

DISCOURSE ANALYSIS AND WRITING/READING INSTRUCTION*

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INTRODUCTION

In the 1984 volume of the *Annual review of applied linguistics*, Grabe (1985) presented a comprehensive discussion of discourse analysis explaining its history, frameworks, models, taxonomies, and operationalizations. The approach of the present article complements Grabe's as a review with a more direct concern for instructional applications of discourse analysis in student reading and writing.

Grabe points out that "the term discourse analysis has, in recent years, assumed immense proportions" (1985:101). It means different things to rhetoricians, linguists, sociolinguists, applied linguists, and text linguists. In addition to having many meanings, discourse analysis in education—including studies of reading and writing—is truly multidisciplinary. It draws on all the above fields as well as others; e.g., psychology and educational psychology. Although I join Tannen (1990) in celebrating the diversity of discourse theories and methods, the exact domain of discourse analysis in education is difficult to define. Van Dijk, in drawing directions for discourse analysis in the 1990s, describes discourse analysis in education as research done by educational psychologists. Educational psychologists have conducted "traditional content analyses of learning materials, conversational studies of classroom dialogues, and psychological work on reading and text comprehension" (1990:141). But, van Dijk suggests, discourse analysis in education has only scratched the surface, for it still ignores many dimensions of the educational process. He calls for "truly explicit studies" and "a serious interdisciplinary account" in his discussion.

In light of this commentary, the present article has a number of purposes. It will review seminal discourse analytic research conducted by educational psychologists in the areas of reading comprehension and writing quality. However, the primary focus of the present review is on discourse analytic research conducted by applied linguists on the teaching of writing. Because of the vastness of the territory that this review

must cover, somewhat less discussion will be given to implication of discourse analysis for reading instruction.¹

DISCOURSE ANALYSIS IN WRITING RESEARCH

1. Large-scale research studies of student writing

In writing instruction, the last decade's focus on process writing has benefited from an explosion of studies of student discourse. Further, discourse analyses of student writing have not just been limited to isolated examinations by individual researchers; rather, they have included a number of large-scale research projects of student writing involving researchers from several countries, cultures, and languages. Two international projects with coordinated data gathering and other collaborative goals are particularly noteworthy: 1) the Study of Written Composition of the International Association for the Evaluation of Educational Achievement, and 2) the NORDTEXT and the NORDWRITE projects in Scandinavia. A third group of researchers, whose work has direct relevance for writing instruction, needs to be mentioned—the systemic linguists working in the Firth-Halliday tradition. Though there is some overlap in the discourse analyses and approaches taken by these researchers, it is important to highlight the work of the three groups separately because each represents a distinct effort to improve student writing by means of discourse analysis.

The International Study of Written Composition was planned and carried out as part of the International Association for the Evaluation of Educational Achievement (IEA), a cooperative research organization which has been conducting international surveys for almost 30 years. The Study of Written Composition, begun in 1980, examined the teaching and learning of written composition in schools in 14 countries: Chile, England, Finland, The Federal Republic of Germany, Hungary, Indonesia, Italy, Netherlands, New Zealand, Nigeria, Sweden, Thailand, the United States, and Wales. The goals of the project, as explained by Takala (1988), are multifold: (a) to conceptualize the domain of school writing internationally, (b) to develop an internationally appropriate set of writing tasks, (c) to describe recent developments and the current state of instruction in participating countries, and (d) to identify factors that explain differences and patterns in the performance of written composition with particular attention to cultural background, curriculum, and teaching practices. From 1981 to 1986, thousands of 12-, 16-, and 18-year-old students in the participating countries wrote essays in their mother tongues on a variety of different topics ranging from reflective to persuasive compositions.

A recent volume, *The IEA study of written composition I: The international writing tasks and scoring scales* (Gorman, Purves and Degenhart 1988), describes the development of the topics and the scoring scales and includes copies of benchmark essays with discussions. Discourse analyses of various kinds applied to sample essays from the participating countries are described in another volume, mainly related to the research of the IEA project, edited by Purves (1988). Using data from the IEA study, Connor and Lauer (1985) describe patterns in persuasive writing of students from

England, the U.S.A., and New Zealand, and Bickner and Peyasantiwong (1988) examine reflective writing of students from Thailand and the U.S.A. Additional volumes are being planned based on the rich data set of the IEA study. The data for the project should be of particular interest to discourse analysts interested in working with cross-cultural data because of the uniformity and cultural sensitivity of the topics used.

While the IEA project examined cross-cultural issues of teaching and learning how to write, the NORDTEXT and its subgroup NORDWRITE projects focus more on the connections between textlinguistics and the teaching of composition. The NORDTEXT project, The Nordic Research Group for Theoretical and Applied Text Linguistics, was initiated at a symposium on Coherence and Composition at the Research Institute of the Åbo Akademi Foundation in 1984; the proceedings provide one of the earliest careful examinations of the connections between text linguistics and the teaching of composition (Enkvist 1985a). The proceedings of the 1985 Nordtext Symposium, held in Trondheim, Norway, were published in a special issue of *Text* (Enkvist 1985b).

More recently, a subgroup, the NORDWRITE project, has been formed. This subgroup concentrates on the development of written EFL skills in the Nordic countries, focusing on the discourse-level in writing. The analyses to date have been organized according to a common core of variables (e.g., lexical cohesion, theme dynamics, and superstructure markers). Evensen (1986) provides an overview of the project; papers by Linnarud and Lindeberg in the Evensen volume describe results of specific studies in the project. Other publications relating to this work appear in recent volumes on applied linguistics edited in the United States. Particularly worth noting are Evensen's (1990) research on superstructure markers, Lautamatti's (1987; 1990) work on topical structure analysis and coherence, Enkvist's (1987; 1990) writing on discourse theory and theories of coherence, and Wikborg's (1990) empirical study on coherence breaks in Swedish EFL students' writing. These NORDTEXT and NORDWRITE projects have identified many important problems and have come up with solutions for describing student texts in terms of discourse-relevant properties such as cohesion, coherence, and sentence functions.

Finally, the third group of researchers, followers of the systemic linguistics tradition, have focused on written language functions of student writers, making significant contributions to the teaching of writing. Particularly noteworthy here is the research of four applied linguists: Barbara Couture, James Martin, Joan Rothery, and Kim Lovejoy. In *Functional approaches to writing* Couture (1986a) demonstrates how two kinds of meaning systems—conceptual logic and contextual semantics—are realized through texts. According to Couture, systematic lexical and syntactic choices express logical relations between topics and comments, while the linguistic choices that comprise registers and genres give texts relevant contexts for ideational interpretation. Texts need a functional dimension of clarity, Couture claims, but they also need exigence—they "must be relevant to the assimilated knowledge systems of the writer and reader in the shared context the text invokes" (1986a:85). This distinction is useful for discussions about text coherence; semantically coherent texts are not necessarily

effective without a shared context. (See Enkvist 1990, for a concurring view about the complexities of coherence.)

In more empirical research, Martin and Rothery (1986) use functional grammar, as well as discourse, register, and genre analyses developed in the framework of systemic theory, to explore qualities of children's writing. In work conducted in Australian schools, their research shows that good student writing exhibits essential features characteristic of particular genres; for example, good stories have something resembling Labov and Waletzky's (1967) scheme of orientation, complication, resolution, and coda. Martin and Rothery therefore recommend that teachers help young writers learn to distinguish and use linguistic and discoursal features typical of certain genres. Martin and Rothery's practical orientation, coupled with their understanding of the writing process, stressing students' innovative writing, places them in the forefront of applied linguists involved with discourse analyses of student writing.

Lovejoy (in press), drawing on notions from the Prague School of Linguistics and Halliday's functional grammar, has applied concepts of cohesion and information management in analyses of published writing in three disciplines (counseling psychology, biology, and history). Lovejoy's findings show that fewer significant differences in distribution of cohesive ties are found in themes than in rhemes, suggesting significant differences in the ways in which given and new information are managed in diverse disciplines.

2. Text-based studies

In addition to examining discourse analysis and writing from the perspective of specific research approaches, it is necessary to survey the field from various text-based perspectives: cohesion, coherence, and superstructure. There is a diverse array of research studies, with varying populations and distinct contexts, which is best synthesized in terms of the discourse analysis methods used.

Cohesion. Analyses of cohesion have received much attention among applied linguists and writing researchers. Cohesion, an intersentential property of text, is achieved through specific linguistic features that give text its "texture" (Halliday and Hasan 1976). Halliday and Hasan's (1976) basic taxonomy identified five kinds of cohesive ties: reference, conjunction, lexical cohesion, substitution, and ellipsis. A more recent version of this taxonomy has expanded the number of categories and altered the basic organization of the taxonomy (Halliday and Hasan 1989).

Many first-language researchers have studied the relationship between the cohesiveness of student writing and its overall quality and/or its coherence.² Among these studies, Witte and Faigley's pioneering research (1981) showed a relationship between cohesion and coherence in college students' writing. In contrast, Tierney and Mosenthal (1983) found no relationship between cohesion and coherence in twelfth-grade student essays. More recently, in two studies, Fitzgerald and Spiegel (1986, Spiegel and Fitzgerald 1990) examined the relationship between cohesion and coherence in third and sixth grade students' writing. They found evidence of a relationship

between cohesion and coherence which varied according to text content. Neither writing quality nor the students' grade level affected the relationship. What is noteworthy about their studies, however, is their use of two different measures to evaluate coherence and the resulting difference in the findings.

In the first study, Fitzgerald and Spiegel (1986) used Bamberg's (1984) scale of coherence, while in the second study (1990) their measure was Hasan's (1984) cohesive harmony index. Bamberg's scale is a holistic one in which raters consider six facets of coherence: focus, context, organization, cohesion, closure, and grammar. Scores on these facets range from 1 to 4. Hasan's cohesive harmony index is derived entirely by analysis of cohesive chains in a text. The holistic rating and the text-based, linguistic measure of coherence revealed different profiles of the cohesion/coherence relationship. These results should not be surprising, however, when one considers the underlying premises of each measure. Bamberg's measure considers all aspects of texts and, not surprisingly, correlates highly with holistic ratings of general essay quality (see also Connor and Lauer 1985, which found correlations as high as .75 between subsections of Bamberg and holistic ratings of quality). By all indications, Bamberg's scale may not be as much a valid measure of coherence as it is a way to generate holistic ratings. Hasan's index may be an accurate measure of text internal coherence, but, as Fitzgerald and Spiegel point out, it does not consider how well the writer develops the setting and context of the essay.

Spiegel and Fitzgerald's research is indicative of the problems that have been inherent in educational researchers' operationalizations of coherence in terms of cohesion in the past decade (see also Cox, *et al.* 1990). An analogy can be drawn here between Bleich's (1987) characterization of reading comprehension research and cohesion studies described above. Bleich writes: "comprehension when studied scientifically in this sector of the academy, is that which a comprehension test measures" (1987:7). Analogously, coherence is what a coherence measure tests. In Fitzgerald's and Spiegel's studies, cohesion is what Halliday and Hasan (1976) describe it as, and coherence becomes only what Bamberg's scale and Hasan's cohesive harmony index measure.

L2 studies, in contrast with most L1 studies, have been characterized by innovative probing of the underlying premises of cohesion and coherence. This probing along with skepticism about "ready-to-use" measures may owe its origin to Carrell's widely-quoted article (1982), "Cohesion is not coherence." In that article, Carrell criticized the concept of Halliday and Hasan's cohesion as a measure of the coherence of the text and cautioned teachers not to expect cohesion theory to be the solution to ESL/EFL reading/writing problems. Backing her claim with both empirical evidence and evidence from schema theory, Carrell argued that coherence is not located in the text and cannot be defined as the result of textual features.

In ESL, fewer studies have been conducted relying on the use of cohesive devices in ESL writing. Scarcella (1984) examined patterns of cohesion in the ESL academic writing of different language groups. One of the four groups—Korean subjects—showed the greatest difference in cohesion behavior when compared to

native English speakers. Connor's (1984) study examined the relationship between cohesion and coherence in the writing of native English speakers, and Japanese and Spanish ESL college-level subjects. She found that general cohesion density was not a discriminating factor between native speakers and ESL writers. The ESL writers were found, however, to lack the variety of lexical cohesive devices used by the native speakers. Leimkuhler (1990) examined the use of cohesive devices by 25 college-level Korean ESL subjects and 25 native English speakers. Differences in the use of cohesive devices between the two groups were attributed to the L1 as well as to topic choice and content of the essays. In addition to the above research studies, Johns' (1984) discussion of textual cohesion and the Chinese student is noteworthy. Based on close observations of Chinese ESL writers, Johns identified reference and adversative conjuncts as the most problematic cohesive devices for the Chinese student.

Coherence. For more than a decade now, the study of coherence has received the attention of a wide range of researchers (e.g., Beaugrande 1980, Enkvist 1985a, Phelps 1985). Two competing orientations in the definition of coherence have emerged: one that emphasizes the reader's interactions with the text, and one that focuses on the text itself. In recent years, definitions emphasizing the interaction between reader and text have prevailed. Useful applications of coherence theories are also appearing which suggest that coherence theories can improve writing instruction. (See Johns [1986], and Raskin and Weiser [1987] for discussions of coherence for writing instruction. See also Connor and Johns [1990] for an anthology of coherence models in classroom use.)

One particularly promising attempt to describe discourse-based coherence is "topical structure analysis." Topical structure analysis, operationalized for text analysis by Lautamatti (1987), examines how topics repeat, shift, and return to earlier topics in discourse. Drawing on theories of Prague School Linguistics, Lautamatti developed topical structure analysis to describe coherence in texts, focusing on semantic relationships that exist between sentence topics and the overall discourse topic. Coherence in texts is charted using three kinds of topic progressions: *parallel progression* (topics of successive sentences are the same), *sequential progression* (topics of successive sentences are always different; the comment of one sentence becomes the topic of the next), and *extended parallel progression* (the first and last topics of a piece of text are the same but are interrupted with some sequential progression).

Witte (1983a; 1983b) used topical structure analysis to explain differences among groups of high- and low-rated L1 essays. Significant differences were found between the low- and high-rated essays in the frequency of the three topical progressions. In an ESL context, Schneider and Connor (in press) used a sample of essays of levels 3, 4, 5, and 6, written for the TOEFL's Test of Written English and found that topical structure analysis distinguished among readers' judgments of writing quality. Their findings concerning the types of progressions characteristic of lower and higher rated essays, however, did not concur with Witte's findings. One consideration in interpreting the findings, argue Schneider and Connor, is the existence of qualitative differences in writing between ESL and English L1 writers. An alternative consideration, however, and one equally plausible, is that Witte employed an incomplete set of

criteria for identifying sentence topics and topic types. In addition to distinguishing low- and high-rated essays, topical structure analysis in ESL has received attention as a teaching method to help students check for coherence in their own writing and to revise accordingly (Cerniglia, Medsker and Connor 1990, Connor 1987, Connor and Farmer 1990, Tipton 1987).

Superstructures. Several top-level discourse structure theories have been advanced in the past decade; e.g., van Dijk and Kintsch's "superstructures," or "schematic structures" (1983), Meyer's "rhetorical predicates" of expository prose (1975), Hoey's "problem-solution" text patterns (1986), and Tirkkonen-Condit's superstructure of arguments (1985; 1986). However, applications of these well-known discourse theories in writing research, with the following exceptions, have been few.

Carrell, who argues that findings from ESL reading comprehension research and from ESL composition research complement each other, theorizes that "teaching ESL writers about the top-level structures of texts...[and]...teaching them how to signal a text's organizational plan through linguistic devices would all function to make their writing more effective" (1987:55). However, empirical investigations offer conflicting evidence about the relationship between an adequate and appropriate superstructure and a holistic quality score of an essay.

Hult (1986) analyzed sixty college-level L1 essays for "organizational frames" (a macro-level analysis system developed by Hult). She found that a student's development of a clear frame correlated with high-quality rating by the trained assessment readers. The high-scoring students were also found "to have a better understanding of how to apply global marking of organization to produce a more unified and coherent presentation of content and a more focused presentation of argument" (1986:160). Evensen's (1990) research also points to the importance of the knowledge of superstructures and how to signal them. Evensen developed a taxonomy of "pointers to superstructure" which mark metatextual deixis, internal logical structure, topic markers, temporal pointers, and connectors. In a small-scale study using essays collected for the NORDWRITE project, described earlier, the taxonomy is shown to be useful in distinguishing between low- and high-rated essays. Connor (1990), however, applied Tirkkonen-Condit's argument superstructure as one variable among 11 others in a multiple regression model and found no significant relationship between the use of argument superstructure and holistic rating in her sample of 150 L1 high school student essays.

In summary, research on the role of superstructures in student writing is just beginning. There will be no easy answers if we accept van Dijk and Kintsch's (1983) notion of cognitively-based superstructures that are heavily dependent on context, situation, reader-writer interaction, and other pragmatic constraints. I have argued elsewhere that identifiable text structure plays a significant role in textual coherence and that each writer may use a top-level structure at different stages in a writing process: "it may serve as a heuristic that helps...[writers]...generate and organize ideas, whereas for others, these organizational structures may appear later" (Connor

1987:690). Future research needs to continue exploring the role of superstructures in successful texts and their functions in the student's writing process.

Other discourse-based analyses of writing. In addition to applications of discourse theories described above, which can be found in a number of discourse analysis handbooks and text grammars, several applied linguists involved in instructional issues have developed their own discourse-based analytic systems to describe and evaluate texts in instructional settings. Swales (1990) has developed a model for examining introductions for research papers by graduate students. Through his analyses of student papers, Swales provides a convincing argument for the importance of global coherence in research introductions. Harris (1990) examines the role of opening sentences in paragraphs in science textbooks and found that opening sentences fall into five functional types: identifying the topic, stating a scientific fact, indicating the number of parts or categories into which something is divided, identifying an important natural event or scientific investigation, and pointing out a false assumption or lack of understanding of a phenomenon. Tadros (1989) proposes a discourse model consisting of six parts (enumeration, advance labelling, reporting, recapitulation, hypotheticality, and question) for the analysis and explanation of law and economics textbooks. Hinds (1987; 1990), working in contrastive rhetoric, has developed various models to compare discourses in different languages and cultures. For example, he has proposed a reader-responsible vs. writer-responsible taxonomy to describe Japanese and English expository prose (1987) and, more recently, inductive, deductive, and quasi-inductive organization patterns of texts to compare Japanese, Korean, Chinese, and Thai prose with English prose (1990).

3. Future directions in the discourse analysis of writing

Discourse-level analyses of texts during the past decade have advanced understanding of student writing and have given new insights into effective teaching. In the decade ahead, other issues will compete for our attention. Generally, a trend is beginning towards postmodern analyses, away from the structuralism of the past decade. This rather general principle is consistent with Pennycook's claim that applied linguistics in general:

...appears to have continued blithely on with its continued faith in objectivity, in models and methods, in positivism, in an apolitical, ahistorical view of language, in a clear divide between subject and object, in thought and experience prior to language, and in the applicability of its theories to the rest of the world" (1990:20).

The message for writing research is that we need to consider writing in its developmental and its situational context rather than in pure finished texts. For writing research utilizing discourse analysis then, I would like to suggest the following agenda:

1. Increase multidisciplinary cooperation between linguistically oriented researchers and those working in composition and rhetoric. (See Crusius [1989] for a

discussion of discourse theories from a rhetorical point of view.) Durst, *et al.* (1990) and Connor and Lauer (1985; 1988) represent examples of effective cooperation between linguists and rhetoricians in efforts to understand persuasive student writing through linguistic analyses (cohesion, coherence) and rhetorical analyses (persuasive appeals, argument development, audience analysis). Kroll's anthology (1990) provides the most comprehensive and up-to-date discussion of ESL composition from the points of view of both rhetoric and linguistics.

2. Extend discourse analysis from the study of written products to the examination of writing at various stages of composing. With L1 students, Witte (1987) shows how discourse analysis is useful in understanding students' writing from a planning stage ("pretext") through drafting to the finished product.

3. Direct greater attention to "reading to write" settings. In L2 in particular, analyses of student writing (of both "processes" as in Raimes [1987] and Cumming [1989] and of "products" as reviewed above) have been limited to essay writing. Too little attention has been paid to students' writing from sources in academic and professional settings. Spivey (1990) provides a comprehensive review of discourse theories for the purpose of studying students' reading strategies and subsequent writing processes and written products. (See also Connor and Kramer 1990, Flower 1987; 1988, Flower, *et al.* 1990, Johns 1990.)

DISCOURSE ANALYSIS IN READING RESEARCH

Although perhaps not having as far-reaching an impact on reading as on writing, discourse analysis has also influenced reading research in the past decade. A reason for the lesser impact of discourse analysis on reading research is perhaps that reading comprehension is based on psycholinguistic processes which are difficult to analyze. In writing, unlike reading, one has a written product as a natural outcome to analyze. Nevertheless, Kamil (1984) discussed how reading research in the 1980s was changing as a result of three pressures: 1) an emphasis on the reader as an active information processor, 2) an emphasis on interdisciplinary interest in reading research, and 3) the development of comprehensive systems of discourse analysis that could be applied to reading. Among discourse systems, Kamil included Frederiksen's semantic text analysis (1975), Halliday and Hasan's cohesion analysis (1976), Kintsch and van Dijk's propositional analysis (1978), and Thorndyke's structures for narrative stories (1977). Kamil's assessment and prediction have proven to be accurate. Reading researchers have made extensive use of discourse analysis in studies of reader-text interactions. The following section will briefly review two areas of reading comprehension study that have utilized discourse analysis: text structure and semantic mapping.

1. Text structures and reading comprehension

Numerous studies in the late 1970s and the 1980s showed that certain types of expository text types facilitate skilled readers' recall of reading passages (Carrell 1984, McGee 1982, Meyer 1975). The effect has been demonstrated so strongly for skilled L1 readers that some instructional methods for unskilled readers focus on developing

their conscious awareness of common patterns of discourse (e.g., Armbruster, Anderson and Ostertag 1987, in L1; Carrell 1985, in L2). To facilitate the study of text structures, a handbook for analyzing texts (Britton and Black 1985) provides theoretical and practical background for the most common analytic systems. Among systems explained in a step-by-step manner are Meyer's (1975) and Kintsch and van Dijk's (1978).

2. Semantic mapping

Related to the growing body of research demonstrating that instruction in text structure facilitates learning from text is research on semantic mapping. Introduced in L1 by Johnson, Pittelman and Heimlich (1986), semantic mapping indicates visually in a diagram a map of categories and associations in a text. Semantic mapping has been used widely in L1 as a reading strategy with children. In ESL, Carrell, *et al.* (1989) showed that training in semantic mapping is effective in enhancing second-language reading. The sample size in the study was small, however, and further studies are needed to verify the findings.

3. Future directions in discourse analytic research of reading

The theme of much reading comprehension research has been that readers have to master certain structures to understand either the content or form of the text, and that there is one interpretation of a text which signifies its comprehension. Influenced by recent postmodern theories of deconstruction, there have been calls for reading research to reconsider its positivistic emphases (Bleich 1987, Brandt 1990). Brandt argues that research should examine how readers of different levels—expert and novices—"take" the words of the same text. She writes:

Recent reading theory and research have stressed how much readers bring to a text in terms of background knowledge, expectations, inferences, and so on—how much, that is, readers must read into a text in order to make sense. But the process could just as well be described in terms of what different readers pick up from a text (1990:90).

Both Bleich and Brandt recommend reading comprehension research that considers readers as active meaning makers and that explores meaningful contexts and situations for reading. In L2 contexts, this concern has been voiced by Carrell (1988) and Pennycook (1990). Carrell, discussing students' conceptions of reading, writes:

It is purely conjecture, for I know of no research on this question, but I wonder whether many of our ESL readers suffer from the same misconceptions [as L1 readers] about reading in ESL, especially in classroom settings where reading is often done for the teacher's purposes and not the students', and where reading comprehension is usually tested by question answering (1988:109).

Proposing an alternative paradigm for research in applied linguistics, Pennycook asserts: "applied linguistics appears to be continuing untroubled with its firm beliefs in the basic tenets of European enlightenment thought and its two subsequent spinoffs, positivism and structuralism" (1990:10). A major implication of this concern is that contexts, situations, and the role of the reader all need to be considered in research that produces meaningful results.

One direction in reading research, following a postmodern paradigm which allows for an active, meaningful role for the reader, is the recent movement in "reading to write." Spivey (1990) provides an excellent overview of the theoretical underpinnings and practical research applications of this new approach. According to Spivey, writers construct meaning when they compose texts, and readers construct meaning when they understand and interpret texts. Discourse-based cognitive processes are available to readers/writers when they read to write. Readers' "task representations" in reading to write have mainly been studies in L1 (e.g., Flower 1987; 1988, Flower, et al. 1990), but a few studies are also underway in ESL students' reading to write strategies in academic classes (Connor and Kramer 1990, Johns 1990).

CONCLUSION

This review highlights theories of discourse with the most frequent and relevant applications to the teaching of reading and writing. Numerous theories of discourse (e.g., cohesion, coherence, and superstructures) have been studied in student reading and writing in the past decade. Implications of this research for instructional practice have also been demonstrated. In the teaching of writing, discourse theories are useful for both teachers and students. Teachers can help students organize and develop their writing processes by giving opportunities for re-writes with specific discourse-level suggestions. Teachers also need to evaluate students' writing at various levels in their development of genre knowledge; a critical factor affecting teachers as evaluators of student writing is the recognition by teachers of those features that define genres and are valued by the audience. In addition to improving writing instruction, discourse-level features have also been found important in describing and evaluating student writing for placement and diagnostic purposes. In reading research also, discourse theories have been useful in providing both teaching techniques and ways to evaluate instructional materials and reading tests.

The amount and quality of text linguistic research in reading and writing in the past decade is impressive. It is rewarding to see that we have gone beyond syntactic analysis in the evaluation of writing and reading texts. It is also evident from this review that the field has gone far beyond general expectations about the role of discourse analysis in education which have called for rather static analyses of instructional materials and classroom interactions (cf., van Dijk 1990). Instead, discourse-analytic research on reading and writing has begun examining stages in reading and writing, contexts of reading and writing, and the variable interactions affecting reading and writing performance.

NOTES

1. Numerous studies using discourse theories, or what can be traced to traditional discourse theories, have been conducted by applied linguists and composition theorists interested in the quality of student writing. These researchers have typically modified and adjusted theoretical discourse models so that they can be applied to student texts as well. Reading research, on the other hand, has been typically conducted in experimental settings utilizing "ready-made" taxonomies of discourse, (e.g., cohesion) to analyze reading texts and recall protocols. Often, it is difficult to see the link between the original discourse theory and its measurement in reading research in subsequent analyses. (See Bleich [1987] for a thorough evaluation of problems with this kind of research.)
2. Coherence, according to Enkvist, is "the quality that makes a text conform to a consistent world picture and is therefore summarizable and interpretable" (1990:14).

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