasste eine große Altersspanne an Teilnehmerinnen und Teilnehmern. Aufgrund der Praktikabilität mussten die Autorinnen und Autoren einen Kompromiss mit den teilnehmenden Schulen eingehen, sodass das Design der Studie nicht komplett randomisiert werden konnte und kein Follow-up erhoben werden konnte. Die Auswertung anhand der NAEP-Skalen wurde durch die Studienleiter durchgeführt (vgl. Hartmann & Pelzel, 2005).

Die dritte Interventionsstudie, die das Schreiben von Zusammenfassungen von Kurzgeschichten thematisiert hat, wurde mit 8- bis 14-jährigen Schülerinnen und Schülern durchgeführt. Eine Limitation, die beachtet werden sollte, ist, dass das Design der Interventionsstudie kein Follow-up vorsah. Die Wahl der Textsorte ist selektiv, wodurch die Übertragbarkeit der Ergebnisse auf andere Textsorten eingeschränkt ist.

Aufgrund des eingesetzten kontrollierten Einzelfalldesigns des letzten Artikels der kumulativen Dissertation, der die Effekte der FIX-Strategie auf die Fähigkeit des Verfassens von persuasiven Essays untersucht hat, ist die Übertragbarkeit der Erkenntnisse als eingeschränkt zu sehen. Es wäre interessant, diese Studie mit einer größeren Anzahl an Teilnehmerinnen und Teilnehmern unterschiedlicher Altersgruppen durchzuführen, die eine Bandbreite an Fähigkeiten, geographischen und kulturellen Hintergründen aufweisen.

6.3 Implikationen für Forschung und Praxis

Die Dissertation soll, wie zuvor beschrieben, einen Beitrag zu dem Themenfeld Interventionen im schriftsprachlichen Bereich bei Kindern und Jugendlichen mit dem Förderschwerpunkt Lernen leisten. Die Artikel beschäftigen sich aus verschiedenen Blickwinkeln mit diesem Themenfeld. Dabei steht natürlich die Institution Schule im Vordergrund, denn die Förderung aller Schülerinnen und Schüler mit und ohne einen sonderpädagogischen Unterstützungsbedarf findet in Schulen statt. Wie zuvor dargelegt, existieren nicht genügend Konzepte, die Lehrkräfte ohne Weiteres im regulären Schulalltag anwenden können. Die Schreibforschung bringt aufgrund der Komplexität des Schreibprozesses (vgl. Troia & Graham, 2003) viele Herausforderungen (vgl. Grünke & Leonard-Zabel, 2015) mit sich, was sich ebenfalls auf die Schreibförderung auswirkt. Dies und die Diversität an den Schulen erschweren die Vermittlung schriftsprachlicher Inhalte in größeren Gruppen, vor allem in Klassen des gemeinsamen Lernens. Wie zuvor in den Limitationen dargelegt, wäre es wichtig, dass die vielversprechenden Inhalte der Studien in größerem Umfang repliziert und ausgebaut werden, damit die Schreibforschung weitere theoretische Befunde entwickelt, die auf die Praxis ableitbar sind.

Der gesamte Schreibvorgang (vgl. Hayes & Flower, 1980) ist sehr komplex, und beansprucht sehr viele kognitive Prozesse (vgl. Hasselhorn & Schumann-Hengsteler, 2001; Mayer, 2010). Dieses stellt bei Schülerinnen und Schüler mit dem Förderschwerpunkt Lernen eine viel größere Herausforderung dar (vgl. Grünke & Grosche, 2014), sodass die Faktoren, die die Bewertung von Erzählungen beeinflussen, vor allem bei diesen Schülerinnen und Schülern trotz ihrer Komplexität nicht ignoriert werden, sondern durch Lehrkräfte bewusst trainiert werden sollten. An dieser Stelle ist die Vernetzung von schulischem Alltag und Forschung sehr wichtig. Die Forschungsdesigns sollten, wie bei den Limitationen dargestellt, den schulischen Alltag und die Bedingungen im Klassenraum beachten, da ansonsten die wichtigen Forschungsergebnisse nicht in der Praxis Fuß fassen können. Die Erkenntnisse dieser kumulativen Dissertation sind diesbezüglich vielversprechend und enthalten umsetzbare und wirksame Interventionen, die im schulischen Alltag Einzug halten sollten.

7 Ausblick

Im Rahmen meines Studiums, meiner Tätigkeit am Lehrstuhl und an der Schule konnte ich feststellen, dass sich das deutsche Schulsystem extrem gewandelt hat. Mit dem Start des Studiums war das gemeinsame Lernen auf einzelne Schulen beschränkt und wurde dort unter guten Bedingungen durchgeführt. Mit der Ausweitung des gemeinsamen Lernens konnten die aktuell guten Bedingungen an den einzelnen Schulen nicht mehr „gehalten“ werden. Dies hat meinem Eindruck nach dazu geführt, dass sich unter vielen betroffenen Sonderpädagoginnen und Sonderpädagogen eine gewisse Unzufriedenheit ausgebreitet hat. Es bleibt spannend zu sehen, ob die von Dyson, Howes und Roberts (2002; 2004) zusammengefassten Faktoren einer guten inklusiven Schule (die Bedeutung von Schulkultur, Leistung und Mitbestimmung, Strukturen und Praktiken und die Unterstützung durch Bildungspolitik und Verwaltung) (vgl. Moser, 2013) demnächst in allen Schulen des gemeinsamen Lernens umgesetzt werden können.

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8.4 Abbildungsverzeichnis

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9 Anhang

9.1 Anteil der Eigenleistung an den zugrunde liegenden Fachbeiträgen

9.1.1 *Artikel 1*

Grünke, M., Büyüknarci, Ö., Wilbert, J. & Breuer, E. (2015). To What Extent Do Certain Characteristics of a Child's Written Story Influence the Way It Is Rated? Insights Into Features Necessary for Supporting Struggling Writers. *Insights into Learning Disabilities, 12(2),* 163-177.

- *Ideengenerierung (gemeinsam mit den Co-Autorinnen und Co-Autoren)*
- *Federführung bei der Literatursuche und -auswertung*
- *Entwicklung des Studiendesigns (gemeinsam mit den Co-Autorinnen und Co-Autoren)*
- *Federführung bei Datenerhebung*
- *Datenauswertung (gemeinsam mit den Co-Autorinnen und Co-Autoren)*
- *Erstellung der Publikation (gemeinsam mit den Co-Autorinnen und Co-Autoren)*
- *Einreichen des Manuskripts*
- *Überarbeitung des Manuskripts (gemeinsam mit den Co-Autorinnen und Co-Autoren)*

9.1.2 *Artikel 2*

Hennes, A., Büyüknarci, Ö., Rietz, C. & Grünke, M. (2015). Helping Children with Specific Learning Disabilities to Improve their Narrative Writing Competence by Teaching Them to Use the Story Maps Strategy. *Insights on Learning Disabilities, 12(1),* 35-56.

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- *Entwicklung des Studiendesigns (gemeinsam mit den Co-Autorinnen und Co-Autoren)*
- *Datenerhebung (gemeinsam mit den Co-Autorinnen und Co-Autoren)*
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- *Überarbeitung des Manuskripts (gemeinsam mit den Co-Autorinnen und Co-Autoren)*

9.1.3 *Artikel 3*

Büyüknarci, Ö., Hennes, A., Rietz, C. & Grünke, M. (2015). Teaching Children with Learning Disabilities How to Write Concise Summaries of Stories. *Insights into Learning Disabilities, 12(1),* 1-17.

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- *Literatursuche und -auswertung*
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- *Erstellung der Publikation*
- *Einreichen des Manuskripts*
- *Federführung bei der Überarbeitung des Manuskripts*

9.1.4 *Artikel 4*

Büyüknarci, Ö. & Grünke, M. (2019). The Effects of a Metacognitive Strategy on the Persuasive Writing Skills of Adolescents With Hearing Impairment and Learning Disabilities. *Insights into Learning Disabilities, 16(2),* 139-152.

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- *Literatursuche und -auswertung*
- *Entwicklung des Studiendesigns (gemeinsam mit dem Co-Autor)*
- *Federführung bei Datenerhebung*
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- *Erstellung der Publikation*
- *Einreichen des Manuskripts*
- *Überarbeitung des Manuskripts (gemeinsam mit dem Co-Autor)*

9.2 Veröffentlichungen

Grünke, M., Büyüknarci, Ö., Wilbert, J. & Breuer, E. (2015). To What Extent Do Certain Characteristics of a Child's Written Story Influence the Way It Is Rated? Insights Into Features Necessary for Supporting Struggling Writers. *Insights into Learning Disabilities, 12(2),* 163-177.

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To What Extent Do Certain Characteristics of a Child's Written Story Influence the Way It Is Rated? Insights Into Features Necessary for Supporting Struggling Writers

Matthias Grünke
Özlem Büyüknarci
University of Cologne

Jürgen Wilbert
University of Potsdam

Esther Breuer
University of Cologne

Many students exhibit a special type of learning disability in writing. Yet, teachers spend relatively little time helping children and youth with severe writing difficulties overcome their struggles or prevent emerging problems from becoming more severe. A major reason for this lack of attention is that many educators feel overburdened by the complex task of teaching students how to compose meaningful texts. The purpose of this explorative study was to determine the extent to which certain theory-based text- and person-related variables influence the way a written story is rated by experts and subsequently enable practitioners to make more informed decisions about where to start in supporting struggling writers. Sixty German secondary students (ages 10-13 years old) wrote stories that were evaluated by eight independent raters. Structural equation models were then used to examine the relationships between seven dependent variables and the quality of the texts. The analysis showed that rather short and illegible stories were generally rated unfavorable. Other factors (e.g., performance on alphabetic and copying tasks or spelling skills) also played a role, but to a lesser extent. These findings provide teachers with useful information about where to start when trying to prevent learning disabilities in writing. In particular, educators should focus on instructing students (a) how to brainstorm story ideas in order to enable them to produce texts of an acceptable length and (b) on how to improve the legibility of their handwriting.

Keywords: essay-writing skills, composition writing, appraisal of essays, handwriting, spelling, learning disabilities in writing

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Introduction

Being able to put one's thoughts on paper is a critical skill for success in school and later professional endeavors. As soon as students have acquired basic writing skills, they are under constant demand to demonstrate their academic competence through the written texts they produce. In other words, possessing content knowledge is not enough. One needs also to be able to express the information in a form that is comprehensible to the reader.

Children learn these processes by composing simple stories at the end of their elementary education. Around the age of 10, they gradually develop the skills necessary to produce more refined texts, like compare/contrast essays, argumentative treatises, and other kinds of more complex genres (Becker-Mrotzek & Böttcher, 2012). Acquiring solid writing competencies is not only important in language classes, it is also vital for demonstrating knowledge on written exams, for example, in natural sciences. Without ample abilities to "think on paper," students are bound to fail in a great variety of subjects (Grünke & Leonard-Zabel, 2015).

However, competence in composing text, or rather, the ability to transfer ideas or information into a linguistic form while following conventional patterns of achieving a communicative goal with a specific audience is as important as it is challenging (Graham & Harris, 2005). Indeed, according to Kame'enui and Simmons (1990), it is "… the most complex of language skills … [and] the last to develop in the sequence of listening, speaking, reading, and writing" (p. 420). Thus, text composition requires brain-based components such as intact attention and concentration, spatial and sequential production, memory, higher-order cognition, language competencies (including adequate vocabulary, grammatical structures, and orthography), as well as executive functioning (Feifer & De Fina, 2002).

In their well-known theory, Hayes and Flower (1980) describe the processes that a person undergoes in the course of writing, which can be roughly subdivided into idea generation, planning, translating, executing and reviewing. In later elaborations of this model, Hayes (1996, 2006, 2012) incorporated supplemental social and affective elements (e.g., problem solving, text interpretation, embedded reflection), further illustrating the intricacy that is involved in text production. Hayes especially stressed the importance of effectively coping with complexity in ever-changing new writing challenges.

Bereiter and Scardamalia (1987) provided an explanation of how novices can gradually master these highly demanding text production tasks, including the significance of increasing the fluency of the linguistic processes in order to lessen the demands on a person's memory system when it tries to hold and manipulate a large amount of information simultaneously. Along these lines, Berninger and Swanson (1994) proposed a model that highlights the mean-

ingful role that transcription skills play on the way to becoming a proficient writer, especially spelling and motor skills. Without fluency, the more mechanical aspects of execution make the writing process even more demanding, usually resulting in brief texts (Bereiter & Scardamalia, 1987; Kreiner, 1996; Van der Hoeven, 1999).

Several studies have suggested that students who do not demonstrate the above skills to a sufficient degree often produce texts that are considered inadequate by teachers and other expert raters. That is, if the ability to simultaneously hold in memory and manipulate a large amount of information and to cope with complexity in novel situations is low, the resulting texts are viewed as being of relatively meager quality (e.g., Berninger et al., 2010). When students make a comparatively large number of spelling errors, their writing products do not get rated very favorably either, (e.g., MacArthur & Graham, 1987). The same is true for students whose handwriting is poor and, therefore, submit texts that are difficult to decipher (e.g., Greifeneder, Zelt, Seele, Bottenberg, & Alt, 2012; Rose, 2009). Finally, if students lack the stamina or the knowledge to elaborate on a subject and hence compose proportionally short writing products, their texts are generally also evaluated rather negatively (Englert & Raphael, 1988).

A great number of children and youth have severe problems with mastering the task of composing a meaningful text. If these difficulties persist over time and reach a critical stage, they are seen as an expression of a specific learning disability in writing. Referring to the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013), Hahn and Morgan (2014) described these students as having writing skills (measured by individually administered tests) that fall substantially below those expected given the individual's chronological age, intelligence, and age-appropriate education (i.e., delays of two years or more). School-based epidemiological studies have documented that the prevalence of children and youth with learning disabilities in writing is even greater than those with dyslexia or dyscalculia (Mayes & Calhoun, 2006). Different studies suggest that up to 15% of all students exhibit this kind of disorder (Katusic, Colligan, Weaver, & Barbaresi, 2009).

Given these statistics, it is important that teachers support children and youth in improving their ability to first author simple stories and later attend to more sophisticated linguistic text forms. This is anything but easy, however. As stated above, writing is a very complex neurodevelopmental process, and its intricacy and unique nature make it difficult to determine exactly what to teach (Anderson & Keel, 2002; Kaufer, Hayes, & Flower, 1986; Ortega, 2009; van Wijk & Sanders, 1999). To educators, the task of imparting the knowledge and skills to compose a meaningful text, therefore, often appears overwhelming (Troia & Graham, 2003). As a consequence, this vital part of schooling gets pushed "to the dusty corners of the classroom" (Schlagal, 2013, p. 257).

To remedy this dilemma, we need reliable information about which problems and skills practitioners have to focus on in order to help students produce texts of acceptable quality.

Purpose of This Study and Research Questions

The theoretical models described above provide answers to the question of what skills and competencies are needed to effectively put one's thoughts on paper. However, we still do not know much about the extent to which a specific factor contributes to being able to compose an acceptable writing product. To our knowledge, the variables highlighted earlier have never been incorporated into one study aimed at providing information about the significance that each of these elements plays in creating a text that gets rated positively by experts.

From the major relevant theories of writing development and the corresponding empirical studies (see above), we have gained an understanding of the importance of sufficient skills in spelling, handwriting, producing longer pieces of work, and coping with complexity in novel situations for creating an appealing text. However, we do not know much about how these factors relate to each other and which factor(s) is/are considered more crucial than others.

To fill this void in the literature, this study was designed to determine the extent to which the aforementioned variables are relevant for producing an acceptable piece of writing and in which way(s) they are connected with each other. Story writing was chosen, because this is the genre that students use from the very beginning of their writing careers (see above). If they have not developed ample competencies in authoring a simple narrative, they will not be able to proceed to more advanced levels of writing (Graham & Harris, 2005).

In order to systematize the relevant variables, we divided them into two categories:

(1) text-related factors that can be directly detected on the basis of a story produced by a student (by assessing the handwriting, by counting the number of words, and by calculating the ratio of orthographical errors) and

(2) person-related factors (fluency in handwriting and ability to cope with complexity in novel situations) that have to be measured independently.

The study was explorative in nature and was designed to gain insight into the roles that these variables play for children aged 10 and a little older when they try to produce stories of acceptable quality (as rated by experts).

Method

Participants

Comprehensive school students. We assessed a total of 60 students – 34 boys and 26 girls. Most of them were 11 (N = 29) or 12 (N = 23) years

old. The remaining eight students were 10 (N = 4) and 13 (N = 4) years old. All attended an inclusive comprehensive school in a major city in Northrhine-Westfalia (Germany) that served grades 5 through 13. They were either in fifth (N = 36) or sixth grade (N = 24). According to their teachers, about 20% of the students came from an immigrant background. A little more than 5% of them had some type of special educational need (learning disabilities, behavioral problems, mild mental retardation, and/or autism spectrum disorders). Due to the lack of a suitable standardized test in German, we were not able to determine the number of girls and boys who exhibited a learning disability in writing or were at risk of developing one. However, the respective class teachers estimated that about a quarter of their students demonstrated major problems in composing text.

Raters. Each story that was subject to our analysis was evaluated by eight independent expert raters. For this purpose, we recruited 192 college students from a large German university (31 males and 161 females). All of them were enrolled in an undergraduate program in special education and had at least rudimentary experience in assessing and teaching children after completing an internship in a special school for slow learners for six weeks. Their ages ranged from 18 to 44 (M = 23.38; SD = 3.88).

Measures

Independent variable. We used a subtest from the General German Language Test (GGLT; Steinert, 2011), in which subjects were to write a story about a drawing that was presented to them. The drawing showed a man climbing up a ladder to a balcony, while a woman watched him from a window in a neighboring house. There were no time limits for finishing the task.

To evaluate the written products, we applied a German version of the National Association of Educational Progress (NAEP) Writing Scale for narrative texts (Canz, 2015). This evaluation grid developed by the NAEP (National Center of Education Statistics, 2011) is one of the most widely used and valid instruments for large-scale writing assessment (Lee & Stankov, 2012). The rubric consists of a set of six descriptions that characterize stories of different quality levels. They address common criteria for evaluating texts like coherence, word choice, and structure. When using the NAEP Writing Scale, a rater assigns one of the six quality levels to a given writing product (with "1" being the highest and "6" being the lowest ranking). To determine the extent of agreement between the eight judges, we applied Krippendorff's alpha (Krippendorff, 2011) as an inter-rater coefficient. The overall reliability was .78. Such a value can be considered as high (Krippendorff, 2004).

Dependent variables. The length of each story was evaluated by counting the number of words. In addition, the percentage of spelling errors was determined. To measure handwriting fluency, we asked the students to record the

letters of the alphabet as fast as possible (alphabet task), as well as to transcribe a given text as quick as possible (copying task). In each case, participants were stopped after 3 minutes. This twofold way to quantify handwriting fluency is rather common (Barnett, Henderson, Scheib, & Schulz, 2009). The reason behind this distinction is the fact that alphabet tasks are generally more strenuous than copying tasks, because the activation of long-term memory may increase the cognitive load of the child's working memory (Graham, Struck, Santoro, & Berninger, 2006; McCutchen, 2000). By considering both kinds of tasks, we tried to cover all aspects of handwriting fluency. Two special education students from a large German university independently counted the number of words, the spelling mistakes, the letters in the alphabet task, and the words in the copying task. The level of agreement between the two raters equaled 100%.

To evaluate the neatness of handwriting, we applied a rating protocol developed by Mahrhofer (2004) consisting of 13 subscales that provide information about different aspects of the neatness of a child's script, while taking the respective grade level into account. The results are then expressed through two indices – one for legibility and one for uniformity. According to Mahrhofer, the overall reliability of the instrument is .87 (Cronbach's alpha). The handwriting evaluation was performed independently by the first and fourth authors. Intraclass correlation coefficients (ICC) were .98 for legibility and .95 for uniformity.

Students' ability to cope with complexity in novel situations was measured using the German Number Combination Test (NCT; Oswald & Roth, 1987). The NCT is a trail-making instrument. On four different sheets, participants must connect randomly positioned numbers from 1 to 90 in the correct order as fast as possible within a 1-minute time limit. Results are expressed as the mean quantity of correctly connected numbers. According to the manual, the test-retest reliability of the NCT varies between .84 and .97. It correlates highly with standard psychometric tests of intelligence (Rammsayer & Stahl, 2007).

Procedures

Five examiners participated in administering the test battery in the school. One held a doctorate, one held a master's degree in special education, a third was a graduate student, and the remaining two were undergraduate students in special education at a large German university. The data was collected during the course of a school day during regular classroom activities.

The 192 undergraduate students described above graded the stories that the students had written about the drawing from the GGLT. These raters had previously been instructed in groups of about 20 each on how to use the NAEP Writing Scale during 45-minute training sessions. As part of the training, they were provided with several examples of very well, mediocre, and poorly

written narratives that had been appraised by experts. Subsequently, the raters were given five sample stories to evaluate for themselves. They received feedback on how well they took the assessment criteria of the NAEP Writing Scale into consideration. Each text was then independently rated by eight undergraduate students. The means of these appraisals served as a measure of narrative quality.

Results

Table 1 provides descriptive values for all variables. In terms of skewness (Skew) and kurtosis (CK), all of them (except for *words copied*) show a normal distribution. Words copied were strongly compressed to the right side of the distribution (a prolonged tail to the left) with a steep peak. After squaring, the variable kurtosis was 0.1 and skewness -0.1. Therefore, the squared values were kept for all further analyses.

Table 1. ***Descriptives for NAEP Values and Indicators on the Text, and Student Level***

Measure	*M*	*SD*	Median	Min	Max	Skew	Kurtosis	*SE*
NAEP value	2.83	1.06	2.75	1.00	5.57	0.33	-0.34	0.14
Total words	100.37	45.16	99.00	26.00	227.00	0.54	-0.19	5.83
Letters of the alphabet copied	48.11	16.47	48.33	0.00	76.00	-0.55	-0.01	2.13
Words copied	38.92	9.32	40.00	0.00	56.00	-1.30	3.45	1.20
NCT	29.63	5.83	28.50	16.50	45.00	0.31	0.03	0.75
Legibility	3.42	1.10	3.00	0.00	5.00	-0.47	0.18	0.14
Uniformity	3.08	0.76	3.00	2.00	5.00	0.40	-0.25	0.10
Error ratio	12%	9%	9%	0%	35%	0.81	-0.52	1%

The inter-correlations of all variables are shown in Table 2. All correlations to the NAEP value were as expected: The total number of words and legibility of the texts were strongly correlated, the copying speed of the letters of the alphabet, the copying speed of words, the uniformity of the writing, and the ratio of orthographic errors were moderately correlated, whereas NCT values were only weakly correlated. All correlations were in the expected direction.

Besides the NAEP values, the other measures showed a complex pattern of correlations. The two copying speed measures (letters of the alphabet and words) were strongly correlated as were the two measures for handwriting (legibility and uniformity). NCT values showed weak to mild correlations with the

word and alphabet copying measures and only a weak correlation to the ratio of orthographical errors. Orthographical error ratio was moderately to strongly correlated to legibility and uniformity of handwriting. This complex pattern of correlations among all variables made it necessary to analyze an integrated statistical model based on multiple regression.

Table 2. ***Correlations Between NAEP Values and Indicators on the Text and Student Level***

Measure	1	2	3	4	5	6	7	8
1. NAEP value	-	-.63*	-.41*	-.40*	-.25	-.52*	-.37	.43*
2. Total words	-.63*	-	.53*	.59*	.13	.44*	.27	-.05
3. Letters of the alphabet copied	-.41*	.53*	-	.61*	.32	.32	.14	-.15
4. Words copied	-.40*	.59*	.61*	-	.29	.21	.05	-.12
5. NCT	-.25*	.13	.32*	.29*	-	.00	-.08	.01
6. Legibility	-.52*	.44*	.32*	.21	.00	-	.57*	-.46*
7. Uniformity	-.37*	.27*	.14	.05	-.08	.57*	-	-.41*
8. Error ratio	.43*	-.05	-.15	-.12	.01	-.46*	-.41*	-

Note. *p < .05. Indicators of significance above the diagonal are corrected for multiple tests following the Holm correction (Holm, 1979).

We set up three structural equation models (SEM) for an exploratory analysis of the model structure. The first model assumed that all manifested variables construed a single latent factor explaining the NAEP results (1-factor model). The second model assumed two separate latent factors explaining the NAEP results (2-factor model), where the first factor comprised all person-related manifest variables (alphabet letter copying speed, word copying speed, NCT results) and the second factor indicated all text characteristics (uniformity and legibility of the handwriting, ratio of spelling errors, and number of words). The third model assumed the two latent factors in a mediation context (2-factor mediation model), where the person factor influenced the text factor, which in turn influenced the NAEP results. That is, we assumed that there would be no direct connection between the person factor and the NAEP results.

The models were analyzed using the *R* package lavaan (Rosseel, 2012). We estimated the SEMs with a maximum likelihood procedure. Due to a high variation in variance, all exploratory variables were standardized for this analysis.

Figure 1. **Three explorative structure equation models (SEM). Path values are standardized.**

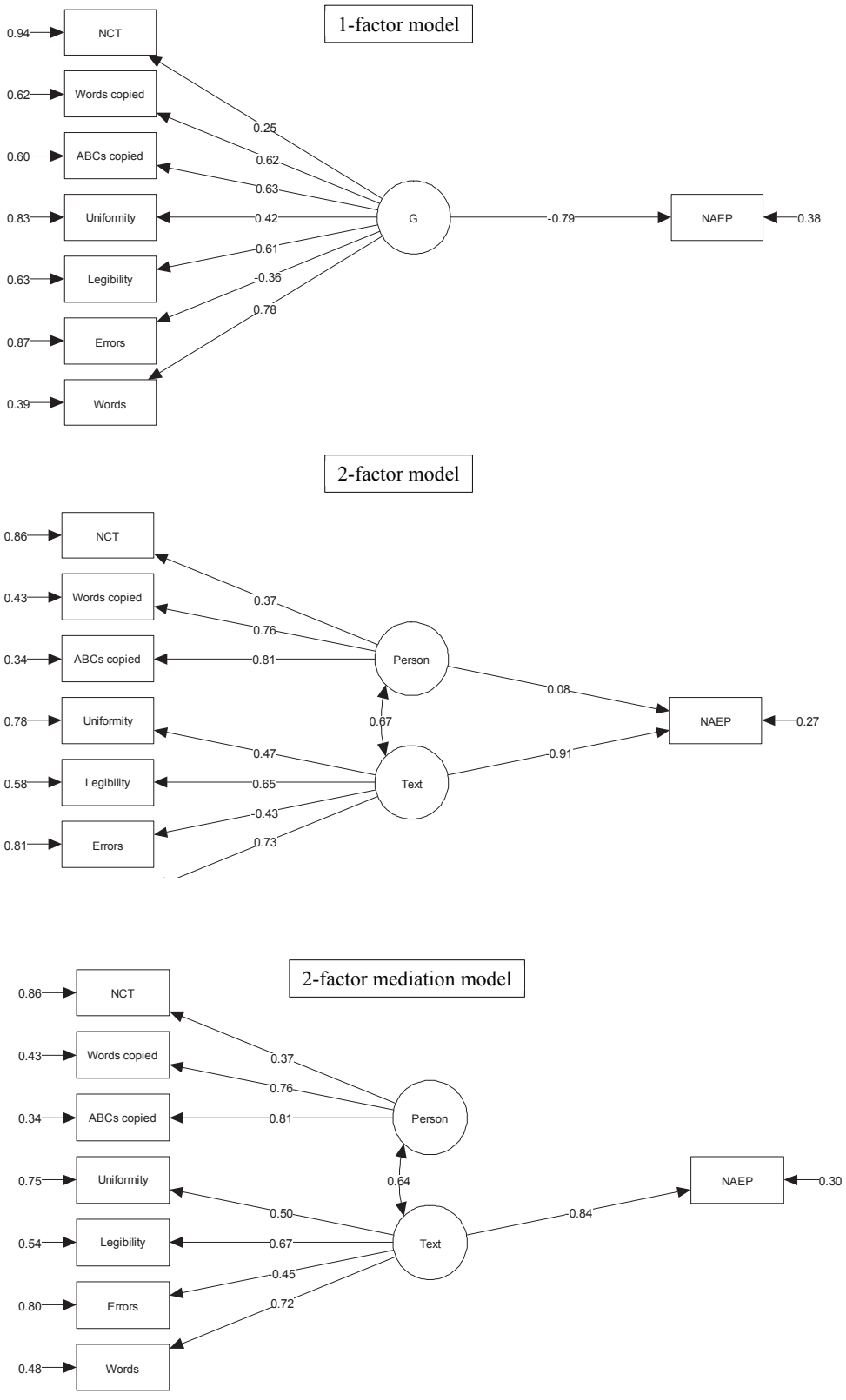

Table 3. ***Fit Indices of the Three Models***

Model	χ^2	*df*	*p*	*CFI*	*TLI*	*AIC*	*BIC*	*RMSEA*	*SRMR*
1 factor	69.4	20	<.01	0.68	0.55	1272	1306	0.20	0.13
2 factors	52.9	18	<.01	0.77	0.65	1260	1298	0.18	0.11
2 factors mediation	53.0	19	<.01	0.78	0.68	1258	1294	0.17	0.11

All three models showed acceptable fit indices (see Table 3). However, the two 2-factor models produced the best model fit (1-factor vs. 2-factor model: $\Delta\chi^2(2) = 16.4$, $p < .01$). Moreover, the mediation model had a nearly identical fit to the model without mediation (2-factor mediation vs. 2-factor: $\Delta\chi^2(1) = 0.07$, $p > .78$). As the mediation model is sparser, it might be preferred over the model without mediation. This argument is strengthened by the fact that within the model without mediation, the latent person factor had virtually no direct influence on the NAEP results (see Figure 1).

Discussion

Main Findings

In this study, we addressed the question of which text- and person-related factors seem to have a bearing on the quality of a story written by children of 10 years of age or a little older. The results of this explorative assessment indicate that length and legibility play prominent roles: The longer and the more legible a text is, the higher its (rated) quality. To a lesser extent, a low ratio of spelling errors and a high uniformity of handwriting are also associated with a higher level of excellence of a narrative. In addition, a child's ability to rapidly copy the letters of the alphabet and different words is moderately, but positively related to text quality. The competency to cope with complexity in novel situations seems to play a rather negligible role in this context, however.

We incorporated all independent variables into three structural equation models: one with a general factor, one with two factors (one that represents person- and one that represents text-related aspects), and one mediation model that assumes that the person-related variables influence the text-related ones. Even though the fit indices of all three alternatives were not high enough to make strong statements about the connections between all variables, the mediation model contributed the most to answering our research question. The length as well as the legibility of a text seemed to influence the latent text factor to the greatest extent.

Limitations

Research studies of the writing process pose challenges for scholars that many other school-related topics do not (Grünke & Leonard-Zabel, 2015). Put-

ting one's thoughts on paper involves coordinating multiple cognitive, linguistic, and physical operations along with considering genre-specific conventions and keeping the intended audience in mind (Troia & Graham, 2003). To identify variables within this intricate process that can be reliably measured and put into context with each other is very demanding.

By nature, our study faced many of the same problems as other research in this area. To start with, we attempted to capture the quality of narratives by using a rating instrument that unfortunately cannot do justice to everything that constitutes text quality. Even though our raters achieved a remarkably high level of agreement, the fact remains that the validity of our instrument stays debatable, since there is no objective external criterion for the quality of a story. In addition, we used undergraduate students as expert raters. It remains unknown whether more experienced teachers would have made similar appraisals. Another limitation pertains to the possibility that the results of our analyses might at least partially reflect assessment biases of university students when rating the quality of narratives. For example, we cannot determine to what extent handwriting influences text quality itself or (just) the appraisal of text quality.

We chose to incorporate various student- and text-related variables derived from relevant theories of writing development. Even though we proceeded as objectively as possible, our decisions about which factors to include might not be completely beyond reproach. Thus, we cannot deny the possibility that other researchers might come to slightly different conclusions. Thus, we need to present our findings with a due degree of humility.

Finally, our results cannot be generalized to populations or text genres other than the ones targeted in the current study.

Practical Implications and Future Research

Even though our findings are somewhat limited – especially with regard to their validity and their generalizability – they can provide practitioners with valuable clues about where to start as they try to support struggling writers at the beginning of secondary school. When composing argumentative, informative, or explanatory texts on an advanced level, relatively short essays are often viewed as being of better quality than lengthier ones (Koutsoftas, 2014). However, this is not the case with narratives produced by children between 11 and 12 years old. As students develop initial composition skills while attending to stories as the most basic genre, length matters. Before they can revise and edit a writing product, students need to have enough material to work with. A third of all texts that our students handed in consisted of fewer than 80 words. According to a study by Rodríguez, Grünke, González-Castro, and Cerezo (2014), this is an alarmingly low value for children of that age. Struggling students need support in composing longer stories. In analyzing the process of writing, Rodríguez, Grünke, González-Castro, García, and Álvarez-García (2015) discovered that

children who come up with rather short texts invest remarkably little time in planning. They think about what to write while writing and revise their products before submitting them, but they usually do not sit back first to collect their thoughts and take notes about what to put on paper and about what they want to communicate to their readers. Having to mind their spelling and handwriting is challenging enough. If, in addition, students only start to contemplate the content of their story after they have started writing it, the assignment of producing a decent narrative will overburden them.

One way of helping children to elaborate more on their stories involves instructing them on how to execute effective planning strategies. Prewriting activities (like using graphic organizers) that serve the purpose of generating ideas before composing the actual story are very beneficial. In a study by Hennes, Büyüknarci, Rietz, and Grünke (2015), such an approach led to an effect size of Cohen's *d* of 0.41. According to a meta-analysis by Gillespie and Graham (2014) as well as one by Rogers and Graham (2008), prewriting activities not only increase the number of total words written, but can also positively impact the quality of an essay.

Graham (2010) highlighted the importance of effective handwriting instruction for enhancing the length and the quality of a story. An increased level of fluency enables children to invest a greater amount of mental effort into producing longer essays. If students learn not only to write faster but also to write more legibly (and more uniformly), this automation will further reduce the problem of having to attend to too many tasks at the same time. That is, a child who has invested a lot of time and energy into writing fluently and neatly can better attend to the content of a text. In a literature review, Graham (1999) identified several ways to improve a student's handwriting both effectively and efficiently. Even though the ratio of orthographical errors in a text was not associated with its quality to the same extent as length and legibility, spelling instruction would contribute to helping children focus on the content of their essay before, during, and after composing it. According to a literature review by Sayeski (2011), an explicit rule-based approach that provides extensive opportunities of practice with corrective feedback is generally the best option.

Future research should focus on replicating and expanding the results of this study through the use of different instruments and research designs. As mentioned, the NAEP Writing Scale for narrative texts is just one of several methods to capture the quality of a story. Prospective studies should consider different ways to measure how well a story is composed. In doing so, experts other than undergraduate students need to be used as raters as part of the variance in the current study may be due to differences in the raters.

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Authors' Note

Correspondence concerning this article should be addressed to Matthias Grünke, University of Cologne, Department of Special Education and Rehabilitation, Klosterstr. 79b, 50931 Cologne, Germany. Contact: matthias.gruenke@uni-koeln.de.

Helping Children with Specific Learning Disabilities to Improve their Narrative Writing Competence by Teaching Them to Use the Story Maps Strategy

Ann-Kathrin Hennes
Özlem Büyüknarci
Christian Rietz
Matthias Grünke
University of Cologne, Germany

The current study reviewed the effectiveness of a graphic organizing technique (story mapping) with 41 elementary and secondary school students who demonstrated difficulties with composition writing. A pre-posttest design was used to determine the benefits of this strategy for the ability of the subjects to plan and produce simple narratives. Measures included the total number of words written and a holistic rating scale. In addition, the opinions of the interventionists regarding the feasibility of the lessons and the materials were ascertained by using an open-ended questionnaire. Results indicate that students who participated in the intervention had significantly larger gains in both writing measures than those in the control group. The interventionists rated the lessons and materials as workable, but also indicated some weak elements. Practical implications of employing story maps in inclusive classroom settings are discussed, and suggestions for future research are provided.

Keywords: Composition Writing; Writing Productivity; Story Mapping; Specific Learning Disabilities.

Introduction

The Importance of Writing

The competence of composition writing has a great relevance in every literary society, because "… through writing, we create, store, and communicate knowledge, build up social networks (…), and generate the basis for decisions" (Jakobs & Perrin, 2014, p. 1). In particular, this skill is one of the key prerequisites for a successful school career. During the course of their primary and secondary education, students need to acquire the ability to formulate words and sentences following conventional patterns to create meaningful texts. Just as the level of reading comprehension abilities affects achievement in almost all academic areas, so does the expertise in converting ideas, thoughts, and knowledge

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into a functional writing product. Students who are not well able to put their thoughts and their knowledge into words will fail, not only as they try to compose an essay, but also as they try to succeed in any kind of written exam. Thus, it is of vital importance to make sure that no girl or boy falls behind in school as they strive to learn how to compose texts for different purposes, audiences, and contexts (Grünke & Leonard-Zabel, 2015; Santangelo, 2014).

However, composition-writing abilities go even further. They are closely associated with general problem solving skills. Students who can write meaningful texts can usually also cope well with a wide variety of different cognitive challenges. Putting ideas into words helps to capture one's thoughts as well as to organize newly acquired knowledge. It facilitates the process of reflecting on one's considerations, structuring one's mind, and generating connections between various subject matters (Linnemann & Stephany, 2014). Writing can help one to understand new contexts, to consider different perspectives, and to draw abstractions from a current situation (Becker-Mrotzek & Böttcher, 2012; Shanahan, 2006). Text production supports learning on all levels in many areas of social and public participation.

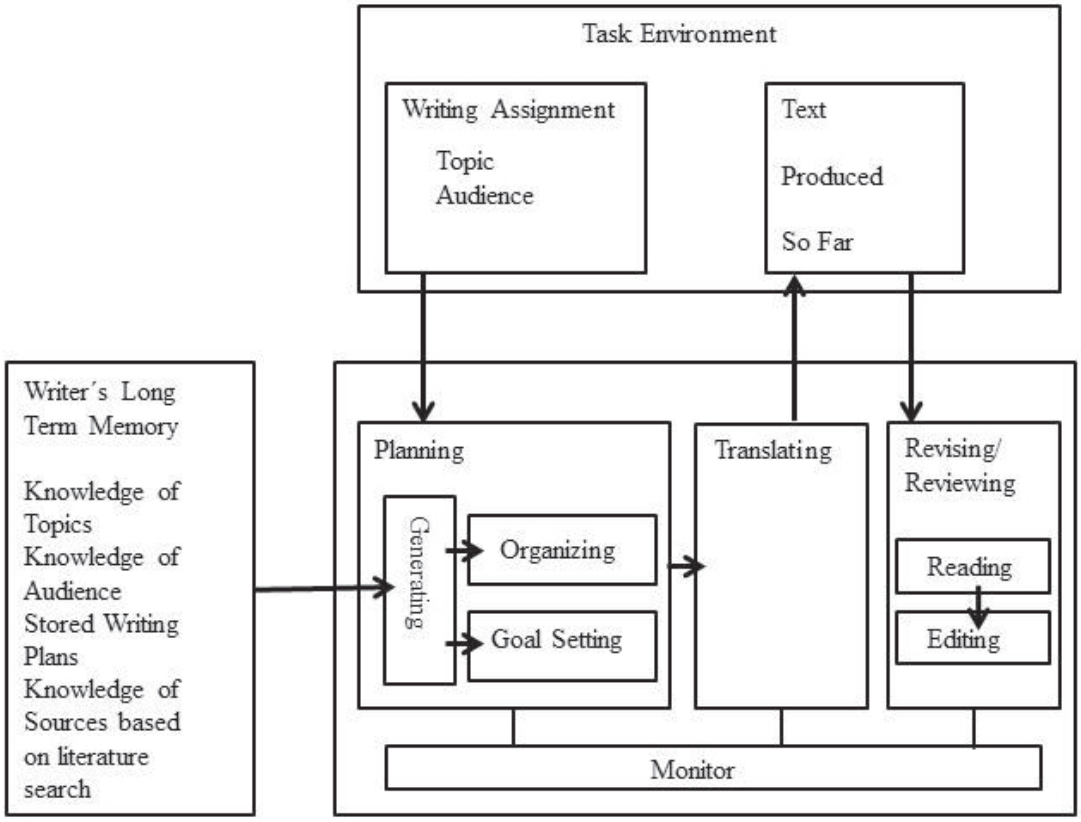
The Development of Writing Skills

The acquisition of writing skills is a complex process and undergoes various stages. Children typically commence their first writing attempts between the ages of five and seven. In addition to becoming familiar with the morphological and technical features of text production, boys and girls need to understand the differences between written and spoken language (Becker-Mrotzek, 2014). They usually start out by relating personal experiences. In the earliest stage of text production, writing is a *knowledge-telling* process in which children instantly put down on paper anything that comes to mind. Each thought prompts the next one, without considering the respective audience or purpose (Bereiter & Scardamalia, 1987; Graham, 2010). Between the ages of seven and ten, boys and girls are increasingly better able to compose simple narratives, uncoupled from events that actually happened to them. The phase between 10 and 14 years is generally characterized by the slowly emerging ability to consider the anticipated reader. Children are now in a position to produce not only narratives, but also informative descriptions and reports. Beyond 14 years of age, most students can finally write comments and argumentative texts (Becker-Mrotzek & Böttcher, 2012; Bereiter & Scardamalia, 1987).

There are several models that describe writing as a problem-solving process. The most prominent format was postulated by Hayes and Flower in 1980 (see Figure 1). It divides the process of text composition into three parts: planning, translating, and reviewing. During the planning stage, ideas are being generated by retrieving information from long-term memory. This step is followed by organizing these ideas and by defining a goal. In this phase, thoughts need to

be evaluated, selected, and structured. Subsequently, the learner transcribes the generated ideas into a text product that is both linguistically and grammatically correct (the stage of translating). By producing text parts, the writing situation changes. All elements are taken into account while the process continues. The endeavor of reviewing includes a repeated reading and editing of the existing text elements.

Figure 1. **Process Model of Writing (Hayes & Flower, 1980)**



In the model by Hayes and Flowers (1980), phases are not defined as fixed sequences, which need to be followed in a rigid order. Throughout the process of writing, they interact in a reversible manner. The long-term memory is constantly reorganized and rearranged. During every step, the writer monitors her-/himself and has to remember the writing assignment.

This model helps to identify the relevant subsidiary skills that students need to master in order to produce meaningful and sophisticated texts (especially planning, translating, and reviewing). Albertson and Billingsley (2001) name some additional features: Students have to know writing conventions, gain adequate knowledge about text types, use cognitive strategies effectively for planning and reviewing the writing process, and acquire the skills to implement adequate self-regulation techniques. A final, major prerequisite for composing

functional text products is the ability to consider the reader (Butterfield, Hacker, & Albertson, 1996).

Students Struggling with Writing

Even though most students master the challenge of acquiring ample writing skills on their way to adulthood, a considerable number of boys and girls do not. In fact, the percentage of young people failing to meet basic writing standards is alarmingly high. Large school-based epidemiological surveys show that the prevalence of children and youth with severe writing difficulties is even greater than that of those with deficits in reading, spelling, or math. About 15% of all students fail to meet basic standards in this respect (e. g. Hooper, Swartz, Wakely, de Kruif, & Montgomery, 2002; Mayes & Calhoun, 2006). Their writing products are generally very short, incomplete, and poorly organized (Englert & Raphael, 1988). According to a study by Rodríguez, González-Castro, Grünke, Cerezo, and Álvarez (2015), deficits in planning a writing task are the number one challenges that keep struggling learners from composing meaningful texts.

Teaching Writing Skills to Struggling Learners

Because of the fundamental influence writing has in schools and in society, it is essential that no child is left behind. Unfortunately, while helping struggling learners to acquire the necessary planning, composing, and editing skills for producing elaborate texts is crucial for their further school career, most teachers neglect these components of elementary school instruction. Instead, they concentrate on teaching children how to read, spell, and perform math. According to Troia and Graham (2003), the main reason why educators tend to largely factor out explicit writing instruction in their work is due to their lack of knowledge and skills to facilitate children's emerging competence in this area.

Teaching students how to compose a text is demanding and challenging. Fortunately, though, there are several evidence-based programs that provide educators with helpful information and materials to tackle this challenge (e.g. "Expressive Writing" by Engelmann & Silbert, 1983, or "Reasoning and Writing" by Engelmann & Silbert, 1991). However, many teachers have neither the time nor the means to implement such concepts in a large classroom of up to 30 learners. Thus, effective strategies are needed that can be used flexibly in small groups or in a peer-tutorial setting.

Lassonde and Richards (2013) describe a number of such techniques that focus on supporting students to master the one task that seems to be the biggest obstacle for them on their way to becoming capable writers: planning the composition of a text. One possible method to enhance students' competences in this respect is to provide them with schemata that they can use in several writing contexts. Schemata are cognitive frameworks or concepts that help to organize and interpret information. According to Andersons (1984), these mental templates explain how knowledge is organized in memory, and how these

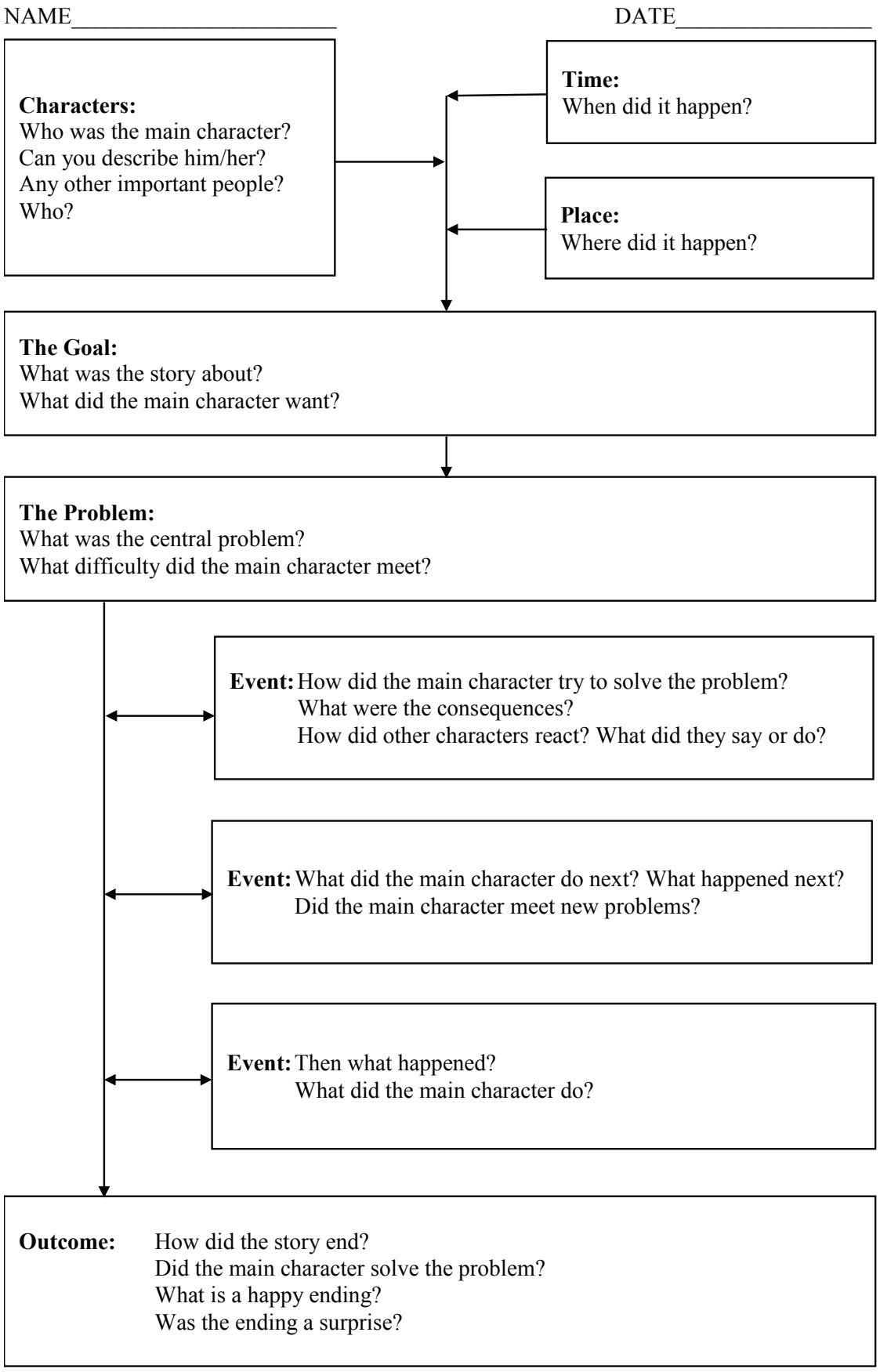
systems affect incoming information. A schema makes thinking easier, because one knows how situations are structured. Everybody uses schemata for many everyday circumstances (Tabatabaei & Radi, 2012). Mandler and Johnson (1977) first applied schema theory to writing a story. They used the term *story schema*, referring to "… an idealized internal representation of the parts of a typical story and the relationships among those parts" (p. 111). Such a representation has the potential to help learners to write more efficiently, because it reminds them of all the essential parts that a text or, more specifically, a story should contain.

Story mapping is one way of using schemata to facilitate a student's ability to structure a writing product. This graphic organization technique "… uses a diagram to visually depict the setting or the sequence of events and actions of story characters" (Li, 2007, p. 78). A story map contains all the key components of a narrative (main characters, settings, problems, events, solutions, and conclusions) in the form of a diagram (see Figure 2). Any idea can thus be accommodated into a suitable schema or component of the map. Such an approach is supposed to support the brainstorming process by reminding writers of the different elements of a tale and by providing them with an opportunity to systematically take notes. Its purpose is to supply students with a mnemonic device that helps them to remember the basic structure and the connection between the various elements of a narrative.

Even though story mapping appears to be a very useful instrument in supporting struggling writers, the corresponding literature on its effectiveness is remarkably scarce. There are numerous studies shedding light on the benefits of this approach relative to the facilitation of reading comprehension (e. g. Boulineau, Fore, Hagan-Burke, & Mack, 2004; Gardill & Jitendra, 1999; Grünke, Wilbert, & Calder Stegemann, 2013; Stagliano & Boon, 2009). However, comparatively few experiments have focused on the possible advantages of using this method for structuring a composition-writing project.

Li (2007) explored the effects of using a story map on writing fluency and word diversity. Participants of the study were four fourth- and fifth-grade students with learning disabilities. They received instructions on how to use story maps as well as story map questions to write a tale. The results indicate that three of the four students showed significant improvements in their writing fluency. Zipprich (1995) investigated the usefulness of pre-structured story webs (a variation of common story maps) as tools to foster the narrative story writing abilities of 13 elementary school students with learning disabilities. After four months, the subjects showed distinct improvements in their planning skills and in the holistic quality of their writing products. Unzueta and Barbetta (2012) presented the findings of a single-case analysis involving four Hispanic students with learning disabilities between the ages of 12 and 13 from an American middle school. She used computer graphic organizers (Inspiration 8.0, 2008) as an

Figure 2. **A Story Map (taken from Li, 2000, p. 124)**



intervention to foster narrative writing skills in her subjects. After 12 weeks, the participants demonstrated substantially enhanced planning skills, a markedly faster writing fluency, as well as several other improvements. he facilitation of reading comprehension (e. g. Boulineau, Fore, Hagan-Burke, & Mack, 2004; Gardill & Jitendra, 1999; Grünke, Wilbert, & Calder Stegemann, 2013; Stagliano & Boon, 2009). However, comparatively few experiments have focused on the possible advantages of using this method for structuring a composition-writing project.

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Research Questions

The purpose of the present study was to extend the scarce body of existing literature related to story mapping and its effects on the text production and text quality of students with specific learning disabilities in the area of composition writing. Previous experiments have fallen back on proportionally small samples and trained the participants for a rather lengthy period of time. In this study, we involved a comparatively large number of elementary and secondary students, evaluated the benefits of a relatively short story-mapping intervention, and narrowed our focus on boosting text production in narrative writing by improving the writing-planning skills of our subjects. The genre of narratives was chosen, because it is the first text type that children produce (McCabe & Bliss, 2003). They have to first meet the requirements in this area, before they can move on to other writing challenges.

We used the CIPP (context, input, process, product) model by Stufflebeam and Shinkfield (2007) as a framework for guiding the evaluation of the presented study. This approach considers four essential components of an appraisal, as indicated in the name of the concept. We responded to the *context* by

providing ample information about the circumstances and aims of our intervention in the method section, and by examining these parameters critically in our discussion. The *input* was attended to by providing details on the theoretical tenets of story mapping in this introduction. We evaluated the *product* by measuring the improvements in the performance of the students during the course of the intervention. Finally, we obtained data about the *process* of the treatment by asking the instructors to give us their impressions on how the lessons went and their appraisals of the curriculum and the materials that they used.

Method

Participants

The sample of participating children consisted of 17 girls and 24 boys from the greater metropolitan area of a large city in Northrhine-Westfalia, Germany. Their ages ranged between eight and 14 years (M=10; SD=1, 6). Eighteen students attended a special school for slow learners, 23 a regular elementary or secondary school. In Germany, formal education for children starts at the age of six with the first grade. If school achievement does not meet the expected standards, children might have to attend for an extra year. If performance does not significantly improve in the long term, they might even get transferred to a special school for slow learners.

Twelve of our subjects attended third grade, eleven fourth grade, eleven fifth grade, six sixth grade, and one seventh grade. Thirteen of the participants had an immigrant background and were raised with a native tongue other than German.

In selecting the sample, we asked the teachers in the participating schools to recommend 8- to 14-year old students with an average intelligence level and acceptable graphomotor skills, but poor composition writing abilities for inclusion in our study. Ideally, we would have liked to validate teachers' appraisals concerning these three variables by applying standardized tests. However, we had to abstain from measuring intelligence and graphomotor skills, due to expenditure issues. Unfortunately, we could not even determine the exact writing competence level of the children, because no corresponding standardized tests exist in German.

We took a broad understanding of the definition postulated in the Individuals with Disabilities Education Act (IDEA) as a basis for considering our participants to be learning disabled. According to this 1990-enacted US federal law, a learning disability is "… a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations" (Turnball, Turnball, Shank, & Smith, 2004, p. 104). We looked at our subjects as learning disabled, in the

sense that they demonstrated deficits in at least one basic psychological process that manifested itself in an insufficient ability to put their thoughts and their knowledge into words in an age-appropriate manner.

The sample of interventionists consisted of six prospective special education teachers between 22 and 28 years of age (M = 25.5; SD = 3.51) in their university training. All of them had previously completed a four-week practical school training program and possessed rudimentary teaching experience.

Dependent Variables

Our study was carried out during wintertime. In accordance with this season, we came up with ten different photographs, depicting winter scenes like a girl riding on a sleigh, some children ice skating, or a couple of boys participating in a snowball fight (a copy of the pictures can be obtained from the first author upon request). Our subjects were supposed to choose one out of three randomly presented pictures out the pool of ten and write a story about it.

When skilled writers reach a developmental stage where they start to compose simple narratives, they generate more ideas and produce longer compositions than unskilled ones. Thus, "Total Words Written" (TWW) is a common parameter to measure the level of competence of students during this phase (Hosp, Hosp, & Howell, 2007). In an early stage of writing development, TWW correlates positively with different text quality indicators (Gansle et al., 2004), and can be seen as a criterion for writing-planning abilities. In our study, we used TWW as a means to determine the writing competence (especially the writing-planning skills) of our subjects. The first and second authors independently counted every word, even if it was spelled incorrectly or if it was not used in a grammatically correct manner. Numbers or dates were counted as one word. The level of agreement between the two raters equaled 100%.

In order to also capture the quality of the texts more explicitly than using the TWW parameter, we asked eight independent raters to grade the stories holistically. The group of raters consisted of graduate-level student assistants who were blind to the purpose of our study. We used a German adaption of the NAEP Writing Scale, an evaluation grid developed by the National Association of Educational Progress (NAEP) (National Center of Education Statistics, 2011; the instrument is available from the first author upon request). A child's level of competence is rated and given point values, ranging from zero to five (with zero representing the lowest degree of skills, and five representing the highest). Testing the interrater reliability between the eight independent raters, Krippendorf's alpha showed a very good agreement at the first (= 0.68) and the second (=0.78) measurement points. Any disagreements were resolved through discussion until consensus was reached.

We used an open-ended questionnaire (available from the first author) to survey the impressions of the interventionists concerning the treatment as a whole, as well as the applied curriculum and the materials. The topics that were covered included the general teaching situation (special occurrences, scheduled timeline, the role of the investigator, her/his confidence in instructing the students, and the motivation systems) as well as the usability of the visualization tools, the story maps, the writing impulse, the writing task, and the decorative paper (see Table 1). We asked the interventionists to fill out the questionnaire at the end of each lesson.

The responses were summarized and categorized independently by the first and the second author into recurring themes, using a procedure as described by Patton (2014). Any differences were resolved through discussion between the two coders.

Study Design

We used a pre-posttest design to determine the effectiveness of the intervention. The participating students were randomly assigned to either an experimental or a control group, with the exception of sixteen boys and girls from one class in one of the regular schools. In this case, the teacher insisted on conducting the allocations herself, to make sure that the children in each of the two conditions got along well. The two groups did not significantly differ in terms of age, gender, or immigration background.

In the experimental group, students received a story map instruction, while the ones in the control group continued to participate in regular classroom activities. Directly before and after the intervention, all participants wrote a story about one of the photographs that were presented to them (see above). Pre and post testing were both conducted by the university students who administered the treatment. We made sure that no student was given the same pictures twice. After the intervention ended, we captured the viewpoints of the instructors with regard to the aforementioned open-ended questionnaire.

Intervention

The intervention took place in different classrooms of the respective schools. Table 1 gives an overview of the ten 45-minute units spread out over two weeks (with one lesson per school day). Our procedure followed these main recurring steps: (1) The instructors motivated the students by repeatedly pointing out to them that they will experience noticeable improvements in their story-planning and writing skills, if they abide by the steps that they are taught during the course of the intervention. (2) The instructors demonstrated the use of story maps by thinking aloud while filling out a respective template on an overhead projector or a poster. They did this several times to consolidate knowledge. (3) The students tried to use story maps while planning a narrative as teams, and later, as individuals.

Table 1. *Overview over the ten Lessons*

Unit	Aim	Material	Proceeding
1	Development of the characteristics of a good working story	Example story 1 fitting into the thematic framework (here: winter), token material, viewing material *winter book*	Motivation, introduction to the thematic framework, writing means and token system, presentation of a good working story (reading out loud), elaborate the typical parts of a story by using key questions referring to these parts, token
2	Work out and visualize the parts of a good working story	Example story 2 fitting into the thematic framework (here: winter), token material, visualization tool	Motivation, presentation of a good working story (reading out loud), elaborate the typical parts of a story by using the story map questions and showing the link between them and the typical story parts, visualizing the typical parts of a story, token
3	Transferring the typical part of a story to the story map and distribute the usage and advantages to the students	Example story 1, story maps	Motivation, reproduction of the typical part of a story using the visualization tool, introduction to the story map, reading out loud example story 1 again, transferring example story 1 to the story map (Teacher guides the student trough the story map by introducing her/himself aloud), token
4	Enhancing the usage of the story map	Example story 2, story maps	Motivation, recourse for the usage of the story map and repeating it, reading out loud example story 2 again, transferring example story 2 to the story map (Teacher guides the student trough the story map by introducing her/himself aloud), token

5	Using the story maps independently in student teams	Story maps, picture as a writing impulse	Motivation, remembering story map, introduction to the story map questions (showing that these questions are similar to those the teacher asked her/himself by guiding the students through the story maps), working independently as a team with the story map and filling in the questions, referring to the writing impulse (one student is guessing the other one is writing), token
6	Using the story maps independently in student teams	Story maps, picture as a writing impulse	Motivation, referring to the last lesson and talking about some results, repeat the story map questions talking together, working independently as a team with the story map and filling in the questions, referring to the writing impulse (one student is guessing the other one is writing), token
7	Using the story maps independently	Story maps for all students, picture as a writing impulse	Motivation, referring to the last lesson and talking about some results, filling in the story maps by writing down the ideas, referring to the writing impulse (self-instruction by asking the story map questions), giving a forecast to the next unit ("Next time you'll get the chance to write an own story by using the story maps you filled in today."), token

8	Producing a good working story	Filled story maps, picture as a writing impulse, decorative paper	Motivation, referring to the last lesson and talking about some results, students producing a story referring to the story map they filled in last time, (teacher answers questions by reproducing the story map questions), token
9	Using the story maps independently	Story maps for all students, picture as a writing impulse	Motivation, referring to the last lesson and talking about some results, filling in the story maps by writing down the ideas, referring to the writing impulse (self-instruction by asking the story map questions), giving a forecast to the next unit ("Next time you'll get the chance to write your own story for the *winter book* by using the story maps you filled in today."), token
10	Producing a good, working story	Filled in story maps, picture as a writing impulse, decorative paper	Motivation, referring to the last lesson and talking about some results, students producing a story, referring to the story map they filled in last time, (teacher answers questions by reproducing the story map questions), token

To foster motivation in the students during their different writing assignments, they were told that their narratives would be compiled into a storybook at the end of the intervention. A trail copy of the book was shown in order to get the children excited about this project. In addition, a token system was used to increase the students' willingness to actively participate in every lesson and to tackle every writing task they were given. Students received toy money for accurately completing assignments and were allowed to spend it at the end of the curriculum for different incentives of their choice (little toys, stickers, sweets, etc.).

The six prospective special education teachers described in the "Participants and Setting" section served as interventionists. They worked in teams with the exception of one instructor, who taught three children by himself. To ensure the fidelity of implementation, the interventionists were extensively trained during three 45-minute sessions and were provided with a detailed script to follow.

Results

Product Evaluation

Tables 2 and 3 present some descriptive statistics on the pre- and post-test results concerning the productivity and the quality of the written texts.

Table 2. *Descriptive Statistics of TWW*

	Group	M	SD
Pre-test	Experimental Group (N = 21)	55.45	43.89
	Control Group (N = 20)	40.76	25.76
	Total (N = 41)	47.93	36.09
Post-test	Experimental Group (N = 21)	78.80	64.66
	Control Group (N = 20)	26.76	54.41
	Total (N = 41)	53.68	63.89

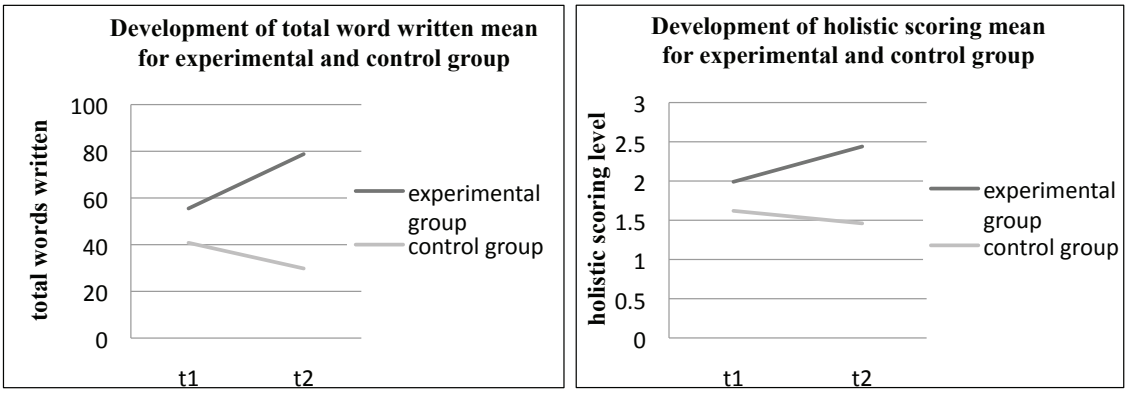
Table 3. *Descriptive Statistics of NAEP Writing Scale scores*

	Group	M	SD
Pretest	Experimental Group (N = 21)	1.99	0.82
	Control Group (N = 20)	1.62	1.05
	Total (N = 41)	1.80	0.95
Posttest	Experimental Group (N = 21)	2.44	0.83
	Control Group (N = 20)	1.46	0.90
	Total (N = 41)	1.94	0.99

As Table 2 and 3 indicate, and as Figure 3 elucidates, the students in the experimental group began on a slightly higher performance level in terms of text length and quality than the ones in the control group. However, when comparing both conditions with regard to TWW using a t-test (two-tailed), results demonstrate that there is no significant difference between both groups (t [39] = -1.32; p = .19)[1]. The same applies to the differences concerning the NAEP Writing Scale ratings (t [39] = -1.27; p=.21).

1 Because of the small group sizes, all results are ensured by using non-parametric methods.

Figure 3. **Pre- and Posttest Results in the Experimental and in the Control Group**



Analyzing the post-test scores using t-tests for independent samples (one-tailed), we discovered significant differences between both groups: On average, the participants in the experimental group wrote significantly more words (t [39] = -2.63; p < .01) and scored significantly higher in holistic ratings (t [39] = -3.63; p < .01) than the ones in the control group. We conducted two mixed analyses of variance (ANOVA), one for the TWW scores and one for the NAEP Writing Scale scores, so as to account for both the within subject variable (test), with two levels (pre and post), and the between subjects variable (treatment condition), with two levels (experimental vs. control group). Results indicate that both variables differ significantly between both groups (TWW scores: F [1, 39] =6; p < .05; NAEP Writing Scale scores: F [1, 39] = 6.55; p < .05). The interaction between the group factor and the treatment factor was statistically significant in the case of the TWW scores (F [1, 39] = 4.42; p < .05)[2], as well as in the case of the NAEP Writing Scale scores (F [1, 39] = 9.27; p < .01)[3]. Thus, it can be concluded that both groups differed concerning the progress that they made during the course of the study.

To quantify the improvements between the experimental and the comparison groups, we used a corrected effect size measure as outlined by Masendorf (1997, p. 73). This formula accounts for any differences between groups that might have existed before the treatment was implemented. The analyses yielded acceptable effect sizes, with d = 0.41 in the case of TWW, and d = .74 in the case of the NAEP Writing Scale.

Process Evaluation

Our data evaluation of the responses to the questions in the aforementioned qualitative questionnaire yielded some insights results: The general situation during the intervention was characterized by common challenges in

2 Mauchly test of sphericity is not significant.
3 Mauchly test of sphericity is not significant.

everyday school life, with occasionally high noise levels and some unforeseen interruptions in the middle of a lesson. Most instructors stated that it was easy to follow the time schedule as outlined in the script. However, one participant indicated that she did not feel that the second lesson contained enough subject matter to keep the children occupied. Every single interventionist felt accepted and treated respectfully by the students. They all considered themselves well prepared and confident as they taught their students to use story maps. In their opinion, the token system worked well and helped greatly in keeping the children motivated.

The materials were not rated consistently. Two of the interventionists viewed the example stories as too easy, the rest, a little too difficult. Similar results emerged as we analyzed the responses to the questions about the visualization tool that we used. Two interventionists stated that such an aid was not really needed, because the students already knew the core parts of a story. Others indicated that the correct use of this tool was initially too hard for the students to understand, due to a rather complicated language that was used in the script to explain its application. Referring to the story maps, all investigators pointed out that there was not enough space to write down everything that the children wanted to take notes on. Moreover, all of the teachers described the division of the main part of the story into "problem" and "main part" sections, as challenging. Most of the time, it was not possible to distinguish these two parts strictly from each other.

However, all interventionists were under the impression that every student was familiar with the skillful use of the story map strategy by the end of the treatment. In addition, all instructors described the pictures that served as writing impulses as helpful and inspiring. The same applied for the writing task and the decorative paper.

Discussion

Main Findings

The purpose of the present study was to examine the effects of a two-week story mapping intervention on the narrative writing performance of children with specific learning disabilities between the age of 8 and 14. Findings from the quantitative data analysis revealed that students that received the treatment showed a significant increase in text productivity, whereas children who continued to participate in regular classroom activities did not. In fact, the last group even demonstrated a pre- to post-test decrease in the total number of words written of 34.35%, with a decrease in text quality of 9.88%.

The analysis of the qualitative questionnaire data showed that there is the need to revise the process of teaching the story map strategy. In particular, the used materials have to be edited. The most important point seems to be that

the materials need to correspond more with the individual needs of the students. The fact that all students are familiar with using the story map after the intervention leads to the assumption that even if the story map needs to be adapted, students benefit from using it.

Limitations

Our sample was comprised of students between 8 and 14 years of age, whose teachers indicated that their composition writing abilities were relatively poor. We did not use any standardized tests to specify their skill level in this respect. This was due to the fact that our sample was German. While there are several norm-referenced, comprehensive diagnostic instruments to measure written expression for children speaking other languages, there is no equivalent option for German students. Thus, we were not able to describe our sample concerning their competence to produce meaningful texts as objectively and precisely as we would have liked. However, we could have applied general intelligence and spelling tests to characterize the sample a bit more specifically. This would have made it easier to adequately replicate our study. In addition, our subjects differed widely in their age range. A more homogeneous age group would have enabled us to draw more specific conclusions in light of the data analysis.

Our design was not completely randomized. About a quarter of our subjects were allocated to either the experimental or the control group by their teacher. In addition, the instructions were carried out, in part, by just one interventionist, and, in another part, by two. All this was the result of an attempt to compromise research (methodological) imperatives with questions of practicability and with requests made by a teacher and two interventionists. In order to secure their willingness to cooperate, we had to make some concessions.

The data analysis yielded promising results. We tried to make sure that our instruments accurately captured what we wanted to foster in our subjects (composition writing abilities, especially writing-planning skills), by applying a measure that solely focused on productivity (TWW), as well as a holistic method (NEAP Scales). Both ways indicated significant improvements in accordance with our hypothesis. However, the results were due not only to an increase in performance of the students that received the intervention, but also to a decrease in performance of the children in the control group. In particular, the decrease in TWW of 34.35% was stunning. It was obviously not possible to motivate the participants in the control group to give their best during the post-test condition. In addition, we did not collect any follow-up data using our instruments or any feedback from the respective teachers in order to determine whether the effects were stable and transferable to everyday life situations in the classroom.

As mentioned above, eight independent raters appraised the quality of the texts written by the participants in the pre- and post-test conditions using

the NAEP Writing Scale. However, the interventionists who administered the pre- and post-tests were not blind to the purpose of the study, but were the ones who taught the children the use of the story maps. According to the observer-expectancy effect, it is always possible that interventionists unconsciously and subtly communicate their expectations and hopes for the outcome of a study to the participants (Hartmann & Pelzel, 2005). By involving "blind" observers, we could have avoided such a bias completely. Furthermore, we cannot rule out the Hawthore effect (Franke & Kaul, 1978), a mechanism whereby any changed behavior can be attributed to participants responding to being studied.

Capturing the viewpoints of the interventionists regarding the course of the lessons and the materials used was a meaningful supplement to merely focusing on performance enhancements in the students. However, such inquiries are comparatively subjective in nature with respect to the viewpoints that the participants express, as well as with respect to the analysis and the interpretation of the data that the researchers carry out.

Practical Implications

Even though our study features some limitations, it is one of only very few experiments so far that document the benefits of the use of story maps in helping struggling writers to produce longer and better texts. As explained above, students must become skilled in putting their thoughts down on paper as a precondition to participating and communicating in society. Thus, it is crucial to help those struggling with this task, so as to not fall behind as the rest of their class progresses with their composition writing abilities.

Our study is one step in the direction toward making this achievement possible. Story map strategies are easy to implement. No special materials and no further training for teachers are needed in order to apply this technique in the classroom. For our study, we produced the story maps ourselves. However, even if someone does not want to come up with his or her own templates, the internet is full of free and open educational resources that offer a whole variety of different story map options for download (e.g., www.clutterfreeclassroom.blogspot.de, www.readingrockets.org, www.lets-explore.net). The interventionists in our study received just a short briefing on the use of this strategy. In addition, they possessed only rudimentary teaching experience and were still in their university training. Story maps appear simple enough to apply, even in a peer-tutorial setting.

Another aspect that emphasizes the practicability of this approach is the fact that two weeks (respectively, ten 45-minute lessons) was clearly enough time to elicit significant improvements in the students' abilities to write longer and better texts. This is remarkable, given that teaching students how to put ideas on paper is a challenging task.

Conclusion and Future Research

Taking context evaluation into account, it can be said that writing has a major impact on success in school, on learning processes, and on social participation. That is why the intervention assesses the needs of these students. School seems to be a suitable environment for implementing an intervention like this.

Considering the theoretical background and evaluating the input factors, it can be said that there is a need to remediate students writing skills. The story map strategy seems to be a highly promising approach for developing improvement, as it offers various opportunities for guiding the writing process. First, this format is related to the schema theory and can be classified as a scaffolding strategy. Students learn how to use the story map, and, after a period of time, they internalize it and do not need the graphic representation anymore. Furthermore, the graphic story map includes all essential parts of a story and, therefore, is a good representation of the task and problems the students have to negotiate. The use of a story map is an effective support for improving one's composition writing abilities, especially writing-planning skills

In summary, the results of this study indicate that the story map strategy can be effective in increasing the students' competence in writing a narrative. The qualitative results of the process evaluation show that it is necessary to choose the materials carefully by competently taking the individual needs of the students into account.

However, systematic replications of this study are needed to establish the generalizability of our findings (while considering the limitations of this experiment as mentioned previously). It would also be beneficial to involve a larger group of students, in order to have a sample big enough to identify different subgroups of responders and non-responders. For this purpose, it would be helpful to have more reliable information about the participants at one's disposal; this would enable the researcher to classify the students on the basis of a wide diversity of relevant variables. Children and youth with various kinds of writing problems are a heterogeneous population. Generally, each student does not benefit from a particular intervention in the same way. Thus, it is vital to gain more insights into which kind of support is best for which kind of learner through sophisticated subgroup analyses.

Future light could also be shed on the effects of teaching stories maps on struggling writers by conducting single-case analyses. These approaches hold the advantage over group studies in that they can provide detailed information about which point in time in a training causes certain changes in the dependent variable. Relying on simple pre-/post-comparisons does not help to answer the question of how long an intervention needs to get applied before subjects show noticeable improvements.

Likewise, additional research is needed to examine the effects of teaching story maps on the writing skills of struggling learners concerning genres other than that of the narrative. Also, it would be interesting to determine whether students in a comparatively high developmental level of writing skills would also benefit from this technique. Finally, it could be effective to use story maps in inclusive settings, if data were available about the potential of applying this method in peer-tutorial situations.

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Corresponding Author:

Ann-Kathrin Hennes, University of Cologne, School of Human Sciences, Innere Kanalst. 15, 50823 Cologne, Germany, Email: ann-kathrin.hennes@uni-koeln.de.

Teaching Children with Learning Disabilities How to Write Concise Summaries of Stories

Özlem Büyüknarci
Ann-Kathrin Hennes
Christian Rietz
Matthias Grünke
University of Cologne

The purpose of this experiment was to investigate the effectiveness of a direct instruction (DI) intervention on the summary writing skills of students with learning disabilities to allow them to compose meaningful summaries of short stories. Being able to reduce a large text unit to its essentials is one of the most vital competencies needed to succeed in all kinds of school subjects. However, this ability is hardly ever taught explicitly in the classroom, resulting in a great share of students failing to acquire it. Concerning this matter, boys and girls who demonstrate obvious problems in receiving, processing, analyzing, and storing information are especially at risk for failure. Fifty-one children with learning disabilities between the age of 8 and 14 participated in the study. Using an experimental two group pre- and posttest design, the treatment group received a ten-lesson program on summarizing skills and the control group received regular classroom instruction. Results indicated that the DI intervention was effective in increasing the ability of children with learning disabilities to compose significant summaries of short narratives. Implications and limitations of the study are discussed.

Keywords: Composition Writing; Writing Productivity; Summarization; Learning Disabilities.

Introduction

Characteristics of Summaries

Summaries are a way to distill the essence of a text to its most important points. They are significantly shorter than the original reading (Fritzsche, 1998; Melenk & Knapp, 2001; Reid, Lienemann, & Hagaman, 2013). In them, the gist of a text is presented in a condensed form. A summary is ordinarily written in the third person. In addition, direct speech is supposed to be changed in indirect speech (Lorenz, 1999). The language should be concise and to the point. Finally, it is suggested that summaries should not contain deviations nor embellishments (Hoffmann, 2014).

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Fritzsche (1998) subdivides summaries into three categories: informative, argumentative, and judgmental. Informative summaries are commonly held to be the most objective ones. They adopt the tone of the original text, simply presenting all relevant information in shorter form. Students from grade three onwards are usually able to create them (Fritzsche, 1998; Melenk & Knapp, 2001). An argumentative summary recapitulates the main idea of a text and subsequently makes a convincing case for its validity; a judgmental summary is a synopsis of a writing product (i. e. a book or a newspaper article) that assesses its strengths and weaknesses in a balanced way (Coirier & Passerault, 1990).

Importance of Summarizing Skills for Academic Achievement

Summarizing makes reading material easily retrievable and preserves important thoughts and ideas for later use (Graham & Harris, 2012; Shanahan, 2013). The ability to distill the essence of a text to its most important points helps learners to build their own schemas of the concepts presented in it (Melenk & Knapp, 2001; Reid, Lienemann, & Hagaman, 2013). Different theories of text comprehension assume "… that a higher-order representation of the super-sentence structure of the text is 'automatically' abstracted during comprehension, and it is this macrostructure that guides the production of recall and summarization" (Brown, Day, & Jones, 1983, p. 968).

It is essential that children acquire the ability to compose concise summaries during their school career. This competency is equally important for developing a sufficient level of reading comprehension as well as of expressive writing skills (Graham & Harris, 2012). Students need to constantly apply it in a variety of academic areas beyond language arts. Without mastering this basic skill, they would seriously struggle to reach their learning goals (Reid, Lienemann, & Hagaman, 2013).

Challenges in Acquiring Summarizing Skills

Three stumbling blocks hinder learners to become proficient in writing concise and informed summaries:

(1) Distilling the essence of a text to its most important points is an extremely complex metacognitive process. In fact, some students do not master this skill until their college years. To summarize even simple narratives puts a heavy load on one's working memory.

(2) Most students do not enjoy summarizing texts. Because reducing the most essential points of someone else's work into a shorter form is very demanding, it is no wonder that children and youth resist this activity. Students often perceive it as a formal task irrelevant to real life.

(3) Instructors seldom teach summarization skills explicitly. It is very uncommon during literary lessons to help students to comprehend the meaning of a text by demonstrating to them how the main points in each passage can be

restated (Melenk & Knapp, 2001). Teachers oftentimes avoid explicit instruction in summarizing text, because they do not feel competent doing so.

Hence, a considerable number of children and youth fails to meet a proficient level of competency in summarizing skills, which are necessary to master a great variety of academic requirements. Especially students in grades 4 and 5 make insufficient use of these strategies (Kirmizi & Akkaya, 2011). They particularly struggle to locate ideas, messages, or themes from a text (Gajria & Aalvia, 1992).

Ways to Support Students who Struggle with Generating Summaries

Although teachers seldom instruct students explicitly on how to write summaries, there seem to be effective strategies to support children and youth in this respect. Most studies evaluating the benefits of helping learners to acquire basic summarizing skills are somewhat dated. However, they unanimously indicate that direct instruction (DI) improves the ability of students to grasp the essence of a text (Alharbi, Hott, Jones, & Henry, 2015). DI is a skill-oriented approach to teaching in which cognitive abilities are broken down into smaller units, sequenced, and taught explicitly. This technique does not rely on exploratory learning models such as inquiry-based learning and has the potential to specifically foster the ability of students to condense larger texts into more manageable chunks (Archer & Hughes, 2011).

Bean and Steenwyk (1984) analyzed the effects of three different types of summarization instruction with sixty (non-labeled) sixth-grade students: a rule-governed DI approach, the intuitive GIST strategy (Shanahan, 2013), and just some general advice on how to identify main ideas in a text. In all cases, the intervention lasted five weeks and consisted of 12 30-minute lessons. Results indicated that students who received DI outperformed their peers in the other two groups in paragraph summary writing as well as in a standardized test of paragraph comprehension. Students who were only given some advice on how to distill the essence of a text showed the least improvements.

Sonntag and McLaughlin (1984) conducted a single-case study (multiple-baseline) with six eighth- and ninth-graders. Over a period of eight weeks, the participants were explicitly taught on how to compose succinct paragraphs, containing only the most relevant information on a certain topic. The intervention elicited significant improvements in the students' abilities to write meaningful summaries as measured by a rating scale accounting for a whole variety of different quality indicators.

Melenk and Knapp (2001) investigated the effects of explicit instruction to write concise summaries over the course of four weeks on the summarizing skills of 350 students enrolled in 13 eighth grade secondary classes. Every learner had to write a series of story summaries. The assessment was based on a qualitative analysis. Results indicated that the students were able to reproduce

the content correctly and properly applied the text genre characteristics. However, a considerable number of them experienced some difficulties when the structure of the reading was rather complex and long.

Most studies involving students with learning disabilities have focused on improving their reading comprehension skills through the application of summarization strategies (e. g., Garjria & Salvia, 1992; Jitendra, Cole, Hoppes, & Wilson, 1998; Jitendra, Hoppes, & Xin, 2000; Malone & Mastropieri, 1992; Nelson, Smith, & Dodd, 1992; Williams, Brown, Silverstein, & deCani, 1994). Thus, teaching learners how to put the key information of a passage on paper has been used as a means to an end in order to help them to understand a text. In contrast, little attention has been paid so far on the quality of the writing product (the summary) itself as noted in the previously mentioned studies (Bean & Steenwyk, 1984; Sonntag & McLaughlin, 1984; Melenk & Knapp, 2001).

Of the different strategies described in the literature to help students with learning disabilities to compose succinct summaries, Reid, Lienemann, and Hagaman (2013) identified the approach by Nelson, Smith, and Dodd (1992) as the best option.

Research Question

The purpose of this paper was to add to the existing body of literature by taking up the question of whether children with learning disabilities as young as between the ages of 8 and 14 years can be successfully taught how to write informative summaries about simple narratives. We focused on students with these kinds of academic problems, because they especially struggle with this task (Graham & Harris, 2012) and "… due to the challenging nature of writing, ... [they generally] experience difficulty when having to complete writing assignments" (Li, 2007, p. 77). As mentioned above, children in grades 4 and 5 oftentimes experience problems in composing summaries. Before that, they are taught basic reading and writing skills. However, during grades 4 and 5, summarizing skills starts to become essential for students in order to master a whole variety of academic tasks that they are confronted with in the classroom. Our purpose was to target boys and girls at-risk for failure at this critical point in their school years.

We applied a similar method as used by Nelson, Smith, and Dodd (1992) and expected that students receiving ten lessons on how to execute skills to identify the gist of a story would outperform their schoolmates who in the meanwhile received regular classroom instruction. We thus chose the most basic type of text genre for our intervention (narratives) and the most fundamental kind of summary (informative) to not overstrain our participants with a too ambitious sort of training.

Method

Participants and Setting

The study was conducted in different towns in Northrhein-Westfalia, Germany. Our sample consisted of 51 students between 8 and 14 years of age (M = 10;2; SD = 2.02). Twenty of them were female, 31 male. All of them were diagnosed as learning disabled by a multi-professional team according to relevant assessment standards (Schulministerium NRW, 2014). In Germany, in the UK, and in a number of other European nations, the term "learning disability" is used in a broader sense than in the US and comprises all kinds of phenomena that result in school achievement problems, including moderate delays in cognitive functions (Al-Yagon, Cavendish, Cornoldi, et al., 2013). Twenty-five of our participants attended a regular inclusive primary or secondary school, 26 a special school for slow learners (see Opp, 1992). The mean intelligence quotient (IQ) was 96.08 (*SD* = 14.53) as measured by the *German Number Combination Test* (ZVT, Oswald & Roth, 1987). Eleven of the students were bilingual, speaking a native language other than German.

Our sample was selected by screening a group of 200 students with learning disabilities between 8 and 14 years of age in the area of reading fluency. Participation criteria required the subjects to demonstrate sufficient decoding skills. The *German Salzburg Reading and Orthography Test II* (SLRT II, Moll & Landerl, 2010) was used to assess the level of reading fluency. The SLRT II measures the power of participants to decode text quickly and accurately in a standardized way. Students who demonstrated a T-value of less than 35 were excluded from the study.

Dependent Variables

To capture the ability of our participants to write profound summaries, we created two stories of about 200 words. The two narratives dealt with the winter season, as the study took place during this time of the year. To make sure that they both contained an equal number of important information, they were presented to a class of 15 undergraduate college students who individually wrote a summary about them, trying to incorporate the basic contents of the narratives. The abstracts were very similar with regard to their content. However, they were not identical. We subsequently altered the stories conjointly with the college students in an effort to make them identical concerning the amount of words that they included, the number of important information that they contained, and the reading level difficulty.

The final versions of the stories were both made up of 180 words and possessed a Flesch Kincaid index of 92. This index is commonly used to determine the level of reading difficulty of a document. The respective formula includes the average number of words in a sentence as well as the average number

of syllables per word (Wilson & Wauson, 2010). A value of 92 is an indication for a rather easy to read text (ebd.) and was appropriate for our sample. We presented the final versions of the two stories to our participants during pre- and posttest sessions in a random order. The first and the second author used a checklist to identify and record the number of pieces of important information contained in the summaries. Points were added to yield a total score representing a student's ability to distill the main ideas and important details of the texts in a short form. The interrater agreement reached 95%. Any discrepancies were resolved through a consensus discussion.

Experimental Design

We randomly assigned the participants of our study in three groups and applied an experimental pre- and posttest design. According to our original plans, we wanted to instruct the members of our first group in the use of the summarization strategy, while the second group would receive a streamlined version of the training, and the third group would continue to participate in regular classroom activities. However, due to different organizational challenges, we were only able to offer the students in the second group a very short introduction of a couple of minutes to various text genres. Thus, we combined the participants in the second and third group.

As mentioned above, the total number of participating students was 51. However, we started out with a sample of 60, with one treatment group of 20 and one control group of 40 students. Unfortunately, nine of the children did not participate in the post-test due to sickness, resulting in a 15% dropout rate. Hence, we were ultimately able to include 51 students in our final sample with 19 and 32 students in the treatment group and control group, respectively.

To ensure comparability between the groups despite the dropout rate, we made sure that there were no significant differences in terms of age, proportions of male and female students, first language, type of school, grade level, IQ, and reading fluency. Every single comparison yielded results that were not statistically significant for the $p < 0.50$ level.

Intervention and Materials

Our treatment was based on a curriculum developed by Nelson, Smith, and Dodd (1992). Their line of action consists of three main steps: (1) identify and organize the main idea and important information, (2) identify key points the writer makes about the main idea, and (3) compose, clarify, and revise a summary. The authors break these steps down into nine self-directional prompts, which guide the student through the whole process of producing a meaningful abstract in a highly structured way (see also Reid, Lienemann, & Hagaman, 2013).

The intervention in the study by Nelson, Smith, and Dodd (1992) consisted of 22 group reading and 18 individual reading sessions, adding up to a

total of 40 lessons. We condensed the content of the curriculum to a number of ten week-daily units of 45 minutes each and taught the students in small groups between two and five participants (a clearly arranged compilation of the contents of each lesson and of the used materials is found in the appendix). With very few exceptions, lessons followed a steady pattern to help participants focus on the content and to make sure that they did not get distracted by different teaching methods or by changing demands and guidelines during the intervention (Archer & Hughes, 2011). The units usually started by presenting the respective educational objectives. Then, the teacher familiarized the students with the intermediate steps to achieve this goal. Subsequently, he or she demonstrated the procedure necessary to reach a certain sub-ordinate target (i.e. identifying the main idea of a text, rephrasing the main idea, tagging some key information about the main idea) while thinking aloud. This phase was followed by teacher-guided practice, involving scaffolding and providing assistance to students until they were able to apply a certain skill effectively by themselves. Afterwards, the students tried to implement the respective strategy with a partner. All lessons ended with the teacher recapping on the learning that had taken place.

We used twelve stories of 150 to 250 words as training materials that were especially written for the purpose of teaching students to develop summarization skills. They centered around different themes relevant to the students' lives (i.e. friendship, sport, school) and included a picture to make the text appear more attractive.

According to Nelson, Smith and Dodd's curriculum (1992), the following three goals were set during the course of our intervention:

(1) Identify and organize the main idea and important information. Our initial lesson focused on introducing the features of a narrative and on how to identify the main characters and the main story line, using two WH-questions ("Who is part of the story?" and "What is happening in the story?"). The next unit focused on teaching the students how to find the other key elements of a story (e.g., "When is it happening?", "Where is it happening?", "Why is it happening?").

(2) Identify key points the writer makes about the main idea. In the third lesson, the teachers focused on coming up with suitable headings for the different paragraphs of a reading. During the subsequent unit, the interventionists showed the children examples of well and badly written summaries. They were told that sound abstracts consist of three to five short sentences answering the five WH-questions that were discussed in lessons one and two. Unit five was geared toward helping participants to distinguish between relevant and irrelevant information by presenting stories and corresponding summaries that contained many dispensable details.

(3) Compose, clarify, and revise the summary. In the remaining four lessons, the children were introduced to the STOP and LIST mnemonic strategy (Graham & Harris, 2012). This technique "… serves as a reminder for students to set goals, generate possible writing ideas, and sequence these ideas before writing" (ebd., p. 33). Using this strategy, the participants were further instructed on how to phrase concise summaries. The teachers demonstrated the application of this procedure using a series of stories with increasing level of complexity. Subsequently, the students were carefully scaffolded in their efforts by continuously providing corrective feedback.

Interventionists and Treatment Integrity

Six undergraduate college students from the University of Cologne (Germany) served as teachers. As they all studied special educational needs, they were familiar with the characteristics of students with learning disabilities. All of the teachers had at least basic experience in teaching students who struggle in school, because they all completed a number of internships in different classrooms over the course of their university training.

We tried to ensure treatment fidelity by providing the interventionists with a detailed script to follow. In addition, the college students were extensively briefed about their role over the course of two hours by the first two authors. Finally, we kept in regular contact with the interventionists via email and phone, as well as during two supervision meetings. During each session, the first two authors asked detailed questions about the way the instruction was implemented and answered any questions that the teachers had.

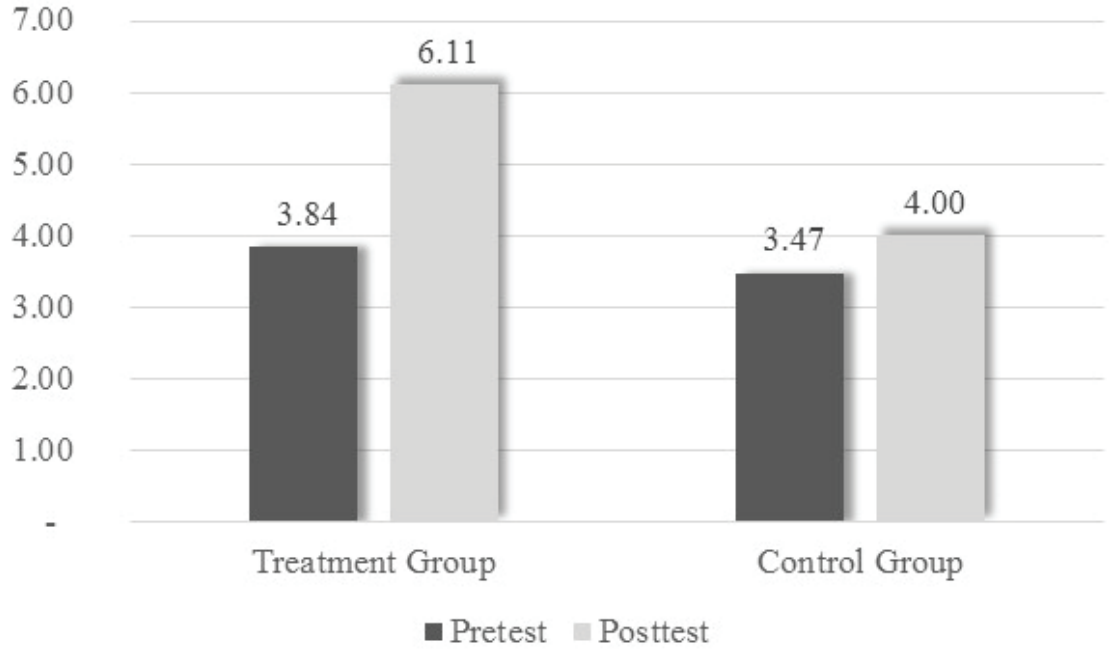
Results

Descriptive results for both groups' pre- and post-test scores concerning the number of pieces of important information that the students mentioned in their summaries are presented in Table 1 and Figure 1.

Table 1. Descriptive statistics of the pre-posttest results in the two groups.

	Group	M	SD
Pretest	Treatment Group (N = 19) Control Group (N = 32)	3.84 3.47	2.03 2.03
Posttest	Treatment Group 1 (N = 19) Control Group (N = 32)	6.11 4.00	2.30 2.76

Figure 1. **Bar diagram of the mean scores regarding the number of pieces of important information in the two experimental conditions**



An independent samples t-test revealed that there were no significant differences between both groups during pretest conditions, $t(49) = 0.63$, $p > .50$. However, as Table 1 and Figure 1 suggest, the students did not demonstrate similar levels of improvements from pre- to posttest assessment regarding the number of pieces of important information that their summaries contained. We conducted an ANOVA with repeated measures in which group membership was entered as the between subjects variable and time (two levels: pre- and posttest) was the within subjects variable. Reading fluency was included as a covariate, because it has to be assumed that this skill influences the level of cognitive load that an individual experiences while trying to summarize a story. Even though we excluded students with very low abilities to decode text from our sample, our participants still demonstrated a great variability in this respect. We expected that low reading fluency skills increase the level of cognitive load a student has to process, resulting in relatively meager treatment gains with regard to summarization skills.

Meaningful differences were found in the group x time interaction (Wilks' Lamda = .92, $F(1, 48) = 4.29$, $p < .05$). However, the effect of the covariate on the outcome fell barely short of statistical significance (Wilks' Lamda = .92, $F(1, 48) = 4.02$, $p > .05$). Incidentally, the order of the two stories that the students were presented with during pre- and posttest did not make a difference. Calculation of an effect size (Cohen's *d,* Cumming, 2011) yielded a value of 0.83. According to common classifications, such an index can be considered as large (Rosenthal & Rosnow, 1984).

In addition to applying inferential statistics and determining effect sizes, various researchers also suggest to undertake a responder analysis in which each student is classified as either a "responder" or a "non-responder" (e. g. Altman & Royston, 2006; Snapinn & Jiang, 2007). Such an approach is appropriate whenever there are reasons to believe that the participants have reacted to the treatment in rather heterogeneous ways. One option to elicit whether this is the case is to calculate the coefficients of variation (CV), which are defined as the ratio of the standard deviation to the mean. The standard deviation usually rises with the mean of the data set. Thus, it is important to put the variance into proper perspective. In our study, the CV of the treatment group was 0.38 and that of the control group was 0.69. If there were an interaction effect between the treatment and the participants, one should expect that some students would have responded very positively to the intervention, whereas others would have not benefited at all (or would have even shown a decrease in performance). Because the CV of the treatment group is even lower than that of the control group, we do not have a reasonable cause for conducting a responder analysis. Our participants have obviously benefited from the strategy in a rather consistent way.

Discussion

Main Findings

The purpose of this study was to examine whether a rather short intervention of just ten lessons is able trigger noteworthy improvements in the skills of children with learning disabilities to write meaningful summaries. Our results indicate that students who received the treatment outperformed their peers who did not. On average, they were able to identify and incorporate more pieces of relevant information in their abstracts about the stories they were presented with compared to their peers in the control group. An effect size calculation indicated that the treatment had a large impact on the students' abilities to capture the basic gist of stories in their summaries. In addition, they seemed to benefit from the intervention in a rather uniform way.

Practical Implications

Our findings imply guarded optimism about the benefits of rather short interventions aimed at building summarization skills in children with learning disabilities. Even though teaching students with writing difficulties how to compose succinct abstracts is a comparatively demanding undertaking, we were able to demonstrate that a highly structured treatment in accordance with the basic tenets of DI can elicit appreciable improvements. Our interventionists were undergraduate college students who were less experienced than fully qualified and experienced special education teachers. Thus, it can be assumed that our approach to facilitate summarization skills for struggling learners is more feasible under everyday life conditions at school than under circumstances, in which stu-

dent teachers try to bring about changes in children that they have only limited teaching experience in the classroom.

Many teachers often do not instruct students explicitly how to write summaries, even though this academic ability is of vital significance. Oftentimes, they do not feel confident enough to tackle this task, due to their limited training in this respect and to the assumed complexity of the endeavor. Our results can assist teachers to feel more at ease and confident in the face of having to familiarize struggling learners with ways on how to write meaningful summaries. They do not need to apply a lengthy intervention program and do not have to undertake some kind of extensive training before using such a strategy. A well-structured, yet tersely curriculum seems to suffice to lift the ability of students with writing difficulties to a higher level. Teaching summarization skills the way we outlined in this study can contribute to break the spiral of frustration and failure that many students with learning difficulties experience.

Limitations and Future Research

Although our study yielded promising results, the findings are not beyond reproach. For one, we failed to collect follow-up data in order to make statements about whether the improvements were stable over time. Students with learning disabilities are often not able to retain treatment gains after an intervention has been discontinued (Swanson, Harris, & Graham, 2014). They usually need repeated booster sessions to keep up their skill level in a certain area. Future studies should definitely involve a follow-up data collection.

In addition, our findings have only limited explanatory power. They only apply to students with learning disabilities between 8 and 14 years of age and to the possibility of fostering their skills to write meaningful and succinct summaries about short stories. We cannot draw any valid conclusions about other populations or other genres. Every study by nature has a limited focus, depending on its specific research questions. However, these circumstances suggest that there is not only a need to replicate our study, but also to conduct similar ones across different populations and genres in order to establish the generalizability of our findings.

Furthermore, additional studies are warranted to discover who benefits the most from an intervention like the one that we applied and what exactly elicits the improvements. Even though our participants seemed to more or less equally benefit from the intervention, it is certainly safe to say that not all of the variances are accounted for by the treatment. To identify specific characteristics that influence the susceptibility to the training, we need a larger sample size and more information about the participants. Finally, multiple measurements during the intervention would enable researchers to make statements about what elements of a treatment trigger what improvements in performance in the students' academic performance.

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Corresponding Author

Özlem Büyüknarci, University of Cologne, Department of Special Education and Rehabilitation, Klosterstr. 79b, 50931 Cologne, Germany, Email: o.bueyueknarci@uni-koeln.de.

Appendix

Lesson plan for the direct instruction intervention on teaching summarization skills.

Unit	Procedure	Text/Material	Didactic Comment
1	Teacher presents the characteristics of a story. For example, introduction, main idea, and conclusion.	Graphic presentation of the main characteristics of a story.	Students learn the characteristics of the story in order to be able to focus on the important aspects of a story.
	Teacher reads the story out- loud and demonstrates how to identify the main character(s) and the main idea using the technique thinking out loud.	Story A	Students learn the WH-questions without overstressing them with the new situation and new content.
	Students and teacher read a story together and identify the answers to the first two WH-questions: Who is part of the story? What is the story about?	Story B	This step helps to slowly introduce independent work.
	Students work in pairs to answer the first two WH- questions without teacher assistance.	Story C	By working in pairs, students will start working independently, which minimizes being overstressed by the pressure of working individually. By trying to identify the answers to the first two WH-questions in three different stories, students will have several opportunities to practice this skill.

2	Teacher reads the story out loud while the students follow along. The teacher using the thinking out-loud technique demonstrates how to find the answers to the five WH-questions (Who is part of the story? and What is happening in the story?, When is it happening?, Where is it happening?, Why is it happening?) in a story.	Story A	By answering WH-questions, students will learn to identify the different parts of a story.
	Teacher activates and leads student participation to identify the answers to all five of the WH-questions in a story.	Story B	Working in class with teacher assistance prevents errors.
	Students work in pairs to identify the answers to all five WH-questions in a story.	Story C	Working in pairs to identify the parts of a story will built confidence in the students.
3	Teacher demonstrates how to assign headings/ titles for different paragraphs of a story.	Story A	Teacher demonstration of the task help the students to learn what to focus on while working in order to avoid mistakes.
	Students work independently to assign titles to the paragraphs of a story with teacher assistance.	Story B	To provide further guided practice to the students.
	Students working in pairs assign titles to the paragraphs of a story.	Story C	Students will learn to implement the previously acquires strategy steps.

4	Stories A and B are read out-loud along with a well-written summary of a story A and a poorly written summary of story B are presented to the students as well. In a teacher-led class discussion, the teacher highlights the difference between both summaries leading the students to identity the criteria for a well-written summary.	Story A + Well written summary of A, Story B+ and poorly written summary of B	By identifying the differences between a well-written and a poorly written summary, students learn the characteristics of well-written summaries.
	Students are provided with two stories (C and D) along with a poorly written summary of story C and a well-written summary of story D. Students work in pairs to determine which of the summaries meets the criteria of a well-written summary.	Story C, Story D + poorly written summary of C and A, well-written summary of D	This step helps students to understand how well and poorly-written summaries should look like.
5	Teacher reads out loud a story, and then using the thinking aloud technique the teacher identifies irrelevant information to omit from the summary.	Story E and summary of E containing irrelevant information	Students learn the importance of omitting irrelevant information to create a succinct summary of a story.
	Students work independently to identify relevant information in a story with teacher assistance.	Story F and summary of F containing irrelevant information	With the assistance of the teacher, students learn to recognize which information can be deleted and which is necessary in a story summary.
	Students work in pairs to identify irrelevant information in a story.	Story G and summary of G containing irrelevant information	By working in pairs, students can compare notes with each other and discuss which information can be omitted in a summary of the story.

6	Students learn the STOP and LIST mnemonic strategy before writing a summary of a story.	Story A	Students learn an effective pre-writing strategy for writing.
7	Teacher demonstrates how to write a well-written summary.	Story H	Students learn to apply the characteristics of well-written summaries to write a well-written succinct summary.
	All students will work together as a group to write a well-written summary of a story.	Story I	By writing a summary together, students practice summary writing before they start to write their individual summaries.
8	Write well-written summaries	Story J	Summary writing practice
9	Write well-written summaries	Story K	Summary writing practice
10	Write well-written summaries	Story L	Summary writing practice

The Effects of a Metacognitive Strategy on the Persuasive Writing Skills of Adolescents With Hearing Impairment and Learning Disabilities

Özlem Büyüknarci
Integrated Comprehensive School Bonn-Beuel, Germany
Matthias Grünke
University of Cologne, Germany

In this research paper, we present the results from a single-case study examining the effects of the FIX strategy by Sherman and De La Paz (2015). This metacognitive instructional approach was implemented to improve the persuasive writing skills of tenth graders at high risk for school failure: students with comorbid hearing impairment and learning disabilities. The strategy was taught by way of peer tutoring involving four low-achieving tutees and four high-performing tutors. We applied a multiple-baseline design (AB) with between five and eight intervention sessions. Results indicated that the treatment brought about respectable improvements in three of the four tutees' ability to produce essays designed to convince readers of a particular idea. Thus, our findings suggest that peer-tutorial instruction in the FIX strategy can enhance the persuasive writing skills of adolescents with hearing impairment and learning disabilities even after only a small number of sessions. Practical implications of the results are discussed, and directions for future research are provided.

Keywords: **Peer Tutoring, FIX Strategy, Persuasive Writing Skills, Single-Case Research, Learning Disabilities, Hearing Impairments**

Introduction

One of the overarching goals of education is to help students think independently. That is, form their own opinions based on a careful reflection of different arguments, a thoughtful analysis of the relevant viewpoints, and a reasonable development of a convincing conclusion (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). Individuals who are able to articulate their positions plausibly and provide cogent reasons for their beliefs are usually more effective problem-solvers and better able to assert their interests than those who are not (Erickson, 2005).

A critical way to develop this kind of independence and autonomy in students is to teach them persuasive writing skills (Crowhurst, 1990). Producing a text aimed at winning over the reader forces students to reflect deeply, make

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their ideas explicit in language, and arrange their thoughts into a comprehensible composition (Graham et al., 2019). While most children and adolescents acquire adequate abilities to write persuasive essays during the course of their school years, some do not.

Two of the largest groups of students who show substantial shortcomings in text production are those with a learning disability (LD) and a comorbid hearing impairment (HI). Specifically, working memory deficits make it extremely difficult for people with LD to collect, process, weigh, and organize information (Graham, Collins, & Rigby-Wills, 2017), and if they have an additional disability, especially an HI, this challenge becomes even more severe (Easterbrooks & Stoner, 2006).

While there is a considerable amount of empirical literature on the effects of various writing interventions for students with LD (see Cook & Bennett, 2014; Datchuk & Kubina, 2013; Gillespie & Graham, 2014; Gillespie Rouse & Sandoval, 2018; Rogers & Graham, 2008, for comprehensive meta-analyses), the literature on evidence-based practices for learners with HI remains "small and fragmented" (Strassman & Schirmer 2013, p. 177). Hearing is an ability whose relevance to understand and produce written language is frequently underestimated (Naff, 2010). Children and adolescents with HI often demonstrate severe difficulties in this area, due to problems with vocabulary, grammar, and pronunciation. Thus, helping learners with HI to acquire literary language skills is an important but demanding task (Vostal & Ward, 2015). When attempting to tackle this problem, it is indispensable to adapt the teaching style to the developmental needs of the students (Slater, 2016).

One instructional framework that seems to be effective in this regard is the Self-Regulated Strategy Development (SRSD) approach by Harris and Graham (1996). Previous meta-analytic research (e.g., Datchuk & Kubina, 2015; Gillespie & Graham, 2014; Gillespie Rouse & Sandoval, 2018; Rogers & Graham, 2008) has consistently substantiated the potency of this strategy. With a 35-year history of effectiveness, SRSD is a comprehensive model that takes all essential features of improving writing performance into account (cognitive, motivational, and academic characteristics). It consists of a six-stage framework for explicitly teaching drafting, composing, and revising: (a) develop background knowledge about a particular strategy and introduce the applications for which it is used, (b) discuss the aim and the advantages of the strategy, (c) model the strategy while thinking aloud, (d) help students to memorize the steps of the strategy, (e) support the use of the strategy through scaffolds based on individual needs, and (f) facilitate independent application of the strategy over time. Within these steps, learners are taught goal-setting and self-regulation procedures, as well as self-statements that assist them in applying the strategy independently (Graham & Harris, 2003).

The SRSD model has been used as a framework for teaching a number of strategies geared towards improving the persuasive essay writing skills of students with special needs, including POW + TREE (e.g., Shora & Hott, 2016); STOP & DARE (e.g., Ennis, Jolivette, & Boden, 2013); and SCAN (e.g., Mason, Harris, & Graham, 2011). Overall, the findings of the body of literature on this topic gives cause for optimism. Thus, the gist of previous studies is that instructing struggling students in the application of various persuasive essay writing strategies by way of SRSD is very promising.

Teaching text production skills is very demanding, involving intense and time-consuming instruction. Unfortunately, the resources for implementing such challenging interventions are often missing. Therefore, the approach to imparting the skills necessary to compose text has frequently involved peer tutoring. This methodology can help to provide struggling children and adolescents with the attention and the support they need in order to learn how to put thoughts on paper (Little, Lane, Harris, Graham, Story, & Sandmel, 2010).

When it comes to acquiring persuasive writing abilities, the complexity of commonly used interventions like POW+TREE, STOP & DARE, and SCAN, as well as the number of steps they need to take to improve their performance often overburden learners who have multiple risk factors (like students with both LD and HI). Fortunately, there is a relatively simple alternative to the approaches just mentioned. Developed by Sherman and De La Paz (2015), it consists only of three simple steps: (a) **F**ocus on essay elements, (b) **I**dentify problems, and (c) e**X**ecute changes (FIX for short).

FIX seems to give consideration to the challenges that students with LD and HI face by reducing the complex concept of text composition to the most basic activities so that even young learners with multiple risks might not feel overwhelmed. Despite its promises, however, until now, FIX has not been systematically evaluated. The aim of this study was thus to examine the effects of the strategy using peer tutoring. We focused on relatively old subjects (10th graders), because younger students presumably would not possess sufficiently developed metacognitive capabilities to benefit from the approach.

Method

Participants and Setting

Our sample consisted of adolescents in a 10th-grade classroom in a Ger-man special school for students with HI in a metropolitan area in North-Rhine-Westfalia (Germany). The ages of the 10 participants in the class varied between 15 and 18 years. All of them demonstrated severe auditory disabilities. In addition, several had distinct learning problems.

For this study, the main teacher ranked the students according to their ability to compose text based on her personal impressions and data from school

records. Consistent with the procedures undertaken in the Peer-Assisted Learning Strategies (PALS) program (Fuchs, Fuchs, Mathes, & Simmons, 1997), they were then assigned to teams by matching the first with the sixth, the second with the seventh, the third with the eighth, the fourth with the ninth, and the fifth with the tenth participant. The last pair was absent more than three times during the course of the study, and was therefore excluded from the data analysis. Relatively better performing peers served as tutors, the lower achieving ones functioned as tutees.

A female graduate student of special education who was fluent in sign language conducted interviews with the 10 participants at the beginning of the study, asking the following questions: (a) Where and when were you born? (b) What country are your parents from? (c) Which languages do you and your family speak at home? (d) What kind of hearing impairment do you have? (e) Do you wear a hearing aid or have a cochlear implant? (f) Which decibel level is necessary for you to hear? (g) Which kind of school leaving certificate are you aiming for? (h) Which subjects do you perform well in and where do you struggle?

The group of tutors consisted of Aida[1] (female, 17 years, born of parents from Kosovo); Ben (male, 16 years, no immigrant background); Chris (male, 16 years, no immigrant background); and Diana (female, 16 years, no immigrant background). According to their main teacher, these students demonstrated respectable text-production skills. Besides, they were all very motivated to take part in the study.

As opposed to the tutors, who had never experienced severe performance problems, all four tutees (Aleyna, Bea, Clara, Daria) had been officially diagnosed with an LD, mainly in math. Even though their teacher indicated that the tutees' text-production skills were far from outstanding, they demonstrated adequate spelling skills and were able to write simple stories.

The tutee working with Aida was Aleyna. She had no immigrant background and was 18 years old at the time of the study. Her HI made it necessary for her to wear hearing aids on both ears. Bea (female, 17 years old) worked with Ben. Her parents moved to Germany from Morocco before she was born. In her home, everyone spoke Arabic. Bea wore hearing aids on both sides. Clara (female, 17 years old, working with Chris) did not have a migration background. She wore a cochlear implant on her left ear, because it was completely deaf. With her right ear, she could hear a little with the help of a hearing aid. The last tutee, Daria (female), working with Diana, was 15 years old at the time of the experiment and the daughter of Turkish parents. The only language spoken at her home was Turkish. Daria had a hearing aid on one ear and a cochlea implant on the other.

1 The names of all tutors and tutees have been changed to maintain confidentiality.

Dependent Variables and Measurement

We used 12 persuasive writing prompts to capture the ability of the tutees to produce texts that present reasons and examples to influence action or thought: (a) Should school start at 11 am? (b) Should all German students attend school in England for half a year? (c) Should girls and boys be taught separately? (d) Should attending school until 4 pm be mandatory? (e) Should all homework be abolished? (f) Should summer vacation last for three months? (g) Should students be entitled to pick their teachers? (h) Should school uniforms be obligatory? (i) Should students have a say in what is taught in school? (j) Should a whole school day be dedicated to physical education each week? (k) Should students be allowed to decide where they want to sit in class? (l) Should there be exams and tests in school?

The prompts were printed on paper strips and handed out randomly to tutees, making sure that no one received the same question twice. Students had available as much note paper as they needed and were allowed to take as much time as they wanted to produce their texts. A specific rubric was applied to assess the quality of what the tutees wrote (available from the authors upon request). It contained 14 categories focusing on structure (e.g., "The text contains a comprehensible conclusion"); content (e.g., "The counter-arguments against the proposition expressed in the prompt are convincing"); and language (e.g., "The text is lexically rich"). Each item was rated on a scale from 0 to 3. Thus, scores could vary between 0 and 42. The rubric provided detailed explanations for each quality level of the spectrum.

All the texts produced by the tutees were evaluated by a graduate student, who had been extensively instructed on how to apply the instrument by the second author during two one-hour training sessions. She did not know which text was written by which tutee at what time. To ensure reliability of the results, a random 50% of all texts were independently rated by a male research assistant. Spearman's rank correlation coefficient equaled 0.84 (p<.01). Thus, the scoring of the female graduate student were considered sufficiently reliable, and used as the basis for assessing the quality of the texts.

Experimental Design and Procedure

A multiple-baseline design across subjects (see Horner & Odom, 2014) was used to evaluate the effects of the training. The phases of the experiment extended over a period of 12 school days with 12 measurements. Baseline data collection with the four tutees began at the same time. However, introduction of the intervention was staggered to control for history and maturation. Aleyna's training started after the fourth measuring point, Bea's after the fifth, Clara's after the sixth, and Daria's after the seventh. Thus, Aleyna's intervention consisted of eight sessions, Bea's of seven, Clara's of six, and Daria's of five.

In order to guide the tutors through the lessons and provide them with reminders of what to do during the process, we prepared a six-page script containing brief instructions and mnemonics in large print (available from the authors upon request). In addition, prior to the start of the study, the graduate student conducted a training on the components of the instructional framework with Aida, Ben, Chris, and Diana, consisting of four one-hour sessions. She familiarized them with the script and encouraged them to refer to it frequently during the intervention.

A female supply teacher (capable of speaking sign language) took the tutees and their tutors to a resource room in the school every day of the study. The room was only occupied by one team and the supply teacher at a time. During baseline, Aleyna, Bea, Clara, and Daria were just asked to write a text. While the intervention was running, they participated in a 30-minute training session on the FIX strategy before the measurement. The time window during which the intervention and the assessment took place varied each day. To ensure fidelity of the treatment and to provide help whenever necessary, the supply teacher sat right next to the teams and intervened if needed.

Our intervention mirrored very closely the procedures described by Sherman and De La Paz (2015). In the first lesson (step 1 of SRSD), the tutors told their respective tutee the essence of what constitutes a persuasive essay. That is, they explained that it starts with an introduction in which the thesis of an argument is outlined, followed by about three points that support the writer's position using evidence to substantiate it. In the conclusion, the argument is summarized, tying together the writer's ideas and restating the thesis. Further, the text should end with a sentence that leaves the reader with something to think about. Tutors provided their tutees with a short sample essay of 150 words and pointed out the aforementioned features. In closing, they provided a general overview of the three steps in FIX (see above).

During the second session (steps 2 and 3 of SRSD), three different kinds of cards were introduced, representing the three actions someone needs to take when applying the strategy: Red indicates that students are supposed to stop and zoom in on essay elements, yellow prompts them to rethink if what they wrote fits their intention, and green is used to trigger them to execute changes in response to specific problems. During the assessment, the tutors used the cards to go through the texts the tutees had written the day before to identify strengths and weaknesses. They then encouraged the tutees to review the three steps when producing the next text during progress monitoring.

In the third lesson (steps 4 and 5 of SRSD), the tutors asked the tutees to recall and explain the steps in FIX. They also invited them to illustrate the meaning of the three cards. Subsequently, the tutors scaffolded the tutees through the process of reviewing the essay they had written the previous day.

They provided encouraging feedback and praised them for any comment or statement indicating that they had caught on to the strategy.

The purpose of the fourth and all following sessions (step 6 of SRSD) was to instruct and support the tutees in revising their texts independently while consulting the three cards. Again, the essay they had written on the day prior to a respective lesson was analyzed and edited. Tutors provided encouragement and support whenever tutees got stuck.

Even though the intervention was set up in a peer-tutoring format, the supply teacher had to step in several times during each session to help with the instruction and to make sure that the procedure followed the script. However, the main part of the training was always left up to the tutors.

Results

Figure 1 presents the total number of points allocated to each of the tutees' essays over the course of the study.

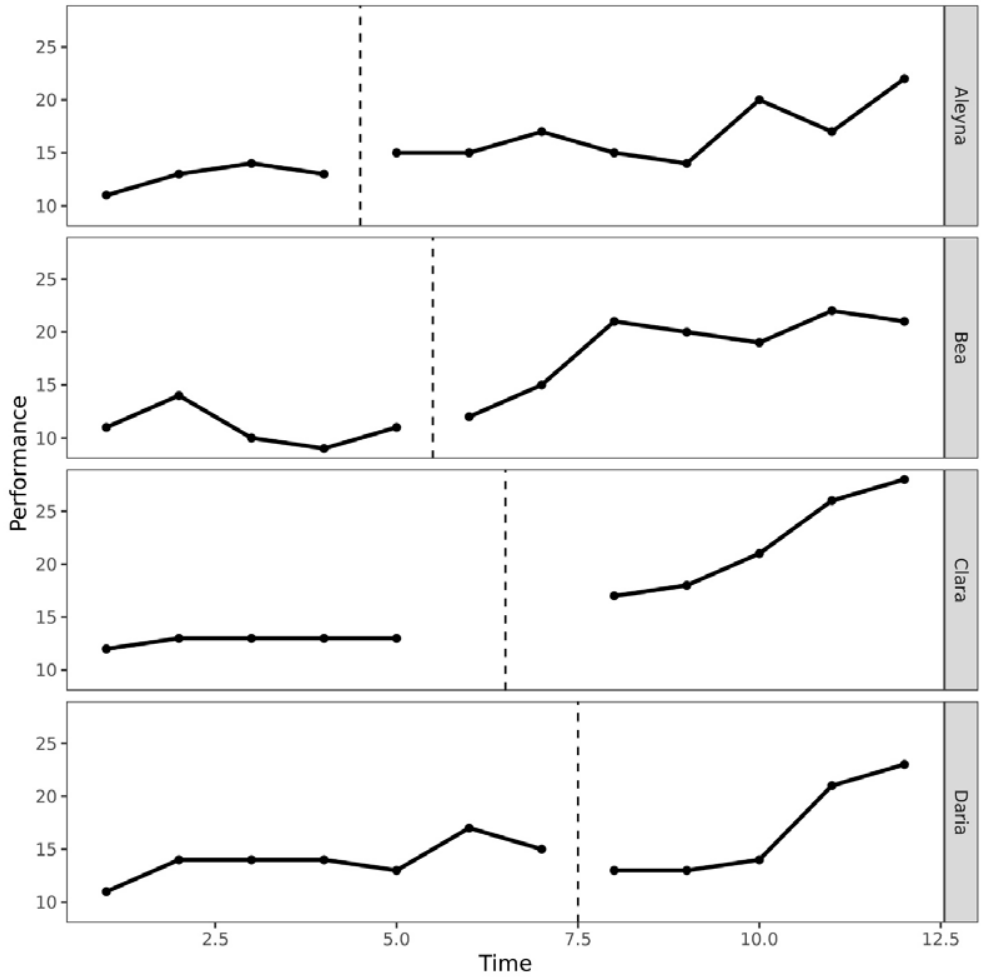

Figure 1. **Quality scores for the four tutees in phases A and B.**

As illustrated, all tutees increased their performance in the treatment phase. That is, whereas they showed little or no improvement during baseline, their scores improved following introduction of the intervention. However, the gains were not overly impressive. In the case of Daria, only the last two measurements indicated a treatment effect. Table 1 contains all information about the raw scores (as noted, two data points are missing for Clara, who was sick for two days).

Table 1. ***Raw Scores for the Four Tutees per Phase***

Student		Phase A	Phase B
Aleyna	*N* (Probes)	4	8
	Raw Scores	11; 13; 14; 13;	15; 15; 17; 15; 14; 20; 17; 22;
Bea	*N* (Probes)	5	7
	Raw Scores	11; 14; 10; 9; 11;	12; 15; 21; 20; 19; 22; 21;
Clara	*N* (Probes)	6	6
	Raw Scores	12; 13; 13; 13; 13; -/-;	-/-; 17; 18; 21; 26; 28;
Daria	*N* (Probes)	7	5
	Raw Scores	11; 14; 14; 14; 13; 17; 15;	13; 13; 14; 21; 23;

In all cases, both the mean and the median of the intervention scores exceeded baseline scores. All relevant descriptive data are presented in Table 2.

Table 2. ***Descriptive Statistics for the Four Tutees per Phase***

Student		Phase A	Phase B
Aleyna	Minimum	11	14
	Maximum	14	22
	Median	13.00	16.00
	Mean	12.75	16.88
	SD	1.26	2.80
	Trend	0.70	0.80
Bea	Minimum	9	12
	Maximum	14	22
	Median	11.00	20.00
	Mean	11.00	18.57
	SD	1.87	3.69
	Trend	-0.50	1.39
Clara	Minimum	12	17
	Maximum	13	28
	Median	13.00	21.00
	Mean	12.80	22.00
	SD	0.45	4.85
	Trend	0.20	3.00
Daria	Minimum	11	13
	Maximum	13	17
	Median	14.00	14.00
	Mean	14.00	16.80
	SD	1.83	4.82
	Trend	0.61	2.80

We first tested the mean baseline difference (MBLD; O'Brien & Repp, 1990). Results showed that Clara benefited the most from the training, with an average increase of 71.88% from baseline to intervention. Bea also profited from the treatment to a remarkable extent (MBLD = 68.82). On the other hand, improvement for Aleyna (MBLD = 32.39%) and Daria (MBLD = 20.00%) did not reach an equally distinct magnitude.

The next step in the analysis involved calculating some of the most common non-overlap effect sizes: percentage of non-overlapping data (PND), percentage of all non-overlapping data (PAND), non-overlap of all pairs (NAP),

and percentage of data points exceeding the median (PEM) (Parker, Vannest, & Davis, 2011; see Table 3). Except for Daria, all indices suggested a considerable increase in performance from baseline to intervention. Again, Clara demonstrated the clearest treatment gains with all non-overlap effect sizes reaching the maximum value of 100 (see Table 3).

Table 3. ***Effect Sizes for the Four Tutees***

	PND	PAND	NAP	PEM
Aleyna	87.50	91.67	98.44	100
Bea	85.71	83.33	97.14	100
Clara	100	100	100	100
Daria	40.00	50.00	58.57	40.00

Finally, we calculated Tau-U for each tutee and a weighted, across-case Tau-U using an online calculator (Vannest, Parker, & Gonen, 2011). For Aleyna, Tau-U equaled 0.97 ($z = 2.63$; $p < .01$); for Bea it equaled 0.94 ($z = 2.68$; $p < .01$); for Clara it equaled 1.00 ($z = 2.61$; $p < .01$); and for Daria it equaled 0.17 ($z = 0.49$; $p = .63$). For all tutees except Daria, a Tau-U greater than 0.85 was obtained, which is considered a strong effect (Parker & Vannest, 2009). The weighted Tau-U across the four participants was statistically significant at the 0.1% level, equaling 0.76 ($z = 4.20$). However, the value fell below 0.85, and thus represented only a medium effect.

Discussion

Main Findings

The primary research question asked how well the FIX strategy was able to enhance the ability of 10th graders with LD and HI when applied in a peer-tutorial setting. Our results give reason for optimism. Even though the training effects were modest, they were not insignificant. Mean treatment gains varied between 20.00 and 71.88%. The percentages of the non-overlap indices (PND, PAND, NAP, and PEM) for all but one tutee ranged at least in the 80s, with six of them reaching the maximum of 100.

The Tau-U statistics were significant (except for Daria), indicating distinct changes in level and monotonic trend between phases A and B. Moreover, the weighted aggregated Tau-U for all four cases suggested that the probability of the differences between baseline and intervention scores being due to chance was less than 0.1%. This can be considered a solid argument for the potency of the treatment.

As a side note, all four tutees commented to both the graduate student and the supply teacher after the last session that they enjoyed the lessons very much. They appeared proud of their achievements and regretted that the training had to come to an end. In addition, they all claimed that they would continue to use the FIX strategy when having to write essays aimed at convincing the reader of an idea. This feedback was not captured in a structured form, and can thus only be considered a vague indication of the experiment's social validity.

Limitations

The study was designed as a single-case analysis with only four peer-tutoring pairs. Thus, the representativeness of the findings is even more in question than if we had conducted a well-founded group experiment. Further studies are needed to substantiate our claims, therefore. Another limitation pertains to the characteristics of our sample. All participants attended the same class in the same school. Future experiments need to include subjects from a wider range of geographical areas, age groups, ethnic backgrounds, skill levels, and so on.

Further, the maintenance effects of the intervention were not tested as the study was conducted as a multiple-baseline design with AB phases without any follow-up measurements. In addition, we did not use checklists to ensure treatment fidelity and did not determine the social validity of the study in any structured manner. Upcoming school holidays did not allow us to adhere to the standards recommended by Ganz and Ayres (2018) to collect maintenance data at least three times and at least four weeks following the cessation of the intervention phase for each level, participant, and condition. Although no treatment fidelity checklist was used, we are confident that the training was implemented as intended due to our script, the briefing sessions, and the supply teacher monitoring each session. While we could have captured the perception of the acceptability of our intervention by the tutees in a more methodical manner, their informal feedback allows us to make a cautious case for the social validity of the research.

Even though the study evaluated the effects of a peer-tutoring intervention, an adult was present at each session and interfered whenever deemed necessary. Under conditions of everyday life at school, it is impossible to have a grownup sit by each student pair all the time. Thus, the question remains to what extent the students would have been able to conduct the training independently. A final limitation pertains to our writing rubric. We used a self-made tool for lack of a better alternative. However, an existing instrument might have been more reliable, as self-made rubrics often yield more positive results than established ones.

All in all, our study clearly has its weaknesses. But doing research with students in an educational setting is always messy. In fact, in their comprehensive meta-analysis of 14 single-case experiments on the effects of writing inter-

ventions for students with LD, Cook and Bennett (2014) stated: "After evaluating all requirements for WWC single-case design standards, none of the 14 studies were considered to meet evidence standards for design" (p. 350). This is not meant as an excuse. Yet, it is important to acknowledge that it is virtually impossible to create a flawless study.

Practical Implications and Recommendations for Future Research

Writing persuasive essays is very demanding, and supporting students with both LD and HI in improving their skills in this area is challenging. Against this background, it is remarkable that our intervention, which comprised only a small number of lessons (five to eight), elicited at least moderate increases in the performance of our tutees. Even Daria's results are noteworthy. Of her seven texts produced during baseline, only one received more than 15 points. On the other hand, her last two essays received 21 and 23, respectively.

It seems to take a while before the effects emerge. However, our approach offers great possibilities for enhancing the persuasive essay writing skills of high-risk students with LD and HI. The findings of our study indicate that the FIX strategy taught through peer tutoring is promising in this respect. Thus, the basic message of our research is that pursuing goals as ambitious as fostering very demanding composition abilities in adolescents with multiple impairments using limited resources can be successful.

Our study is the first of its kind. As a result, the findings must be replicated several times before reliable statements about the effectiveness of a peer-tutoring intervention via FIX for students with LD and HI can be made. In addition, given that it took a while before the effects of the training became visible, prospective research should provide participants with more time to learn how to apply the skills in question. Finally, it would be interesting to find out to what extent not only the tutees, but also the tutors benefit from the training. In closing, we hope that the FIX approach will receive more attention in the future as a means of detecting how best to support students in their endeavor to acquire the vital skill of persuasive essay writing.

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Authors' Note

Correspondence concerning this article should be addressed to Özlem Büyüknarci, MA, Integrated Comprehensive School Bonn-Beuel, Siegburger Str. 321, Bonn, Northrhine-Westfalia, 53229, Germany, Email: o.bueyueknarci@gmail.com.