Review

MacArthur, C.A, Graham, S. & Fitzgerald, J. (Editors) (2006). *The handbook of writing research*. New York: Guilford Press | ISBN-1: 59385-190-1

In the 1980s, empirical research on writing emerged as a constituted academic discipline. What characterized this new body of research was a shift from a product-oriented approach to a process-oriented one, mainly initiated by Emig's (1971) works. This resulted in abandoning the traditional rhetorical perspective that focused on normative instructions about (?) how writers should compose. Since the 1980s two main theoretical approaches have been developed: one, inspired by the cognitive revolution, aims to study the writing processes, the composing strategies and their relationships with human cognition, and the other, grounded in constructivism and called sociocultural, seeks to describe the contextual aspects of composition, including social, historical and instructional contexts. In parallel, methods for investigating writing developed with fine-grained on-line tools to track in real time the processes underlying writing, with sophisticated and sometimes automated text analysis methods and tools, and with qualitative research method that describe writing practices and contexts. Now, after 25 years of research, numerous findings and theories have been proposed and our understanding of writing has greatly improved. It is now time to cover this quarter century of writing research. This is the challenge that C. A. MacArthur, S. Graham, and J. Fitzgerald sought to reach in editing the Handbook of Writing Research.

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Presentation of the book

The Handbook of Writing Research (2005), by C. A. MacArthur, S. Graham, and J. Fitzgerald (Editors), at The Guilford Press (ISBN: 1-59385-190-1) is a volume of 468 pages that approaches writing research from cognitive, sociocultural, instructional, motivational, neuropsychological and methodological aspects. The book includes 29 informative chapters from leading international researchers organized in five sections: Theories and models of writing, writing development, instructional models and approaches, writing and special populations, and methodology and analytical tools.

Part 1, Theories and models of writing, begins with a chapter from Martin Nystrand that presents the social and historical context for writing research since pioneering Emig's (1971) study. Next, John R. Hayes examines three different area of research —working memory in writing, freewriting, activity theory and writing— that according to him "are shaping the evolution of writing theory today" (p. 28). In chapter 3, Gert Rijlaarsdam and Huub van den Bergh review their works on the relationships between writing processes and text quality to show that modeling of writing processes has to take into account the dynamic of writing. In chapter 4, Paul Prior presents the main tenets of the sociocultural approach of writing. This part on Theories and models closes with a chapter by Mark Torrance and David Galbraith that discusses how cognitive processing limitations constrain writing.

The second part of the book, Writing Development, opens with a chapter by Liliana Tolchinsky (chapter 6) demonstrating that preschool children possess knowledge about writing even before formal instruction at school begins. In chapter 7, Virginia Berninger and W. D. Winn present the brain basis of writing and then address how advances in writing and educational technologies can improve writing instruction. Next, in chapter 8, Deborah McCutchen examines the role of cognitive factors such as working memory and long-term memory in writing development and use by children of planning and other reflective processes, text production and revision. Chapter 9, by Carol A. Donovan and Laura B. Smolkin, synthesizes literature on children's understanding of genre. In chapter 10, Suzanne Hidi and Pietro Boscolo review research on motivation to write, self-efficacy and self-regulation. In the following chapter (chapter 11), Frank Pajares and Gio Valante show that self-efficacy is a good predictor of quality in writing. In chapter 12, Timothy Shanahan convincingly suggests that speaking, listening, reading and writing are interconnected and that instruction in one of these activities can improve skills in the others.

The third part addresses issues related to instructional models and approaches of writing. Steve Graham, in chapter 13, shows with a meta-analysis the positive and long term impact of strategy instruction on students' writing performance. In chapter 14, Carol Sue Englert, Troy V. Mariage and Kailonnie Dunnsmore review three educational principles (sociocognitive apprenticeships in writing, procedural facilitation and tools, and participation in communities of practice) before proposing several future research directions. In the next chapter (chapter 15), Richard Beach and Tom Friedrich describe

the characteristics and techniques of effective responses (which result in improvement of writing) to students' writing. In chapter 16, George E. Newell examines how writing supports learning by exploring and making sense of new ideas and experiences, by making students more aware of conventions in different disciplines, and by transforming the role of both the teacher and the students. In Chapter 17, Charles A. MacArthur considers the impact of the use of new technologies and of new forms and contexts of writing. Michael W. Smith, Julie Cheville, and George Hillocks, Jr., explain in chapter 18 why traditional school grammar is ineffective for developing students' language skills. Then, they propose alternative grammar theories or teaching methods addressing traditional school grammar that may maximize language development. This part on instructional approaches of writing closes with chapter 19 by R.J. Pritchard and R.L. Honeycutt, who first present the writing process approach to writing instruction and then turn to research on the impact of the USA's National Writing Project.

Part 4 is devoted to writing and special populations. In chapter 20, Arnetha F. Ball explores writing by children from diverse cultural backgrounds and what the implications are for instruction and research about integrating cultural diversity into (?) writing. In the next chapter (chapter 21), Shelley Peterson analyses the influence of gender on writing development, and proposes routes for overcoming the underlying stereotypes that influence writing instruction. In chapter 22, Gary A. Troia looks at the characteristics of LD students' writing products and processes before presenting some proposals for adapting writing programs and instructional strategies for poor writers. Jill Fitzgerald, in chapter 23, presents a review of K-12 multilingual writing. After characterizing the methodologies and findings of the studies included in her review, she focuses on the need to construct a theory of multilingual writing, to improve research methodology, and to pay more attention to such research, as it is socio-politically grounded.

The final part of the book deals with methodology and analytical tools and opens with a chapter on qualitative methods in education by Katherine Schultz (chapter 24). The author advocates for qualitative research as a valuable tool for understanding writing. In chapter 24, Robet D. Abbott, Dagmar Amtmann, and Jeff Munson describe statistical procedures that can be applied in randomized and cross-sectional field experiments and in longitudinal studies. Ted J. M. Sanders and Joost Schilperoord illustrate in chapter 26 how the Procedure for Incremental Structural Analysis provides insight into a writer's cognitive representation, in writing development and in expert writing. The next chapter, written by Mark D. Shermis, Jill Burnstein and Claudia Leacock (chapter 27), reviews applications of computers in assessment and analysis of writing. More critics, Brian Huot and Michael Neal, propose in chapter 28 a "techno-history" of writing assessment that rather supports reader-based assessments. In the final chapter of the book, Kenneth R. Pugh, Stephen J. Frost, Rebecca Sandak, Margie Gillis, Dina Moore, Annette R. Jenner and W. Einar Mencl consider the challenges that must be met when applying functional neuroimaging to writing. They close their chapter by examining implications for writing disability.

And next?

As this summary of the chapters included in the book shows, writing research is examined from a large diversity of perspectives in The Handbook of Writing Research. However, as a researcher anchored in the cognitive tradition, I would say that The Handbook of Writing Research put the emphasis more on the sociocultural aspects of writing research than on the cognitive foundations of the composition process. So, future editions, or a new volume, should also include several findings of cognitive research on writing. In the following, I briefly mention four areas of research that would deserve to be part of a handbook on writing.

- *Handwriting*. For children beginning to write, a major problem is to deal with execution processes. Handwriting is indeed a very complex activity (Van Galen, 199), which requires a long period of practice to be mastered, and whose cost may prevent efficient planning, translating and revising (Berninger & Swanson, 1994: Bourdin & Fayol, 1996; Olive & Kellogg, 2002).
- *Spelling*. Faced with a pressure to strictly apply the norms of their language, beginning writers take a long time to acquire spelling rules. Recent findings suggest that most of these rules are implicitly acquired through associative processes (Pacton, Perruchet, Fayol, & Cleeremans, 2001; Pacton, Fayol, & Perruchet, 2005). Another example related to spelling concerns subject-verb agreement. We now have a clear figure of the processes involved in producing and controlling such agreement (see for example, Chanquoy & Negro, 1996; Fayol, Largy Lemaire, 1994). Finally, do writers need to phonologically encode their words before writing down them? Responses to that question have been proposed by Bonin and collaborators (see Bonin & Fayol, 2000, Bonin, Fayol, & Peereman, 1998).
- *Real-time management of the writing processes*. Rijlaarsdam and van den Bergh point out in the Handbook that the dynamics of writing is crucial. Galbraith and Torrance alsounderline how processing characteristics of the cognitive system constrain the writing processes. Pausological (Schilperoord, 2002) and dual-task studies (Olive, 2004; Roussey & Piolat, in press) have explored how the writing processes are managed and how writer- and situation-specific factors affect this orchestration. Such studies are particularly important with regards to writing strategies.
- *On-line research tools and methods*. From a methodological point of view, several on-line techniques have been developed and applied in the last ten years. Keystroke recording toos (Strömqvist, Holmqvist, Johansson, Karlsson, & Wengelin, 2006; van Waes & Leitjen, 2007), handwriting recording and eye movement (Alamargot, Chesnet, Dansac & Ros, 2006), or even dual-task methodologies (Olive, Kellogg & Piolat, 2002; Piolat, Olive, Roussey, Thunin & Ziegler, 1999) have also permitted researchers to design and conduct new fundamental investigations of writing.

The Handbook of Writing Research covers very different facets of writing and so it provides discussions of the processes, products, and contexts of writing that will be helpful for writing teachers, writing and literacy researchers and students for

understanding the composition process. Even if it is not exhaustive – a complicated task to fulfill – The Handbook of Writing Research, by synthesizing 25 years of research and by providing directions for further research, is a necessary source for any person, scholar or not, interested in understanding writing.

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