

Teaching Writing: what the evidence says /

Ensino de Redação: o que dizem as evidências

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ABSTRACT

Language teaching is the basis of global education. Despite Brazilian attempts to improve, the results reveal a lack of progress in the final Years, especially with regard to teaching writing. Therefore, it is necessary to gather scientific evidence on effective teaching of writing. This article aims to bring this information together. To this end, three surveys were carried out: bibliographical review of scientific articles, titles of writing manuals from the most renowned publishers, rigorous meta-analyses that investigated more effective strategies for teaching reading. It was found that Brazilian scientific studies focus on theories and their practical applications. The manuals sometimes contained normative grammar and sometimes the teaching experiences of their authors. The meta-analyses showed a set of writing teaching strategies based on 5 pillars: the fundamentals of writing, grammatical knowledge, instruments for

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coherence, vocabulary mastery and the phases of the writing process.

KEYWORDS: Teaching Writing; Meta analysis; Writing Manuals; Scientific Evidence

RESUMO

O ensino de Língua é a base da educação no mundo. Apesar das tentativas brasileiras de melhoria educacional, os resultados revelam falta de avanço nos anos finais, principalmente no que concerne o ensino de redação. Por isso, é preciso reunir evidências científicas sobre o ensino eficaz de redação. Este artigo objetiva reunir essas informações. Para isso, foram realizados três levantamentos: revisão bibliográfica de artigos científicos, títulos de manuais de redação das mais renomadas editoras, meta-análises rigorosas que investigaram estratégias mais eficazes de ensino de leitura. Constatou-se que os estudos científicos brasileiros focalizam em teorizações e aplicações práticas delas. Os manuais continham ora a gramática normativa, ora as experiências de ensino de seus autores. As meta-análises mostraram um conjunto de estratégias de ensino de redação baseadas em 5 pilares: os fundamentos da escrita, o conhecimento gramatical, os instrumentos para coerência, o domínio de vocabulário e as fases do processo de escrita.

PALAVRAS-CHAVE: Ensino de Redação; Meta-análise; Manuais de Redação; Evidências Científicas.

1 Introduction

Language teaching – like Mathematics – is one of the basic pillars of all educational systems in the world. These two subjects are included in all curricula throughout the entire school career. The best-known international tests – such as TIMMS, PIRLS and PISA – prioritize the assessment of knowledge acquired in these subjects. The results of these tests – over the last few decades – have been the subject of special attention in developed countries, where there has been a relative stagnation in student performance.

Teaching a mother tongue (L1) improves significantly when it is combined with scientific research and pedagogical practices. In the case of writing instruction, studies point to the importance of promoting the learning of the fundamentals of writing, grammatical knowledge, vocabulary, textual coherence, and the stages of the production process in an integrated manner. These strategies help students develop a reflective stance, which is essential for learning linguistic elements in a contextualized and meaningful way. Combining science-based knowledge about language with good teaching practices may contribute to overcome some of Brazil's educational challenges by promoting more efficient learning relevant to students' needs.

This article investigates the most effective strategies for teaching writing, considering its importance as a foundation for education. Despite efforts in Brazil to improve educational outcomes, advances in teaching writing in the final years remain limited. In this context, this study conducted three surveys: a review of scientific articles, an analysis of writing manuals from renowned publishers, and analysis of teaching strategies to promote reading. The results indicated

that Brazilian research prioritizes theories and their practical applications, while the manuals present both normative grammar and the authors' experiences. The analysis identified five essential pillars for teaching writing: writing fundamentals, grammatical knowledge, textual coherence, vocabulary mastery, and stages of the writing process. The study reinforces the need to connect scientific evidence to pedagogical practice to overcome challenges in teaching writing.

2 Review of the literature in Brazil on the teaching of writing

A review of the literature published in the main journals on the teaching of the Portuguese language in Brazil suggests that the contribution of academic reflections, although extensive and abundant, remains at a theoretical and abstract level, having no effective repercussions on education systems and in the classroom.

Studies such as those by Corrêa (1992), Araújo (2021) and Bonini (2002) illustrate this picture. Corrêa (1992) highlighted the importance of establishing investigative analogies between reading and text production, emphasizing that textual production goes beyond simple formal elaboration, involving the understanding of the reasoning structure. Araújo (2021) addressed the way in which writing is treated in the classroom, a common writing activity in the school environment, and investigated the characteristics of the textual genre associated with it, using the theoretical framework of textual linguistics to understand both the concept of textual genre and the strategies for dealing with textual activities. Bonini (2022) addressed the historical evolution of textual production methodologies since the 1960s, highlighting the areas where they meet and differ. The author concluded that psycholinguistic models are important for oral language but focal exercises based on Bakhtin's theory are relevant for teaching textual production.

Other studies have conducted literature reviews in an attempt to explore the relationship between theory and practice in writing instruction, such as Newell et al. (2011) and Cheung (2016). Newell et al. (2011) conducted a literature review from two research perspectives, cognitive and social, to understand the teaching and learning of argumentative reading and writing. Thus, they proposed an integrated research vision, uniting the cognitive and social perspectives, to reveal both the cognitive processes and the instructional practices that promote learning of argumentative reading and writing skills.

Cheung (2016) conducted a brief historical review of various approaches to teaching

writing, including the controlled approach, the process approach, and the genre approach. The author emphasized that in order to implement these approaches, it is essential to understand the recursive nature of the writing process and identify what constitutes competent writing. Writing competence is not limited to word choices, sentence variations, and punctuation for cohesion; it also includes the ability to structure and develop arguments at the micro and macro levels. Thus, for him, it is crucial to adopt a writing pedagogy that explicitly trains students in the thought processes that lead to effective writing.

Another angle widely addressed by scholars in the field of Portuguese language teaching, influenced by the context of social isolation during the Covid 19 Pandemic, refers to- the use of technologies for teaching writing. Rodrigues, Belarmino & Karlo-Gomes (2023) addressed the evaluation of digital applications aimed at teaching textual production, using the principles of mobile learning (m-learning) as a basis. The research, carried out through documentary analysis with a qualitative approach and comparative method, examined digital resources, user reviews, evaluation standards, quality criteria, and pedagogical and knowledge updating attributes of three textual production guidance applications: Writing Manual (Manual de Redação; Manual for Writing (Manual para Redação), Textual Genres and Standard Writing Manual. Based on the evaluation criteria applied, it was observed that the three applications do not fully meet all the internal and external quality, pedagogical and knowledge updating criteria. However, they present several aspects that may be favorable for mobile learning strategies.

Marcondes & Ferrete (2020) presented pedagogical practices based on the use of Digital Information and Communication Technologies (DIT) and active methodologies to personalize Writing teaching. These practices were implemented with the support of the G Suite for Education platform. The case study adopted a qualitative approach, using empirical procedures. The research was conducted in three 8th grade classes of a private school in Aracaju-SE/Brazil. The results highlight the teacher's ability to increase the level of interaction and motivation of students by innovating their practices, highlighting the importance of active methodologies and technology in the teaching and learning process.

The use of technology to teach writing has been growing, especially after the enactment of the National Common Curricular Base (BNCC), which advocates the inclusion of students in the digital world. Aoki (2018) addressed the crisis in the teaching and practice of journalism resulting from Information and Communication Technologies, identifying factors that affect communication companies and teaching methods. The research proposes to fill a gap in the teaching of journalistic

writing by creating a literacy newsgame for smartphones. The methodology included a qualitative case study with a usability assessment of the newsgame. The objective was to assess whether digital narratives in Digital Game-Based Learning Environments contribute to the teaching of journalistic writing. The results, obtained with 32 participants, indicate a satisfactory reaction to the newsgame, especially in the knowledge factor. It is concluded that *Aprendendo Jornalismo* can contribute to the teaching of journalistic writing, but future studies need to measure student learning and restart the Usability Engineering Cycle to advance in the gaps identified in this case study.

Souza & Laurindo (2017) proposed the development of an application to assist in learning concepts related to essay writing. The application includes grammar tips, essay text structure, topic suggestions, and the option to send essays for evaluation by the teacher, who can provide feedback via email. In addition to the pedagogical contribution, the project addressed important concepts for the development of collaborative applications in education, including usability and user experience. The first version of the application was tested in a high school class, with positive preliminary results, indicating that more than 70% of users had a good experience, and more than 93% considered navigation easy. Student feedback will be used to improve the application, seeking to offer an even more satisfactory experience.

Costa (2019) conducted a literature review on how mobile applications can influence textual productions in high school. Given that many students have access to technological resources that shape their ways of studying, learning, and interacting, the objective was to highlight the contribution of digital technology in the new educational environment. The research aimed to analyze mobile applications common among students, considering them as methodological tools to improve writing. The methodological approach is qualitative and analytical-descriptive, using the analysis of applications such as *Descomplica*, *Correção Redação Aprovado*, *Citação Redação*, *Redação Enem Conceitos e Alusões*, *Redação nota 1000*, and *G1 Enem*. The results indicate that these applications can play a significant role in improving the textual productions of high school students, offering opportunities for more autonomous and critical learning.

Other studies have focused on teaching writing specifically in the final years. Santos (2016) analyzed argumentative texts written by sixth-grade students in a private school in Brasília, using the perspective of Usage-Based Linguistics. The research aimed to develop teaching strategies for Text Production, mapping problems of structure, students' understanding of textual organization, and the influence of spoken language on writing. Benjamim et al. (2015) described the characteristics of written productions of students in the final years of Elementary School, observing

spelling, morphosyntax, and discourse. They also proposed interventions to overcome the difficulties identified

The following papers, in addition to focusing on the final years of elementary school, are focused on the theoretical explanation of the concept of text/textual genre of school essays and their consequences for teaching. Bunzen (2011) reflected on the school subject Teaching Writing, exploring its emergence and rise. He based his work on studies of school subjects. The author concluded that the teaching of writing, its emergence and rise, is related to the grammaticalization and schooling of the mother tongue. Marcuschi (2005) approached school essays as a textual genre in the classroom, using the concept of textual genre.

The academic papers presented here illustrate the theoretical frameworks that prevail in the understanding of writing teaching, some of the teaching methodologies applied in Brazilian classrooms, and also the attempts to use technologies to improve writing teaching in the classroom. However, the approach is always based on theoretical concepts of linguistics or on the identification of their use in practice, without, however, any concern with the use of evidence or with the measurement of results resulting from interventions.

3 Manuals that address the teaching of writing

The following paragraphs present the results of an exhaustive survey of writing manuals published by major Brazilian publishers over the last 10 years, most of which are aimed at elementary school students, although some of these manuals have a wider target audience. Some address both oral and written text production. There are few manuals that use scientific evidence to support the practices they propose for teaching writing. Most are based on descriptions and ethnographic experiences of the authors, and may or may not present theoretical concepts. The most frequent theoretical concepts are based on textual linguistics, discourse analysis, and the interactionist perspective of language, whose main exponents are Schneuwly, Bakhtin, and Vygotsky, respectively. Furthermore, some of these manuals also present the normative grammar of the Portuguese language in a varied way.

3.1 Manuals with emphasis on normative grammar

The Folha de São Paulo manual, entitled “Folha Editorial Manual”, was prepared and revised by journalists and experts in the Portuguese language. This manual deals with writing practices and the rules of the Portuguese language, in addition to covering new themes and topics that have gained relevance in the media in recent years. It is divided into four parts: characteristics of the newspaper “A Folha de São Paulo”, journalistic activity, style, standardization and Portuguese language of the text and the last part with thematic appendices.

Matoso Câmara Jr. is a renowned linguist and a pioneer in the study of the subject in Brazil. The author’s “Manual de expressão oral e escrita” is a comprehensive and didactic work on the Portuguese language, focused on oral and written language. Thus, the first part is concerned with oral expression, while the second with spelling, writing, and the adaptation of the language to the standard language, among others. As is typical of this type of manual, the recommendations refer to the characteristics of the language based on its normative principles – and not on its teaching. Although the editions presented here are dated from the last decade, many of them are reissues of old materials that have been adapted to the present day, taking on new formats over the years. The manual “From School Writing to Text: A Writing Manual”, by Paulo Coimbra Guedes, was written during the author’s writing classes at UFRGS, since the early 1970s, in the Communication and Literature courses and, therefore, aimed at higher education students. This work aims to lead to the production of text, that is, the conscious use of the expressive resources of language with the purpose of producing deliberate effects of meaning on very specific readers.

The “Manual de escrita e estilo para mídias convergentes” (Writing and Style Manual for Convergent Media), by Dad Squarisi, is a kind of “first aid” for the Portuguese language and aims to help readers write anything from a news report to a professional or school text. It is intended to help communication professionals and anyone who wants to express themselves more clearly, effectively and attractively, both in writing and speaking. Instead of stating grammatical rules, the author uses examples that speak louder, with humor, hints of irony and lightness. It is divided into six chapters: the first two are dedicated to the different textual genres of written text production, while chapters 3 and 4 address oral textual genres and the remaining chapters are tips and quick answers to difficulties when writing.

Of the manuals that focus solely on elementary school students, the Compact Manual for Writing and Text Interpretation by Ana Maria Silva Pacifico presents, in a concise manner, the current school curriculum for Writing and Text Interpretation for elementary school. Among them,

topics such as spelling, punctuation, textual and literary genres, rules and agreements, and tips for text interpretation. It offers theory, exercises, and useful tips.

The “Minimanual de Gramática e Redação: Língua Portuguesa” (Mini-manual of Grammar and Writing: Portuguese Language), published by Editora Vale das Letras, is intended for students aged 6 and over. It presents normative grammar in an objective manner with examples from everyday life. It has syllabic division and definitions that are easy to understand. It also contains practical proposals for writing texts as exercises to help consolidate the content learned. There is no mention in this material that it has an empirical basis.

3.2 Manuals based on ethnographic experiences

Among the manuals on teaching writing aimed at teachers, “Reading and Writing at School: The Real, the Possible, and the Necessary” by Delia Lerner stands out. It seeks to analyze changes in teaching practices and theorize about the actions necessary for such changes to occur. The author emphasizes the importance of reading and writing as vital school practices, allowing students to become full members of the community of readers and writers. She emphasizes, however, that the implementation of this practice faces challenges, such as differences in purposes inside and outside of school, temporal distribution of content, the need for institutional control, and inequality of rights between teachers and students.

Eglê Franchi, writer and author of “A Redação na Escola” (Writing in School), explains that her manual is related to a teaching method that involves creating reflective reading journals. This method was developed during a university course she taught. The approach of this manual consists of putting into words the learning process and knowledge development itself, allowing both students and teachers to evaluate the progress of the teaching. The manual, however, is not based on any prior empirical study regarding its foundations.

Another manual that is also intended for teachers is “Didactic practices for learning to write”. Anna Camps and collaborators present didactic proposals that are based on the social context of written production, as well as the recipient and interlocutors, theoretical concepts that belong to textual linguistics. There is no report of a previous empirical study that has underpinned this material.

In “My Writing Lessons”, by Joseane Rücker, there is a sharing of experiences that are part of the author’s practice. The book is organized into 20 lessons with laboratories, that is,

exercises to practice what is accomplished in each chapter and a notebook that presents a collection of proposals with current themes so that the reader is prepared for any test question. This manual also does not present the scientific or empirical foundations on which these proposals are based.

The authors of “Reflections on School Practices of Text Production,” organized by Gladys Rocha and Maria da Graça Costa Val, theorize about how students learn to write during elementary school, especially in the first years of school. To do so, they use the theoretical basis of Bakhtin and Vygotsky, which basically consists of discourse and interaction as the main elements of textual production. Like the others, this material is also not based on empirical foundations.

Regarding the teaching of writing within the literacy process, the manual “Teaching Written Language”, by Myriam Nemirovsky, is aimed at teachers, presenting didactic sequences aimed at developing specific skills of analysis, writing and exploration of various themes, with emphasis on the use of socially relevant playful and printed materials. “In the world of writing”, by Mary A. Kato, is a theoretical/conceptual work that focuses on the differences between oral and written languages, as well as the problem of learning to read and write. It is based on the postulates of Cognitive Linguistics and Psycholinguistics that investigate language in its cognitive aspects, that is, in the mind of the native speaker.

There are also phenomenological/descriptive manuals, such as “Writing and the Other”, by Lucília Garcez. The author combines the theories of Bakhtin, Vygotsky, Bronckart, and Schneuwly with educational ethnographic research, studying the phenomenon of writing and school practices of text production. She also presents concrete examples of how to proceed in the classroom. Lucília Garcez concludes that writing is an interactive process on several levels and in many stages that are generally ignored in school practice, which is detrimental to students.

In summary, in the present survey, no guidelines were found for the initial teaching of writing based on scientific evidence., i.e, these works were based on the authors' personal experiences.

4 Evidence on teaching writing

This section explores the scientific evidence regarding effective practices for teaching writing in schools. First, we describe the skills involved in learning to write, characterizing it as a process that involves a set of highly complex cognitive and non-cognitive skills. Then, we present

evidence regarding the relationships between reading and writing. The third section summarizes the evidence regarding proven effective strategies and interventions that can help develop these skills throughout the school process.

Writing is a process that involves a broad set of cognitive and non-cognitive skills. Writing involves much more than a simple and isolated skill. Even when faced with a relatively simple task – such as writing a note – the student needs to mobilize a relatively broad and complex set of skills. This set includes motor skills in handling a pencil or keyboard, knowledge of spelling, punctuation, syntax, knowledge of relevant information or concepts about the characteristics of the recipient, the purpose of the message, the formats to be used and the appropriate language – among many others (Bazerman et al. 2017; Olinghouse, Graham & Giles, 2015; Knudson, 1995).

Writing, therefore, involves a broad spectrum of physical-motor, cognitive and motivational skills and, in particular, a high capacity for self-regulation that allows the student to deal with and select the factors to which they will pay attention at different times. The following paragraphs summarize the reflections of one of the most important scholars of scientific literature, Steve Graham (2019) regarding the main challenges to learning to write. This description will serve as a backdrop to identify evidence regarding effective practices for teaching these skills, which will be done in the subsequent section.

Writing is rarely an act that is completed all at once or at a given moment. It typically involves a series of interactions at different times and with different purposes, which requires an effort of memory, the ability to order ideas in the mind and to retrieve them within a relatively long space of time. Imagine the number of variables that the author of this paragraph took into account when writing it.

Writing and teaching writing in schools must therefore take into account not only the types of texts that students need to develop to deal with the challenges of school learning, but, above all, the types of writing that students will do at more advanced levels of education, especially at university and in different work situations. Incorporating these elements into the writing curriculum involves introducing not only different types and genres of text, but also more complex requirements associated with the characteristics of each type of writing and its pedagogical objective. On the other hand, this also requires and implies creating situations that are more realistic or closer to the student's reality and context, in order to keep them motivated to write in increasingly appropriate and complex ways.

Writing and learning to write are profoundly influenced by students' beliefs and attitudes

toward writing, as these beliefs affect their motivation and, consequently, their effort to mobilize time, effort, and other cognitive resources for writing tasks. Developing and assuming different identities as “writer” or “author” affects the level of effort involved in these activities.

Finally, writing is both a solitary and supportive activity, a social activity. Writing is always done for a specific audience, a recipient. Although solitary, it always has in mind the person or group of people it is intended for; it is an intrinsically dialogic process. Therefore, acquiring and developing a positive attitude as a “writer” increases the likelihood that the student will write, enjoy writing, and value activities related to writing.

4.1 Specific skills involved in the process of learning to write

To map and evaluate the effectiveness of activities that promote writing skills more effectively, psychologists and language education scholars first describe the skills needed to write. These skills can be organized into five sets: (1) the fundamentals (handwriting, spelling, typing), (2) the grammatical knowledge and skills needed to compose sentences, especially from the point of view of cohesion, (3) the tools to identify and employ the characteristics of “good” writing, especially from the point of view of coherence, (4) the mastery of vocabulary relevant to the topic and reader, and (5) the mastery of the phases of the writing process, namely, planning, drafting, revising, correcting, and presenting the final text (Graham, Harris, et. al., 2015; Graham, Harris et. al. (2016); Graham Liu, Bartleet et al. 2018; Slavin et al., 2019; McLean, 2022).

Developing this set of skills in the school context requires a set of other elements such as a well-designed curriculum, teachers prepared to deal with the class and students, as well as students' access to differentiated books and texts appropriate for different tasks. Therefore, evaluating the effectiveness of interventions is a challenge, given the broad set of variables involved and their interrelationship. The literature reviewed in the remainder of this article refers to evaluations of educational interventions in schools, based on relatively broad proposals, which, on the one hand, provide greater realism and, on the other, less rigor.

4.2 The relationship between reading and writing: what the evidence says about the preeminence of reading

In the cultural tradition of the West, and possibly in other cultural traditions, writing and

writers have always been, above all, avid readers. Especially until the 19th century, before the democratization and universalization of access to education, writing was accessible to few, and possibly to very few of the most intellectually and culturally gifted. “Literary schools” were created and spread through direct access by individuals to the intellectual production of their ancestors and the repertoires of their contemporaries. By reading, and by reading copiously, the reader acquires the elements that allow him to initially imitate and progressively identify and develop his own characteristics as a writer. It is in this sense that “reading is more important than studying,” as Ziraldo (2008) states. And this, strictly speaking, would also apply to writing – reading is more important for writing than formally learning the principles and techniques of writing.

Although they are not identical, reading and writing have a number of characteristics in common, as both involve similar representations of knowledge and cognitive processes. Therefore, it is plausible to assume that one influences the other. At a more elementary level, and beyond the obvious, it is clear that mastering basic reading skills, such as decoding and reading fluency, also affects writing skills, by automating these skills and reducing the cognitive demands at the time of writing (McCutchen, 1995 and Graham, 2000). In addition, vocabulary knowledge acquired through learning and practicing reading equally and positively affects writing skills.

Fitzgerald and Shanahan (2000) identified common sources of knowledge shared by reading and writing. The first and most important is mastery of the content, that which is being read or written about. The second is what is called meta-knowledge, that is, both reading and writing presuppose knowledge about the functions and purposes of written language and how readers and authors interact, which allows them to interpret what they read and, in turn, produce messages that can be interpreted by others. The third is knowledge about specific procedures involved in both reading and writing, such as how to search for information assertively, how to establish goals for reading or writing, as well as other skills that facilitate comprehension, such as asking questions of the text, predicting, inferring, visualizing, analyzing, summarizing. And, finally, readers and writers share pragmatic knowledge about the attributes of a text, such as the formal characteristics of the text and knowledge of the meaning of words, syntax, and uses of the language. This knowledge not only allows us to extract the meaning of the text, based on the meaning of the sentences and their relationship, but, in writing, it allows us to write increasingly broader and more complex sentences, paragraphs and units to compose a text.

At an even higher cognitive level, reading provides the reader with opportunities to gain insight into the reasons why an author decides to use a particular word, phrase, or rhetorical device

to achieve a particular goal or meaning (Nelson and Alfee, 1998). Shared reading and analysis of texts is a highly recommended and desirable activity in schools based on evidence, as it allows students to perceive how the author's intention may not be perceived or perceived differently by different readers, which can help them when they themselves face these decisions.

Against this backdrop, starting from a goal-analysis on the impact of reading on writing published in 2018, Graham and his collaborators (Graham et al, 2018), identified dozens of experiments and quasi-experiments from which they selected only the studies that met the various established statistical criteria. About 54 studies obtained ES of .5 to 1.25 points, both in short-term measures and measures carried out a few years after the intervention. These studies relate, for example, the effects of literacy through the phonics method or explicit grammar teaching on the quality of students' writing.

These authors also investigated the effect of specific practices associated with teaching reading, such as word reading training, increased reading time, analysis of texts produced by peers, and observation of peers' interactions with texts in reading and writing situations. All of these practices produced significant effects on general indicators of writing quality, and some of them had a lasting impact. To give an idea of the impact of reading on writing, the authors of this meta-analysis compared the impact of strategies focusing on reading (.44 ES) vs. the impact of strategies focusing on the amount of time spent on writing activities (.24 ES), which reinforces the precedence, importance, and superiority of reading instruction as an instrument to promote writing skills.

These data support Shanahan's (2016) theoretical proposal, which suggests that there is a bidirectional relationship between reading and writing, at least in the sense that promoting reading instruction and skills affects writing skills. However, there are other studies, also based on meta-analysis, -analyses that provide evidence for the effects of teaching writing on reading (Graham and Hebert, 2011) as well as reciprocal effects (Graham and Santangelo, 2014).

4.4 Effective interventions to promote writing skills

Slavin and his collaborators (Slavin, 2019 et al.) carried out a synthesis of the available evidence on the teaching of writing. In this study, they analyzed the results of teaching proposals that were effectively implemented for relatively long periods with students in the initial and final years of school systems in different countries. It is worth noting that the vast majority of these studies refer to interventions carried out in English-speaking countries. Based on the results of the

most robust studies from a methodological point of view, they identified a set of highly effective factors specifically associated with the teaching of writing, which include (1) establishing routines and a pleasant environment for writing activities; (2) provide frequent opportunities to write, during which one or more of the 5 phases of the writing instruction process (planning, writing, revising, editing, and “publishing”/presenting) are systematically implemented, (3) create routines to ensure that students write frequently, (4) create situations in which students can cooperate in one or more phases of the writing process, and (5) establish goals and increasing challenges for the essays written by students.

The interventions evaluated in Slavin's study, in turn, incorporate some of the elements that have been evaluated in specific studies, especially activities related to vocabulary development, teaching text characteristics, teaching the 5 phases of the writing process, writing sentences and combining sentences into increasingly larger and more complex units. These constitute the 4 pillars of writing instruction for which there is relatively robust evidence regarding their effectiveness.

4.5 The “pedagogies” of teaching the components of writing and the proof of their effectiveness

In recent decades, four major “pedagogical trends” have competed for educators’ preference based on two lines of thought: writing as a “product” and writing as a “process”. The first line – writing as a product – emphasizes teaching the formal and structural aspects of linguistic knowledge, such as vocabulary, syntax and the use of cohesive mechanisms. This trend emphasizes teaching the components of language separately in specific classes or moments, including separate moments for writing. One of the main protagonists was Pincas (1982). The focus of the evaluation of the impact of this approach is on indicators such as the increase in the length of essays and on some formal elements of quality (Berninger et al., 1996), which does not constitute a sufficient guide to help students improve the quality of their writing.

Inspired by the Whole Language movement, which has several elements in common with what has become known as “constructivism” in Brazil the approach to Teaching Writing as a Process identified and promoted the teaching of writing with an emphasis on the different stages: preparation, composition, revision, editing and publication. This approach also placed little emphasis on the linguistic aspects and structure of the text. There is evidence of gains of 0.34 and

.4 in interventions that adopt the second model (Graham and Sandmel, 2011 and Graham, 2012b), but there are no published studies comparing this with other approaches.

In the 1980s, “textual genre pedagogy” emerged, whose central theme is “writing with a defined purpose,” and this purpose would be umbilically linked to the characteristics or purposes of the different “literary genres,” from the point of view of structure, normally using model texts in the teaching process and involving the explicit teaching of linguistic aspects in the writing process. A meta-analysis carried out by Graham et al. (2015) found positive effects (ES .41) associated with the increase in the quality of texts. This evidence, in turn, confirms the claims of Myhill et al. (2020) regarding the advantages of contextualized grammar teaching, explicit teaching of the characteristics of each genre, and the attention that should be given to “how” to write, and not just “what” to write.

More recently, proposals based on knowledge from cognitive psychology have gained ground, grouped under the name of “teaching cognitive strategies”. This approach emphasizes the importance of teaching the stages of the writing process (planning, writing, reviewing), and evidence indicates ES ranging from 0.02 (Graham and Perin, 2007a) to 1.02 (Graham et al 2012b). This approach has strong affinities with the process approach and involves strategies that include modeling, teaching genre characteristics, and gradually promoting student autonomy, (McKeown and FitzPatrick, 2019).

4.6 Evidence on teaching specific skills

Associated with these four pedagogical trends, different researchers have examined the importance of different teaching strategies on the quality of students' writing and, based on this analysis, have identified four sets of factors with the greatest explanatory power: sentence writing, grammar and punctuation teaching, formal teaching of the stages of the teaching process, and the knowledge required for the writing process. Below is a description of each of these sets of factors.

Writing sentences. The ability to write sentences is the backbone of the writing process. There are strong theoretical reasons for teaching students to write and combine sentences, especially from the perspective of cognitive overload theory. There is also some empirical evidence that teaching these skills, and especially the skills of writing, expanding, and combining different types of sentences, has a positive impact on writing skills (Graham & Perin, 2007). In the Sage Handbook of Writing Development edited by Beard, Myhill, Riley, and Nystrand (2009), we find

several chapters on the subject, in one of which Terry Locke provides an extensive and robust review of the impact of different strategies for formally teaching grammar and other components of writing. Of these, teaching how to compose, combine, and expand sentences is the most effective strategy proven to be effective.

Teaching grammar and punctuation. Evidence suggests that teaching grammar and punctuation tends to be most effective when taught in the context of sentences and texts, that is, teaching should be contextualized rather than delivered in isolation from reading and writing activities (Fogel and Ehri, 2000; Graham and Penn, 2007a). Unlike the evidence on the effectiveness of teaching sentences, sentence types, and sentence combinations in isolation, the evidence on teaching grammar in isolation is weak and not very robust (Myhill and Watson, 2014). Teaching grammar in context or “functional grammar” is best defined as the opposite of formal, “decontextualized” grammar teaching. There is some evidence that contextualized teaching tends to favor students with better cognitive levels (Myhill et. al. 2018) and that student progress, in general, depends largely on the teacher's level of preparation and the pedagogical practices he or she uses (Humphrey and McNaught, 2016), which makes sense given that teaching grammar in a contextualized way requires a deep knowledge of grammar on the part of the teacher.

Teaching the stages of the writing process. In addition to direct evidence of the impact of this approach, there are studies that demonstrate the superiority of interventions in which these steps are not only used, but are taught explicitly. In one experiment, for example, an intervention in which students were given time to plan (step 1) but did not receive any instruction on how to do so resulted in zero impact (Limpo and Alves, 2013). On the other hand, explicit teaching strategies on paragraph writing can result in gains; for example, Rogers and Graham (2018) report results from studies in which students learned to write different types of paragraphs following an ordered methodology, which included opening sentences, sentences that detailed the opening sentence, and a concluding or transition sentence with the following paragraph.

The “knowledge” necessary for the writing process. In addition to specific skills, and just as important—if not more important—than those skills, there are three essential bodies of knowledge that students must develop in order to advance their writing abilities: knowledge of the content or subject matter, knowledge of the genre and its characteristics, and knowledge of

vocabulary, characteristics, and knowledge of vocabulary. With regard to knowledge of the subject, there is little or no evidence regarding effective pedagogical practices, but scholars in the field, such as Graham (Graham et al. 2015), suggest that strategies that encourage students to write about what they have read and read about what they are going to write are effective. He also recommends that adequate time be allocated in the writing process for activities such as brainstorming, creating concept trees, and searching for information on the topic. The literature reviewed above suggests strong evidence of the impact of reading on writing. With regard to knowledge of the characteristics of different genres, and based on the literature review on the topic, Graham (Graham et al., 2019) recommends teaching the basic elements of each genre, presenting relevant exemplary models, and, based on them, modeling students' practices.

Final considerations: from scientific evidence to the classroom

The previous paragraphs presented the most robust scientific evidence available, based on experimental studies that investigated the impact of specific variables and interventions based on meta-analyses that compile the results of rigorous studies to evaluate and compare interventions associated with greater impacts. There is no single principle, technique, intervention, teaching program or strategy that, by itself, accounts for all the variables necessary to develop the skills required for teaching writing. However, based on the studies presented, it is possible to outline, with a reasonable degree of certainty, some principles and practices that, when articulated in a consistent manner, constitute a robust and well-founded approach to teaching writing in schools. These are:

1. Increase the time dedicated to teaching reading and writing, ensuring a minimum of one hour per day throughout students' school career and teaching the respective skills in an intentional and separate, but integrated, manner.
2. Ensure that all students at the end of the first years of school are able to write/type fluently and spelling correctly.
3. Ensure the teaching of sentence writing and sentence combination techniques, in order to expand the student's repertoire and automate the use of connectives.
4. Promote the teaching of grammar and punctuation in a contextualized manner, based on texts written by the students themselves.

5. Teach and use in a systematic and meaningful way for students the basic strategies of the writing process (planning, writing, editing, revising and presenting).
6. Teach explicitly and contextually the characteristics of text types and genres, promoting a properly balanced teaching of the different types.
7. Encourage students to write different types of text for different purposes and audiences.

And above all, transform the school – the school library and the classroom – into an environment that encourages and develops the habit and taste for reading.

CRediT

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