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ABSTRACT

Twenty countries are participating in the IEA International Study of Written Composition, for which this is a background report. school-based writing in particular, this report discusses the functions of writing from the point of view of culture, cognition, and child development. It also presents a usable model for constructing and evaluating writing curricula, writing tasks, writing instruction, and textbooks. Covering the domain of writing in its first section, the report discusses the following topics: (1) the origins of writing, (2) the cultural and cognitive impact of writing, (3) the functional relationship between spoken and written language, (4) differences between conversational interactivity and written composition, (5) writing as an act of communication, (6) writing as a cognitive process, (7) the development of writing, and (8) writing in a cultural context. The second section presents a general approach to school-based writing and a model of written discourse and then discusses factors related to school writing: educational objectives, the progression of writing tasks, and rating criteria. Following a conclusion, the report lists extensive references. An abstract and a price list of previous IEA reports are appended (in Finnish); there is also a Finnish version of the Introduction. (MM)

ON THE SPECIFICATION OF THE DOMAIN OF WRITING

Kohti kirjoittamisen kuvailua ja erittelyä

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INTRODUCTION

This report deals with the domain of writing in general and then focuses on school-based writing. It discusses the functions of writing and written language from the point of view of culture, cognition and child development. It also presents a model, which can be used - and has subsequently been used - to construct and evaluate writing curricula, writing tasks/assignments, writing instruction and text-books. The report has been written as a step towards the conceptualization of a research project: The IEA International Study of Written Composition, in which some twenty countries are taking part. At the same time it is the first publication of the Finnish national study within the international framework. The authors of the report are members of the group responsible for the planning of the international study; Sauli Takala is the International Coordinator and Anneli Vähäpassi chairs The Steering Committee.

In planning the IEA study and in working out its theoretical foundations, the following briefly summarized generalizations have been made: a central task of education appears to be the transmission of cultural heritage from one generation to another. The acquisition, transmission and development of cultural heritage is carried out largely by means of language, in modern times mainly through written language. Recently there has also emerged a growing awareness that human activities are largely dependent on cultural growing awareness that human activities are largely dependent on cultural development. It has even been claimed that modern science and rationalistic thinking are an indirect consequence of the invention of written language.

Writing can be considered as a landmark in the development of human culture. Those societies and communities that have employed also the written mode need and use it in the area of non-material culture; eg. literature, research, and administration.

It has generally been assumed that the emergence of writing is related to new patterns of thought and expression in the development of societies. On the other hand, it has also been emphasized that the acquisition of the skill of writing constitutes a turning point in the child's development towards a full member of the prevailing culture. Thus the acquisition of writing is not only an educational

objective but it can be regarded as a necessary means for the attainment of other important educational aims. Written language frees the developing child from contextual dependence, since it does not only represent reality but it can also help him/her to reconstruct reality.

However, some recent cross-cultural studies have shown that the acquisition of literacy does not necessarily lead to the acquisition of higher cognitive processes, as has often been suggested. Of decisive importance is the uses of literacy in societies. In other words the crucial question is who is literate in what languages for what purposes.

Writing seems to differ eg. from mathematics and science in that the criteria of what constitutes an appropriate or outstanding response may vary from culture to culture to some extent. It would be questionable to assert that there is only one correct way to write a composition in a given assignment. There are several acceptable approaches and several acceptable products. It is possible that there exists a relatively high cross-cultural agreement on some aspects of written products. Yet, it can be assumed that cultures may also differ from each other in terms of how they set writing tasks, how they value the organizational patterns of compositions, how they value writing styles and how they value writing speed.

The IEA International Study of Written Composition seeks to elucidate the links between writing and cultural patterns described in the above. It also attempts to describe how writing is thought in schools, how instruction is related to cultural patterns and how it is related to written products. During the work in the theoretical model of the IEA study it was found out that while something - though not very much - is known about the teaching of early stages of writing, very little is known about the teaching of writing at more advanced stages. Also, there are considerable gaps in our knowledge of the writing processes and factors influencing them, and of how certain teaching practices influence writing processes. The IEA study seeks to provide a good description of practices in the teaching of writing and attempts to clarify the relationships between teaching practices and students' writing performance.

The authors of this report have attempted to provide a background for defining the problems and hypotheses of the IEA study. It may also be of some use in interpreting the results of the study at a later stage. The authors decided to publish their work in a revised form also in Finland so as to make it easier for the Finnish audience

to be informed of the progress of the IEA International Study of Written Composition. The helpful advice and criticism of the other members of the Steering Committee (Alan C. Purves, Eva L. Baker, Judit Kadar-Pülop and Hildo Wesdorp) of the earlier drafts of the articles is gratefully acknowledged.

TIIVISTELMÄ

Raportti käsittelee kirjoittamisen aluetta ensin yleisemmästä, sitten koulukirjoittamisen näkökulmasta. Se on kirjoitettu IEA-järjestön (International Association for Educational Achievement) toimeenpanoman kansainvälisen kirjoitelmatutkimuksen ongelmien ja hypoteesien sekä tehtävien valinnan taustaksi. Samalle se on Suomen kansallisen kirjoitelmatutkimuksen ensimmäinen osaraportti. Suomen lisäksi Kansainväliseen kirjoitelmatutkimukseen osallistuvat seuraavat maat: Alankomaat, Australia, Chile, Englanti, Indonesia, Israel, Italia, Kenia, Länsi-Saksa, Nigeria, Norsunluurannikko, Skotlanti, Suomi, Thaimaa, Unkari, USA, Uusi-Seelanti. Tutkimuksen pääasiallinen tietojenkeruu on vuosina 1983-84.

Tutkimuksen suunnitteluvaiheessa ilmeni, että kirjoittamista on tähän mennessä tarkasteltu melko vähän kulttuurin, koulun ja kirjoittamistapahtuman kannalta. Tässä raportissa pohdiskellaan kirjoittamisen olemusta em. näkökulmista.

Raportin alkuosassa tarkastellaan kirjoittamisen tehtäviä ja kirjoitettua kieltä kulttuurin ja ajattelun kehityksen kannalta. Todetaan, että kasvatuksen keskeisiä kysymyksiä on kulttuuriperinnön siirtäminen sukupolvelta toiselle. Kulttuuriperinnön omaksuminen, siirtäminen ja kehittäminen tapahtuu useissa maissa kielen, useimmiten juuri kirjoitetun kielen kautta. Keskeisiä raportissa esitettyjä näkemyksiä ovat seuraavat:

Kirjoittamista voidaan pitää ihmillisen kulttuurin tunnusmerkkinä. Ne yhteisöt, joihin kirjoitettu kieli on omaksuttu, tarvitsevat sitä juuri kulttuurin alueella: sanataiteen, tieteellisen tutkimuksen julkisen tiedonvälityksen ja joukkoviestinnän välineenä. Viime aikoina on erityisesti David Olson (1976, 1977) korostanut näkemystä, jonka mukaan ihmisen toiminta on paljolti riippuvainen kulttuurin kehityksestä. Hänen mukaansa nykyinen tiede ja rationalistinen ajattelutapa ovat epäsuoraa seurausta kirjoitetun kielen keksimisestä ja käyttöönotosta.

On usein oletettu, että kirjoitustaidon syntyminen on ollut ja on kiinteästi yhteydessä uusiin ajattelun ja ilmaisun muotoihin. Kirjoittaminen vähentää muistin rasitusta ja vapauttaa kognitiivista kapasiteettia niin, että voidaan kiinnittää enemmän huomiota esimerkiksi

ilmausten merkityksiin, varsinkin niihin päätelmiin, joita kirjoitetuista teksteistä voidaan tehdä. Kirjoitettu teksti ei ole sidoksissa puhetilanteeseen. Täten kirjoittaminen vaatii täsmällisempää ja paremmin muotoiltua kieltä kuin kasvokkain tapahtuva keskustelu; näin se johtaa kielen loogisen käytön lisääntymiseen. Raportin alkuosassa hahmotellaankin suullisen ja kirjallisen esityksen keskeisiä eroja.

Kirjoitustaidon omaksumista voidaan pitää ratkaisevana käännekohtana myös lapsen kehityksessä kulttuurin jäseneksi. Kirjoitustaidon saavuttaminen ei olekaan vain yksi koulutuksen päämääristä, vaan sitä voidaan pitää välttämättömänä myös muiden päämäärien saavuttamiselle. Kirjoitettu kieli vapauttaa kehittyvän lapsen ja nuoren ajattelun tilannesidonnaisuudesta, koska se ei ainoastaan edusta todelliauutta, vaan se voi auttaa myös muovaamaan sitä.

Toisaalta jotkut viimeaikaiset tutkimukset ovat osoittaneet, ettei kirjoitustaidon omaksuminen välttämättä johda korkeampien ajattelutoimintojen omaksumiseen, niin kuin usein on otaksuttu. Sen sijaan ratkaisevia ovat kirjoitustaidon käyttötavat eri yhteisöissä. Toisin sanoen voidaan kysyä: kuka on kirjoitustaitoinen; millä kielellä; mihin tarkoituksiin.

Kirjoittaminen eroaakin esimerkiksi matematiikasta ja luonnontieteistä siinä suhteessa, että se on sidoksissa tietyn kansan, alueen tai alayhteisön kulttuuriin. Ne kriteerit, joiden mukaan jokin tuotos on asianmukainen, saati sitten erinomainen, vaihtelevat jonkin verran kulttuurista toiseen. Samoin vaihtelevat tärkeinä pidetyt kirjoittamisen tehtävät.

Raportin loppuosassa esitellään koulukirjoittamisen erittelyyn kehitelty malli, jossa on otettu huomioon seuraavat ulottuvuudet: kirjoittamisen tehtävät (funktiot), kirjoitustehtävien vaatima ajattelu ja siihen kytkeytyvä esityksen muoto, kirjoitelmien vastaanottaja ja kirjoitelmatyyppi. Kehiteltyä mallia on mahdollista käyttää eri maiden opetussuunnitelmien, erilaisten tutkintojen ja opetuskäytänteiden analyysiin. Analyysin pohjalta voivat opetussuunnitelmien ja oppimateriaalin laatijat havaita, missä kohden ko. maassa toteutettu kirjoittamisen opetus kaipaa monipuolistamista. Mallin pohjalta tehdyn opetuksen erittelyn tuloksia voidaan myös suhteuttaa oppimistuotoksiin.

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Sauli Takala

I. THE DOMAIN OF WRITING

1. ORIGINS OF WRITING

Gelb (1952: 230) states that "the concept of the divine origin and character of writing is found everywhere, in both ancient and modern times, among civilized as well as among primitive peoples. In the main it is due to a widespread belief in the magic powers of writing". Primitive people are known to be astonished and afraid of books and writing in general.

For writing to serve as a system and means of human interaction and communication it was necessary to devise a system of conventional visible marks. Writing was, in all likelihood, invented to serve emerging new needs in communication. Gelb (1952) suggests that geographic, social and economic developments created a complex of conditions which could not function properly without writing. Thus he claims that writing could only exist in a civilization and a civilization could not exist without writing.

The earliest records of writing (clay tokens, bullas, and tablets) known to us go back some 5,000, perhaps even 10.000, years and were used in a primitive way of accounting and as bills of lading accompanying shipments of goods. Thus the function of documentation appears to have been the driving motivation for the invention of writing.

Before full writing systems were developed, meanings were conveyed by pictures or by some more conventionalized descriptive or mnemonic devices. Full writing emerged when writing did not only convey meaning but expressed language. According to Gelb (1952) the development went from a word-syllabic writing (i.e., individual signs express individual words) through a syllabic writing (i.e., words are divided into component syllables) to an alphabetical writing (i.e., the letters of the alphabet express single sounds of speech).

2. ON THE CULTURAL AND COGNITIVE IMPACT OF WRITING

Typically great claims have been made regarding spoken and written language. Thus it is often maintained that "no other species except our own has a language" (Hockett 1963: 14). Even after extensive studies of chimpanzees trained to use symbols it is generally held that human beings do have a special biologically based capacity for language (Slobin 1979).

Writing is often seen as a landmark in human culture. Breasted (1926, quoted in Gelb) has claimed that "the invention of writing and of a convenient system of records on paper has had a greater influence in uplifting the human race than any other intellectual achievement in the career of man." In a similar vein, Olson (1976) has described the great impact of the technology of writing on human cognitive processes and on the style of expression. He develops the idea of performance being culturally conditioned by suggesting that technological changes have had a profound impact on mental processes.

Specifically Olson has studied the effect of the invention of the phonetic writing system and that of extended prose statement (i.e., the essayist tradition) on the type and style of language use. He maintains that writing made language an instrument for formulating original statements whereas before that oral presentation transmitted traditional culture, and on account of heavy reliance on auditory memory, imposed a rhythmic syntax pattern on oral language. The written text had to convey meaning on its own without depending on shared prior knowledge or on the immediate situation. Not having to concentrate to remember what was said released cognitive capacity to pay attention to what the statements imply. Olson (1976: 198) claims that "the essayist technique and written language generally in the process of formulating general statements from which true implications can be drawn have as a by-product created the abstract logical concepts that we who are so habituated to a literate culture tend to view as part of nature herself. Modern science, like 'rationality', is an indirect consequence of the invention of a particular technology" (i.e., the technology of writing).

Olson (1977) has also drawn attention to the dominant role that written language plays in the school systems of the world. He argues

that in written prose rhetorical functions are subordinated to the logical functions and that the requirements for logical, descriptive, autonomous statements requires that the written language must be more explicit and conventionalized than "the mother tongue" (i.e., speech). Schools are tied to the specialized written language and to a specialized form of knowledge because they rely so heavily on written prose. Literacy is not only the main goal of schooling, but is considered necessary for the achievement of other goals as well.

Vygotsky (1934/1962) suggests that the motives for writing are more abstract, more intellectualized and more removed from immediate needs than the motives of speaking. Thus writing requires detachment from the actual situations and deliberate analytical action. This leads him to the conclusion (Vygotsky 1978) that written language is a particular system of symbols and signs whose mastery heralds a critical turning-point in the entire cultural development of the child. Vygotsky elaborates this by saying that

> We need to imagine the enormous changes in the cultural development of children that occur as a result of mastery of written language and the ability to read - and thus becoming aware of everything that human genius has created in the realm of written word. (Vygotsky 1978: 116)

Vygotsky (1978) suggests further that writing has its origin with children in gestures and drawing. On the basis of experiments and psychological analysis, he has come to the conclusion that

> however complex the process of development of written language may seem, or however erratic, disjointed, and confused it may appear superficially, there is in fact a unified historical line that leads to the highest forms of written language. This higher form, which we will mention only in passing, involves the reversion of written language from second-order symbolism to first-order symbolism. As second-order symbols, written symbols function as designations for verbal ones. Understanding of written language is first effected through spoken language, but gradually this path is curtailed and spoken language disappears as the intermediate link. To judge from all the available evidence, written language becomes direct symbolism that is perceived in the same way as spoken language. (Vygotsky 1978: 116)

Bruner (1972) also argues that technologies have a powerful impact on cultural environment and on cognitive functioning. Culture provides "amplification systems" for cognitive processes. Among such amplification systems are symbolic modes of representation. Bruner suggests that

> Finally and most powerfully, there are amplifiers of the thought processes, ways of thinking that employ language and formation of explanation, and later use such language as mathematics and logic and even find automatic servants to crank out the consequences. (Bruner 1972: 69)

For Bruner, language is essential for thinking. He suggests that "the shape or style of a mind is, in some measure, the outcome of internalizing the functions inherent in the language we use" (Bruner 1968: 107). Language tempts persons to form concepts and written language frees them from dependence on the immediate referent. Thus

> the stage is set for symbolic processes to run ahead of concrete fact, for thought to be in terms of possibility rather than actuality. At this point, symbolic representation can go beyond the capacities of an ikonic system and the way is open for Piaget's stage of formal operations, where the real becomes a subset of the possible. (Bruner 1972: 49)

Thus language not only represents reality but also helps to tranform it. On this point he diverges from Piaget and his co-workers, who see thought rooted in action.

Like Vygotsky, Bruner and Olson, Emig (1977) is a strong advocate of the significance of written language. She contends that "writing represents a unique mode of learning - not merely valuable, not merely special, but unique" (1977: 122). Writing resembles successful learning strategies in that it is "self-rhythmed", represents a "powerful instance of self-provided feedback", provides connections in that it "establishes explicit and systematic conceptual groupings", and is "uniquely multi-representational and integrative" as a learning process in that it involves the enactive (the hand), the ikonic (the eye) and the symbolic (the brain) modes of representing reality (Emig 1977: 128).

The foregoing discussion shows that it is frequently claimed that the process of writing plays an important role in the development of thinking. Scardamalia and Bereiter (1981a) list the following as the often cited direct cognitive benefits attributed to writing: (1) The Emperor's new clothes phenomenon, which refers to the fact that writing, in contrast to conversation, seems to force a critical look at and analysis of our fuzzy thoughts. (2) Text organicity, by which is meant that a text takes on a life of its own and thought may therefore diverge in a creative way from the original direction. (3) Revision helps to contribute to the development of thought. (4) Sustained thought is said to be fostered by writing, mainly because of lack of interruption and because writing helps keep thinking moving ahead.

Scardamalia and Bereiter (1981a) maintain, however, that their studies have indicated that the above-mentioned benefits are by no means automatic consequences of writing compositions. In fact, it has to be considered that for beginning writers the writing process may curtail rather than extend thought. The contribution of writing to thinking might be limited to few highly literate people and it might be an impediment for most people.

Scardamalia and Bereiter (1981a) suggest that writing may, in fact, have a positive influence on thinking if there is a dialectical interaction between what they call the "content space" and the "rhetorical space". Thus awareness of the demands of a particular genre may affect the selection and elaboration of content. Consideration of the audience may lead to finding inadequacies in the content of the text. Searching for text elements (transitions, definitions, examples, etc.) may cause the writer to go back to consider what has been written so far. Problems of word choice may encourage the writer to look more carefully at alternative interpretations of the text and thus make further changes. The demand to produce a minimum amount of text may lead to further development of ideas or discovery of new ideas. The internal constraints of the text (eg. its implications) may point to new directions not envisaged at the beginning.

Scardamalia and Bereiter (1981a) have identified several ways young writers cope with rhetorical problems: (1) Students may be aware of potential audience objections but they do not care about that, (2) Students may not be willing to make the effort to remove recognized weaknesses in structure or content, (3) Students often can make only poor and vague diagnoses of what is wrong with their texts (cf. 7.2.4.), (4) Students are often satisfied with superficial connections within the text, (5) Students may use conversational ploys (Well, anyway; abrupt topic shifts) for side-stepping difficulties, and (6) Students may use a simple knowledge-telling strategy (cf. 6.2.4.)

Scardamalia and Bereiter (1981a) conclude that the deepening of reflective thinking is not an automatic consequence of experience in writing. The dialectical processing in writing is an achievement, which is not only a cause of, but equally the result of, reflective thinking during composing. Studies carried out by Scardamalia and Bereiter indicate that reflective processes can be facilitated by teaching and they may gradually be internalized and lead to self-reflection.

However, on the basis of their study of the effects of literacy in the Vai tribe in Liberia, Scribner and Cole (1978, quoted in Wells, 1981) concluded that the acquisition of literacy did not entail a generalized facilitation of higher cognitive processes. They consider that the facilitation of skills depends on the way in which literacy is socially organized and to what uses it is put in different societies. Their conclusion is supported by Spolsky (1981), who in an article on the sociolinguistics of literacy suggests that it is the most worthwhile to study literacy as a social phenomenon, looking at the role played by the written language in the functioning of a community. If we adopt such an approach, we ask "who is literate in which language for what purposes" and we may study the social distribution of literacy or we can assess the functional significance of literacy (Spolsky 1981: 4). Also Gere (1981) warns against facile crosscultural generalizations concerning the effect of literacy.

Wells (1981) discusses the question of literacy from a number of perspectives. He points out that

> although higher levels of cognitive functioning may be strongly associated with the symbolic manipulation of meaning encoded in linguistic representations, such a use of language is not confined to the written mode. Very precisely formulated reasoning can also occur in speech, as is frequently the case in, for example, cross-examinations of witnesses, spontaneous contributions to seminars, diagnoses of illness, or of machine malfunctioning, etc., and such uses of language can be found in nonliterate as well as in literate cultures. (Wells 1981: 255)

Thus he comes to the conclusion that literacy as such is not so important as the symbolic manipulation of experience through the sort of language which is "most characteristic of written texts" (Wells 1981: 255). It seems to the present writer that Well's conclusion is a fair estimate of the present state of art concerning our present knowledge of the impact of written language.

3. FUNCTIONAL RELATIONSHIP BETWEEN SPOKEN AND WRITTEN LANGUAGE

Traditionally linguists have assigned writing or written language a secondary status in relation to speech. Thus the Swiss linguist de Saussure (1916) stated that language and writing are two distinct systems of signs and that the only raison d'être of writing is to represent language (i.e., spoken utterances). This point of view was strongly supported by most American linguists. Sapir (1921) described written forms as secondary symbols of the spoken forms. Bloomfield (1933: 21) stated categorically that "writing is not language, but merely a way of recording language by means of visible marks". He also pointed to an often-made observation that writing is not universal whereas speech is. More recently Hockett (1958: 4) has maintained that "speech and writing are merely two different manifestations of something fundamentally the same".

In spite of this very dominant view among linguists all over the world (which is changing as there is growing interest in discourse processes), there have been some linguists, especially in Europe, who have questioned the majority view. In particular, Josef Vachek of the Prague functional school of linguistics has tried to explore the relationship between what he calls "the spoken norm of the language" and "the written norm of the language". Vachek (1973; 1974) maintains that the two norms are functionally complementary in that the "marked member" (the written norm) serves specialized cultural and civilizational purposes in those societies which have utilized the latent possibilities of language more fully by employing also written language. Such functions are, e.g., literature, research, administration.

Vachek (1973) compares the functions of the two norms in the following way:

> The SPOKEN NORM of language is a system of phonically manifestable language elements whose function is to react to a given stimulus (which, as a rule, is an urgent one) in a dynamic way, i.e. in a ready and immediate manner, duly expressing not only the purely communicative but also the emotional aspect of the approach of the reacting language user.
> The WRITTEN NORM of language is a system of graphically manifestable language elements whose function is to react to a given stimulus (which, as a rule, is not an urgent one) in a static way, i.e. in a preservable and easily surveyable manner, concentrating on the purely communicative aspect of the approach of the reacting language user. (Vachek 1973: 16)

The most important observation in terms of the present paper is the claim that written language is "preservable and easily surveyable." It is those characteristics that make writing ideal for the archival functions of language (Olson 1981).

Vachek also demonstrates how the structural correspondence between the spoken and written forms cannot be limited to the "basic level" only (phoneme-grapheme correspondence) but higher levels (morphemes and words) are also important. He also shows how, in English, traditional spelling rather than proposed, more "regularized" spellings allow easy recognition of morphological regularities for the reader. Thus the orthographical interests of the writer and the reader are not necessarily identical. That may partly explain the fact that spelling reforms in English have not been very successful in spite of many attempts during several centuries.

As Olson (1976, 1977) has shown, the written language has played a dominant role in school. It has typically been considered the school's central task to teach three R's, two of which refer to written language: reading and writing (not speaking and listening comprehension). Written language tends to be regarded as the norm. Halliday (1980) has noted that the imagery we use in reference to language is visual rather than auditory: long words, long sentences.

There have apparently been relatively few attempts to teach reading and writing directly on the basis of earlier oral competence. The "Breakthrough to Literacy" project sponsored by the Schools Council in England and "Läsning på talets grund" (Reading on the basis of speech) in Sweden and the "language experience" approach in the USA are examples of systems where children build up their own reading material by constructing written discourse with the help of the teacher. On the other hand, there have been some innovative ideas suggested regarding reading and writing. Thus Carol Chomsky (1972, quoted in Dale 1976) has suggested that children should start writing before reading because she claims that the natural order is writing first and then reading what one has written. Kroll (1981) also shows that several language arts specialists agree that dictation could be used with benefit as a bridge to writing.

4. DIFFERENCES BETWEEN CONVERSATIONAL INTERACTIVITY AND WRITTEN COMPOSITION

Rubin (1980) has argued that it is unfounded to equate skilled reading with decoding skills plus oral comprehension. There are a number of factors related both to the medium and message of language experiences which suggest that there is no simple transformation from one modality to the other. It seems equally obvious that there are a number of points of divergence when children move from conversational interaction to composing, especially expository writing.

Vygotsky (1962) can be cited as a good exponent of the view which emphasizes the distinction between spoken and written language. His contention that "written speech is a separate linguistic function differing from oral speech in both structure and mode of functioning" (Vygotsky 1962: 98) has been repeated in a number of slightly different formulations. The present author has made an attempt to construct a systematic taxonomy of the characteristics of conversational interactivity (face-to-face conversation) and written composition. It draws on a number of studies, mainly those carried out by Bereiter (1980), Bereiter and Scardamalia (1981b), Dillon (1981), Emig (1977), Freihoff and Takala (1974), Glinz (1971), Grice (1975), Hymes (1964), Krashen (1976), Markova (1977), Moffett (1968), Myers (1979), Rubin (1980), Shuy (1981), Steger (1967), Wunderlich (1972) and Vygotsky (1962, 1978). These studies will not be cited in detail. Instead, the present author has attemped to integrate the various viewpoints into a coherent system (Table 1).

TABLE 1. A Taxonomy of the Characteristics of Conversational Interactivity and Written Composition

Communication Framework Characteristics	Conversational Interactivity	Written Composition
A. Modality	Oral; allows the use of linguistic and paralinguistic devices (pause, stress, intonation)	Written; allows the use of some textual devices (punctuation, paragraphing, underlining, etc.)
B. Temporal Context	Shared time perspective ("now"); allows ready use of temporal deictic expressions; does not persist beyond the "now"	Not shared; writer's perspective decisive for interpretation; produces a permanent record
C. Spatial Context	Shared spatial perspective ("here"); allows use and reference to physical environment, kinesics, facial expressions, eye contact, proximity, postural expression, etc.	Not shared; writer's perspective decisive for interpretation
D. Mode of Functioning	Verbal and nonverbal interactivity characterized by reciprocity and collaboration and a continuous feedback and cues exchanged between at least two people who alternate in the role of addressor and addressee	Largely autonomous language production with a varying degree of interaction, feedback and cues from the text produced by writer. Influence on discourse of remote addressee derives from writer's anticipation of addressee or audience reactions
Message Characteristics		
E. Content	Typically concrete and largely shared (familiar) information and experiences requiring relatively little effort in searching from longterm memory	Typically less familiar information of more abstract nature requiring often extensive and sophisticated goal-directed searching from longterm memory
F. Structure	Typically more open and highly context-sensitive discourse structure allowing redundancy and associative communication	Typically more closed and conventionalized structure requiring within-text-or co-text sensitivity

Message Characteristics (cont.)	Conversational Interactivity	Written Composition
G. Function	Typically social-emotional regulation of interpersonal relationships and ideational-informative exchange of ideas. In conversational interactivity the latter is always subject to some influence from the salience of the personal contact (me- entered, you-centered, us-centered: expressive, regulative, phatic)	Typically informative-ideational exchange of ideas and reader-text interaction regulation. The latter can be focused on writer-text interaction (reflective, expressive) or text-remote audience interaction (create opportunities for interpretation, impressions and aesthetic experience)
H. Size of Expected Message	Typically a conversational turn which normally is relatively short containing only a few context-relevant points or ideas	Typically a self-contained whole containing all relevant points or ideas and resembling monologue rather than conversational turn
I. Norms Related to Message	Cooperativeness, including informativeness, truthfulness, relevance and clarity. Social norms of fact underlie all conversational interactivity.	Cooperativeness including informativeness, truthfulness, relevance and clarity. Product related norms of felicitous expression (style) apply to all writing.
Processing Characteristics		
J. Processing Load	Usually relatively easy to manage all constraints involved in conversational interactivity within available processing capacity	Usually demanding all processing capacity and often overloading it, especially among inexperienced writers
K. Mode of Processing	Largely automated and well coordinated processing at different levels due to routinized executive procedures and sub-routines included in familiar conversational schemata. Planning can often be local and serial (what next?), there are several acceptable organizational and wording alternatives and there is little need for reviewing.	Typically non-automatic processing requiring conscious attention to even such lowlevel processes as text generation and writing mechanics among inexperienced writers, allowing little or no spare capacity to attention to whole text planning, process monitoring and reviewing.

Developmental Characteristics	Conversational Interactivity	Written Composition
L. Mode of Learning	Informal, largely unconscious acquisition and self-generated learning	Formal learning with a growing degree of conscious control of one's activities. Typically a school-based activity of learning
M. Developmental Sequence	Normally a child's first language experiences as listener and speaker	Normally follows after extensive experience with conversational interactivity with a tendency of the latter being partly transferred into the early stages of composition learning. Normally also is preceded by having first learned to read.

Linguistic Characteristics	Conversational Interactivity	Written Composition
N. Code	Cooperativeness, the support of the context of situation, etc. make the linguistic code only one medium of conveying meaning. Therefore the language can be structurally loose and less well-formed, and use elliptical and deictical expressions. The grammar can often be more complex than that of written language, but lexical density is typically lower than in written text.	Since the meaning of the text has to be constructed by the reader without the possibility of continuous cues and feed-back from the writer and without the support of the immediate context (within-text, cotextual focus) the message has to assume a larger role than in conversational interactivity. Cues for the construction of meaning must be both structurally and semantically relatively well-formed to avoid misinterpretation. Syntax is often simpler than in spoken language but lexical density is higher

Differences between the two aspects of literacy, reading and writing, have also been discussed in several contexts. Some of them will be noted briefly here. Wells (1981) suggests that though the reading aspect of literacy is a complex process, it is greatly facilitated by the structure of meaning and expression that already is present in the text. The construction of written text puts, however, even greater demands on the cognitive and linguistic skills of the writer, since there is no similar support of pre-existing structure. Scardamalia and Bereiter (1980) use the term "compositional task" to refer to tasks in which the goal is not fully definite at the outset but becomes more definite during the process and in which there is a large storage of potentially applicable knowledge and a wide choice of alternative routes to the goal.

In spite of obvious differences, oral and written language clearly share some similar features. Cambourne (1981) lists some of them:

> They employ the same basic rules of grammar and vocabulary; both are obviously concerned with communication; both are used in a variety of every day activities; both are taken for granted by those who use them. There appear, however, to be few similarities beyond this list. From a number of perspectives, dissimilarities are more numerous and more obvious than the similarities. (Cambourne 1981: 84-85)

Cambourne (1981) also noted that oral and written language can be contrasted from a number of different perspectives. As shown in the above, he acknowledges that there are obvious differences, which may be important. He suggests, however, that the relevance of the differences for example for the pedagogy of reading is often simply assumed but never explained. In a similar vein, Shafer (1981: 23) points out that "emphasizing the spoken/written opposition leads to long lists of all the differences between talk and writing, lists that obscure the crucial difference: the unilateral vs. collaborative production of a text". According to Shafer, who quotes approvingly Moffett's (1968) earlier work, a more useful dichotomy is, therefore, the opposition between dialogue and monologue.

O'Keefe (1981) contends that we should see writing as the production of discourse, in other words as language-in-use, rather than as simply linguistic production. She agrees with earlier scholars of rhetoric and discourse theory in that she suggests that "message producers develop a repertoire of strategies for adapting discourse forms in relation to content, interpreter, and personal objectives" (1981: 136). Analysis of

the present situation leads her to claim that current discussions of speaking and writing suffer from two conceptual errors: failure to analyze discourse as discourse in terms of its characteristic form and communicative function, and failure to see discourse in the context of communication. According to O'Keefe (1981: 138), "meaningful conclusions about the differences between speaking and writing can be made only within a general classification and structural description of discourse forms".

Undoubtedly Cambourne, Chafer and O'Keefe are correct in the criticism against mere listing of all possible differences between oral and written language. They are also justified in emphasizing that we should look for differences that are relevant for the particular purpose at hand. It seems to the present author, however, that although taxonomies are bound to be ad hoc to some extent, they serve a useful purpose in trying to structure phenomena. Also, it seems probable that in many cases it is a greater error to regard some things as similar which are, in fact, different than to consider them different. Also in scientific enquiry it is often useful, at the beginning stage of research anyway, to push an argument to its logical conclusions in order to see to what extent the viewpoint can explain how things are. When the case for the "more different than similar" view has been made, it is possible to start developing arguments for the opposite view: spoken and written language and discourse are more similar than different.

5. WRITING AS AN ACT OF COMMUNICATION

5.1. Characteristics of Communicative Acts

Writing is commonly regarded as an act of communication between the writer and the reader(s) of the produced text. It is also increasingly recognized (e.g., Anderson 1977, Bruce 1979, Spiro 1980) that meaning is not simply transferred by the writer to the reader. Speakers and writers are not assumed to be able to communicate directly their intended meanings through language. According to this view, they can, at best, provide clues that allow the audience to construct approximations to that meaning from their own prior knowledge. The reader's task is as complex as that of the writer, since meaning is really constructed by the reader and does not reside in the text. Thus reading requires creativity just as well as writing. If this assumption about meaning being largely created by the reader is essentially correct, as latest research suggests, it raises some interesting questions for the evaluation of compositions written by students in a number of different countries and cultures.

In a genuine social interaction and communication the writer pays careful attention to the audience, the person or persons to whom the item of communication is addressed. Collins and Gentner (1980) have identified four principles that form tacit objectives in communicative acts. These four principles are assumed to be generally applicable and they can be realized by different structures and devices at different levels of text. The four principles are:

1. Comprehensibility. It is generally considered desirable that the text is as easy as possible for the reader to understand. The writer ought to give the reader enough clues to construct the correct model of the text. Collins and Gentner suggest that comprehensibility can be enhanced by using examples to illustrate general principles, filling in intervening steps in arguments, and using short, simple sentences. The requirement of comprehensibility seems to apply primarily to expository texts.

2. Enticingness. If a reader quits a text before finishing it, its easy comprehensibility does not matter. Therefore, it is important to be able to catch and hold the reader's attention. Collins and Gentner recommend including the most important information in the beginning to motivate the reader to keep on reading. They list a variety of devices designed to accomplish this objective: using suspense, unexpected events and humor, encouraging the reader to identify with the characters, etc. The requirement of enticingness seems more central for literary than for expository texts.

3. Persuasiveness. In writing, the goal is often not only to explain ideas or to tell a good story, etc., but also to convince the reader of the truth, importance, authenticity, etc., of what was written. There are a number of devices used to make texts more persuasive. Collins and Gentner suggest that among them are the argument form used in some texts, admission by the writer that there may be problems or limitations, citing authoritative opinion, or referring to commonly shared experiences.

4. Memorability. In order for the reader to be able to learn from texts he should be able to hold the essential parts of the text in memory. Memorability goes beyond ease of understanding. A text can be easy to understand, but not very easy to remember. Collins and Gentner suggest the use of lists, tables, figures, hierarchical headings and explicit statements about the structure of the text.

The devices that were suggested to achieve the above-mentioned general objectives of writing are related to the structure, style, genre and content of the texts produced.

5.2. Construction of Meaning by Writer and Reader

5.2.1. Self-sufficiency of Texts

Traditionally communication has been viewed as the transmission of a message (information) by a source, through a channel, to a receiver. This is the classical conception of the early information theory. Meaning is encoded by the sender into the message and meaning resides entirely in the text. All the receiver then has to do is to decode the message to recover the entire message. There is no residual part of meaning outside of the text. The text is the self-sufficient repository of meaning. Also the school of new criticism stressed the close reading of the text itself as a guard against what Wimsatt and Beardsley (1954) called the dual fallacies of ascribing subjective intentions to the author and relying on the variable affective responses of the readers.

According to Olson (1976, 1977), Luther was among the first to suggest that meaning can be read from the text itself. There is no need for experts (priests) to explain what the written text means. (Olson (1977) himself argued earlier for the view that "meaning is in the text" but has subsequently changed his view, as will become evident in the following discussion.) The traditional, purely linguistic view has tended to support such a conception of meaning. Meaning is assumed to be exhaustively contained in sentences and text. According to transformational grammar "a semantically interpreted deep structure of a sentence, where the interpretive procedure is a purely linguistic one, provides a full analysis of its cognitive meaning" (Spiro 1980; 248).

The view that meaning is simply communicated to the receiver by means of the text has been challenged by literary critics and by linguists, philosophers, cognitive psychologists and cognitive scientists.

5.2.2. Context and Construction of Meaning

Linguists, philosophers, and cognitive scientists and psychologists tend to agree that context is important for determining meaning. This view has a long tradition in British linguistics going back to Malinowski and Firth, but has gained prominence in the United States relatively recently.

Writing is now commonly regarded as an act of communication between the writer and the reader(s) of the produced text. It is also increasingly recognized (e.g., Anderson 1977, Bruce 1979, Spiro 1980) that meaning is not simply transferred by the writer to the reader. Speakers and writers are not assumed to be able to communicate directly their intended meanings through language. According to this view (Anderson and Shifrin 1980), they can, at best, provide clues that allow the audience to construct approximations to that meaning from their own prior knowledge. The reader's task is almost as complex as that of the writer, since meaning is really constructed by the reader and does not fully reside in the text. Thus reading requires creativity just as well as writing.

According to Grice (1957) a distinction should be made between a sentence as a linguistic phenomenon and its utterance in a given context by the speaker. He suggested that we should distinguish "sentence meaning", i.e., the meaning that a sentence may have in any context, from the "speaker's meaning", i.e., the meaning that the speaker intends to convey by means of that particular sentence.

Generally speaking, the "sentence meaning" is the conventional way of expressing also the "speaker's meaning". In interpreting the speaker's meaning the hearer may, however, have to draw upon both "conversational implicatures" and "conventional implicatures" (Grice 1975, Karttunen and Peters 1975, quoted in Olson and Hildyard 1981). Conversational implicatures are based on the general Cooperative Principle: "Make your conversational contribution such as is requir[illegible], at the stage at which it occurs, by the accepted purpose of direction of the talk exchange in which you are engaged" (Grice 1975: 45). If the speakers are cooperative, they observe the four maxims of Quantity, Quality, Relation and Manner by trying to make their contributions informative, truthful, relevant and clear, respectively. Thus, if something undesirable happens and one fo the speakers says "That's marvellous" with a certain intonation,

the listener may infer that the speaker is violating the maxim of truthfulness and is being sarcastic. The speaker's meaning is, in fact, diametrically opposite to the sentence meaning.

According to Karttunen and Peters (1975: 2) conventional implicatures are equivalent to the pragmatic presuppositions implied by the choice of particular words themselves. Thus, if the speaker says "John managed to find a job", he "... commits himself to the view that it isn't easy to find a job, or at least not easy for John ... (The truth of the sentence) depends solely on whether John actually found a job, the rest is a conventional implicatum to which the speaker commits himself by using the word manage."

Searle (1979) has recently pointed out that sentences have meanings in context. He maintains that "... even in literal utterances, where speaker's meaning coincides with sentence meaning, the speaker must contribute more to the literal utterance than just the semantic content of the sentence, because that semantic content only determines a set of truth conditions relative to a set of assumptions made by the speaker, and if communication is to be successful, his assumptions must be shared by the hearer" (Searle 1979; 95-96). Similarly Bierwisch (1979, quoted in Olson and Hildyard 1981) assumes that the semantic structure of a sentence and the context together determine the meaning of an utterance. An utterance meaning is a certain state of affairs belonging to a "possible world". A possible world may be an actual spatial or temporal context or it may be a hypothetical, stipulated or even counter-factual world. Olson and Hildyard (1981) summarize the above views in the following formula for the determination of meaning:

TABLE 2. Determination of Meaning (after Olson and Hildyard 1981)

Semantic Structure (Linguistic/Sentence Meaning. Sense) S	Possible World (Common Ground/Context) PW	Type of Speaker's Meaning M
Semantic Structure	Knowledge of the World	Intended Meaning
or	or	or
Linguistic Meaning	Knowledge of Context	Speaker's Meaning
or	or	or
Sentence Meaning	Possible World	Utterance Meaning
or		or
Sense		Reference

According to Olson and Hildyard (1981: 15) literal meaning does not correspond to linguistic/sentence meaning "... but, rather, to an utterance spoken by a particular individual in a particular context on a particular occasion in such a way as to determine a set of truth conditions." Thus literal meaning is assumed to be one form of speaker's meaning. Other forms of speaker's meaning are termed casual meaning, indirect speech act, and metaphorical meaning. The type of speaker's meaning depends on the relationship between sentence meaning and the possible world as described in Table 3.

TABLE 3. Varieties of Speaker's Meaning (after Olson and Hildyard 1981)

Semantic Structure (Linguistic/Sentence Meaning, Sense) S	Possible World (Common Ground/ Context) PW	Type of Speaker's Meaning M
Modifiable	Invariant	Casual meaning
Invariant	Modifiable	Literal Meaning
Invariant	Invariant	Indirect Speech Act
Invariant	Invariant	Metaphorical Meaning

In the case of casual meaning, the possible world (context) is considered invariant (given). If the presuppositions of linguistic meaning do not correspond to the structure of the possible world, fit is achieved by transforming S into S'. Casual meaning is most common in ordinary conversational interactivity and in child language. Olson and Hildyard cite a Piagetian experiment where children are shown three ducks and two rabbits and asked: "Are there more ducks or animals?" Young children typically answer "more ducks". It is assumed that they gloss the question to a more typical form "Are there more ducks or rabbits?" Olson and Hildyard (1981: 19) suggest that in casual speech "the weight of interpretation falls on PW in determining the meaning M, thereby making allowance for some degree of vagueness and impression in S: any wording will do - a wink is as good as a nod - if PW is well established".

Literal meaning occurs when S is considered invariant in determining meaning. "The very words" of S must be preserved for a sufficient length of time for the computation of literal meaning. The weight of meaning falls on the semantic structure S. The context can be modified by adding new information or an entirely new possible world may be stipulated by "the very words", i.e., by what the sentence actually says and means. Olson and Hildyard suggest that young children only gradually

become capable of computing literal meaning. They also argue that there is a natural link between literal meaning and written language, since writing is an ideal way of preserving S and also for constructing new possible worlds.

Indirect speech act and metaphorical meaning emerge when the semantic structure and the context are mutually incompatible but neither is made subject to modification. It follows that speaker's meaning M is transformed into a marked form M'. Thus the sentence "John is a chicken" is interpreted to have the metaphorical meaning "John is a coward" and "I hear speaking" uttered by a teacher in a class is understood to be an indirect request for silence.

Searle (1979) suggests that literal meaning is the unmarked case while indirect speech acts and metaphors are marked cases. Olson and Hildyard (1981) take casual speech as the unmarked case and treat literal, indirect and metaphorical speech as marked cases. In developmental perspective the latter view is probably more justified.

5.2.3. Interpretive Communities

There is a strand in literary criticism that has also challenged the traditional influential argument in favor of the stability and self-sufficiency of the text. Rosenblatt (1938: 35) suggests that the reader is creative as well as the author. "The same text will have a very different meaning and value to us at different times and under different circumstances ... Without an understanding of the reader, one cannot predict what particular text may be significant to him, or what may be the special quality of his experience". More recently Fish (1980) has argued that there is no direct relationship between the meaning of a sentence (paragraph, novel, poem) and what its words mean. Fish gives an interesting account how he gradually gave up the notion of the "integrity of the text" and developed the notion of interpretive communities. In Fish's words:

> Indeed, it is interpretive communities, rather than either the text or the reader, that produce meanings and are responsible for the emergence of formal features. Interpretive communities are made up of those who share interpretive strategies not for reading but for writing texts, for constituting their properties. In other words these strategies exist prior to the act of reading and therefore determine the shape of what is read rather than, as is usually assumed, the other way around. (1980: 14)

Fish's notion of interpretive communities seems to be a useful way of avoiding extreme subjectivism and relativism in the construction of meaning. According to Fish:

> An interpretive community is not objective because as a bundle of interests, of particular purposes and goals, its perspective is interested rather than neutral; but by the same reasoning, the meanings and texts produced by an interpretive community are not subjective because they do not proceed from an isolated individual but from a public and conventional point of view. (1980: 14)

All of this also leads to a new understanding of the role of interpretation:

> Whereas I had once agreed with my predecessors on the need to control interpretation lest it overwhelm and obscrure texts, facts, authors, and intentions, I now believe that interpretation is the source of texts, authors, and intentions. Or to put it another way, the entities that were once seen as competing for the right to constrain interpretation (text, reader, author) are now all seen to be the products of interpretation. A polemic that was mounted in the name of the reader and against the text had ended by subsuming of both the text and reader under a greater category of interpretation. (Fish 1980: 16-17)

It seems to the present author that the concept of the interpretative communities is a fruitful concept, which complements in a useful way the exploration of the problem of meaning in linguistic philosophy, cognitive psychology and cognitive science, which tend to emphasize the mental functioning of individuals. Cole (quoted in Norman 1981) urges that proper consideration should be given to the role of environment in cognitive functioning.

> What culturally organized knowledge does for us is to carry a lot of information for us. An extreme way to talk about it is that the information is in the environment, not in the head, so a lot of the processing that experiments require to be done in the head can be, and is, short-circuited in real life. ... One issue is how to describe cognition as an interaction between head and world where some of the thought power resides in each locus. (Norman 1981: 291)

The notion of interpretive communities may be taken as one possible example of the construction and interpretation of meaning by individuals within a social and cultural context.

5.3. Parameters of Written Communication

Rhetorical models that relate the writer to the reader have been presented by Brewer (1980), Britton et al (1975), Chatman (1978), D'Angelo (1975), Kinneavy (1971), Moffett (1968) and reviewed by Kinneavy (1980). One of the most interesting developments in linguistics and educational linguistics is the increasing emphasis on seeing speaking and writing as production of discourse. Discourse can be defined as any form of verbal interactivity where the meaning of linguistic elements is defined in the context in which they occur (Widdowson 1979). Discourse is accordingly language-in-use (O'Keefe 1981).

Most of the authors cited above agree that models of rhetoric or discourse should take account of the functions (aims, purposes) of language, the modes of discourse, and of the kinds of audiences one addresses. D'Angelo's system comprises the discourse modes of expressive, persuasive, literary and referential. Kinneavy distinguishes between narration, description, classification and evaluation; Brewer's discourse structure includes descriptive, narrative, expository and poetic; and Moffett defines the discourse forms as drama (what is happening), narrative (what happened), exposition (generalization of what happens) and argumentation (what may happen).

Britton et al emphasize the functions of language and distinguish the functions of expressive, poetic and transactional (with subdivisions into informative and conative); Kinneavy refers to referential, persuasive, literary and expressive aims of discourse; and Brewer talks about the informative, entertaining, persuasive, and literary-aesthetic discourse force.

In terms of audience, Moffett distinguishes the categories of interior, conversation, correspondence and public as the audience moves more and more from "I" to impersonal "you". Kinneavy's categories are monologual, small group, large group, mass. Britton et al, who are mainly concerned with school writing, propose the categories of self, teacher, wider audience, unknown audience.

In trying to apply the above-mentioned general models of discourse for the purpose of assessing students' ability to write compositions, it soon became evident that they are in many ways too general to provide sufficient guidance in such a work. Further work is needed to make the

domain of writing more specific. The following is the author's attempt at a taxonomic classification of parameters assumed to play an important role in any writing situation and to constrain the writing process.

TABLE 4. Parameters of Writing Situation

I. Writer-Audience Relationship

A. Identity of Writer (W) and Audience (A)

1. W is identical with A (intrapersonal)
2. W is not identical with A (interpersonal)

B. Role of Writer

1. Writes as self
2. Assumes some role other than self

C. If A2, what is the social status relationship between W and A?

1. W higher than A
2. W equal to A
3. W lower than A
4. unknown

D. If A2, what is the size and specificity of Audience?

1. One specific person
2. Small specific group
3. Large specific audience
4. Large unspecific audience

E. If A2, what is the degree of publicity of the communication?

1. Private/personal
2. Semi-public/semi-official
3. Public/official

F. If A2, what is the attitude of W to A and vice versa?

1. W to A positive/A to W positive
2. W to A positive/A to W neutral
3. W to A positive/A to W negative
4. W to A neutral/A to W positive
5. W to A neutral/A to W neutral
6. W to A neutral/A to W negative
7. W to A negative/A to W positive
8. W to A negative/A to W neutral
9. W to A negative/A to W negative

II. Feedback

G. Expectation of external feedback

1. Not expected
2. Personal feedback expected
3. Public feedback expected

III. Purpose (Function)

H. Dominant purpose (function)

1. Documentative (produce a record)
2. Expressive (convey attitudes, emotions, mood, etc.)
3. Informative (convey information)
4. Persuasive/directive (convey intention)
5. Reflective (produce a structured cognitive account)
6. Artistic (produce an artistic structure)

IV. Content (Topic)

I. Content identity

1. Units, entities, classes (descriptive)

a. W (about me)
b. A (about them, you)
c. W and A (about us)
d. Other persons (he, she, they)
e. Things, elements, institutions (it)

2. Events, actions, processes (narrative it)

3. Relations, systems, notions, ideas, beliefs, norms, etc. (exposition, argumentative)

J. Content accessibility

1. Familiar content easily accessible from memory to both W and A (W and A both experts)
2. Familiar content easily accessible to W but not to A (W expert, A novice)
3. Content clues available in writing situation (W and A both novices)
4. Content clues available in writing situation (W novice, A expert)
5. Content less familiar and not easily accessible (W novice, A expert)
6. Content less familiar and not easily accessible (W and A both novices)

K. Attitude to content

1. W positive, A positive
2. W positive, A neutral
3. W positive, A negative
4. W neutral, A positive
5. W neutral, A neutral
6. W neutral, A negative
7. W negative, A positive
8. W negative, A neutral
9. W negative, A negative

L. Interest in content

1. W high, A high
2. W high, A medium
3. W high, A low
4. W medium, A high
5. W medium, A medium
6. W medium, A low
7. W low, A high
8. W low, A medium
9. W low, A low

V. Response

M. Response complexity

1. One or a few words (e.g., fill in)
2. One or a few sentences (e.g., short answer)
3. One paragraph
4. Unified composition of several paragraphs

N. Procedural accessibility

1. Procedures and strategies familiar and easily accessible (high degree of automaticity)
2. Procedural and strategic cues are available in the writing situation
3. Procedures and strategies less familiar and not easily accessible

VI. Product

O. Format specifications

1. Format specifications are familiar (standardized format)
2. Format specifications are available in writing situation
3. Format specifications are not familiar

P. Familiarity with criteria

1. Product criteria are well-known
2. Product criteria are specified in writing situation
3. Product criteria are not well-known

The parameters of the writing situation can be used to characterize different writing tasks. Thus, for instance, a writing situation consisting of A1, G1, H1, I1e, J4, K1, L1, M2, N1, O1, and P1 would characterize written notes made for personal use. The parameters can be used in the same way to characterize a great variety of writing tasks, e.g., writing a letter of application, writing a personal letter to a friend, writing a complaint, and writing a non-guided expository essay in school. The parameters can be, for instance, used to show how a request or suggestion can become an order depending on the status of the communicants. The

taxonomy could perhaps be modified by adding a "not relevant" category to some of the parameters. The parameters can also be used as a tentative guide in assessing the difficulty of writing tasks.

Another possible use of the taxonomy is for constructing general instructions for writing assignments, for instance:

Task description:
Student will write a composition describing a problem and his/her opinion of how the problem may be solved.

Content cues:
Cues to help problem identification are to be provided. These cues may include the general content, e.g., a problem between people, or the need for facilities. Students will be allowed to identify and describe a problem of their own choice. Specific examples may also be provided to help students to find a topic to write about.

Audience:
The audience is someone or a group of higher status than the student (to elicit more formal writing) yet someone who is not expert in the problem area (to elicit full description and credible solutions from the student). The potential use of the student's paper may also be described, e.g. to be read by a committee, printed in school paper or local paper.

Structural cues:
Students are instructed to be sure to describe fully and concretely the problem and to propose a specific solution, including the steps which should be taken.

Assessment criteria:
Criteria for judging the quality of the composition are provided to the students and they are asked to review their writing in terms of the criteria.

The general task specification given in the above can be transformed into a number of more specific direct instructions for the students to suit each particular set of circumstances.

6. WRITING AS A COGNITIVE PROCESS

6.1. General Models of Writing

Essay writing is a complex cognitive skill, which requires appropriate cognitive strategies, intellectual skills, verbal information as well as appropriate motivation (cf. Gagné and Briggs 1979). In essay writing the student generates a text by applying certain rules and conventions and by drawing on applicable information. In the Bloom taxonomy (Bloom 1965) composition writing would fall into the category of "synthesis" being a "production of unique communication" in which the writer attempts to convey ideas, feelings and/or experience to others.

In writing a composition the student carries out a variety of cognitive processing. These cognitive processes include executive control processes, which select and activate needed cognitive strategies. These, in turn, modify all other cognitive processes, including retrieval and search for information from the long-term memory to the working memory as well as response generation, which selects and organises performance.

The above remarks can be summarized as follows: Writing is a multi-level, interactive and goal-directed process of constructing, encoding and communicating meaning by means of a conventional system of visible marks.

Just as reading comprehension is now often considered a non-hierarchical process of both top-down (conceptually-driven, knowledge-based) and bottom-up (data-drive, text-based) strategies (e.g. Spiro 1980), writing cannot be adequately described by fixed-order stage models (Flower and Hayes 1977, Gould 1980). Writing processes are interactive. Composing is iterative and recursive (Gould 1980).

Hayes and Flower (1980) have presented a model which purports to describe the processes used by competent writers when writing expository compositions. The writing situation is viewed as consisting of three parts: long term memory (LTM), task environment (TE), and writing processes (figure 1). The emphasis on the role of the task environment comes close to viewpoints expressed earlier, for instance, by Gagné (1962) and by Resnick and Glaser (1976).

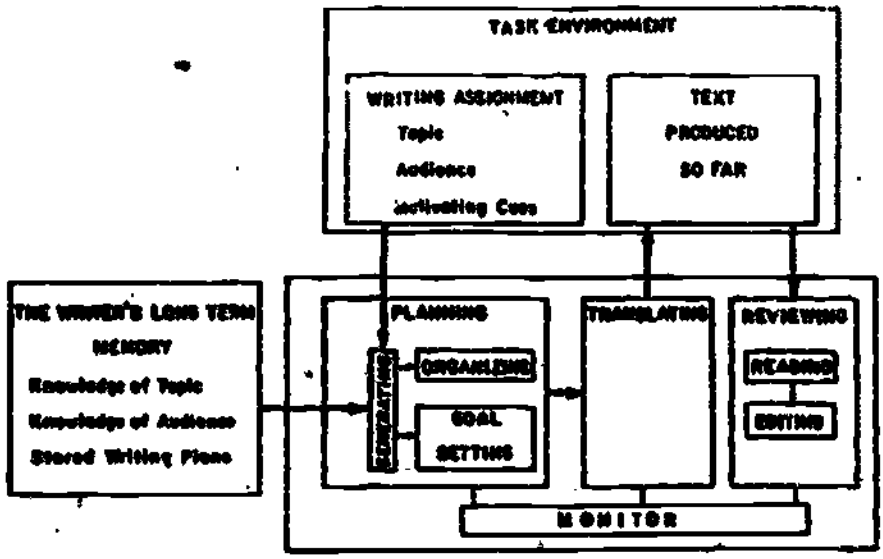


FIGURE 1. Structure of a Model of Competent Expository Writing (Hayes and Flower 1980)

According to Hayes and Flower (1980) the writing process comprises three major processes: planning, translating, and reviewing. Each of these have sub-processes or sub-routines.

In planning, the generating process produces notes from the LTM, which are organized into a writing plan or outline. The writer also has criteria or goals to guide writing (e.g., I need a transition here). These goals resemble closely what Flavell (1976) calls metacognition.

In translating, material retrieved from LTM is transformed into acceptable language.

In reviewing, the writer gets feedback by reading the text produced and edits the text by making changes judged to be desirable for improving the product. Editing is assumed to be automatic whereas reviewing is conscious and deliberate.

The processes of planning, translating, and reviewing are regulated by the monitor (cf. Krashen's Monitor Model in second language acquisition), which in cognitive psychology is often called the "executive".

Bridwell (1981) has suggested a psycholinguistic model of writing which combines cognitive behaviors with linguistic structure in the

production of sentences. She maintains that it is useful to stydy writing as derivative of normal speaking processes. As in speech, sentences are assumed to be planned via set syntactic frames. Typically, clauses are planned and lexical items are fit into the frames. Long and complicated sentences are recoded semantically, which means that the syntax of the sentences may be disrupted. Thus when a potential perceptual clause (basic unit held in short-term memory containing the sentence relations required by the verb: subject, verb, object, complement) is recoded semantically, the writer may have some difficulty in completing the sentence, because important grammatical information from the prior clause has, in fact, faded. The writer then produces the subsequent clause utilizing the semantic information and whatever syntactic information he can remember. Similar overloading in rereading one's text may explain why writers often do not notice their grammatical errors.

According to Daiute (1981) it is important to account for the effe of memory on sentence production because writing involves many activities that occur in the short-term memory. During composing "the writer is 1) generating ideas, 2) forming propositions, 3) accessing lexical items, 4) planning clauses and sentences, 5) translating from semantic and phonological representations to orthographic ones, and 6) planning subsequent units" (Daiute 1981: 9).

Collins and Gentner (1980) state that regarding writing as a process makes it possible to specify a number of sub-processes and their interrelationships. Their model of writing sees writing as a process of producing and editing text under constraints related to the a) structure, b) content, and c) purpose of writing.

At the highest level, the process of writing can be divided into a) the process of idea production and into b) producing text embodying t ose ideas. Collins and Gentner suggest that it is possible to teach writers to separate the sub-processes of the two high-level processes, which enables writers to use effective generation strategies for each sub-process, helps them to ignore other constraints while working on any given sub-process.

Collins and Gentner distinguish two sub-processes in idea production: 1) capturing ideas, and 2) manipulating ideas. These sub-processes usually merge in writing, but it is possible to keep them separate and to apply systematic generation and editing strategies for each of them.

This kind of separation is most useful in the beginning stages of learning how to write.

According to Collins and Gentner, the processes of text production are assumed to be largely similar to those of idea generation. The task is to impose text structures on the ideas produced and to observe the relevant structural constraints operating at the different levels of text (text, paragraph, sentence and word).

Separating the various steps in producing a text is claimed by Collins and Gentner to help the writer at least in two ways: 1) the number of constraints that have to be satisfied at one time is reduced, and thus 2) at the same time it increases the likelihood of satisfying any particular constraint successfully.

Collins and Gentner (1980: 66) suggest that a useful step-by-step procedure might be as follows:

1. Create a detailed outline of the text structure.
2. Apply text-level editing operators.
3. Create a semitext with all the ideas included in paragraphs, but not in finished sentences.
4. Apply paragraph-level editing operators.
5. Create finished sentence-level text.
6. Apply sentence-level editing operators.

Step-by-step procedure is assumed to help the writer because much of the editing can be done, in fact, before the text is produced. It allows the writer to concentrate on the generation and editing of one aspect of the text at a time. Collins and Gentner recognize that such an approach might, however, have the disadvantage of making the process of writing too inflexible for subsequent revisions and modifications.

Bereiter (1980) has suggested that it would be useful to attempt to develop a complete model of the writing process even if it will necessarily have to be a sketch at this point of research. According to Bereiter, there is a high-level executive scheme directing the whole writing operation in keeping with certain purposes and constraints. At the next lower level are genre schemes. A genre scheme consists of knowledge and skills in producing a certain kind of writing. Bereiter illustrates the genre scheme by means of a letter of introduction, which includes the following:

1. A limited set of fairly specific intentions: e.g., to present the candidate in the best possible light, to do the candidate no harm but to avoid explicit commitment, etc.
2. A set of strategies or 'game plans' appropriate to carrying out these intentions. A game plan will in turn include the following.
3. Categories of content needed to support the plan. These may be in the nature of slots to be filled: "The candidate has shown initiative by _____ and _____."
4. Search procedures for discovering the needed content. These may be overt procedures such as consulting certain records or calling on informants, or they may be internal memory-search strategies.
5. Tuning instructions for language output. For instance, a typical game plan might call for expressing the recommendation in language that is standard written English, fairly formal, dense, authoritative, and vague. But another strategy might call for quite different language. (Bereiter 1980: 78)

Below the genre scheme is a content processor, which uses semantic information from memory and organizes it in accordance with the directions from the genre scheme. Its output is a unit of content--not yet verbally expressed--which Bereiter calls the gist. The gist goes to the language processor, which in turn transforms it into explicit language in accordance with the tuning instructions from the genre scheme. Bereiter assumes that the content and language processors are all-purpose mechanisms. They are not specialized for genres nor even to writing (as opposed to speaking). What they do that is unique to writing depends, therefore, on directions from writing genre schemes.

Bereiter recognizes that such a simple step-at-a-time process will be enormously complicated by continuous comparisons between instructions and outputs, which may result in changes in processing or in higher-level decisions or both.

Johnson-Laird (1981) has stressed the importance of the concept of mental models in cognitive science. A model represents some state of affairs. Its structure is to reflect the relevant aspects of the corresponding state of affairs in the world. Models may underlie thought processes without emerging into consciousness in the form of images or propositional representation. Scardamalia, Bereiter and Goelman (1982) suggest in the same vein that a mental representation of text is of crucial importance in composing. They suggest that there are several mental representations at different levels of abstraction and integration. These are from lowest to highest: (1) graphical representation (visible text, punctuation, spelling etc), (2) verbatin representation (exact

wording), (3) sentence plan (meaning plus major syntactical decisions), (4) gist unit (purely semantic representation of main ideas of points), (5) text segment plan (major subdivisions of a text), and (6) whole text plan.

The six representations are not assumed to be automatically formed or stored, ready for immediate recall. In line with a commonly held view in cognitive science, it is assumed that the representations have to be constructed and reconstructed every time they are needed. Construction is mainly needed in going from lower to higher levels of text representation. The lower the level of representation being attended to, the greater the amount of construction effort required to reach a given higher level. Mental representations may vary from vague and fragmentary to sharply delineated and detailed. This may depend on familiarity with genre schemas, frequency of earlier reconstructive effort, and the needs of the situation.

Among younger children the two highest forms of mental representation of text are assumed to be collapsed, ie. the whole text usually consists of only one major text segment (reminiscent of a conversational turn). In dictation children typically operate only or mainly at the gist unit and sentence plan levels. This results in easy and rapid composing. In slow dictation the slower pace gives an opportunity to verbatim and sentence plan level representation of the text. In writing a graphical level is added. This may cause memory for meaning and structure to weaken, so that there is a greater need to reconstruct gists and plans. The result of this is shorter compositions. Production cueing has, however, proved effective in helping children to produce longer compositions, which are usually better in quality than dictated texts produced after prompting. The greater amount of reconstructive effort at higher levels of text representation needed in writing may thus tend to limit the richness of content but improve coherence. Accordingly, the main merit of writing may lie in the fact that it fosters the active reconstruction of higher-level representations of text in the interest of achieving coherence.

Augustine (1981) has recently suggested a fairly elaborate model of composing, which includes the following assumptions:

1. The writer addresses a subject, X, to be composed.
2. He forms a tentative perspective toward X by recalling what he knows about X from his long-term memory and by judging his experience with X and with the task of writing in general.
3. He forms Presupposition 1: the meaning of X to the addresser.
4. He projects a tentative perspective toward X by the addressee by reconstructing images or notions of general and particular contexts (frames, or places, intellectual schemata, works of art, etc.) in which X or something associated with X was discussed.
5. He forms Presupposition 2: the meaning of X to the addressee.
6. He chooses a "performative stance", thereby choosing a general or particular mode of form for his discourse which he stores in his medium-term memory to be adjusted, adopted, or abandoned as he proceeds.
7. He adjusts the relationships of the two presuppositions and the performative stance. If there is little or no "match", he begins all over again. If there is a possible match of meanings and form, he will then adopt a style or code of presentation in order to effect and affect the combination of meanings and form.
8. Now he fixes his "intention". Out of all the possible performative verbs, he judges one to be the most appropriate to his composition of materials thus far ("I assert ...," or "I advise ...," etc.). He scans his long-term memory for information on X and his medium-term memory for his choice of form and style to qualify his intention.
9. He then fixes a frame for his intention about the meaning of X so that it may adjust to the addressee's "response", based on Presupposition 2. He compares intention, frame, and response for a match and proceeds if there is enough of a conceptual or contextual overlap. If not, he begins the process over again at the beginning or at some intermediate and appropriate step.
10. If the possible match between intention and frame seems workable, he scans his medium-term memory for his qualified choices of style and form and adjusts intention or frame or both for coherency.
11. He encodes, finally, not just data or subject matter, but the rhetorical materials of discourse: what is known and projected about the perspectives of adresser and addressee along with what is known about conversational rules in the absence of immediate responses.
12. He judges the appropriateness of the composition of materials: subject, meanings, intentions(s), response(s), form, and style. If the potential discourse fails the test of appropriateness, he begins again at some sequence or strategy judged to be far back enough in the process to correct the problem. If there is a possible match of all choices in the process thus far, he proceeds to the task of writing. (Augustine 1981: 230)

Augustine (1981) illustrates her model of composing with the following schematic representation:

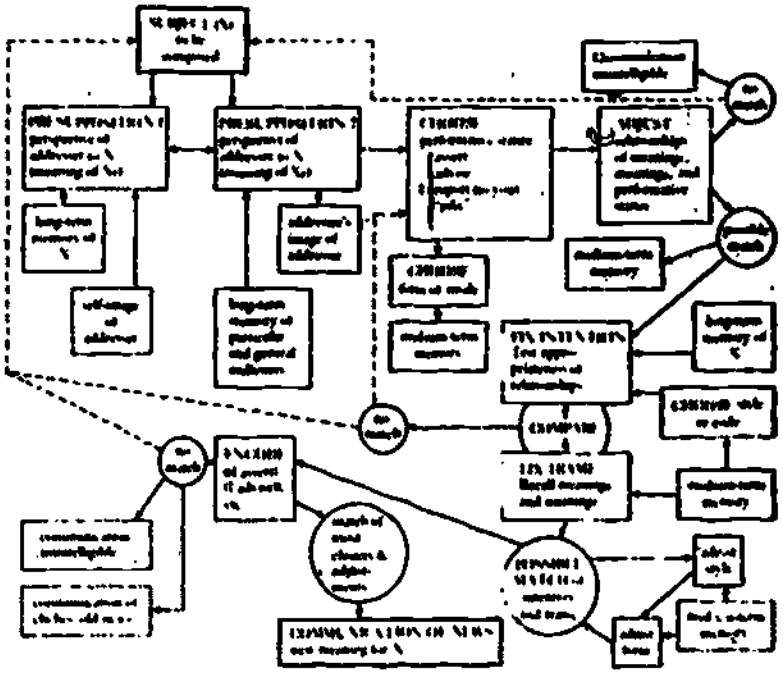


FIGURE 2. Model of the Composing Process (Augustine 1981)

Augustine points out that the processes are recursive and, therefore, the model could be made even more complex to do better justice to the complex process of composing. The writer may always do some rewriting and go back a few steps. Thus the writer keeps inventing until he leaves the text.

6.2. Model of Reviewing Processes in Writing

Bereiter and Scardamalia (1981a) have proposed a model which deals with the evaluative, diagnostic and editing capabilities of young children. They call this the CRO process model. The acronym stands for "comparing, diagnosing, and operating." The model is illustrated in Figure 3.

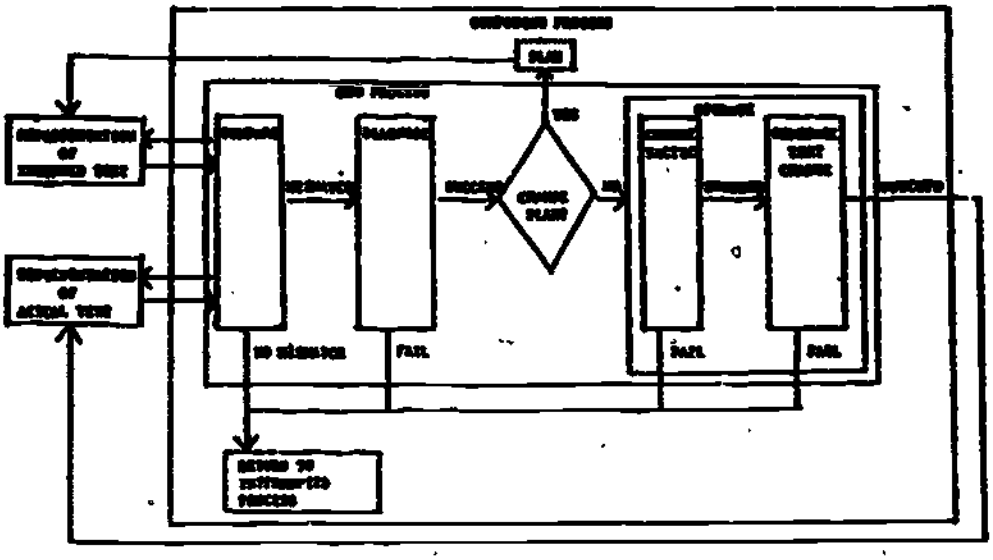


FIGURE 3. Model of the CDO (COMPARE, DIAGNOSE, OPERATE) Process in Composition (Bereiter and Scardamalia 1981a)

During composing, the CSO process starts when the writer perceives a mismatch between the representation of the text actually produced up to that point of time and the representation of the intended text. The problem is diagnosed and some tactic is chosen to operate on the text to improve it. Children's ability to carry out the CRO process is described in Chapter below.

6.3. Model of Knowledge-Telling Strategy in Written Composition

Bereiter and Scardamalia (1980) have also proposed a model of Knowledge-Telling Strategy. It illustrates a stage in writing development where composing is characterized by a lack of a clear goal and lack of testing of content against the goals. The only goal is to write what the person knows about a certain topic. This can be done by selecting key descriptors from the assignment and by choosing a relevant discourse schema (Figure 4).

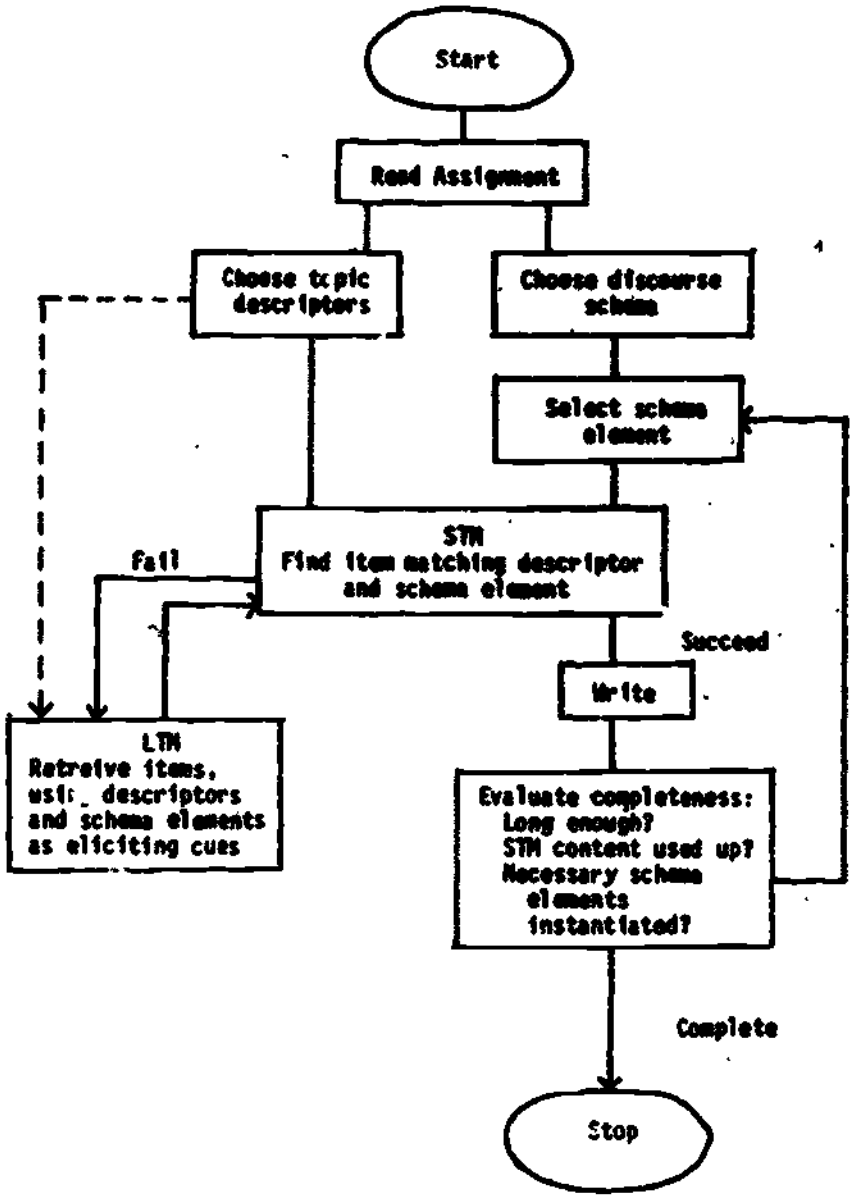


FIGURE 4. A Model of the Knowledge-Telling Strategy as Applied in Expository Writing (Bereiter and Scardamalia 1980)

Bereiter and Scardamalia suggest that the model describes an immature stage in writing development. Yet, they recognize that it is adequate for many school-based writings (cf. also Applebee 1981) and has some uses in the out-of-school context as well. Bereiter and Scardamalia maintain, however, that in spite of the fact that it "works" so well in school, it is an inadequate strategy in the long run. What it leads to is "inert knowledge". No new links are created between old and new knowledge elements. In lack of the need for inventive and problem-solving strategies, no manipulation of information is really called for. Bereiter and Scardamalia suggest that the Knowledge-Telling Strategy should be limited to a minimum, since it does not foster "intentional cognition" which they (Bereiter and Scardamalia 1981b) define as the "voluntary direction of mental effort". Students who are capable of directing their own mental activities are not merely passive "participant learners" but autonomous "intentional learners" who can construct meaning and perceive meaningfulness in learning on their own. For participant learners meaning and meaningfulness of learning has to be prepackaged by the school system. This means, however, that participant learners have not been able to take charge of their own minds.

7. DEVELOPMENT OF WRITING

7.1. Stages in Writing Development

It will have emerged from the foregoing discussion that the number of things that must be managed simultaneously in writing is very great. This obviously means that the information processing load in writing is considerable. Bereiter (1980) suggests that writers can carry out such a great variety of processes simultaneously only if (1) many parts of the writing process are automatized so that little conscious attention is needed for carrying them out, and 2) if there is a highly skilled time-sharing, so that attention can range over a number of on-going tasks without serious lapses or interference. A young writer does not possess such complex processing skills and he uses mainly lower-order schemes, which are not sufficiently automatized to allow higher-order schemes to operate.

Bereiter (1980) makes a distinction between "gradualist" and "structuralist" conception of writing. The gradualist conception holds that higher-order skills can be used when lower-order skills are sufficiently automatized. The structuralist conception holds that the writing process, however it is carried out, has organization and therefore the incorporation of a new skill requires reorganization of the process. Thus there would not be only gradual elaborations and refinement of schemes but more discrete stages of organization.

By a "stage" Bereiter (1980) means simply "a form of organization" that is preceded or followed by other forms. He wishes to avoid too close an association with the Piagetian idea of developmental stages. There seems, however, to be a "natural" though not necessarily universal or obligatory order.

Mature writing is characterized by six systems of knowledge or skills according to Bereiter (1980: 82):

1. fluency in producing written language,
2. fluency in generating ideas,
3. mastery of writing conventions,
4. social cognition, which is manifested in the ability to take the reader into account,
5. literary appreciation and discrimination, and
6. reflective thought.

Children cannot integrate all these skills at once. Skills are integrated in a hierarchical way as shown in Figure 5.

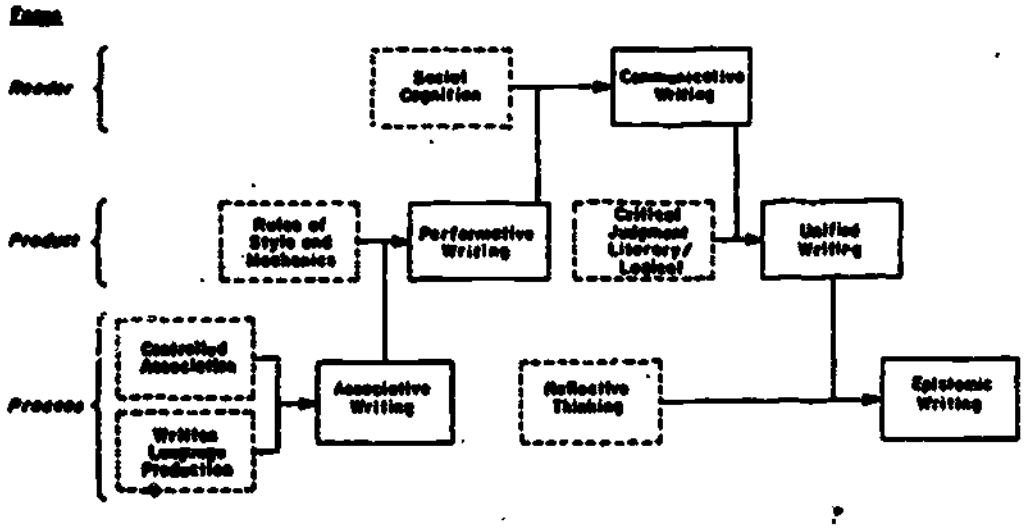


FIGURE 5. A Model of Skill Systems Integration in Writing Development (Bereiter 1980)

1. Associative writing. This is the kind of writing in which ideational fluency is coupled with skills of written language. The writer puts on paper whatever comes to mind. Uninteresting topics often tend to produce associative writing. Associative writing resembles transcribed speech, and is close to what Britton (Britton et al 1975) calls expressive writing.

2. Performative writing. In this kind of writing associative writing is integrated with knowledge and observance of stylistic conventions and mechanics.

3. Communicative writing. The integration of performative writing with social cognition results in communicative writing, in which the writer is attempting to have a certain effect on the reader. Britton (Britton et al. 1975) calls this type of writing transactional.

4. Unified writing. Characteristic of this type of writing is that it takes account of the writer as the reader of his own product. This implies that there is a feedback loop established. The writer may wish

to be satisfied with the piece of writing as well as have it be appealing to the other readers. The written product matters as such, it is not only an instrument skill. Unified writing has similarities with Britton's poetic writing.

5. Epistemic writing. Because writing can be stored, reviewed and revised, it makes it possible to produce extended and complex patterns of thought, which is very difficult without writing (cf. Olson 1976, 1977). Epistemic writing involves reflective thinking integrated with unified writing skills. Writing is no longer only a product of thought but an integral part of thought.

7.2. Development of Processes and Strategies in Writing

7.2.1. Research Methods

Bereiter and Scardamalia (1981c) have clearly shown that young schoolchildren have a much wider knowledge base than they typically demonstrate in a task such as written composition. Their conceptual capabilities (concepts, knowledge, etc.) are in advance of their functional capabilities. This led the authors to the idea that a technique called "procedural facilitation" might improve the utilization of the functional potential. This is a method whereby some aspect of the executive process is manipulated experimentally without giving any direct cues regarding content or form of writing. The latter is called "substantive facilitation" by Bereiter and Scardamalia.

7.2.2. Active Search for Content

Simple content-empty prompting (Go on. Tell us more about it!) and instructions to write as much as possible were shown by Bereiter and Scardamalia (1981c) to double or even triple the amount of writing. Thus the typical problem, especially in early composing, of having nothing to write about is not only a function of the child's knowledge store but also of getting access to and giving order to what they know. Bereiter

and Scardamalia take this to be an indication of inadequate search strategies. They have shown that simple strategies such as giving children sentence openers (I think; For example; The main point; One reason; A second reason; The reason; Besides; Not all; But; etc.) and asking them to write down a list of words they thought might be used in the composition helped children to double the length of their essays. Listing ideas did not, however, prove helpful for young children.

7.2.3. Shift from Local to Whole-Text Planning

Children do not typically plan what they are going to write. Expert writers, on the other hand, plan extensively before writing (Hayes and Flower 1980). Stallard (1974) has also shown that good student writers (12th grade) spend more time at prewriting activities than less proficient writers. Bereiter and Scardamalia (1981c) have shown that children's planning is local, i.e., limited more or less to the immediate context. They call this the "What next?" strategy of planning, which is characterized by a forward-looking, serial procedure. In studying whether children had a potential for whole-text planning, which involves both backward-looking and forward-looking analysis, they found this to be the case. Sentence openers did not prove helpful, however. When children were given composition endings, they were found to be able to engage in requisite means-end planning in building the composition towards the final outcome. Children also had some knowledge of various discourse structures (story, opinion essay, giving directions). When they were given some training in the use of various discourse elements (e.g., give a reason for an opinion, tell more about the reason, give an example) the quantity and variety of discourse elements in their compositions differed significantly from the compositions written by a control group. Thus it seems possible to improve children's planning of discourse "by helping them gain conscious access to rhetorical knowledge and by helping them develop executive procedures for using that knowledge as they compose" (Bereiter and Scardamalia 1981c: 51).

Burtis, Bereiter, Scardamalia and Tetroe (1982) studied the planning skills of children in grades 4, 6 and 8 (approximately aged 10, 12, and 14 respectively). All students were asked to write on the topic "Should children be able to choose the subjects they study in school?". They

were asked to plan aloud and encouraged to take notes as they planned. Before they started planning their attention was drawn to the following points: (1) they might think of the problems they might have in writing, (2) they might think what they remember about the topic, (3) they might think about their goal in writing, (4) they might anticipate how people reading their text might react to it, (5) they might think about how to put everything in good paragraphs. The experimental group also received five cards to remind them of these points.

There was a clear difference between the younger and older groups. For the younger students the notes they took represented the first draft of a composition, which is then only slightly transformed to produce a final draft. For the older students the notes represented ideas which are more clearly transformed when the final draft is composed. For the younger students the product of planning is already text. For the more mature students the product is really a plan. However, when younger children have been trained in the use of diagrams, frameworks, matrices, tables or similar techniques, it has been found that their tendency to lapse into continuous production of linear text in the planning stage can be checked.

There is a definite tendency among students aged 10 - 14 to engage predominantly in content planning (about 90 %) in spite of attempts to induce them to do also conceptual (rhetorical) planning. It is only in later adolescence that thinking appears to become sufficiently detached from immediate expression that a plan for a text is distinct from the actual text.

7.2.4. Development of Evaluation and Revision Skills

Murray (1978) claims that writing is rewriting. Stallard (1974) found that good 12th Grade writers tended to be slower, stop more often to read what they had written and do more revising. Several other studies (e.g. Emig 1971, Gould 1980) have shown that even high school and university students do not usually revise what they have written and do not like to do it. Murray (1978) suggests, however, that student unwillingness to revise may be an artifact of teaching rather than something inevitable. When children do revise their text, they usually limit it to small units of text (words, phrases, sentences).

It is often suggested that inexperienced writers are egocentric: they structure their writing in accordance with their memory and experience and pay little attention to the demands that such writing sets on the reader. Flower (1979) calls such writing "writer-based" as opposed to "reader-based" writing. Bereiter and Scardamalia (1981c: 57) suggest, however, that "the problem might not be that children lack ability to evaluate but that they don't have an internal feedback system that allows evaluation to become part of the writing process". When children were given a list of evaluative phrases (e.g. I'm getting away from the main point; This doesn't sound quite right; People may not understand what I mean here), their ratings of their sentences agreed quite well with those of an expert rater. Their diagnosis skills were not equally good, and the corrections they made after choosing a strategy from a set of directives (e.g. I'd better give an example; I'd better say more) were only slight improvements and did not improve the overall rated quality of the compositions. Children could recognize problems but had difficulties in diagnosing and overcoming them. Most changes were minor changes of words and phrases, and minor deletions or additions. Only six out of thirty instances were attempts to make major changes and two drastic reformulations were both obvious failures.

7.2.5. Information Processing Load in Writing

Information processing demand in text comprehension is often believed to be very great. Thus Beaugrande (1981) states that empirical evidence points to the view that discourse production routinely operates near the threshold of overloading. Bereiter and Scardamalia (1981d) have recently addressed that problem and find the claim overstated. After a number of carefully planned and executed studies they conclude that writer's performance can be disrupted because of information processing overload if there are several new demands to cope with. But it also appears that in their normal composition writing writers do not typically operate near the threshold of overload. This applies also to young writers who may not be particularly proficient in composing.

It is frequently suggested that the information processing capacity of normal adults is five chunks (Case, Kurland and Goldberg 1981, Simon 1974). This is the number of chunks a person can hold in working memory

while executing some attention demanding operation. On tasks where the adult capacity is four or five units, that of 7-year-olds is two units and of 9-year-olds three units (Case 1974, 1978).

Several studies since the 1960's have shown that one typical unit in language processing is a syntactic phrase, typically consisting of up to six words. Bereiter and Scardamalia (1981d) suggest that there is a larger unit in text production, which they call a "gist unit". It frequently corresponds to a sentence but may also be more or less. It is a unit of content, not a unit of language, however. In recall tasks, people usually produce gist units, not verbatim accounts. Beaugrande (1981) suggests that there is also a larger unit called "idea", in which both content and rhetorical strategy is condensed. Bereiter and Scardamalia (1981d) think that that may be part of the repertoire of expert writers but they have not found any evidence of its use by average student writers.

Bereiter and Scardamalia (1981d) hypothesize that the "minimal processing demand of sustained, locally coherent text composition is, for most genres, two chunks. This demand is critical at the point where a gist has been expressed and a next gist unit must be selected (Bereiter and Scardamalia 1981: 27). It is probably due to highly efficient discourse schemata for stories that enable even 5-6-year-old children (whose memory capacity is usually only one chunk) to produce sustained and coherent narratives.

Bereiter and Scardamalia (1981d) suggest that rather than taxing students' processing capacity, many writing assignments in school are not challenging enough. Thus perfunctory execution of writing tasks may be far below performance limits to sustain motivation for writing. Understanding teachers usually can perceive students' intentions as long as there is a minimum degree of local coherence in the text (Applebee 1981). Bereiter and Scardamalia (1981d) conclude that under normal conditions people should have spare information processing capacity to higher-level goals of text processing. So rather than needing guidance merely toward load-reducing strategies (as advocated by Flower and Hayes 1980), novice writers should be guided how they could put unused processing capacity to work.

7.2.1. Effect of Some Production Factors on Composing

Scardamalia, Bereiter and Goelman (1982 in print) have investigated performance factors (production factors) in writing ability. By production factors is meant processes such as recognizing, recalling, attending, evaluating and responding used in carrying out the decisions arrived at through the action of the executive metacomponents (related to plans, goals, strategies, knowledge of the task, etc). Production factors have an impact on the executive processes (and not only vice versa) since they compete for the same workspace in the short-term working memory.

It has been suggested that the following three production factors are important in writing: (1) short-term memory loss due to slow writing rate, (2) interference from the mechanical requirements of written language that compete for cognitive capacity with higher-level demands, and (3) disruption of the coordination of language production resulting from the lack of cueing stimuli typical of conversational interactivity.

Scardamalia, Bereiter and Goelman manipulated conditions of text production while keeping the task the same by having 4th and 6th graders (aged 10 and 12) produce three opinion essays through writing, normal dictation, and slow dictation corresponding to the rate of writing. This made it possible to study the effect of speed of production (normal vs. slow dictation, holding medium constant) and of the mechanical demands of writing (writing vs. slow dictation, holding production rate constant).

The results show that children produce most in normal dictation and least in writing. Three prompts by the experimenter to write more doubled the total quantity of words produced in normal dictation and writing, and the difference between slow dictation and writing disappeared. Thus the production factor of speed favours quantity, but it did not lead to corresponding advantage in rated quality of texts in terms of coherence. Material added after prompting did raise the judged quality of written composition but lowered that of dictated compositions.

Interference due to the mechanical demands of writing influences text production mainly through reducing the quantity of writing, which also limits the judged quality of written compositions. Prompting brought the quantity of written texts to the same level as that of slowly dictated texts. As mentioned in the above, the quality of the written texts was rated to be higher than that of dictated texts.

Lack of situational cueing proved an important factor affecting text production in school age. After cueing (prompting) was provided students in the written condition were able to continue a structurally coherent string of text units but not in dictation.

8. WRITING IN A CULTURAL CONTEXT

One of the major issues facing those who undertake to assess written composition is that of the criterion. What is good writing? In a classroom, a teacher may claim the right to be sole arbiter of that question: "Good writing is what I consider good". Once assessment moves beyond the classroom, however, differences in what people consider good begin to emerge. Local and even national groups of judges have been able to forge consensus through scoring systems, training sessions, and sample papers used for scaling essays. Yet these consensual criteria have come to be assailed by the increasing number of students whose native language is not the language of instruction, whose native culture is not that of the nation.

8.1. Whorfian Hypothesis: Linguistic Relativity and Determinism

The notion that different languages affect perception and thought in different ways has a long tradition. It is often referred to as the Whorfian Hypothesis or the Sapir-Whorf Hypothesis of Linguistic Relativism and Determinism. Sapir (1912: 69) stated that "human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression for their society ... We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation".

Whorf (1956) elaborated the ideas suggested by his teacher along the lines illustrated by the following set of quotations.

"... linguistic relativity principle, which means, in informal terms, that users of markedly different grammars are pointed by their grammars toward different types of observations and different evaluations of externally similar acts of observation, and hence are not equivalent as observers but must arrive at somewhat different views of the world." (Whorf 1956: 221)

"We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds -- and this means largely by the linguistic systems in our minds." (Whorf 1956: 213)

"I should be the last to pretend that there is anything so definite as a 'correlation' between culture and language, and especially between ethnological rubrics such as 'agricultural, hunting' etc., and the linguistic ones like 'inflected, synthetic, or isolating'." (Whorf 1956: 138)

"... language for all its kingly role, is in some sense a superficial embroidery upon deeper processes of consciousness, which are necessary before any communication, signaling, or symbolism whatsever can occur, and which also can, at a pinch, effect communication -- though not true agreement -- without language's and without symbolism's aid." (Whorf 1956: 239)

"... our psychic makeup is somehow adjusted to disregard whole realms of phenomena that are so all-pervasive as to be irrelevant to our daily lives and needs." (Whorf 1956: 210)

"And every language is a vast pattern-system, different from others, in which are culturally ordained the forms and categories by which the personality not only communicates, but also analyzes nature, notices or neglects types of relationship and phenomena, channels his reasoning, and builds the house of his consciousness." (Whorf 1956: 252)

"There is a yogic mastery in the power of language to remain independent of lower-psyche facts, to override them, now to point them up, now toss them out of the picture, to mold the nuances of words to its own rule, whether the psychic ring of the sounds fits or not." (Whorf 1956: 267)

Cryptotype: "It is a submerged, subtle, and elusive meaning, corresponding to no actual word, yet shown by linguistic analysis to be functionally important in the grammar." (Whorf 1956: 70)

Phenotype: "... the linguistic category with a clearly apparent class meaning and a formal mark or morpheme which accompanies it; i.e., the phenotype is the 'classical' morphological category." (Whorf 1956: 72)

"Grammatical research up to the present time has been concerned chiefly with the study of phenotypes. A certain type of grammar proceeds as if linguistic meaning dwelt wholly in them. The anthropologist should not be satisfied with such a grammar, any more than with an ethnology that described only positive behavior and ignored the patterning of taboos and avoidances." (Whorf 1956: 72)

8.2. Critique of Whorfian Hypothesis

Fishman (1977) notes that the Whorfian Hypothesis concerning the linguistic relativity of cognitive processes has been a major source for the emergence of sociolinguistics and has also led to the study of language universals (Greenberg 1963), ethnolinguistics (Garfinkel and Sachs 1970, Sachs, Schegloff and Jefferson 1974), and the study of language in transmitting social structure (Bernstein 1960, 1971; Halliday 1973, 1975, 1978). However, Fishman claims that what Whorf talks about is a remediable and transitory phenomenon and consequently only a partial reflection of the complex embeddedness of cognitive behavior. Fishman suggests that much of mankind is bi- or multilingual, that the Whorfian essentially one person -- one language model as far too limited, and in fact, many of us can escape from the shackles of one grammar and one lexicon. In everyday communication we are not concerned so much with the differing structures of two languages as with how to say the appropriate things in the particular context and situation. Thus, Fishman supports the notion of a two-way relationship between the organization of language and the organization of social behavior. Rosch (1977) claims that contrary to Whorfian Hypothesis even basic color terminology appears to be universal and the color space appears to be a prime example of the influence of underlying perception -- cognitive factors on linguistic categories and not vice versa.

Slobin (1979) suggests that at the lexical level the major issue of differences between languages (missing words, missing superordinate terms and different divisions of semantic domains) is the relative codability of concepts. He (1979: 179) makes a distinction between habitual and potential behavior. "While it may be true that, with some effort, one could say anything in any language, we tend to say things which can

be fairly conveniently encoded, and we frequently assimilate experience to the categories of the linguistic code. Thus a list of frequently-occurring words in a given language community will give you a good preliminary index of what is probably of special importance to the members of that group. Other things can, of course, be conveyed by more complex utterances, but this is not economical for important discriminations."

It has been suggested by Sapir, Whorf and others that at the grammatical level, especially, obligatory grammatical distinctions in a given language covertly predispose users of that language to pay attention to certain aspects of situations. Most linguists and psychologists at present would, however, probably concur with Hockett's (1954: 122) assessment according to which "languages differ not so much as to what CAN be said in them, but rather as to what is RELATIVELY EASY to say in them ... The impact of an inherited linguistic pattern on activities is, in general, LEAST important in the most practical contexts and most important in such 'purely verbal' goings-on as story-telling, religion, and philosophizing. As a result, some types of literature are extremely difficult to translate accurately, let alone appealingly."

8.3. Language and Culture

Grimshaw (1973) suggests that there are four principal perspectives on the causal relationships between culture and social structure on the one hand and language on the other: 1) language is the primary determinant or independent variable, 2) culture is the primary determinant or independent variable, 3) language and culture co-occur and co-determine each other, and 4) both language and culture are determined by a third factor (e.g., Weltanschauung, the world-view of the human mind). Grimshaw himself supports the third position, that of mutual embeddedness of language and culture.

Leach (1976: 32) points out that "our internal perception of the world is greatly influenced by the verbal categories which we use to describe it ... We use language to cut up the visual continuum into

meaningful objects and into persons filling distinguishable roles. But we also use language to tie the component elements together again, to put things and persons into relationship to one another." Leach (1976: 35-36) states further that the "process of carving up the external world into named categories and then arranging the categories to suit our social convenience depends upon the fact that, although our ability to alter the external environment is very limited, we have a virtually unrestricted capacity for playing games with the internalized version of the environment which we carry in our heads." While it is true that many of our concepts correspond to sense-images which are culturally determined responses to objects and events in the external world, Leach (1976: 37) points out that the reverse also obtains. "We may generate ideas in our heads (e.g. the opposition good/bad) and then give these abstractions manifest form by projecting them onto the external world, e.g., good/bad becomes white/black."

Leach (1976: 96) summarizes his argument by saying that "we must know a lot about the cultural context, the setting of the stage, before we can even begin to decode the message". Cultural customs are to be seen as parts of a complex, because "details, considered in isolation, are as meaningless as isolated letters of the alphabet" (Leach 1976: 1). According to Leach (1976: 2) "culture communicates; the complex interconnectedness of cultural events itself conveys information to those who participate in those events".

Triandis (1981) has observed that there has been no systematic way of describing cultural differences in social behavior in spite of frequent references to them. While there is variation within as well as between cultures, Triandis suggests that analogously to linguistic universals it is possible to extract dimensions of cultural variation which apply to all cultures. Different value configurations on the dimensions illustrate different cultural patterns.

Triandis proposes a framework consisting of twenty-five dimensions of cultural variation. He compares mainly Mediterranean culture (Greece, Latin America) to North European and North American (Scandinavia, Anglo-Saxons) cultural patterns. The twenty-five dimensions are to some extent interrelated and form clusters like second-order factors in factor analysis. The dimensions have been grouped into broad categories called "patterns of thought", "patterns of perception", "patterns of behavior", "values" and "social organization". The two second-order dimensions ("super-

dimensions") are called "complexity" and "modernity". Even these two covary to some extent and form a "super-superdimension" called "complex modernity". In this paper the focus will be on those dimensions that are considered most relevant from the point of view of thought patterns and spoken and written communication patterns.

Triandis uses the term "universalism" to refer to preference for broad ideologies or frameworks of thought with an emphasis on the deductive mode of thought. "Particularism" means an outlook where experiences are considered of limited generality and where emphasis is on the inductive mode of thought. Particularism, which is found particularly in Northern Europe and North America, is often associated with cultural pluralism and with pre- or post-industrialism. Universalism emphasizes principles and connections between events.

Triandis uses the term "associative" to describe communication that can be very indirect since everything that is connected with the topic is considered relevant and appropriate to take up. Everything is related to everything else in a diffuse way. "Abstractive" communication requires concentration on those elements that are strictly relevant to the particular situation. Concepts are also highly specific, not diffusely related.

Triandis suggests that the United States is mainly particularistic-abstractive, Germany universalistic-abstractive, Arab culture particularistic-associative and Latin America universalistic-associative.

Triandis compares the above-mentioned conceptual patterns to the patterns of thought suggested earlier by Pribram (1949). Basing his study on European philosophers and other scholars Pribram distinguished four patterns of thought: 1) Universalistic, which is identical with the concept suggested by Triandis; 2) nominalistic, which is roughly the same as particularistic (Anglo-Saxons being nominalists and Latins universalists). Being the battleground for the above two patterns of thought, Germany produced both 3) the intuitional mode, according to which one can know the whole without knowing the parts (resembling to some extent associativeness) and 4) the dialectical mode focusing on the conflict and unity of opposites. Triandis suggests that the latter two patterns are more recent and less prevalent than the former two.

It would seem reasonable to hypothesize that the dimensions dealt with above (patterns of thought and communication) might be reflected in the organization and style of compositions (method of writing), whereas the rest of the dimensions (values, behavioral patterns and

social organization) might be reflected in the ideas presented in the compositions (content of writing).

Cole (1977) has shown how poor performance by "primitive" tribes on some traditional western experimental tests of thinking may be largely due to lack of familiarity with the problems presented to the subjects. He suggests that the variety, as well as the amount, of practice with a particular subject matter is crucial to the wide application of cognitive skills. He points out that research on learning has shown that people learn generalited problem solving skills through repeated experience with different problems of the same type. It is Cole's central thesis that ethnography must be combined with psychology if we wish to understand culture and cognition.

Scribner (1977) has demonstrated that schooling rather than culture per se may be the most important factor affecting performance on logical (verbal) reasoning problems. She (1977: 494) says that traditional villagers living in the most rural and isolated towns "bring to the arbitrary problems of the experiment a reasoning system, at play in everyday life, in which inference is intricately interwoven with evaluation and interpretation of semantic information; others adopting a formal mode for some problems tend to lapse into the semantic-evaluative approach to other problems. Performance on the formal task is rarely free from intrusions of real-world knowledge".

Hymes (1974) has suggested that genres and performances should be used as basic categories in studying ways of speaking in various speech communities. Scribner (1977: 498) suggests that "through experience with a genre (a socially evolved language structure) individuals develop a cognitive schema through which they assimilate increasingly varied and more complex examples of the genre". She states that the familiar structure of a genre internalized by people within a culture helps to make sense of material presented to them and serves as a device that guides and constrains remembering and reasoning.

One of the most salient findings of the IEA Study of Literature (Purves 1973) was that students at both populations (Pop 2 = 14 years olds; Pop 4 = pre-university students) systematically selected different sets of questions to describe their response to literature in general and to a set of specific literary extracts. Thus, Purves (1976: 102) concludes that "there can be said to be at least one pattern of response for each country (in England two patterns compete); these patterns of

response become most pronounced in Population 4 when the students' preferences among questions tend to be more consistent across selections and tend to portray a more homogeneous group; the patterns chosen by students in Population 4 tend to coincide more with the patterns preferred by their teachers than is the case with Population 2". The curricula in the countries participating in the IEA Study of Literature often indicated that expressing a pattern of response was an important goal of literature instruction. Also teacher questionnaires elicited consistent patterns of response.

Purves (1976) suggests that during the course of secondary education students learn an "approved" pattern of response as part of their education in literature. The patterns of student and teacher responses tended to be quite similar to each other but in some cases they deviated from the official guidelines set out in curricula.

Goodnow (1976) suggests that performance on tasks in cross-cultural studies is partly determined by unspoken assumptions about proper goals and good methods. Where these assumptions are held both by the task-giver and task-taker, performance is usually as expected. Thus performance may vary according to what the intellectual demands and cultural patterns are in each culture. To the extent that there are cultural differences in assumptions about what are proper goals of written composition and what are good methods of writing we may expect a certain degree of convergence within countries and by the same token variation between countries in terms of the structure of essays.

Olson (1976) develops the idea of performance being culturally conditioned by suggesting that technological changes have had a profound impact on mental processes. Specifically Olson has studied the effect of the invention of the phonetic writing system and that of extended prose statement (i.e. the essayist tradition) on the type and style of language used. Olson maintains that writing made language an instrument for formulating original statements whereas before that oral presentation transmitted traditional culture, and on account of heavy reliance on auditory memory, imposed a rhythmic syntax pattern on oral language. The written text had to convey meaning on its own without depending on shared prior knowledge or on the immediate situation. Not having to concentrate to remember what was said released cognitive capacity to pay attention to what the written statements imply. Olson claims (1976: 198) that "the essayist technique and written language generally in the process

of formulating general statements from which true implications can be drawn have as a by-product created the abstract logical concepts that we who are so habituated to a literate culture tend to view as part of nature herself. Modern science, like 'rationality', is an indirect consequence of the invention of a particular technology" (i.e. the technology of writing).

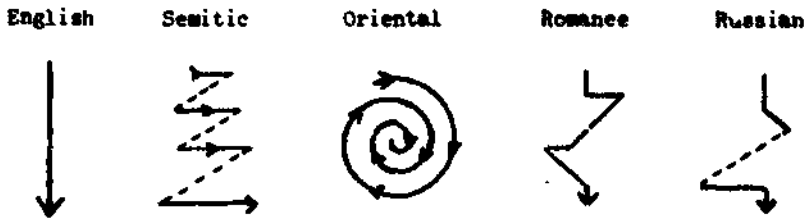
Olson (1977) argues further that in written prose rhetorical functions are subordinated to the logical functions and that the requirement for logical, descriptive, autonomous statements requires that the written language must be more explicit and conventionalized than "the mother tongue" (i.e. speech). Schools are tied to the specialized written language and to a specialized form of knowledge because they rely so heavily on written prose. Literacy is not only the main goal of schooling, but is considered necessary for the achievement of other goals as well.

8.4. Patterns of Organization in Writing

Kaplan (1966), echoing the Whorfian view that each language conveys to its users a ready-made world view and predisposed forms of interpreting the world, claims that "logic (in the popular rather than the logician's sense of the word), which is the basis of rhetoric, is evolved out of culture; it is not universal. Rhetoric, then, is not universal either, but varies from culture to culture and even from time to time within a given culture. It is affected by canons of taste within a given culture at a given time". (Kaplan 1966: 246)

Analysis of some 600 compositions written in English by foreign students led Kaplan (1966: 256) to hypothesize that in expository writing" each language and each culture has a paragraph order unique to itself, and that part of the learning of a particular language is the mastering of its logical system". Kaplan suggests that Anglo-European thought patterns stem from the ancient Greek sequence, which is dominantly linear in its development. An English expository paragraph may begin with a topic sentence and proceed to develop the main idea (= deductive model) or present examples and details first and summarize them in a generalizing statement at the end of the paragraph (= inductive model).

Kaplan illustrates the contrasts in paragraph organization between English and some other languages in the following way:

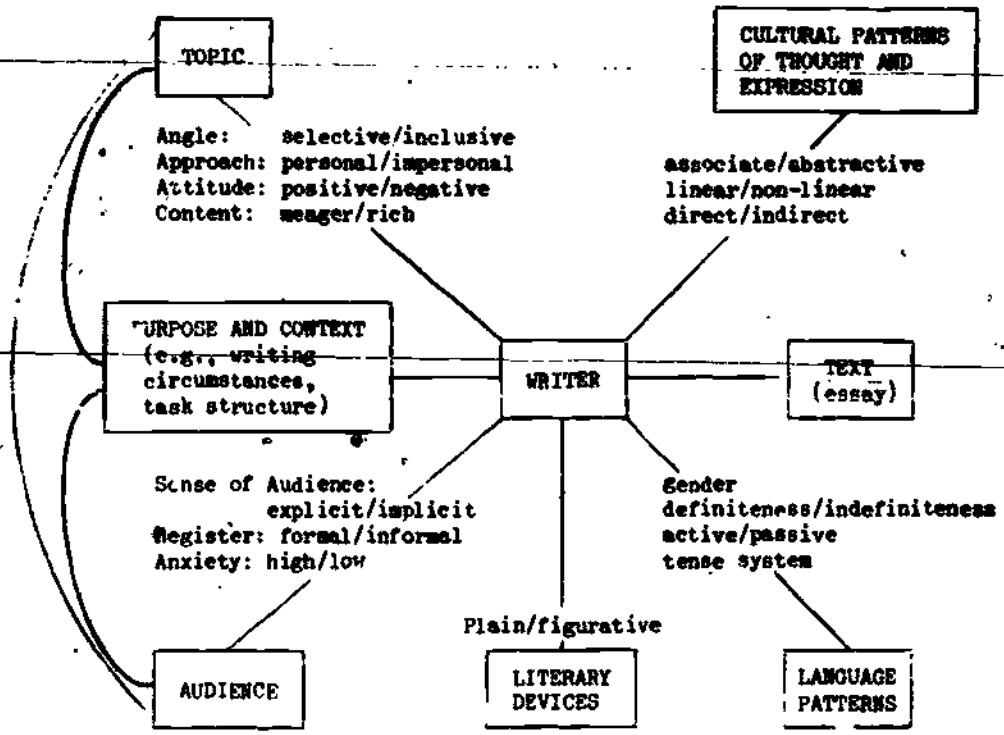


According to Kaplan, in Semitic languages paragraph development in expository texts is based on a complex series of parallel constructions. Clauses are joined together by coordination rather than by subordination. Oriental writing is claimed to favor indirect approach, so that the subject is shown from a variety of angles but not discussed directly. This means, for instance, that the reader is told how things are not rather than how they are. Kaplan also suggests that in Romance languages and cultures (e.g. French, Spanish) there is a greater freedom to digress and to introduce extraneous material than in English. In Russian perenthetical amplifications and parallel constructions are claimed to be part of acceptable paragraph construction.

8.5. Implications for Evaluation

From the preceding review, we may assert that there exist cultural patterns of expression and thought; that these patterns may be found both in what is said or written and in the manner of presentation; that these patterns have some relation to the lexical and grammatical constraints of a language; but that more probably these patterns are learned either in formal or informal schooling. From the foregoing, we might infer the legitimacy of an entity which we will call "national style"; we say national because we suspect that within a language group there may be differences certainly between nations that have separated themselves (e.g. England and Australia) and developed their own cultural histories.

These differences may be summed in the following model which suggests possible aspects of national or subnational differences.



National style and what is called achievement are interrelated. Perhaps they can't be meaningfully separated. Achievement might be defined as a composite of four aspects of writing: 1) the ability to present information according to rules of grammar, spelling, punctuation and usage, 2) communicative fluency, 3) cognitive content, 4) aesthetic quality.

National style is a set of culturally determined expectations of what good writing should be. The influence of national style on achievement is most intuitively obvious in the case of aesthetic quality. People who have grown up with different expriences and ideals are likely to appreciate different aspects of composition. It is quite possible that national style will also turn out to affect readers' perception of writer's ability to communicate fluently and the estimation of the

adequacy of cognitive content. The ability to infer the writer's intentions from information presented and estimate cognitive content may be partly determined by a history of shared experience. What is coherent because of common experience in communication in one country may seem incoherent and incomplete to readers from another culture. Triandis (1981) relates the story of an Arab diplomat who mystified his listeners when he described his trip to Paris. The associations between concepts to which he referred had developed and were widely shared in his own close-knit culture, but were incomprehensible to outsiders.

It now seems an appropriate step to define more fully the dimensions of national style, but this task, itself, contains hazards. Osgood et al. (1975) said "Crosscultural comparisons are particularly difficult when subjective culture (non-material traits) is involved, and we may ascribe two causes." Investigators from other cultures, however deeply immersed in the cultures being studied, cannot fully share the experiences and hence meanings assigned to those experiences by natives of the cultures. "Investigators into subjective culture cross-nationally are therefore prone to projection of their own cultural norms, values and expectations when attempting to interpret their data" (Osgood et al. 1975). Also, subjective culture traits are usually assessed through the medium of language and hence the language barrier must be circumvented.

9. DISCUSSION

We have defined writing as a multilevel, interactive and goal-directed process of originating (creating, constructing), encoding and communicating meaning by means of a conventional system of visible marks. We have seen, however, that meaning itself is not a unitary concept. Sentence meaning has to be distinguished from speaker's meaning. Depending on the relationship (variance vs. invariance) between sentence meaning and context, speaker's meaning can be treated either as casual meaning, literal meaning, indirect speech act or as metaphorical meaning.

It has also been established that, even in writing, sentence meaning cannot by any means be equated with literal meaning, although writing does lend itself better than speaking to the construction of literal meaning and the creation of meaning by the text itself. Normally the reader has to actively reconstruct meaning on the basis of what is written (the very words) and what can be assumed on the basis of shared background knowledge. Thus meaning cannot simply be communicated from addressor to addressee (audience), since it does not reside exhaustively in the text produced. This does not have to lead to unbridled relativism and subjectivism, since writers and readers are members of interpretive communities. Having been socialized into interpretive communities, individuals do not have to negotiate meaning from scratch but can rely on a number of implicitly shared conventions and strategies.

Writing does demand more decontextualized use of language and more explicit encoding of meaning than conversational interaction, but this is a matter of degree, not any drastically qualitative difference. Yet, it has been shown that there are a number of differences between conversational interactivity and written communication. Many psychologists and educators have been impressed by the impact of writing on culture and cognition. Writing is often seen to serve distinct, perhaps even unique, functions in culture and in human cognition. These differences have been listed in a number of ways, but the lists have also been criticized as being too ad hoc. The present author has worked out a

taxonomy of the characteristics of conversational interactivity and written composition, which attempts to make the comparison more systematic. The taxonomy takes into account the communication framework, message characteristics, processing characteristics, and developmental characteristics. It would be useful to construct a similar taxonomy of similarities between conversational interaction and written composing in order to test the relative merits of the "more different than similar" view and the "more similar than different" view. It seems likely, however, that whether certain differences or similarities are relevant depends on the task at hand. Thus, like the validity of a test is not a universal characteristic, the relevance of a particular difference or similarity between speaking and writing is dependent on the situation and context.

Writing, particularly compositional writing, is a complex process. This means that the information processing load in writing is considerable. A young child does not possess such complex skills. It is only when lower-order schemata are largely automatized that young writers can make use of higher-order schemata. It has been shown that young writers' conceptual capabilities are in advance of their functional capabilities. Providing procedural facilitation in the form of simple content-empty prompting to write more can double or triple the amount of writing. Similarly young writers can engage in whole-text planning instead of being limited to local planning, if they are provided with suitable procedural facilitation and prompting. Young writers can also evaluate their products quite well but are much less successful in revising what they have written. They find it easier to recognize problems than to diagnose and overcome them.

In conclusion, it turns out that, though writing in most cases is an act of communication, it is a more complex phenomenon than is usually assumed. This very complexity may well be one of the most important reasons why the skill of writing is usually learned relatively late and why even mature writers often consider writing a very exacting task.

Anneli Vähäpassi

II. ON THE SPECIFICATION OF THE DOMAIN OF SCHOOL WRITING

The purpose of this section is to explore the domain of writing and to present a general model of school-based writing.

During the planning and writing of this article, the complexity of the domain of school writing became more and more obvious. Any model of writing needs to take into account the general functions of language and the specific functions of what Vachek calls the written norm of language. The functions of writing should also be kept separate conceptually from the modes of discourse. While the functions of language necessarily have a bearing on school writing, they should not be assumed to be the sole determinants of the objectives of education in writing. General goals of education may also have a great influence on how the general functions of language and the specific functions of written language are emphasized in writing instruction. Furthermore, writing instruction in schools is also influenced by the kind of criteria that are used in rating student's written products. The progression of tasks, each consisting of a certain combination of functions, audiences and topics, is usually based on the relevance of the tasks in terms of motivation and level of cognitive processing required.

1. GENERAL APPROACH

1.1. Introductory Remarks

V. S. Naipaul describes his personal writing process and its meaning in the following way:

> I do not think writing is simply a skill you acquire, like making a suit or building a house, and then practise forever. One is a changed man at the end of every book one writes; one has discovered depths of responses that one never knew existed before. One has undergone a great experience of patterning, moulding, discovering thoughts and emotions. And since one writes with every sense, one has to be physically fit - you cannot write if you are not feeling well, if you have a stomach ache or a headache or if you are depressed; you have to be totally alert - and the exercise of all the senses together over several months does alter one.
>
> I am also a great hoarder of experience: I like to think that every day something new has occurred to me: not necessarily a physical event, but a new thought perhaps, or a little progress in my work. It would depress me enormously if there was not this continual element of newness in my life.

Written language is not only a means of reflecting reality but it is also a means of creating and expanding reality (e.g., Ricoeur 1973). Schoolbased writing is by the same token closely related to the students' personality development and provides opportunities for inventing new chains of thought and clarifying one's views of the phenomena of the environment.

The meaning of written language from the point of view of cultural and personal development, the introduction into written language, has been extensively analyzed in several articles by Olson. According the Olson (1976, 1977) the invention of the alphabet and the development of writing gave Western culture most of its characteristic features, including a changed view of language and rationality. When language was transformed from the spoken to the written mode, the dominant picture of the world was also changed: language and reality were partly reorganized and reinterpreted.

Olson has referred to the concept of "essayist technique" to signify the fact that the writer is obliged to create autonomous text, in other words, to write in such a manner that the sentences are an adequate, explicit representation of the writer's meanings, and are not based on implicit premises or personal interpretation. This technique was first used by British essayists, and prominent among them was John Locke, the essay became a tool of investigating problems and a means of producing new knowledge during that process. Such a use of language made writing into a powerful cognitive tool.

According to Olson cognitive development is manifested in a growing degree of explicit meaning. Its starting point is utterance, which, however, specifies only part of meaning. Language development means

that a child learns to master conventions about how an increasing part of addresser meaning is transferred into verbal form. Thus a child moves from a situation (Bloom 1970) in which two different meanings are conveyed by means of one identical expression to a situation in which meaning is transferred largely into sentences and text, i.e., meaning becomes explicit.

If we accept the general trend of the argument put forward by Olson and some other scholars, we are likely to arrive at the following conclusion: it is a central task of school writing to help students make a transition from utterance to text, from speaker and writer meanings to explicit, literal meaning. This is one way to foster the development of logical thinking. This hypothesis is supported by a survey of current school practice: school leaving examinations in the mother tongue (or in the language of instruction) and in other school subjects, as well as school learning in general, seem to require mastery of explicit meaning: comprehension of texts and production of autonomous text.

It has been maintained (e.g., Britton et al. 1975) that the school system has a decisive effect on the development of writing. This claim is, without doubt, justified. A review of terminal examinations in the mother tongue in some countries leads to the following observation: in many countries the aim of writing appears to be the ability to produce an explicit, objective and context-independent text and the acquisition of a literary style of expression.

If we relate the topics and modes of terminal examinations to Bereiter's (1980) model of writing processes (cf. Takala, in this volume), we can note that they require not only expressive writing but, rather, epistemic writing, in which reflective thinking and unified writing are integrated. Students are asked to search for meaning and seek a personal solution to large-scale problems. Writing requires and makes possible expanded thinking. Such thinking is elicited by means of either a carefully delimited content or more general prompts and stimuli.

1.2. Functions of Language and Written Discourse

Any discussion of written discourse and of the domain of school writing needs to take into account two overriding questions: What is language for? What are the functions of language in human life and in the life of mankind?

There are a number of theories about the functions of language developed for different purposes (see Bühler 1934; Jakobson 1960; Vygotsky 1962; Chomsky 1972; Halliday 1973, 1978; Tough 1974; Wight 1976; Feldman 1977; Shuy 1981). The basic difference between different theories is concerned with the question whether communication is the main function of language or not. This question has been debated among communication-intention theorists and proponents of formal semantics; only the former view communication as the main function of language.

Since the question is of crucial importance for written discourse, it will be briefly discussed in this paper. In her article, Feldman (1977) deals with the debate between formal semantics and communication-intention theory. After a thorough analysis of the issue she arrives at the argument that all language is communicative. Even the ideational function, which advocates of formal semantics (e.g., Chomsky) consider non-communicative, is considered communicative. It is the addresser's communication with himself. The present author agrees with the view that, in a broad sense, the main function of written discourse is communicative, which also includes reflection. Thus written discourse is communicative but the addressee(s) may be either the person himself or other persons.

Once it has been decided to treat written discourse as the writer's communication either with himself or with other persons, it is useful to relate the present discussion of the domain of school writing to general ideas about the functions of language. In his semiotic model Bühler (1934) outlines the relationship of the linguistic expression (Z) to the referent ("Gegenstände und Sachverhalte"), representational or symbolizing function ("Darstellung"); to the addresser ("Sender"), expressive or symptom function ("Ausdruck"); and to the addressee ("Empfänger"), conative or signal function ("Appell").

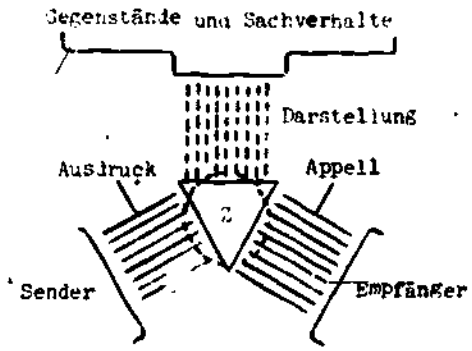


FIGURE 1. Bühler's (1934) Model of the Functions of Language

It should be noted, however, that there hardly exists such a direct link between the linguistic expression and the referent. Discourse always expresses the writer's perspective of the referent. Thus the writer may describe phenomena from a comical, satirical, reflective, etc. perspective. In real communication the addresser and addressee can learn from each other, take note of each other's perspective and expand their perspectives. They may reach agreement on perspective, although written discourse may not coincide with objective reality but may, in fact, be an alternative possible world or even a counterfactual world.

Jakobson (1960) has elaborated Bühler's model and summarizes his view in the following figure:

CONTEXT

ADDRESSER ---------- MESSAGE ---------- ADDRESSEE

CONTACT

CODE

According to Jakobson, the ADDRESSER sends a MESSAGE to the ADDRESSEE, but the message is not enough in itself. In order to function the message needs a CONTEXT which is common to the addresser and addressee. The CODE must also be wholly or at least partially common to the two parties. Finally, communication is enabled by a CONTACT, which Jakobson uses to refer to the physical channel and psychological connection the addresser and the addressee.

Jakobson continues his exposition of the functions of language by pointing out that each of the above-mentioned six factors determines a different function of language. In the referential function the context plays a dominant role. This function is served when language is used, for instance, to acquire and present knowledge, when a task-oriented discussion is held, when ideas are thrashed out or when events are reported. Communication is oriented towards the referent.

The emotive or "expressive" function focuses on the addresser and aims at a direct expression of addresser's feelings and experiences. The message may pour forth and it may not have a very clear structure. The addressees are usually familiar to the addresser so that the message can be interpreted on the basis of shared knowledge and experiences.

Following Malinowski, Jakobson calls the function that primarily serves to establish contact phatic. Language is used phatically when communication is for the sake of communication (social rituals and conventions): people talk about the wheather, tell each other how the family is, etc. What counts is the fact that language is used, not what it is used for. The covert message of the phatic use of language is that we are not adversaries but are willing to keep the channel open.

The function of language whose focus is the addressee Jakobson terms conative. The purpose of language use is to change the addressee's behavior and thinking. The message is tailored to take account of the addressee's knowledge, attitudes and opinions.

Language serves a metalingual function when it focuses on the code. Jakobson illustrates this function in the following way:

> Imagine such an exasperating dialogue: "The sophomore was plucked." "But what is plucked?" "Plucked means the same as flunked." "And flunked?" "To be flunked is to fail in an exam." "And what is sophomore?" persists the interrogator innocent of school vocabulary. "A sophomore is (or means) a second-year student." All these equational sentences convey information merely about the lexical code of English; their function is strictly metalingual. Any process of language learning, in particular child acquisition of the mother tongue, makes wide use of such metalingual operations; and aphasia may often be defined as a loss of ability for metalingual operations. (p. 356)

Focus on the message itself is the poetic function of language. This function is not restricted to poetry alone.

> Poetics in the wider sense of the word deals with the poetic function not only in poetry, where this function is superimposed upon the other functions of language, but also outside of poetry, when some other function is superimposed upon the poetic function. (p. 359)

Jakobson also points out that

> apparently no human culture ignores verse-making, whereas there are many cultural patterns without 'applied' verse; and even in such cultures which possess both pure and applied verses, the latter appear to be secondary, unquestionably derived phenomena. (p. 359)

The discussions the present author has had with professional writers have led to the conclusion that language use in literary works is multi-functional: it contains all functions of language. The writer creates a new world from sounds, words and sentences. This world reflects the writer's view of reality. The writer's purpose may be emotive, referential or conative or all of these at the same time.

1.3. Functions of Discourse and School-based Writing

A review of different classifications of the functions of language has led the present author to the conclusion that the tasks of school-based writing are best seen in the framework of the semiotic model derived largely from the work of Bühler and Jakobson. One of the major merits of the semiotic approach is that it draws the attention of curriculum planners, textbook writers and teachers to the purposes and functions of school writing.

More recent models take into account written discourse and are related to school setting. The models presented by Moffett (1969), Britton et al. (1975) and Kinneavy (1971) are based on the semiotic structure: the relationship between writer, reader and message. They, as well as a somewhat different model presented by D'Angelo (1975), draw on Bühler's and Jakobson's views on the functions of language, although they use different terms to denote the functions.

The functional perspective in the above-mentioned models is not fully worked out, however. The persuasive function seems to be the most neglected one. Moffett and D'Angelo hardly recognize it al all, whereas Kinneavy devotes one quarter of his book to it. In real life, as opposed to school writing, persuasion is omnipresent and probably the most dominant of all functions (Kinneavy 1980).

On the other hand, the poetic, artistic function is recognized by all model-builders, but Kinneavy (1980) points out that poetic function nowadays occupies a minor position in American schools in comparison to the situation thirty years ago. The same trend is probably evident in many other countries, certainly in the author's native country, Finland. It should, however, be emphasized that the artistic function of language is an essential part of school writing also: it involves play with language and creative experiments with language (e.g., rhyming).

Both Britton and Kinneavy assign a prominent role to emotive function (in their terms: expressive) and they suggest that all other purposes of writing are derived from that function. This view is supported by the developmental perspective of functions. On the other hand, as Kinneavy (1980) points out, Britton's own empirical findings suggest that the emotive (expressive) function is not very prominent in school writing. If it were, in fact, the most important and in psychological terms the most fundamental function, it should occur more often in school writing. However, the referential (informative) function covered 62 % of all school writing in Britton's study. The dominant category was the sub-category "classification".

When we adopt the semiotic approach in the style of Moffett, Britton and Kinneavy, we can avoid a basic weakness of many models of writing instruction: the purpose and mode of writing have been considered to be largely synonymous. This view is probably based on the old rhetorical tradition, and the old rhetorical modes (narrative, description, exposition and argument) have been incorporated as such as the sub-categories of writing purposes.

The present author believes that it would be advisable to keep in mind that rhetorical modes and their interpretation are derived from the analysis of the finished products of adult writers and speakers. If we, by contrast, start from the above classification of the purposes of school writing (referential, metalingual, emotive, conative and poetic purposes), we can conclude that especially narration and description can be used for several purposes. Similarly, expository writing can also be used for referential purposes as well as for conative purposes. A model which forces each of these rhetorical modes to fit with some one definite purpose alone militates against flexible use of language.

1.4. Relationship Between Writer and Audience

In out-of-school writing situations the writer-audience relationship is very important. If the writer has reached the stage of communicative writing, (cf. Takala, in this volume), he can modify his message in accordance with the experiences, knowledge and attitudes of the audience. Semiotic models of the writing situation (Moffett, Kinneavy and Britton) take account of this fact and also seek to examine the writer-audience relationship from the point of view of school writing. Basically, all three models have the same structure.

Moffett (1968) distinguishes the following categories:

I			You
Interior	Conversation	Correspondence	Public

Britton (1975) distinguishes the following categories:

I				You
Self	Trusted	Teacher	Wider	Unknown
	General	Examiner Particular		

The categories distinguished by Kinneavy (1971) are the following four: Monologual - Small Group - Large group - Mass. Applebee (1981) classified the audience as follows: (1) no clear audience, (2) for the writer only, (3) for the teacher in the role of examiner, (4) for the teacher as a part of continuing instructional dialogue, (5) for a wider audience, known or unknown.

In mother tongue instruction, writing at its best is often a student's dialogue with himself or herself, which the student allows the teacher to see. In the best case the student is not consciously aware of the teacher's opinions while writing and does not write in order to please the teacher. In examination situations, such as matriculation examinations and university entrance examinations, the situation may naturally be different.

Since a large part of school writing is directed to oneself, classmates parents or teacher, the following broad classification seems reasonable in a study of school writing: Self → Known Audience → Unknown Audience.

1.5. Content

From the parameters related to all writing situations (e.g., Takala, in this volume) very important in terms of school writing are the purposes of writing and the relationship between writer and audience? However, it can be claimed that the most dominant feature of the writing situations in school is often the parameter of content (topic, theme). This is particularly true of beginning writers. However, if a significant amount of experiences, observations and knowledge is stored in the long-term memory, even a beginning writer can direct cognitive capacity to the explicitness of the text and to the other parameters of the writing situation (see Chapter I).

Augustine (1981) has recently presented a detailed model of writing, which starts from the following assumptions:

1. First the writer addresses a topic, X, to be composed.
2. The writer forms a tentative perspective towards the topic by recalling what he knows about the topic from long-term memory and by judging his/her experience with the topic and with the writing task in general.
3. The writer forms a hypothesis of the meaning of the topic to the addressee.
4. Only after that the writer considers the topic from the point of view of the addressee.

Augustine's model and practical experience suggest that the subject, content, is the most general starting point in learning to write. For this reason, the parameter of content (topic) is dealt with in some detail in this part.

Takala (in this volume) has analyzed the parameter of content in terms of content identity, content accessibility, attitude to content, and interest in content. When we focus our attention to the area of school writing we need a more detailed analysis of his category of content identity. The category of "relations, systems, notions, ideas, beliefs, norms, etc.", in particular, needs elaboration.

The category of content identity can be classified for example in the following way in terms of school writing:

a. General topics
   a. Self (feelings, experiences, problems, personal life)
   b. General problems of human life; religions and psychological problems
   c. Everyday life (family, home, health, neighborhood, school, work)
   d. Spare time (holidays, travel, sport, entertainments)

b. Topics related to school subjects
   a. Nature and geography
   b. Technology
   c. Science
   d. Society, community, community life, politics
   e. Economic life
   f. History
   g. Literature
   h. Other arts

When we consider writing task assignment in school, we should keep in mind that people can write well only on such subjects about which they have sufficient observations, experiences and knowledge. Statement of opinion and evaluation can be reasonably expected only when there is an adequate knowledge and experience basis for them. Consequently content accessibility is of decisive importance in school writing: the best result can be expected when the writer feels an expert, who may know the topic even better than the teacher. This can take place when the student is allowed to write about his or her special interest or hobby. This resembles a natural writing situation: the addressee receives genuine information from the writer. The writing situation in school is, however, often such that the students are asked to write about topics which the teacher is more familiar with than the students, the writing task may be, for example, an essay on a topic covered in some school subject. This tends to make the situation somewhat artificial. The situation can be improved at least to some extent by providing content clues.

At the secondary level, in particular, the writing situation may be such that the teacher and the students are all equally novices and that content clues are accessible in the writing situation. This happens often when the topic is a general one, e.g., reflection on one's outlook on life, description of mood or atmosphere or narrating a sequence of events.

The writing situation is likely to become optimal when the parameter of content accessibility has the following values (cf. Takala, in this volume):

1. Familiar content easily accessible from memory to bot W and A
   (W and A both experts)
2. Familiar content easily accessible to W but not to A
   (W expert. A novice)
3. Content clues available in writing si' ation
   (W and A both novices)

In school writing attitude to content is related to the purpose of writing. If writing has a conative purpose, it may be useful in terms of results if the writer is allowed to exhibit a clearly negative attitude towards the content (topic). This is useful, for example, when the task is to write a polemical composition against competitive sports or feminism. In other types of writing a positive or neutral attitude towards the content is optimal. A situation in which the student has a positive attitude towards the content and the teacher a negative attitude can create a problem and must. and can be, handled with tact in school. If a student's and teacher's views concerning e.g., competitive sports, feminism or racial relations are diametrically opposite, the student does not dare to express his opinions unless he can feel confident that he will not be penalized in grading for an honest expression of his views. Yet we cannot maintain that a student who writes about a topic which the teacher feels neutral or negative about may not feel apprehensive, because the product may receive a more critical appraisal than it would if the case were different. To some extent. the same applies to interest in the content.

1.6. Cognitive Processes and Modes of Written Discourse

Models relevant to school writing (especially those by Britton et l. and By Kinneavy) have criticized the way in which the purpose and mode of writing have been conceptually equated. Whereas they thus do emphasize the purpose of writing, they tend not to give due attention to another important dimension of school writing: the cognitive processes.

The close connection between thinking and writing is noted but the relationship is not elaborated in a manner that would be very useful for writing in an educational context.

This is not to belittle the importance of the purpose or the audience of writing, a point well made in the semiotic models of written discourse. Still, from the point of view of cognitive processing, the function and audience of writing are not the only relevant features in the writing situation. When the writer is producing a text, he is creating a personal structure of reality. This structure is influenced by his own schemata of reality, his knowledge of the world. Depending on the level of cognitive processing on the one hand and on the purpose of writing on the other hand, he can simply present or represent facts, events, ideas or emotions or he can also expand reality on different levels.

Cognitive processing, representing or expanding reality, is related to the mode and content of writing. It is also related to the general verbal ability of the writer. Cognitive processing cannot be very deep if the writer does not have a sufficient amount of experiences, observations, ideas of information about the topic of writing. On the other hand, narration, description, etc. cannot be lively or illuminating nor can exposition or persuasive discourse convince the reader if the writer's concepts and vocabulary are limited and if sentence formation and text construction are uncertain. Anton Chekhov once said that the construction of sentences is all that there is to the writer's skills.

When we examine school writing from the point of view of both cognitive processing and mode of discourse, we can see that the writer can represent and expand his view of the world in several different ways: he can simply reproduce units, events, facts (e.g., copy, cite, make notes); he can organize or reorganize reality (narrate, describe, explain, summarize); he can also expand reality, invent/generate reality (analyze, expound, argue, create a new possible world). Thus, cognitive processing can be shown to be related to the traditional rhetorical modes (description, narration, exposition, persuasion).

Among the first to rediscover the relationship of traditional rhetorical modes and the way of thinking was Leonard (1914). He maintained that in the earlier influential work of Alexander Bain (1890), completed pieces of writing, i.e., the products, are emphasized rather than the processes of composition. Leonard's own classification scheme was as follows:

I. PRESENTATION OF FACTS

A) Sense-Impression suggested to give the reader a new and interesting bit of experience: the forms of simple objective narration and description.

B) The same type of material but chiefly such matters as machines, processes, and so on, stated in order to give the reader useful information, the form of simple explanation.

II. INTERPRETATION OF FACTS

A) Conclusions as to character-mood and motive and so on; and the complications of cause and effect in human action developed into plot: the interpretive forms of narration and description.

B) Generalizations - conclusions as to the relations and the significance of the bodies of fact presented in information in I, B: the forms interpretive, exposition and argument.

As D'Angelo (1976) points out, Leonard's scheme is not a new classification but rather a reclassification, the purpose of which was to help students think clearly.

Leonard's forms of discourse can be viewed as a sequence in terms of their difficulty and level of abstraction: theme writing on the basis of sense impressions; exploring, explaining, analyzing and interpreting the material; evaluating facts and information and determining their significance. According to the present writer, Leonard's scheme may also help the teacher to understand the process of writing and to assess the level of thought in student's compositions from a new point of view.

If we follow Brewer (1980), we can distinguish three main types of the form (mode) of writing: description, narration and explanation (interpretation). According to Brewer they differ in terms of the cognitive structure underlying each type of discourse. According to this view:

1) Descriptive discourse attempts to transform a stationary, spatial-visual field of perception into a verbal form. The underlying structure is visual-spatial.
2) Narrative discourse transforms into a verbal form a chain of events which take place in the passage of time. The events are related to each other via a causal or thematic coupling.
3) Explanatory (interpretative) discourse transforms into a verbal form fundamental abstractions, public processes, etc. It comprises induction, deduction, classification and comparison.

According to Brewer, the type of discourse and the purpose of discourse, which he calls discourse force (probably analogously to the concept of illocutionary force in speech-act theory), are two dinstinct categories. Accordingly Brewer does not categorize persuasive discourse as a separate type since all modes of discourse can be used for persuasive purposes. On this point he diverges from earlier rhetorical tradition. His starting point is, in fact, different in that he emphasizes the cognitive structures underlying the mode of discourse instead of the style of presentation.

We conclude then that the development of writing skills is intimately connected with the development of thought. Writing skills develop concomitantly with the development of thought processes and with the acquisition of a variety of experiences. It seems, therefore, reasonable not to make a sharp distinction between the form (mode) of writing and the depth of thought processes.

The present writer suggests that the following classification of the mode of writing, which is largely based on the traditional rhetorical modes, might prove useful in any evaluative study of written composition:

1. Documentative discourse: material is recorded as such with little or no modification. This leads to notes, short answers to questions in workbooks, incoherent stories, stream of consciousness writing, etc.
2. Constative discourse
   a. Narrative discourse: the writer reports on events and experiences. This leads to a story, an account of events, news, etc.
   b. Descriptive discourse: the writer conveys to the audience a structured account but follows the external visual (spatial) model. This leads to instructions how to use some machine, how to do something, description of a route to follow, description of scenerey, a summary, etc.
   c. Explanatory discourse: the writer conveys a logical account using such techniques as comparison, classification, and cause-effect. This leads to products like reports, technical descriptions, statements of personal views, opinions.
3. Exploratory discourse
   a. Interpretive (expository/argumentative/persuasive) discourse: the writer examines some material, classifies it and makes conclusions using induction, deduction and comparison. This may

lead to changes of other people's actions or thinking and to products like book reviews, editorials, columns, essays which show what the writer thinks of some events, ideas etc.

b. Literary discourse, in which special attention is devoted to the structure of the product. Experiences are made the object of conscious analysis by distancing them. They are given a clear structure and special attention is given to the choice of words and sentences. This leads to poems, plays, play with language resources and creative experiments with language. In literary discourse other modes of discourse may be used according to the purpose of the writer.

2. GENERAL MODEL OF WRITTEN DISCOURSE

The discussion in the previous section led to the development of a general model of written discourse, which is designed to take into account the general dimensions of writing. It attempts to redress the balance between the dimensions of the purpose, writer and audience and level of cognitive processing involved in writing. It also makes a distinction between the modes and purposes of writing, which are conflated in some earlier models of written discourse based on traditional rhetorics.

The model poses "dominant intention/purpose" as one main dimension and "cognitive processing" as the other. Since a decision was made to concentrate on the communicational aspect of writing, the author has left out the "archival" purpose of writing, i.e., the preservation and transmission of the cultural heritage. The learning purpose is considered to include not only the codefocused (metalingual) function but also a more general function of learning (mathematic). Primary content is related to levels of cognitive processing, and primary audience is related to the purpose of writing. We obtain a typology, which can be tested empirically by trying to place different types of written products within its cells. Figure 2 illustrates such a classification but it is by no means meant to be an exhaustive listing

of types of written discourse. As suggested earlier, no sharp distinction should be made between the level of cognitive processing and modes of discourse. This is done by indicating at the bottom of the figure how the mode of discourse is related to level of cognitive processing.

The model can be used to analyze writing assignments in different countries. It will also help in deciding what kind of writing tasks can usefully be employed with pupils of different ages. Using the typology, writing tasks can be characterized, for instance, in the following way:

To reproduce in order to learn. This kind of task primarily involves the writing down of dictated or spoken language as in note taking but also in school the making of a correct copy.

To organize or reorganize in order to learn. This task primarily involves the recasting of one form of language into another form. It may include the transformation of oral language such as dialogue into a narrative summary or the summarizing of a longer text into a shorter one that retains the main ideas.

To organize or reorganize in order to inform. This kind of task is one of the primary communicative tasks, the writing down of information such that a reader can understand and act appropriately on that information (e.g., filling out a form, giving direction, describing an action, state or process).

To organize or reorganize in order to convince or persuade. This kind of task also represents a primary social and pragmatic objective of instruction, the writing down of reasons why the writer has an opinion or to be persuaded to join the writer. This kind of task involves the communicative functions of informing and expressing emotions or states of mind, but they are subservient to the major communicative purpose.

To generate in order to convey or inform. These tasks are common to much school writing and are seen as important contributors to maturity as a writer, particularly in academic situations, but also in social situations.

Level of Cognitive Processing		REPRODUCE	ORGANIZE/REORGANIZE		INVENT/GENERATE	
Primary Content / Primary Audience		Facts / Ideas	Events	Things, facts, mental states, ideas	Ideas, mental states, alternative worlds	
(Intra-personal/ poetic)	Self	Copying Taking dictation	Retell a story (heard or read)	Note Resume Summary Outline Paraphrasing	Comments on book margins Metaphors Analogies	
(Literary genres, feelings, emotive)	Self Others	Stream of Consciousness	Personal story Personal diary Personal letter	Portrayal	Reflective writing --Personal essay	The traditional literary genres and modes can be placed under one or more of these four purposes.
To inform (referential)	Others	Quote Fill in a form	Narrative report News Instruction Telegram Announcement Circular Message	Descriptions of distinctive features Directions Description Technical description Biography Science report/ experiment	Expository writing --Definition --Academic essay/ article --Book review --Commentary	
To convince, persuade (formative)	Others	Citation from authority/expert	Letter of application Statement of personal views, opinions	Advertisement Letter of advice	Argumentative/ persuasive writing --Editorial --Critical essay/ article	
To entertain, delight, please (poetic)	Others	Quote poetry and prose	Given an ending, create a story Create an ending Retell a story	Word portrait or sketch Causerie	Entertainment writing --Parody --Rhymes	
		DOCUMENTATIVE DISCOURSE	CONSTATIVE DISCOURSE Narrative Explanatory	Descriptive	EXPLORATORY DISCOURSE Interpretive (Expository/ Argumentative/ Persuasive)	Literary

FIGURE 2. General Model of Written Discourse

3. DOMAIN OF SCHOOL WRITING

3.1. Factors Related to School Writing

What has been said in the above points to a conclusion that the most important factors underlying written response in school writing as well as in adult writing situations are (a) the purpose of writing and (b) the level of cognitive processes required by the writing task. Other important factors contributing to the final form of written response are (c) the content of writing and (d) the writing situation (e.g., clues, stimuli). Other sources of influence are the student's awareness of being evaluated and perception of the criteria that are likely to be used in such an evaluation. These parameters are important determinants of the kind of writing tasks that are assigned in school. In the background of those parameters are many factors. They are illustrated in Figure 3, which was suggested by Alan C. Purves.

3.2. Objectives of Education in Writing

This section deals with the question: What is school writing good for? The focus will be on the development of the learner with frequent references to the views expressed by Bereiter (1980).

With some simplification we can say that one part of school-writing is associated with the acquisition and recitation of knowledge, one part is related to expanding reality and the developing of logical thinking, and one part is related to activities within social context. It is suggested that different forms of writing are related to these objectives in the following way:

I. Subject-learning objectives

1.1. Documenting
1.2. Reciting, knowledge demonstration
1.3. Sentence combining
1.4. Writing according to dictation

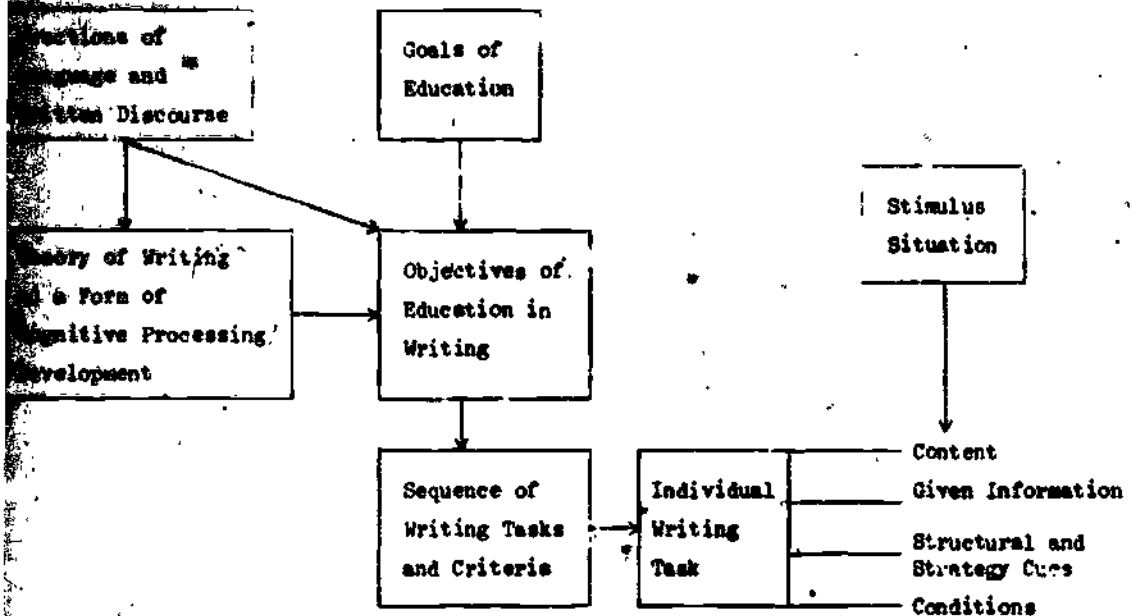


FIGURE 3. Determinants of School Writing Assignments

II. Reality-expanding objectives

2.1. Emotive writing
2.2. Reflective writing
2.3. Poetic writing

III. Acting-in-society objectives

3.1. Phatic writing
3.2. Referential, informative writing
3.3. Evaluative, persuasive, conative, valuative writing
3.4. Poetic writing

Spencer (1981) has illustrated in detail the kind of activities that typically occur within each dominant objective. The main difference between the above classification and the classification suggested by Spencer, on the basis of his empirical work, is the fact that writing for artistic purposes has been considered to be subsumed under both intra-personal and inter-personal purposes. Within brackets is indicated how the above classification is related to Spencer's scheme.

I. SUBJECT-LEARNING PURPOSES (Subject-Learning Objectives)

1) To aid memorization of subject content
2) To store information (for revision later)
3) To allow teacher to check on learning
4) To write as will be required to succeed in examinations
5) To show that you are qualified to join the 'guild' of Scientists, Geographers (or whatever subject specialists) by your command of the language and style of the subject

II. INTRA-PERSONAL PURPOSES (Reality-Expanding Objectives)

1) To clarify and organize thought
2) To develop confidence in the value of one's own observations, knowledge, ideas ...
3) To record events, feelings, reactions as a personal record
4) To explore, define, account for one's knowledge, feelings, attitudes and opinions

III. INTER-PERSONAL PURPOSES (Acting-in-Society Objectives)

a) More referential, informative, objective purposes:

To record, report, narrate events (factually)
To record or convey information
To summarize information or argument on significant elements in events, experience, texts, discussion ...
To give instructions for a procedure

b) More evaluative, conative, value-laden purposes:

To present evidence and draw conclusions
To report/narrate events, with evaluative comment
To convey information, with evaluative comment
To summarize ..., with evaluative comment
To give advice for a procedure
To make inferences from, evaluate and comment on ideas (in texts or in the media ...)
To persuade someone to a point of view or an action

IV. ARTISTIC PURPOSES (Reality Expanding Objectives/Acting-in-Society Objectives)

1) To explore and interpret experience in literary forms (i.e., by intellectually or emotionally meaningful patterning of experience, events, relationships, symbols, images, language)
2) Entertain/give pleasure
3) To explore the possibilities of the language one possesses, to see what emerges when it is 'played with', tried out in various ways

In a recent study of learning to write in secondary school in the United States, Applebee (1981) classified school writing into the following major function categories: (1) writing without composing (mechanical uses of writing), (2) informational uses of writing, (3) personal uses of writing, and (4) imaginative uses of writing.

If we analyze writing for different objectives in the light of Bereiter's model, we can observe that writing related to subject learning objectives often tends to be at the level of associative or performative writing only. In contrast, writing for reality-expanding is important for personality development. Britton suggests that expressive writing forms a foundation for all other types of writing and reflects the writer's emotional and experiential layers of personality. For a developing young mind reflective writing is at least equally important. At its best it is epistemic writing in Bereiter's sense of the term. By means of this kind of writing the student structures the world, creates a mental representation of it and expands his thinking. He learns new cognitive schemata and it does not matter very much for him who the audience of writing is. Writing is extended and objectified thinking.

As a regards reflective writing we can, however, ask with some justification whether reflective writing can emerge on the basis of a stimulus provided by the teacher or whether the stimulus for reflective writing must always be the student's own need to write about important problems. It seems to the present writer that reflective writing on the basis of external stimuli is an important educational task. For the student, it may constitute the only, or at least one of few, opportunities for creative reflexion, even if adults might consider the product and the patterns of thought included in it of limited interest and originality.

On the other hand, it should be pointed out that if all school writing is limited to this kind of reflective writing, it may become stereotyped and its value may be questioned, as has happened at least

in New Zealand and Finland (e.g., Jänsä 1981). Students may be taught a "safe" pattern of thinking and writing, and they may find it difficult to adopt a different approach to writing. The school's task, however, is to develop several kinds of writing skills in students so that they can handle different kinds of writing tasks with success. A pamphlet dealing with the teaching of writing in New Zealand states that "if we are to help students gain these abilities, we need to pay as much attention to the way in which skill in writing develops and to the purposes for which we write as we do to the finished product."

If writing for acting-in-society objectives is related to Bereiter's model, it becomes obvious that for Bereiter this kind of writing is communicative writing, in which performative writing is associated with social cognition. Bereiter points out that contrary to common belief, children do not usually lack ability to take into account others. Thus in school writing, according to Bereiter, egocentric writing is really due to the need to consider simultaneously the reader and fulfill all the other requirements of the writing situation.

At its best, writing for acting-in-society objectives, as a process, is unified writing, in which the writer can also act as a reader and appraise the text from the reader's point of view. Writing for artistic purposes is unified writing in Bereiter's terminology. When a person begins to integrate his own evaluative reading skill with writing skill, an important feedback loop is established. Writing begins to be modified in accordance with personal standards and these are modified in the course of writing. Personal style and personal perspective is developed and writing becomes authentic and rewarding. Thus, for instance, the writer does not present arguments only to convince the reader but gives reasons about which he is personally convinced.

From the point of view of a beginning writer, unified writing is an extremely high objective. Still, writing for poetic purposes can be part of the writing tasks in school. Stories, the rhythm of language and play with words appeal to young children. From the point of view of personality development it is important that, after reading literary works, students are encouraged to produce their own poems, stories, etc. It is of minor importance what the quality of the products is in the opinion of adult literary criticism. What is important is that students can create something by means of writing.

As Spencer (1981) points out: "... an argument ... pointing to the significance of literature for the individual's personal and linguistic development, is the justification for Scottish teachers of English having consistently resisted any proposals to separate in the curriculum the study of literature from the use of language." The situation is the same in the new curricula for the comprehensive school and upper secondary school in Finland.

3.3. Progression of Writing Tasks

At this moment we do not have much data on how the sequence of writing tasks is organised in different countries. We know perhaps better what the sequence was in antiquity and in medieval times than at present (cf. D'Angelo 1976). The task sequence of writing in the Finnish comprehensive school and the upper secondary school will be used to illustrate one possible approach. Both syllabuses reflect the situation in the late 1970's.

In the Finnish comprehensive school the acquisition of explicit and largely decontextualized meanings through writing is based on oral competence. In the third and fourth grades (ages 10-11), when writing motorics is still a problem, exact meanings are practised through play. At the same time listening, reading and discussion is used to elicit vivid images and to heighten perception. The purpose of such exercises is to recall a sufficient amount of experiences, observations and information so that the beginning writer could focus his attention to the structure of the text and to other factors influencing the writing situation. When the motorics of writing is practised, it is however attempted to show how writing serves a communicative purpose. The teacher discusses with the pupils what people need writing for. Letters, postcards and notices are drawn up. Correctness is now emphasized.

Of the different discourse modes the first to be practised both in speech and writing is the narrative discourse. In writing this takes place mainly in the fifth form. Pupils are asked to write about their personal experiences and about events they have witnessed. They are also allowed to tell news. Descriptive discourse is practised

by drawing up instructions, by describing how some job is done, by describing routes to different places. The description of people, scenery, etc. is introduced only in the lower secondary school.

The lower secondary school (grades 7-9 on the upper level of the comprehensive school, ages 13-16) is the time for practising both explanatory and argumentative/persuasive discourse. Pupils attempt to present in a logical order their own opinions about some event, state of affairs or condition of life. Topics related to both general themes and to school subjects are employed.

The same line continues in the vocational branches of the upper secondary school. By contrast, exploratory discourse emerges as the focus of practice in the academic upper secondary school.

In the new upper secondary school syllabus introduced in 1981, the school year is divided into shorter units called courses. Objectives are defined separately for each course. The syllabus is functional in general approach. Each course emphasizes some major function of language. In this way it is hoped that pupils develop a versatile command of language uses and learn to cope in different writing situations.

The referential language function is the most essential one from the viewpoint of the overall aims of the upper secondary school. Exercises based on this language function can, however, be versatile. In the first course they are reports or abstracts, in the second they train the pupil in the composition of an article, in the fifth course they are based on the use of reference material. The sixth course emphasizes subjective analysis, and typical exercise types include reviews, essays, etc. related to different fields of arts. The most independent text based on the referential language function is a paper prepared during the last grade.

The conative/persuasive language function appears for the first time in the selection of writing exercises in the second course (writing exercises related to language use in statements and negotiations). The practising of persuasive language is mainly concentrated on the fourth course, when the exercises consist of articles expressing opinions, replies, analysis of programs, propagandistic texts and the like.

The emotive language functions is the basis for the exercises of the first course generally aiming at the reduction of anxiety in oral

expression. The third course is the most important one in the upper secondary school from the viewpoint of emotive writing. Personal moods and impressions may be expressed, for example, in collage-type exercises, which also allow creative writing.

The fifth course is important from the point of view of different types of exercises. The pupils should gradually start to recognize the style of writing that suits their own expression. Exercises become individually differentiated more than before.

The brief description in the above shows one possible progression of writing tasks. One of the most interesting products of the on-going IEA Study of Written Composition will be a portrayal of how writing tasks are sequenced in a number of countries which have different educational systems and different educational emphases.

3.4. Rating Criteria

In the construction of a functionally based syllabus in Finland it was clearly seen that the functions involved in different types of tasks are closely related to the criteria used to judge pupil performance.

During the first course special attention is, accordingly, devoted to whether the product is informative or expressive. Subsequent guidance of writing in the second course aims at the mastery of structural consistency and the observation of the quality and quantity of arguments. The third course again focuses on the consistency of the compositions. When exercises in the fourth course are returned, evaluation focuses mainly on the ability to take into account the communicative situation, on the ability to put forward arguments, and on the clarity of expression. In the fifth course guidance is directed at language and personal features of style. With the exception of the fourth course it is not until in the sixth course that decisive attention is paid to structural features, the number of viewpoints, and the validity of information and statements. During the whole of the last grade compositions are evaluated in regard to all of the above features and guidance is given in aspects that are least well developed in the individual products of each pupil.

Even if criteria were not expressed in this way, we should keep in mind that in school writing the pupils are always aware that the teachers will read and evaluate the product and possibly grade it. For this reason, criteria used in external and internal examinations will influence pupils' views about writing and features of good writing. It is not insignificant whether criteria are made known to pupils explicitly or only implicitly.

The following set of criteria seems to represent current criteria in a number of countries:

A. Articulateness (can be seen in a single composition)
   1. Approximation of general linguistic and stylistic norms
      a. Use of standard written dialect
      b. Adherence to conventions (e.g., paragraphing)
   2. Clarity and comprehensibility
      a. Mastery of cognitive content
   3. Coherence
      a. Order of ideas or topics
      b. Flow of sentences
   4. Expressiveness

B. Fluency (can be seen in rate or amount of writing done within or across compositions)

C. Flexibility (can be seen across a number of assignments)
   1. Ability to write for different purposes (e.g., persuasion, narration)
   2. Ability to write to different kinds of audiences (e.g., known, unknown)
   3. Ability to write different types of writing
   4. Ability to adopt different points of view regarding a topic

D. Appropriateness (can be seen within or across a number of assignments)
   1. Ability to select appropriate role (purpose, audience, type, point-of-view) for a given assignment
   2. Adherence to conventions associated with a role or genre or discipline

(Purves and Gavin 1977)

The on-going IEA Study of Written Composition will also provide information which can be used to test the universality of the above set of criteria.

Writing Situation: Task Instruction

When we consider writing from the point of view of thinking and cognitive processes, as we have attempted to do in the above, it is important to take into account what kind of prompts are provided for those cognitive processes (cf. Baker in this volume).

An important factor influencing the success of processing is the information given to pupils. It is quite a different task to write on the basis of a short rubric like "Career Woman" and to write on the basis of the following instruction:

A. Who has to be emancipated actually?

We can think of a number of answers to this question, like

- nobody
- only the woman
- both woman and man

As soon as we deal with real emancipation this has consequences for the existing role pattern.

Assignment: Write an essay with the given title in which you make clear your opinion about this subject. Use data from some of the following quotations (there were altogether six quotations in the original instruction). You can also use you personal knowledge and experience.

a) One day people will realize that discrimination based on the difference in sex is just as unworthy of man as discrimination based on difference in color of the skin. (Andreas Burnier, "Do Women Need Men?", Rotterdam 1969)

b) We will definitely take the right in our own hands not to be female any more, but human. (Alice Schwarzer, "The Small Difference and the Great Consequences", Amsterdam 1977)

c) "You should know that I'm not all that fond of all that modern business. I don't have anything against emancipation, I agree that women should have a chance to think about themselves. But I think that certain groups exaggerate grossly. My mother is just a housewife and I like that. She is not at all a silly person, you can discuss anything you want with her. But she is a mother who is always at home and who does everything for us. She is really for us anytime we need her. My father travels a lot for his job and it would be an awkward situation if she would also be gone all the time. My father would certainly be against it too. Imagine him coming home after a busy week

to find that my mother has gone to a meeting or so. That would be too much, wouldn't it? A man in such a situation should be pleasantly received and spoiled a little bit." (18 year old student, 6th grade Atheneum, in "Equality ... You Don't Really Believe That, Do You? Reactions of 15-20 Year Old Girls and Boys with Regard to Emancipation," by Mink van Rijskijk, Kampen 1975)

d) We women have to start doing in society, at a job or as social activity, the things we are good at home. Not imitating men, but being ourselves also outside of the family. Creating an atmosphere within a too business-like society. Using the qualities we have acquired within the family in the working world. Women are really needed out in the world. (Emmy van Overee, "Hey Mary, the Lock is on the Inside," Rotterdam 1976)

In other words, when the domain of school writing was discursed earlier it was done only at the general task level. It is, however, possible to produce a number of variations from the same task according to how much information is given to pupils. The amount of information is important. It can be a single word or a short rubric. It can be a number of separate, unrelated sentences, the opening or closing sentence of a composition. It can be a short, coherent text or several texts. If several texts are used, there are still many variations: the viewpoints of the texts may be similar or they may vary to a lesser or greater extent.

Different writers process different information in different ways. Therefore the form of prompts is also important. The information may be given through discussion, through writing, through pictures or music or through a combination of these.

Several studies have shown that the prompt is an important factor in school writing (e.g., Bereiter and Scardamalia 1981b). The use of a variety of prompts (pictures, music, text, etc.) tends to produce more original and semantically richer compositions than the use of only a brief title.

Another important factor in the writing situation is whether structural cues are given or not: are pupils told how concrete they should make their compositions, should they give examples, are they advised about the length and the audience of the composition?

When we analyze the topics included in the terminal examinations of some of the countries currently involved in the IEA Study of Written

Composition (Australia, England, Federal Republic of Germany, Hungary, Italy, Finland, Ivory Coast, The Netherlands, New Zealand, Scotland, United States, Wales) in terms of the information provided for writing, we can see that students in different countries face quite a different situation. The least amount of information is provided to Finnish, German, Hungarian and Italian students. Finnish and Hungarian students are commonly asked to write on the basis of a short rubric alone.

It is only in a few countries that students are asked to write to a large, unknown audience in terminal examinations. Generally speaking the audience is not specified in the writing assignment instructions. The richest information is provided in the experimental materials used in Australia and New Zealand.

In the Anglo-Saxon areas, especially in New Zealand and Australia, there seems to be a trend towards a greater variety in the writing domain, particularly through increasing the variety of information and the degree of freedom in the choice of the mode of writing. In several experimental writing tasks the student can choose the approach to writing on a topic. One is tempted to see the influence of Britton's work in this respect.

4. CONCLUSION

As far as the domain of school writing is concerned we have seen that it is a very complex phenomenon. This is true in spite of the fact that the present writer has not discussed the relevance of teacher personality, the degree of extraversion vs. introversion of pupils, or general verbal ability for writing in school.

The on-going IEA Study of Written Composition promises to yield a wealth of information on the objectives and the type of tasks used in writing instruction, on teaching methods, on evaluation criteria, etc. This will be useful in the further elaboration of the domain of school writing.

At this point, with some simplification, we can conclude that the dominant objective of school writing seems to be writing which is related to the development of thinking. Less emphasis is devoted to writing for practical purposes, even if there are some clear signs of growing variety in writing assignments. By way of generalization we can state that in different school systems it has been considered the task of the school to introduce students into written language and help them to acquire the mastery of written, explicit language.

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Tiivistelmäkortti

Takala, S. & Vähäpassi, A. (1983) On the Specification of the Domain of Writing. Reports from the Institute for Educational Research 333. University of Jyväskylä. Finland. ISBN 951-678-856-4. ISSN 0448-0953.

In this report the domain of writing is examined from severa aspects. The following factors are considered: the characte ristics and development of literary culture, functions of writing, cognitive processes associated with writing and their development. These issues are discussed both generally and from the viewpoint of teaching of writing at school. The authors have constructed two theoretical models: in the first one written and oral communication are compared; the second one presents a general model of written discourse, which includes the purpose of writing, cognitive processes and the type of discourse connected with them. - The report is a part of the theoretical background of International Study of Achievement in Written Composition,

Descriptors: teaching objective, writing, cognitive process, communication

Abstract card

Takala, S, & Vähäpassi, A. (1983) On the Specification of the Domain of Writing. - Kohti kirjoittamisen kuvailua ja erittelyä. Kasvatustieteiden tutkimuslaitoksen julkaisuja 333. Jyväskylän yliopisto. ISBN 951-678-856-4. ISSN 0448-0953.

Raportissa tarkastellaan kirjoittamisen aluetta useista näkökulmista. Otetaan huomioon seuraavia tekijöitä: kirjallisen kulttuurin ominaispiirteet ja kehitys, kirjoittamisen funktiot, siihen kytkeytyvät kognitiiviset prosessit ja niiden kehitys. Näitä pohditaan sekä yleisesti että koulun kirjoittamisen opetuksen kannalta. Kirjoittajat ovat laatineet kaksi teoreettista mallia: toisessa niistä vertaillaan kirjallista ja suullista viestintää, toisessa esitellään kirjallisen esityksen yleinen malli, jossa on otettu huomioon kirjoittamisen tarkoitus, kognitiiviset prosessit ja näihin liittyvä esityksen (diskurssin) laji. - Raportti on osa Kansainvälisen kirjoitelmatutkimuksen teoreettista taustaa.

Hakusanat: opetustavoite, kirjoittaminen, kognitiivinen prosessi, viestintä

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