

Reconstructing the “Argumentative Structure” of Scholarly Papers: What University Students
'Must Have Learned in School' but Did Not Really Learn

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Abstract

Theoretical articles, methodological articles and case studies often have complex and loosely defined structures compared with empirical studies and literature reviews. Reading comprehension of the first-mentioned scholarly papers poses a largely underestimated problem that is even observed in advanced university students. If students have not learned to focus their attention on an article's argumentative structure, they take away only an additive text comprehension. With few exceptions, scholarly papers contain a global argumentative structure insofar that their authors claim to offer something new. This structure consists in those pieces of the text that are directly functional for the argumentative intentions. Reconstructing the argumentative structure is an indispensable step towards critical comprehension and is a reading strategy that must be taught and learned when the aim of reading is more than to extract isolated information. The result of this reading and reconstructing strategy is, in terms of the text, a structurally transparent text base, and in terms of the reader, the result may be called 'deepened comprehension'. Mastery is a precondition for critical examination of the literature and, ultimately, proficient writing of scholarly papers. Students require more support in this aspect than is normally offered.

Keywords: Text comprehension, reading strategies, text structures

Introduction: A Text Comprehension Problem That Does Not Receive the Necessary Attention

As a teaching assistant at the Faculty for Sociology in a German university (University Bielefeld), I was frequently confronted with the difficulty that university students, including advanced students, struggle with understanding more than a surface-level comprehension of scholarly texts. I later realized that the problem was not the students' poor preparation for a seminar session but that they did not comprehend the reading "because of how they read" (Meyer et al., 2002, p. 486). Only if written text summaries such as reading response papers are demanded from students will a lack of text understanding be obvious. However, German seminars are based on lecture and discussion, and text understanding is assumed but not systematically controlled. To German university teachers, it is more probable that students who remain passive in a session have not read the text than that they have read it but do not understand it. It is often taken for granted that students, even novice students, possess the basic competence to understand texts and recognize their structure. Confronting colleagues with the problem, one often receives the answer: "They must have learned this in school!"

Similar experiences have been reported by American university teachers, as in the following example:

In essence, these preservice teachers had been asked to read a piece of expository text, and they had not been able to recall that text. Initially, it was thought that the preservice

teachers had not, in fact, read the assigned text. However, upon review, the preservice teachers' texts had been highlighted and notated, indicating that the texts had been read. Only one conclusion was evident. Ironically, these preservice teachers had not comprehended or retained the expository text they were assigned to read (Wake, 2009, p. 179).

Apparently, students are assumed to have learned to address expository texts, but "... as the academic demands on ... students become more complicated, explicit reading instruction diminishes" (Ness, 2007, p. 229). There is a difference between Wake's report and the aforementioned scenario from German universities: in Wake's report poor preparation of the reading matter was "initially" (p. 179) thought, in German universities, there is no opportunity to identify deficits under common condition. American teachers may consider instruction in reading comprehension as a "time-consuming burden" (Ness, 2009, p. 159), making this type of instruction a "rare occurrence", at least for content area teachers (Ness, 2007, p. 231). German university teachers do not recognize the need to practice text understanding as an exercise for students during coursework. Moreover, introductions to reading comprehension of scientific texts are not offered by faculty, which is in contrast to the assistance provided to students writing scholarly texts. Writing centers ('Schreiblabor', 'Schreibwerkstatt', 'Schreibzentrum') exist in many universities.²

Students may have difficulty comprehending scientific texts due to a lack of knowledge about the content or due to limited knowledge of basic reading strategies, such as activating prior knowledge or making inferences. These deficits result in problems at the local text level, and students who are normally aware of these issues attempt to adopt comprehension strategies.

² The overview offered by the writing center University Bochum lists (July 2013) 27 German universities (<http://www.sz.ruhr-uni-bochum.de/intern/service/links/index.html>)

Goldman and Saul (1990) identified, apart from a “once through” approach in reading behavior, “Review” and “Regress” as global approaches and ten different local strategies used by college students (p. 187). If students have not learned to address the function of every section within the text as a whole and instead process the text in sequential units without connecting them, known as “addition encoding” (Mayer, 1985, p. 69), they may believe that they understand the text and indeed may at a surface level. This feeling can not only “conceal incomplete understanding at the level of the situation model,” as Kintsch (1994, p. 302) says, but it also obstructs further attempts at better comprehension on the text base level. Grasping only basic ideas, students can answer “what” questions but not “how” or “why” questions, e.g., how the author proceeds and why he proceeds as he does. Thus, students do not experience difficulties and are unaware of problems. One cannot write scientific texts without understanding the literature, and understanding texts presupposes more than surface comprehension. Eventually, the initial hidden comprehension problem will become a writing difficulty.

Therefore, for different reasons, there appears to be a general underestimation of problems with text comprehension at the university level by faculty, teaching staff, and students in the US and Germany, as well as other European countries. The problems are further enforced by the Bologna-process due to the inherent time pressure on students. These problems are known and have been discussed. Sieverding, Schmidt, Obergfell, and Scheiter (2013) examined the impact of reduced options and pressure to perform on university students of Psychology and found increased stress and reduced well-being in students in bachelor degree courses compared with students in the traditional diploma degree courses. In a broad survey of German bachelor students, less than half of the respondents (46 %) stated that critical thinking has been enhanced during their studies. The students also criticized the insufficient instruction in scientific

methodology (Bargel, Heine, Multrus, & Willige, 2014, pp. XIII, XVII). A general awareness of student problems is present; however, reading comprehension has not been identified as a main problem.

Not only faculty, professors, and students fail to perceive the problem; research on text comprehension has demonstrated similar negligence of comprehension problems. “The college population has not been as widely studied because of the assumption that they had already learned these structures” (Samuels et al., 1988, p. 172). Research on text comprehension problems of university students is poor for many reasons. The texts used for empirical research by psychologists are more commonly narrative for different reasons, such as a “lack of well-defined expository macrostructures” (Mosenthal, 1985, p. 389). Texts used for empirical research are generally short, unlike extended articles in a scientific journal. Calfee and Chambliss (1987) criticized the commonly-used methodology as “inadequate for evaluating the comprehensibility of anything as large as a whole chapter or book” (p. 357). For “texts”, Calfee and Chambliss refer to “textbooks”, which typically do not have the consistent argumentative structure (conf. their example: Brooks and Warren) present in scholarly papers and monograph or treatise chapters. The texts used in empirical studies normally represent one structural category, more often on a lower difficulty level than the university or college level, and “...the question of how organizational patterns affect the reading of longer expository texts constructed with a mixed structure remains unanswered” (Armand, 2001, p. 69). Under these circumstances, attempting to surpass addition encoding is not an obviously indispensable step towards comprehension at the level of investigation and is therefore not considered. Additionally, psychologists are interested in comprehension processes, such as memorizing and remembering, and not in the initial text structures but in their effects. Black & Bower (1980, p. 223) declare,

“[W]e are psychologists primarily interested in what people remember from the texts they read or hear.” Similar statements are often made (Loman & Mayer 1983, p. 404; McGee 1982; Meyer 1973, p. 17; Meyer, Brandt, & Bluth, p. 97; Meyer & Rice 1983; Schallert & Tierney 1980, p. 1; Thorndyke 1977, p. 77). In contrast, linguists are primarily interested in local structures. Composition textbooks treat the different types of effective writing separately. Thus, there is little interest in global structures in the context of addressing more extended and structurally complex texts.

A Special Problem of Inadequate Text Comprehension: Special Texts

Why should there be special problems of text comprehension for students at the university level or even *especially* at the university level? The answer follows from the types of texts university students are more often exposed to than lower level students. Generally, university students are not exposed to textbook materials, i.e., short pieces of text with distinct content, but with scholarly papers, monographs or treatises. What are the characteristics of these types of university texts that bring about problems? These papers must develop an argument about the novelty of the treated item and thus enlarge the existing body of scientific knowledge. Understanding arguments is more difficult than describing them, and these texts contain a large proportion of arguments. If they are not completely theoretical, they will claim co-relationships, and correlation between at least two items in the western world is normally regarded as causal. “Causality is a cornerstone of our perception of the world. We make sense of events or personal experiences by infusing causal relations to integrate them into our image of the world” (Schroven, Beller, & Bender, 2013, p. 9). Causal relations must be argued if the author is not content with conjectures without proof. The fundamental reason for argument is the attributional

character of causality. Statements about a causal relation cannot be verified but can be accepted as probable based on given proofs within an argument. But the problematic aspect is not the argument as such, nor is it the number of arguments that poses problems; to a greater degree, the problematic aspect is that the whole structure of these texts is determined by the “novelty claim” (Kaufer & Geisler, 1989, p.290), the aim to develop an argument about the novelty of a discovery or insight. Of course, when an article argues about the appropriateness of some action and not about the novelty of a discovery or insight, the whole structure will be determined by this aim, too, but it has other constituents than those distinguished by Kaufer and Geisler for the ‘novelty claim’, and this kind of article is rarely found in scholarly journals.

The main characteristic of texts that university students, compared with other students, are confronted with is that these texts not only contain arguments but are written to develop an argument, whereas “Textbook writing... rarely incorporates well-written argument of any length” (Chambliss, 1995, p. 778). There are other types of articles that are frequently found in journals: discussions, necrologies, critical appraisals, reviews, etc.; these articles are of scholarly quality but less structured than a monographic paper and are therefore of no interest here. The following discussion is focused on scholarly texts whose finding is not known nor not taken for granted and thus needs arguments to convince readers regarding the correctness *and the novelty* of the provided information in the form of facts or statements about relationships; therefore, such texts have an argumentative structure. In descriptive texts, the author may have great freedom regarding what to include in his text, as van Dijk and Kintsch (1983, p. 195) claim for the semantic macrostructure. In argumentative texts, the situation is different because certain functions must be fulfilled: to concede, support, refute, evaluate and conclude at the local level and especially at the global level for the text as a whole. Similar functional prerequisites do not

exist for descriptive texts.

Insofar as scholarly texts develop an argument, they have functional prerequisites and should contain text units that fulfill these functions. These functions can be fulfilled by any local text structure. For example, every local text structure can be the form that is used to deliver evidence in the context of an argument. Thus, the argumentative function that is recognizable regarding the text as a whole is not a characteristic of a certain local text structure; recognizing the local text structure does not help to recognize the possible argumentative function. The five (or six) text structures proposed by B.F. Meyer, including description, sequence, compare/contrast, cause-effect, and problem solution (and listing) (Harvey & Goudvis, 2007; Kissner, 2006; Mayer, 1985; Meyer, 1975; Meyer et al., 1980; Meyer & Freedle, 1984; Williams, 2007) do not play a role in this context. Therefore, "...it makes more sense to examine the *function* of each element, including paragraphs, within the elaborated text structure" rather than "their structural form" (Calfee & Curley, 1984, p. 177).

However, local text structures, which in a given text fulfill a needed global argumentative function, may have their own functional prerequisites and therefore need text units with local function. For example, a cause/effect passage may implement (local function) a comparison passage and thus offer evidence (global function) for the intended argument. Alternatively, a precise description of an item (global function) may presuppose a comparison with a similar item ("different but easily confusable"; Rittle-Johnson & Star, 2011, p. 204) to overturn any doubt; the comparison here has a clarifying and local function. Other functions can be recognized. Text units fulfill a communicative function insofar as they facilitate the reader's comprehension, including illustrations, exemplifications, summaries, and repetitions or identifying functions (categorization, classification, definition) or formal organizational functions (introduction,

transition, methods, results). Between these different functional levels, all parts of a text must be correspondingly allocated to recognize the argumentative text structure using the text units that are directly functional for the text as a whole.

The text as a whole is an empty formula. Argumentation is a general frame inside which an author attempts to realize his aims. This frame has functional prerequisites, but the indispensable elements of an argument in a given text are determined by the authors' intended ways of proceeding forward to realize their substantial purposes. Such procedures and not the substantial purposes themselves are essential in determining which text parts may be functional when addressing the text as a whole. For example, an author may intend to show that in highly industrialized countries a certain type of immigration policy is the most preferable one under social, economic, political and human rights guidelines. One method of proceeding is to compare different existing solutions regarding connected problems, observable developments, and special political and social context and to evaluate the results. Another possibility is to argue about a certain policy and the possible results with examples taken from varied contexts and from the literature about the problem to develop an alternative. The purpose is the same; however, the procedure is different, and hence, the relevant functional prerequisites are different.

A Special Problem of Inadequate Text Comprehension: Special Task

The task in reading a scholarly paper as characterized above is to follow and reenact the argumentative structure, comprehend *why* the author does what he does, and address the treated subject, which goes beyond understanding *what* the author says. A complex structure requires more than addition encoding for comprehension. Thus, the problem does not consist in increased difficulty of content but in increased structural complexity, i.e., the manner in which different

parts of a text are coherently related, constituting the argumentative text structure in a strict sense.

What is meant by the concept argumentative text structure? Every well-constructed expository text has an argumentative structure in the sense that every part of the text has an identifiable function, including the function of providing information, enhancing comprehension, organizing, giving examples, and offering evidence for claims. In other words, for every part of the text, it should be possible to give an answer to the question: why did the author do this? Argumentative structure refers to the connection between differently substantiated parts of the text. Expository texts beyond the simple enumeration of information have this *general* argumentative text structure, which does not mean that the functions of identified text parts are indispensable; they may be superfluous. Within texts written to present an argument, inside the general argumentative structure, text parts can be identified that are directly functional and indispensable in developing the argument. These text parts form a *special* argumentative structure that is individual for every text. To comprehend scholarly texts beyond the surface level, identifying those parts of a text that have an argumentative function as part of the special argumentative text structure is necessary. Directly, this identification task is not possible; it is possible only by identifying the context and, once inside the context, the detours.

Identifying comprehension problems in this manner alters the meaning of comprehending a text beyond surface-level comprehension. Deep comprehension consists of, according to the literature, constructing a situation model. However, constructing a situation model is not presupposed in the reconstruction of the argumentative text structure. “In the situation model, the text has lost its identity” (Weaver & Kintsch, 1991, p. 238). In searching for the argumentative structure of an extended text, the reader remains on a level that van Dijk and Kintsch (1983) call

the “text base level.” In doing so, the reader may activate prior knowledge and make inferences off-line; however, the goal is to find the author’s intended meaning, and the search for meaning in this restricted sense does not involve “one in monitoring and reshaping one’s own thought”, as Biggs claims (1988, p. 216). “The text base is a representation of the text as it is” (van Dijk & Kintsch, 1983, p. 51), as long as this representation is locally and globally coherent (p. 11).

Identifying the argumentative text structure results in a rearranged or at least structurally transparent text base that goes beyond global coherence and proposed strategies (particularly, making use of the macrorules deletion, generalization, and construction) in the van Dijk and Kintsch model. One may ask if this rearrangement does not inevitably imply meaning added by the reader, thus resulting in more of a construction than a reconstruction. However, accepting “the intuitive notion of a ‘meaningful text’ as a pragmatically valuable fiction” (Schmidt 1985, p. 291), agreeing on author intentions is assumed to be possible even from a constructivist point of view. While (McCormick & Waller, 1987, p. 204) make use of this notion in their analysis of the interaction between the text and the reader, Schmidt employs it in regard to the communication between readers and provides plausibility by claiming that „every subject follows rules, applies conventions, and makes use of stereotypes that are shared by other subjects with whom he/she has built up a consensual domain presupposed by any communicational operation” (Schmidt 1985, p. 291). The scientific community is such a “consensual domain.”

Comprehension on this level and not with the generated situation model is relevant in scientific communication, i.e., the horizontal communication between scientists. This type of comprehension may be called deepened comprehension, which is different from surface comprehension on one side and deep comprehension on the other; it aims at “textually manifested surface and meaning structures” (van Dijk & Kintsch, 1983, p. 194) as antecedent to

further processes of meaning assignment based on cognitive structures.

Although the literature, apart from the surface code, frequently contains two levels of text representation, text base and the situation model, the argumentative structure represents a third level complementary to the basic text base or at least a complementary aspect of the text base, already providing an enriched meaning that is near the explicit text presented. It is an oversimplifying assumption that deep comprehension may be possible without efforts to achieve deepened comprehension and thus without relevant strategic text processing. Arriving upon deepened comprehension is a distinct step in text processing of extended scholarly texts and is indispensable for comprehension of the text as a whole (a reader may have other reading goals). How to help university students to succeed in executing this step and becoming aware of how the author constructs his argument by reconstructing the text's argumentative structure is a problem largely disregarded in the literature and in academic practice; however, comprehension processes on the surface level and how to achieve deep comprehension are frequently discussed. In questioning deepened comprehension, it is here assumed that the reader has correctly identified *what* the author said in the text. The reader may have also recognized the form and special local text structures that the author selected to present. The reader may not know *why* the author says what he says, such as the function of the single part for the text as a whole and for neighboring text parts. The reconstruction of the special argumentative structure inside the general argumentative structure comes after a first reading and surface comprehension, while subsequent conscious strategic processing attempts to connect the different parts. Addressing relations on the global argumentative level must be learned and practiced. This practice, in my experience, needs support.

Two Basic Strategies to Address Higher-Level Text Comprehension Problems

Once the problem of inadequate text comprehension is identified in this manner, two reading strategies that support reading comprehension towards deepened comprehension can be proposed. A bottom-up reconstruction of the argumentative text structure by looking for the function of every part of the text within the overall context, the text as a whole, can be utilized while reading, especially after a first complete reading. A well-written scholarly paper does not contain superfluous information; every part has or should have a function that must be identified. However, not every part must have a global function. Nevertheless, no single part should be left aside or regarded as inconsistent, seemingly providing anomalous information. Even if every paper had only a completely individual argumentative structure, this individual global structure can be reconstructed. Depending on the proficiency of the author, difficulties to identify a function are starting points for further reflections. I call this strategy: Ask Why and Provide the Author a Chance to Answer.

Provided that the reader has some knowledge about the content area, the reader can adopt another strategy that involves top-down processing, not by activating structural knowledge and not by looking for accentuated text features (what Kelley & Clausen-Grace (2010) called “Text Feature Walk”) but by creating a structure himself. Once a reader has identified the author’s aim, the reader may reflect on how realizing these intentions can be processed by reflecting on which steps are logically necessary and thus develop his/her own argumentative structure, which is potentially different from the author’s intentions. However, differences are the starting point for reflecting about the author’s processing, a step beyond recording isolated pieces of content. I call

this strategy: Make a Difference.³

Neither strategy presupposes that the connections between the different parts of a text follow a logically, conventionally, aesthetically or in any way fixed pattern, resulting in an argumentative text structure that is not purely individual and is not different for every text. These basic strategies require no prior knowledge of structural elements for facilitating text comprehension, in contrast to the strategy that Meyer (in Meyer, Brandt, & Bluth, 1980) called structure strategy and in the following years extended from a strategy for better memorization into a general reading strategy.

The structure strategy teaches readers to identify the overall top-level structure of expository text (e.g., comparison, problem and solution, cause and effect, sequence, description, and listing) and to use that structure to organize their reading comprehension. Comprehension is defined as the synthesis of new ideas with existing memory structures using the framework of the structure strategy (Meyer & Wijekumar, 2007, p. 348).

³ Example for the Make a Difference Strategy while reading Lars Engwall, *Managerial Capitalism Revisited*, in: Joachim Schwalbach (Ed). *Corporate Governance*, Berlin-Heidelberg: Springer (2001, pp. 173-191).

The author tries “to establish who is actually controlling the modern corporation.” (p. 176). And he claims: “The gist of the arguments above is that business schools, consultancies, and media in interplay are significant for the creation of present and future business practice. They provide carriers of ideas in the form of graduates, consultants, and publications.” ...

“Through their interaction they will reinforce a homogenisation of business behaviour leaving managers an impression that there are few degrees of freedom in terms of action.” (p. 180)

In following the ‘Make a Difference’ strategy, a reader should now start reflecting about which arguments must the author offer to support his thesis? At least:

1. The worldwide education offering business schools themselves must be homogenized
2. Which are the ways of influence?
3. A majority of managers must have passed a respective education
4. There might be no other influencing socialization factors besides the training in business schools. (e.g., “on the job”)
5. There must be some pressure from outside to observe these patterns
6. These influences must not be restricted to a special type of corporation or industry.
7. The passed-on ideas must cover all the typical management tasks.
8. It must be shown, that the managers in general follow these ideas
9. If homogenization is in fact observable, are the treated causes the only possible ones or are there functional alternatives that may give an alternative explanation.)

The argumentative text structure can be reconstructed without previous structural knowledge, similar to what Taylor (1982) termed “text specific hierarchical organization of a text” (p. 323). Taylor’s proposed “hierarchical summarization strategy” also does not require previous knowledge about text structures. However, the “hierarchical pattern of main ideas and supporting details” operates on a low level and does not consider the functional relations between the main ideas beyond the “hierarchical pattern of main ideas and supporting detail”. The recall of ideas may be improved in this manner but does not lead to deepened comprehension.

An Advanced Strategy to Achieve Auxiliary Structural Backing

Undoubtedly, prior structural knowledge would be conducive to better comprehension, and different structural traits can be specified to determine whose knowledge can support the previously mentioned basic strategies. The more formal structure is referred to by van Dijk (1980) as the “superstructure”. In scholarly papers, it consists of indispensable steps, including

- Introducing the item(s) one is interested in and the first description
- Formulation of a scholarly problem
- Collection of available information about the selected item(s) using previous discussion in the literature
- Formulation of a question
 - followed by a comparing procedure
 - assessment of the result
- Formulation of a claim
 - description of further elements mentioned in the claim
 - formulation of implicit or explicit subclaims about relations between these further

elements

- providing relevant evidence regarding the subclaims
 - changing or sharpening the original claim
 - followed by a causal-analytic procedure
 - providing evidence regarding the (sharpened) main claim
 - treating counterarguments
 - invalidation of counterarguments
- Evaluation
 - Summary

Parts of the text that fulfill these formal functions must be identified. However, the main section of every article, which is located between the problem and results of processing, still contains a black box. “Apparently the ‘middle’ categories, which constitute the so-called ‘body’ of the discourse, are ‘freer’” (van Dijk, 1980, p. 111). However, inside this general structure, there are some road forks with alternatives for proceeding in a structured but less formal method of treating a topic.

The first intersection concerns the cognitive status of the topic: is it thus far unknown? Then, this topic must at length be substantiated as an interesting item. Does it consist of an actual social, political, or economical problem? Then, the topic must be outlined that it is a scholarly problem. Is it a scientifically controversial issue? Is it a conceptual or terminological problem? Is it a theoretical problem? The route to the statement “This is the scholarly problem that will be treated here” can be short, as in the case of treating a scientific controversy, or long, as in the case of starting the article with a real-world problem; such problems may include extended descriptions of social or historical developments, of developments in the history of science, or of

the previous analysis of the topic.

The second intersection concerns the perimeter of problem discussion: is the focus on an item itself or does it concern the causes and/or effects of the item? The third intersection concerns possible evidence: evidence by factual correspondence, by temporal coincidence, or by description of causal processes or at least favorable conditions for such processes. The fourth intersection concerns selecting between different methods: comparative or causal-analytic. Some alternatives demand more or less strict methods. For example, to investigate the effects of an item, using comparative methods may be reasonable. An author may be free to make this choice, but after deciding to follow a certain procedure, the author will follow the logic of a relevant pattern. For example, having proposed a certain solution for a problem, he must evaluate the proposed solution, and for that, he must address those aspects of the problem that seem to be solved as well as those aspects that are not solved. In addition, he must address the collateral damage caused by his solution and compare the advantages and disadvantages, etc. In taking this approach, he will follow a material logic and not a conventionalized pattern. Accordingly, a reader cannot match a text against a catalog of patterns; he must reflect on what aspects are important or essential for the procedure used by the author.

This first example can generalize and claim that no patterns can be found that are less formal and substantially more explicit than the formal general frame for scholarly papers on the level of the text as a whole. However, inside the general frame, which is determined by a differentiated question/answer structure and which contains intersections with alternative possibilities for further processing, for the respective alternatives to be at least plausible (if not required), single steps are identifiable that again may lead to a further intersection with further alternatives. Thus, for example, the decision for a comparative processing contains different

varieties for the procedure:

1. Comparison of different items with respect to a certain aspect (e.g., immigration in Germany, France and Japan).
2. Categorizing a great number of items, categorizing the problematic aspects, comparison of different categories. (e.g., immigration in industrialized countries, typical alternative approaches to problems).
3. Comparison of different positions in a controversy, supporting one or developing one's own position.
4. Looking for comparable items as a first step toward comparison as an alternative to experiments to explore future developments.

Then, on a lower level, evaluation and explanation denote different procedures. When the comparison prepares a future choice, the aim is an evaluation: What is better? When the comparison is induced by a strong but disappointed or doubtful expectation about similarities or dissimilarities, the aim is an explanation: Why is it as it is? Is it justified? Is it immutable?

Insofar as a material logic on a middle level suggests it, certain processing patterns are formed. If it is possible to compile a comprehensive repertoire of such patterns, one may doubt, and if it would be auxiliary to have one, one may doubt also. For the individual reader, such a repertoire, which must be learned, would not only be difficult to handle, it would spare reflecting and thus hamper a productive approach to the text. The reader himself must try to find out the regularities, and he will detect structural similarities once a couple of texts have been treated with respect to the argumentative text structure. These similarities will help to reconstruct the argumentative structure of every following text; every new text will enlarge the repertoire of possible argumentative structures. The main attribute of this advanced reading strategy is that it

incorporates the reading of a single text into the reading of other texts, thus not only overcoming ‘addition encoding’ with respect to the single text but also with respect to other texts that will be read for a content area or in the course of a trimester.

Summary

The proposed reading strategy, i.e., to reach a deepened comprehension by reconstructing the argumentative text structure of scholarly papers, is a type of do-it-yourself processing. Of course, to address a text in this manner is arduous and time-consuming and is not appropriate for every text a student confronts. The necessary effort may be daunting. However, in specializing oneself in a subject and especially in preparing one’s own scientific work, this reading strategy “promote[s] better understanding of the subject matter” (Wiley & Voss, 1999) and helps create independence and confidence in one’s own competence. Because this strategy is less a learned and executed skill than an attitude that must be developed and cultivated, the necessary instruction and support should be presented in content area courses and not (only) in special courses.

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