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Advantages and Limitations of Theoretical Verbal Production Models for Education

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Abstract: Verbal production models created by Hayes & Flower (1980), Bereiter & Scardamalia (1987) and Hayes (1996) revealed the cognitive processes implied in the writing task. However, those models do not reveal the processes used in the writing task nor the linguistic resources needed in those processes. In education this loophole raises problems in evaluating the writing abilities of the student by the teacher and in the choice of study objects for teaching and learning. Unlike these models, Bronckart's and collaborators (Bronckart et al., 1985; Bronckart, 1996) promote tools for the teaching and learning of text production whether it be oral or scribal. Indeed, while insisting on the specific linguistic features of the genres of text, his model leads to evaluate the students difficulties and abilities to perform the writing task, giving the instructor hints for intervention. This article aims to present those theoretical oral production models, to show their limits for instruction and to present the one we think best for the instruction of writing in early grades.

Key words: verbal production, theoretical models, instruction briefing, cognitive writing processes, teaching and learning

1. Introduction

While in training, future teachers develop a variety of professional skills including those related to the design and implementation of teaching-learning situations aimed to help students grow. Thus, one of the challenges they face is to mobilize educational facilities that take into account the heterogeneity of the class of which they are responsible. In this sense, they must be able to show that these means are appropriate, given the context of the classroom, supporting their choices and actions "on recent educational researches" (MÉQ, 2001, p. 79).

As regards the young writers' development of the skill "writing various texts" (MÉQ, 2001), research conducted over the past two decades have led to the establishment of basic principles underpinning the teaching of writing. Simard (1995) summarized these principles that consider, among other things, that the development of writing skills requires regular practice of writing texts and that such a skill "is composite and varies following the task and the kind of text to produce" (p. 123). Thus, in the context of teacher training, the expertise aimed at in future teachers should be, firstly, to identify the cognitive and linguistic issues involved in producing different kinds of texts, and, secondly, to establish educational goals defined from the respective features of these types of texts, in a school environment that promotes text writing activities.

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In this perspective, it is desirable that the theoretical model on which training in teaching writing is based should highlight the cognitive processes involved in the scribal production and the linguistic resources required by the wording process, so that future teachers be able to assess the students' writing skills and select appropriate objects of study for instruction. This article aims at one hand, to present theoretical models of speech production and to highlight some of their limitations for teaching writing skills. On the other hand, it describes the theoretical reference model that we favor in the context of teacher education in the production of written texts with early graders.

2. Theoretical Models of Written Text Production

2.1 Models from Hayes and Flower (1980) and Hayes (1996)

Textual production models developed until now have identified the various components of the written production process. Thus, the model proposed by Hayes and Flower (1980) distinguishes three components involved in the process. First, the task environment which concerns external factors influencing the text production, for example the editorial guidelines given by the teacher in the classroom as well as the text already produced. The second component concerns the process involved while writing: (1) planning based on recovery in long-term memory of knowledge related to the topic, the selection of what is relevant to the task and its organization as, for example, the selection of an order or grouping certain information into semantic category; (2) phrasing which requires linearization of words previously developed in planning respecting at a local level of the text, rules related to syntax, spelling and word choice, and at the global level, rules relating to the structure of the text; (3) revision involving a critical reading of the text already produced to consolidate by drawing inferences.

Finally, the third component refers to the writer's knowledge and, in particular regarding the topic to be discussed and the representation of the task he has developed. Furthermore, in this model, the operation of these components and subcomponents is monitored by a controlling metacognitive agent (Garcia-Debanc, 1986).

The model proposed by Hayes and Flower has sparked a lot of research either on the cognitive processes involved in the production of a written text, for example, those corresponding to the text planning or on the student-writer's linguistic skills involved on the macrostructural level (global) and microstructural (local) level of text production (Garcia-Debanc, 1995; Bonin & Fayol, 1996). The model also raised discussions about the elements that should be included in such a model. Hayes then proposed, in 1996, a new model more accurate in the description of the various aspects of the writing process and explaining the various editorial activities of the writer. Figure 1 illustrates the general organization of that revised model.

In the revised model, the "task environment" poses the act of writing as a "social activity", firstly because, most often, we write to communicate and, secondly, because of socially developed writing conventions inflect the way we write. As highlighted by Hayes (1998), "What we write, how we write and to whom we write is shaped by social conventions and by the history of our social interactions." (p. 57). The revised model attaches also particular importance to the working memory which plays a central role in assuming that the sub-component "cognitive processes" has access to it and thus, affects all non-automated activities.

Moreover, the effects of motivation and emotions on the part of the writer are highlighted in the editorial process while, from the text viewpoint, it also includes the visuo-spatial features (tables, graphs, images, etc.) essential to understanding the kind of text to produce. Finally, the sub-component "cognitive process of writing" was reorganized. The drafting process as a whole, is integrated into a broader category, that of reflection,

involving the writer's decision the resolution of the rhetorical writing problem, which may involve different complexity levels from the wording of a sentence by a student-writer to the planning of a trial by a more experienced writer. In the latter case, the decision relates, among other, the selection and organization of information and the perspective adopted in the text. Reflection also involves the production of inferences that the writer must perform in order to make the text acceptable by the recipient, that is to say adapted to its characteristics, interests and topic knowledge (Hayes, 1998).

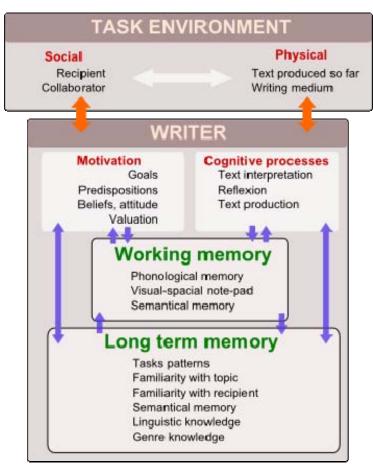


Figure 1 Overview of Hayes Model (1996) (from Hayes, 1998, p. 5)

Composing/translating is considered a more global process following written, oral or graphical rules in order to consider "the majority of texts encountered daily". Revising, was replaced by an interpretation of the text including reading, listening and examination of charts to identify problems and opportunities for improvement, regardless of the problems detected (Hayes, 1998). Hayes also stated the sub-processes involved in processing the text to be revised, such as decoding words or apply grammatical knowledge to correct spelling or grammatical errors or textual rules required by the text genre. Revision requires, according to the author, the implementation of a set of activities such as reading to evaluate or solve problems detected in production (Hayes, 1998).

2.2 The Bereiter & Scardamalia Model (1987)

Following the Hayes et Flower (1980) model came others attempting to clarify the development of the writer's editorial expertise, such as Bereiter and Scardamalia (1987), based on two text production strategies, one

of which describes how young writers proceed to produce a text and the other concerned with the adult writer composing strategies (Alamargot & Chanquoy, 2002).

Researchers were interested in the cognitive processes implemented during the writing of an argumentative text based on spoken protocols from writers while drafting and by the written production. Considering the writing task as a problem-solving activity, they have highlighted the difficulties faced by non-expert writers regarding the planning of the task to produce and/or improve their written productions.

Bereiter & Scaradamalia's results led them to oppose two production strategies: the strategy of knowledge told (knowledge telling strategy) and the strategy knowledge transformed (knowledge transforming strategy). According to them, using the strategy of told knowledge, which is to state, with minimal changes, knowledge from recovered memory, novice writers' texts "appear to reflect the order in which they think things rather than the order they have imposed on the content after planning" (Scardamalia & Bereiter, 1998, p. 29). In fact, this strategy is a direct transcription of ideas into words (or think-write: "Think it, write it"; McCutchen, 2000). Thus, it seems that the beginning writer fetches his memory for all relevant information, whether it is valued as appropriate or not and when so transcribes it as is. After each segment of written text, the writer conducts the research to the next segment (Piolat & Roussey, 1992). This strategy is particularly effective in narratives producing, since for this kind of text, the utterance sequence is modeled on the sequence of events to relate. For the expert writer, the knowledge transforming strategy involves the development of the text content taking into account the intended effect and the recipients. The search mode of useful information on the topic to be covered is identical to that of the beginning writer who uses the told knowledge strategy. As against, according to Scardamalia & Bereiter (1998), mobilized informations are modified and organized to meet the constraints related to two interconnected space-problems: on one side the space of content regarding the availability and the selection of the domain's knowledge to be processed and on the other side, the rhetorical space regarding the constraints linked to the text to be produced.

3. Limits in Education

3.1 Models from Hayes & Flower (1980) and Hayes (1996)

The value of Hayes & Flower (1980) model lies in the fact that it was developed from the analysis of verbalizations from competent subjects in the progress of a writing task, which allowed authors to make an assumption about the writer's mode of operation for a given writing task. In this sense, this model is still today a reference model.

It however has limitations, as shown by various studies. One recurring criticism is that the model is one of expert writers not well suited to describe the writing skills of young writers. Moreover, even if Hayes' new model considers the communicative function of text production as well as socially developed text plans, both models show very little consideration to the influence of the type of text on the editorial processes used in the production. They rather assume, as highlighted by Dolz, Pasquier & Bronckart reporting Schneuwly's words, "a single language functioning in which discursive gender acts only as a variable among others without substantially affecting it" (1993, p. 25). Moreover, in these models, the translating processes are poorly defined and remain unclear (Garcia-Debanc & Fayol, 2002, p. 45) and the linguistic dimension required for their realization is not taken into account. Finally, in these models, the problem of learning the written text production is not addressed.

Indeed, the reference to these models to consider the teaching of writing to young students has significant

gaps. For example, the planning and content organization according to the text diagram requires the use of topic knowledge and textual forms that the young writer of elementary grades does not control or only partially control. There is, therefore a learning problem. In this respect, the models offer no didactical tools easing the development of writing skills for young students in regards to the planning process of various types of text writing.

In addition, the processes for drafting as well as the required linguistic resources for these operations are not mentioned. This gap raises problems, in education, firstly for the teacher's assessment of the student's writing skills and secondly, in the choice of objects of study for teaching and learning.

It should also be noted that these models assume the intervention of a control instance which depends on metacognition for the writing of cognitive operations. Mastery of the writing process assumes that the writer has developed metalinguistic knowledge on the functioning of the components of language such as the phrase, the text and the use of various text editing methods on one side and of metaprocedural knowledge of his cognitive awareness used in the process of writing such as revising strategies (Brassart, 2005). Development of metacognitive awareness for the young writer emerges from the frequent practice of various writing tasks allowing her to use "intentionally" the linguistic resources needed to accomplish such task and to perform the controlled management of the processing procedures. According to Brassart (2005), from a didactic point of view, "It is unlikely that one be taught directly metacognitive awareness, it could probably at the best be triggered from favorable learning situations" (p. 111).

3.2 Bereiter & Scardamalia's Model (1987)

This model considers written text production as a problem solving activity. From the point of view of teaching and learning, this model suggests to offer students procedural facilitation methods in order to reduce the processing load required by the writing task. However, for the novice writer, textual production does not necessarily represent a problem situation (Gagnon, 2011). Depending on the age and development stage, young children build a different representation of the problem situation. They would also tend to overestimate their ability. As pointed by Brassart (2005), "It is often observed that young children are not blocked by the proposed task, and that they confidently advance solutions to what they perceive as simple problems." (p. 105). This could be due to the fact that the young writer was not yet aware of the variables that can change the writing, especially because it has not yet been confronted with such writing situations and therefore, can not deal with it in an accurate manner. Thus, this "functional" limitation hinders the representation of the writing task as a problem to be solved (Gagnon, 2006).

3.3 Section Summary

Overall, the models from Hayes and Flower (1980), Hayes (1996) and Bereiter & Scardamalia (1987) help to highlight the cognitive processes involved in the written production. It also noticed that in these models, writing skills expertise or mastery level is based on increasing conscious control of underlying cognitive activities. However, little account is taken of the strictly linguistic dimension involved in all verbal production. They moreover shed little light on the young students' development of writing skills: models of Hayes and Flower and Hayes do not address the problem of learning how to write a text, while that proposed by Bereiter and Scardamalia discusses opposing strategies of novice/expert production. As mentioned by Garcia-Debanc and Fayol (2002), their "model is not really a development model because it does not specify how the switchover takes place from the first (novice) to the second mode (expert) in text composition" (p. 46). This aspect is however essential to support the teachers activities for the learning writers.

4. A Theoretical Reference Model for Teacher Education

4.1 A Model from Bronckart et al. (1985) and Bronckart (1996)

Unlike written production models proposed by Hayes & Flower (1980), Hayes (1996) and Bereiter & Scardamalia (1987), the model developed by Bronckart, Bain, Schneuwly, Davaud & Pasquier (1985) and Bronckart (1996) offer means for the teaching and learning of textual production, whether oral or written. The model, which proposes a speech typology based on a text classification corresponding to specific linguistic markers, does support education.

For these authors, language activity is considered "a specific form of human activity" that occurs in a specific place and takes the form of speech acts. Speech acts are defined as "sets of verbal actions oriented toward determined communication goals" embedded in a production context. This situational context is defined by the representation that the writer has developed and included:

- (1) The social interaction situation: (a) social location of production: school, shop, family, etc.; (b) social position of the speaker teacher, client, parent, etc.; (c) social position of recipient: student, colleague, friend, etc.; and d) the purpose of the interaction: the effect of the production referred by the speaker on the recipient;
- (2) The physical production situation, including the production context and made of: (a) the place where the production is carried out; (b) the time of production; (c) the agent of production (speaker); and (d) the recipient of the production;
 - (3) The thematic content (or referent) include all information presented in the production.

The object of communication is knowledge or representations built by the producer under his experiences and development level, knowledge that the writer must mobilize from his memory where they were stored, and that the reader will in turn have to activate to be able to understand the delivered text (Bronckart, 1996).

Furthermore, each speech acts can take form in various text genres. Following Bronckart, text genres are communication modes where the operation rules are recognized in a society to achieve the goals of a speech act. They correspond to "temporarily 'crystallized' or 'stabilized' by usage" cultural communication modes (Bronckart, 2004). Thus, a genre can be defined as "a set of oral or written language productions, sharing, in a given culture, common textual, linguistic, graphic or visual and/or oral, communicative characteristics, flexible but relatively stable over time" (Chartrand & Emery-Bruneau, 2013, p. 3). The speaker's decision (or writer) to use a particular text genre is based on its knowledge of various genres and its assessment of the effectiveness of one over the other to make his speech act. For example, to introduce different forms of knowledge, the speaker may use different genres such as conference or encyclopaedia entry.

The model also assumes the involvement of three text editing operations using different linguistic marks, connection operations, cohesion and modalization. Segmentation operations allow content to be cut and organized in different parts of the text. As such, they use a set of punctuation marks (period, ellipsis, exclamation points and question marks). Connection operations also contribute to segment the text or text blocks, while connecting at the same time, the various text units to ensure thematic progression. To do this, relation markers are used (Bronckart, 1996; Bronckart et al., 1985) of the type "once upon a time", reporting the initial phase of the story; an adverb, as "suddenly" or adverbial phrase, as "all of a sudden", which indicate the complication phase. Cohesion operations ensure the recovery of known informations in the text (or themes) on which are added new informations (or rhemes). Those are made possible primarily by the use of anaphoric processes, such as pronominal anaphora,

nominal anaphora or other anaphora, such as the location adverbs "there" or by the use of verb tenses, like present, past tense, imperfect, etc. The use of different tenses contributes, for example, to alert the reader of the transition from a section of text to another, such as the use of the imperfect and the simple past to indicate the transition from the "Initial phase situation" to that of "Complication phase" in the story. Modalization operations help bring an evaluative judgment on what is said in the text. They concern the speaker(s)'s position(s) (or the writer or the characters mentioned in the text) with respect to certain aspects of the thematic content. They use verbs of the type "want, need, have to, able", adverbs or adverbial phrases such as "definitely, probably" etc. (Bronckart, 1996). The following table, taken from Bain and Schneuwly (1993) summarizes the model.

Context Personal pronouns pron. and possessive det. of 1. Social interaction I. Contextualisation Speaker(s) a) sensibilisation to items 1 and 2 of first 1st, 2nd or 3rd person: column Recipient(s) I, you, he, mine, his, its... Goal(s) b) content determination (3rd item of First col) Temporal marks that define or segment time: location today, in a moment, this afternoon; one day, in February, May the 2nd, that morning.. 2. Physical features II. Structuration Structural: Speaker a) relation between items 1 and 3 against 2 on one hand, on the other hand, finally, against, or Space (col1:1 > 2, 3 > 2)elsewhere; hyphen, parenthesis, references to notes. time Verb tenses: simple present, simple past, b) cognitive development of content progressive past... c) content broadcasting 3. Content (Referents) III. Text editing a) articulation of different parts and elements of the text: connection b) linking of the parts: cohesion c)relativisation of the processes of speech: modalisation

Table 1 Text Production Model (from Bain and Schneuwly, 1993, p. 61)

4.2 Model's Implications in Education

As mentioned earlier, Bronckart's model identifies three aspects of the activity of language production: the situational context, language operations and the text's specific marks (see Table 1). In addition to the instruction of textual production (oral or written), it offers an entry using the teaching of text genres. These are the subject of more or less accurate representations from the early graders, mostly developed in oral production. Work on text genres allow us to address language issues raised by production, involving, for example the representation of the social context in which production takes place, or the choice of language units.

Moreover, each text genre requires specific educational interventions since each one has distinct characteristics. For example, to perform cohesive operations in a story, the writer can use different verb tenses indicating the transition from one part of the text to another, such as the use of the imperfect and the simple past to mark the transition from the "initial situation" phase to a "complication".

Those considerations affect the text production teaching activities of elementary school teachers. For example, the initial scene (situational context) is a crucial moment to explicitly introduce students to all the information needed for them to understand the writing project "at its best communication situation in which they must act" (Dolz et al., 2001, p. 9) or, more precisely, what is the communication problem they have to solve in this text production. This initial scene must include the text genre to be produced, information on the recipients, intent and content to be developed.

With its focusing on the linguistic characteristics of text genres, this reference model also lead, among other things, to focusing the training activities on: the mastery of the different text genres; the capacity of performing assessments and to spot the writers' difficulties to meet the constraints of those different text genres; to perform instructional interventions concerning text editing operations, such as segmentation, connection, cohesion and modalization operations.

5. Conclusion

Reference to a solid theoretical model is, in our opinion, the cornerstone of educational activities for education. In the context of textual production teaching, research over the past twenty years have lead to modelize verbal production. These models, including those here described, highlighted, among others, the cognitive process of writing and the linguistic dimension of text production. In the context of teacher education, we favor Bronckart's language production model (Bronckart et al., 1985) for various reasons that have been outlined above. The consideration of this model affects the choice of training activities aimed at developing the skills of future teachers in their need to support and assess the young students' writing skills and choose adequate study objects for instruction.

References

- Alamargot D. and Chanquoy L. (2002). "Les modèles de rédaction de textes", in: M. Fayol (dir.), *Production du langage*, Paris: Lavoisier, pp. 45–65.
- Bain D. and Schneuwly B. (1993). "Pour une évaluation formative intégrée dans la pédagogie du français: de la nécessité and de l'utilité de modèles de référence", in: L. Allal, D. Bain & P. Perrenoud (dir.), *Évaluation formative and didactique du français*, Neuchâtel: Delachaux and Niestlé, pp. 51–72.
- Bereiter C. and Scardamalia M. (1987). The Psychology of Written Composition, Hillsdale, NJ: Lawrence Erlbaum.
- Bereiter C., Burtis P. J. and Scardamalia M. (1988). "Operations in constructing main points in written composition", *Journal of Memory and Language*, Vol. 27, pp. 261–278.
- Bonin P. and Fayol M. (1996). "L'étude en temps réel de la production du langage écrit: Pourquoi et comment", Études de linguistique appliquée, Vol. 101, pp. 8–19.
- Brassart D. G. (2005). "Didactique du français langue maternelle: Approche(s) «cognitives(s)»?", in J. L. Chiss, J. David and Y. Reuter (dir.), *Didactique du français—Fondements d'une discipline*, Belgique: De Boeck, pp. 95–118.
- Bronckart J. P. (2004). "Les genres de textes and leur contribution au développement psychologique", Langages, Paris: Larousse.
- Bronckart J. P. (2005). "Développement, compétences and capacités d'action des élèves", in: J. L. Chiss, J. David & Y. Reuter (dir.), *Didactique du français—Fondements d'une discipline*, Belgique: De Boeck, pp. 135–148.
- Bronckart J. P. (1996). "Activité langagière, textes and discours", Lausanne, Paris: Delachaux and Niestlé.
- Bronckart J. P., Bain D., Schneuwly B., Davaud C. and Pasquier A. (1985). "Le fonctionnement des discours: Un modèle psychologique and une méthode d'analyse", *Lausanne*, Paris: Delachaux and Niestlé.
- Chartrand S. G. and Émery-Bruneau J. (2013). "Caractéristiques de 50 genres pour développer les compétences langagières en français", available online at: http://enseignementdufrancais.fse.ulaval.ca.
- Dolz J., Noverraz M. and Schneuwly B. (2001). S'exprimer en français: séquences didactiques pour l'oral and pour l'écrit, Bruxelles: De Boeck.
- Dolz J., Pasquier A. and Bronckart J. P. (1993). "L'acquisition des discours", Études de linguistique appliquée, Vol. 92, pp. 23–37.
- Gagnon R. (2006). Effets d'une séquence didactique sur les opérations de textualisation d'un texte documentaire par des élèves de 2e année du primaire: Thèse de doctorat inédite, Québec: Université Laval.
- Gagnon R. (2011). "«Et»... le connecteur privilégié des scripteurs du 1er cycle du primaire", *Les Cahiers de L'AQPF*, Vol. 2, No. 2, pp. 11–14.
- Gagnon R. and Ziarko H. (2006). "Analyser des textes d'élèves pour soutenir l'intervention didactique en écriture", in: Dans J. Loiselle, L. Lafortune and N. Rousseau (dir.), *L'innovation dans la formation à l'enseignement*, Québec: Presses de l'Université du Québec, pp. 124–136.

- Garcia-Debanc C. (1986). "Intérêts des modèles du processus rédactionnel pour une pédagogie de l'écriture", *Pratiques*, Vol. 49, pp. 23–49.
- Garcia-Debanc C. (1995). "Incidences de la nature des tâches d'écriture sur les processus rédactionnels", in: J. C., Boyer J., Dionne P. & Raymond P. (dir.), *La production de textes—Vers un modèle d'enseignement de l'écriture*, Québec: Les Éditions Logiques, pp. 193–220.
- Garcia-Debanc C. (2005). "Les tris de textes: vingt ans après", Recherches, Vol. 42, pp. 75-89.
- Garcia-Debanc C. and Fayol M. (2002). "Apports and limites des modèles du processus rédactionnel pour la didactique de la production écrite: Dialogue entre psycholinguistes and didacticiens", *Pratiques*, No. 115/116, pp. 37–50.
- Hayes J. R. (1998). "Un nouveau cadre pour intégrer cognition and affect dans la rédaction", in: A. Piolat & A. Pélissier (dir.), *La rédaction de textes*, Neuchâtel: Delachaux and Niestlé, pp. 51–101.
- Hayes J. R. and Flower L. S. (1980). "Identifying the organization of written of writing processes", in: L. W. Gregg & E. R. Steinberg (dir.), *Cognitive Processes in Writing*, Hillsdale, NJ: Lawrence Erlbaum, pp. 3–30.
- Ministère de l'éducation du Québec (2001). La formation à l'enseignement. Les orientations: Les compétences professionnelles, Québec: Gouvernement du Québec.
- McCutchen D. (2000). "Knowledge, processing, and working memory: Implications for a theory of writing", *Educational Psychologist*, Vol. 35, pp. 13–23.
- Piolat A. and Roussey J. Y. (1992). "Rédaction de textes: Éléments de psychologie cognitive", Langages, Vol. 26, pp. 105-108.
- Scardamalia M. and Bereiter C. (1998). "L'expertise en lecture-rédaction", in: A. Piolat & A. Pélissier (dir.), *La rédaction de textes*, Neuchâtel: Delachaux and Niestlé, pp. 13–50.
- Schneuwly B. (2005). "De l'utilité de la «transposition didactique»", in: J. L. Chiss, J. David and Y. Reuter (dir.), *Didactique du français—Fondements d'une discipline*, Belgique: De Boeck, pp. 48–59.
- St-Laurent L., Giasson J., Simard C., Dionne J. J. and Royer É. (1995). *Programme d'intervention auprès des élèves à risque*, Québec: Gaëtan Morin éditeur.