

A metaphorical structural model for teaching argumentative writing in a Greek elementary school

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ABSTRACT

According to the genre-based approach to writing, modeling of a ‘target’-genre consists of a useful tool for teaching and learning in language arts. The current study makes part of a broader research concerning teaching experimental strategies for fostering argumentative writing to 25 eleven years-old pupils of a Greek elementary school (case research). Purpose of the study was to examine the influence of an original structural model, “the train of argumentation”, as methodological tool in the context of a socially constructed classroom, to the pupils’ argumentative writing. The proposed model was influenced by Toulmin and used the “journey metaphor” of argumentation for providing pupils with the necessary knowledge about structural exigencies of argumentative genre. Statistical analysis of data proved: a) a significant augmentation of argumentative text structure awareness and b) a significant increase in the use of connective devices inserted in the pupils’ written argumentative texts.

Keywords: genre, argumentative writing, metaphor, model, literacy, elementary school, rhetoric, structure.

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Introduction

Teaching the writing of argumentative genre

Extending pupils’ literacy and writing skills through a genre-based method of teaching language arts consists of an incontestable reality of the modern school pedagogy [1] and the new Greek curriculum [2]. The term *genre* derives from the latin term *genus* [3] and represents social performances of oral and written discourse that function as answers to certain recurrent rhetorical situations [4]. The interaction between the internal linguistic organization and the external context of situation represents the basic axe of genre-based instruction which stems from the theory of systemic functional linguistics [5]. Understanding genres is closely related to the essential interpretation and effective creation of particular texts [6], to a higher awareness of society and culture as well as to their creative reconstruction [7]. Successful writing consists of a necessary evidence of the pupils’ «mastery of a particular kind of genre» [8].

The autonomy of the argumentative genre in discourse is recognized by several taxonomies based upon different criteria. The intention of the text producer [9], the text-form [10], the aim of the discourse [11], the accomplished speech-act [12] or the functions of the discourse [13] consist basic criteria that differentiate argumentative genre from narration, description, instructions and other genres. As a result of all the above taxonomies, argumentative genre is, mainly, connected to persuasion and to the function of approving certain ideas or beliefs as more acceptable in confrontation with others.

Theorists underline the social power of argumentative genre and writing [14] and, consequently, the necessity of its effective teaching. Costello (1997) supports that the earlier pupils approach to argumentative genre, the more they will benefit in

their future personal, social and academic life [15]. Despite the pre-mentioned benefits, the writing of the argumentative genre - as a facet of non-fiction [16] or factual writing [17] - consists of an extra demanding task for pupils [18], especially in elementary school. Skills such as the invention and production of appropriate ideas and arguments, their integration to a coherent text-structure after their effective evaluation and, finally, their textual representation through appropriate stylistic and linguistic choices compose the multidimensional frame of intellectual, linguistic and metalinguistic demands of the genre [19]. These difficulties reveal the necessity of continuous, new pedagogical researches which will enhance the effectiveness of the teaching process respecting, at the same time, pupils' socio-emotional needs in the language acquisition [20].

Structural models of argumentative genre

According to theorists the use and presentation of schematic models contribute to a more concrete *inscription* of the genre's structure [21]. Equally, they facilitate the acquisition of substantial knowledge of genre's typical organization during the writing process [22]. The use of such models is included, as teaching strategy, to the explicit instruction of genres [23]. Despite the reservations about the possibility of formula's creation [24] and the consequent constraints to pupils' awareness of genres [25], Devitt [26] insists that the explicit instruction of genres succeeds to activate pupils' implicit knowledge and convert it in explicit form as well as to limit their sense of anxiety, especially, in writing.

Furthermore, teaching the writing of argumentative genre through models and / or visual schemata may be examined as a feature of the *scaffolding* teaching and learning strategy [27]. According to Vygotsky's social constructionist theory of knowledge, besides the creation of a certain context in which learning is realized in terms of social interaction, the use of cultural tools, as schemata or models, is considered a helpful, intermediate process that facilitates knowledge's acquisition [28].

There have been several attempts to accomplish a visual representation of argument and argumentative text-structure for enhancing higher order comprehension and writing tasks of argumentative genre. Stephen's Toulmin procedural argumentative model signalled the beginning of such a practice. Claim, data, warrant, backing, modal qualifiers and rebuttal as composing elements of his model influenced the production of posterior models [29]. The three-fold argumentative model of Rottenberg [30], the argumentative structure of Tirkkonen-Condit [31], the argumentative models of Adam [32] and Hillocks [33] could be further explored as reference points. Also, the model of Reznitskaya et al. [34] based on the construction metaphor, the heuristic pyramid [35], the triangle model of argument [36], the socio-cognitive model of the main and faulty path [37] and, even, the scientific model of Imre Lakatos [38] visualise important aspects of the argumentative process as well as the identity and structure of the argumentative genre. Due to their rhetorical and metaphorical character, all the above models are considered as useful tools for the generation of pupils' new cognitive concepts about the argumentative genre and for their pedagogical implication to the teaching process [39].

Metaphors of argumentation

Metaphors play an invaluable role to the teaching and learning process in many cognitive fields [40]. They serve as tools of effective conceptualization of new experiences and cognitive objects. Also, metaphors facilitate the dynamic reconceptualization of existing ideas, beliefs and knowledges [41]. The metaphorical use of language, as manifestation of the human metaphorical thought, is attributed to the interactive relationship of «two thoughts of different things» [42] which generates new meanings.

Cohen [43] doesn't omit to talk about the existence of multiple metaphors related to argumentation. If we accept Kreitman's [44] view that the metaphorical linguistic expression about a phenomenon declares inner thoughts and beliefs about it, we will be impressed by the diversity of metaphors used to present the nature of argumentation and, consequently, by the numerous possibilities we possess to construct the artefact of argumentative genre. Jensen [45] denotes and comments, extensively, the below metaphors of argumentation: a) the *journey metaphor*, which indicates the notion of motion and destination of the argumentative discourse, b) the *edifice metaphor*, which stresses the value of evidence grounding the argument's soundness, c) the *adhesive metaphor*, which emphasizes to the intended consensus between arguer and argue, d) the *chain metaphor*, which underlines the necessary continuity of reasoning and argumentation, e) the *military* or *war metaphor*, which derives from the conception of argumentation as a polemical debate between two opposite camps, f) numerous *nature metaphors*, which summon natural phenomena, elements or images for illuminating argumentation, g) *anthropomorphic* metaphors and h) metaphors which connect argumentation either to miscellaneous human activities, as weighing, either to human artefacts, as the door threshold. To my opinion, we should seek to employ metaphors of argumentation that function as potential releasing and not restraining forces during the process of teaching argumentative genre.

Presentation of the proposed model: *The train of argumentation*

In the framework of my doctoral dissertation, the structural modelling of an argumentative text consisted of an important didactic strategy for improving pupils' written argumentative abilities. The co-construction of the model could offer them detailed information about argumentative genre, its rhetorical purpose, its executive structure and, also, about the necessary linguistic elements that compose its form and guarantee its cohesion and coherence.

The proposed model, *the train of argumentation* (Fig. 1) was influenced by Toulmin's [46] procedural argumentative model and was based on the journey metaphor [47]. By association, pupils were easily transferred from the concept of journey to the concept of a train as the vehicle by which they could realize their oral or written journey to the arguments' land. Since constructivism, as epistemological referent for my research, consists itself «a cultural metaphor» [48], nothing could impede the construction of an original structural model of argumentative genre based in an extended example of analogy [49].



Figure 1. The proposed model: *The train of argumentation.*

Each part of the train corresponded to a different structural element of the argumentative genre. The locomotive represented the basic claim of the speaker / writer about a subject-matter. The first wagon (s) of the train visualized the reason(s) that justified the proposed thesis. In connection to the locomotive, the wagon(s)-reason(s) composed the basic structure of an argument and provided the necessary space for the transfer (persuasion) of the passengers (audience) to a desirable destination (the acceptance of a claim, the exhortation to a certain action etc.). However, during the construction of the model in co-operation with the pupils, it has been noticed that, possibly, some passengers could express different ideas about the final destination of the journey. So, we decided to add a second wagon in order to create the necessary space where the opposite opinions could be hosted. Realizing that just the exposition of different ideas couldn't solve the problem, we made one more step. We added a third wagon which could offer the necessary space for the negotiation of the alternative propositions. In this wagon the passengers should try either to refute the counterarguments either to examine better the strength of the proposed arguments in such a way that the final solution would be the optimum for all the passengers. The last wagon of the train represented the conclusion for the final destination of the journey. The wagon of the conclusion could contain not necessarily the initial claim, since, according to the journey metaphor, the final destination could change because of the adoption of an intermediate proposition [50] or even of the opposite one [51].

The hooks among the wagons represented the necessary words or phrases that function as connective devices of the argumentative text. For example, the hooks represented causal and / or final conjunctions among the claim and the reason(s) that support it, oppositional connectives that signal the introduction of counter-arguments,

concessive connectives for the refutation arguments, conclusion connectives, additional connectives that link sequential arguments etc.

Finally, the tracks on which the train was placed for ensuring the security of the journey, symbolized the necessary evidence that empowers the strength and validity of the provided arguments. The parallelism between the parts of the train and the structural elements of an argumentative text appeared friendly to pupils and was easily conceived by them. In many circumstances pupils extended the provided information. For example: *And you can add as many wagons as you wish. You can add as many reasons as you want...* (Sotiris)

There are several reasons which advocate the use of the above structural model with pupils of elementary school. First of all, the model is easily perceived, because it is based on pupil's existing experience [52]. Then, the journey metaphor is closely related to the active learning process. A journey always consists of a unique experience of discovery as well as a source of new knowledge. From a cognitive point of view, the model may render the development of more complex forms of argumentation, since the number of wagons-arguments can be increased. Also, in a more extended, potential version of the model, the smoke rising from the smokestack may represent *fallacies* that often cloud the argumentative discourse. Moreover, the proposed model succeeds to combine positive dimensions of several metaphors of argumentation and, consequently, to facilitate the comprehension of the argumentative genre. The train-artefact exploits at the same time notions of the journey metaphor as spatiality and destination as well as notions of the edifice metaphor like the foundation component (the tracks-evidence). As a result of this combination the model guarantees a double dynamic movement in the space: an horizontal (loco-motive-wagons) and a vertical one (train-tracks) with possible, positive influences to pupils' learning. Most of all, the artefact of the train as well as the journey metaphor protect pupils from a dogmatic view of argumentation. As it often occurs during journeys that arise surprises, the journey with the train of argumentation can lead the passengers to a different destination from the initial one. Similarly, argumentation doesn't guarantee *a priori* the prevalence of the proposed claim, especially if the argumentative process is not identified to a «battle with victory as the goal» [53] but as an interesting critical inquiry [54].

The study: Data and methodological framework

Participants

The following study describes the effects of the construction and the presentation of the above presented structural model to the argumentative writing of 25 pupils, 11-years old, in the 5th grade of a public primary school in an urban zone of Athens. Pupils shared an homogeneous middle class social back-ground.

Purpose

The purpose of the construction and presentation of the model was the enrichment of pupils' written argumentative text structure due to the integration of all the necessary structural elements and cohesive devices of argumentative genre.

Process

The progressive co-construction and assemblage of model's structural elements were realized for a total of seven weeks, once a week, for two didactic hours (90 minutes)

to the experimental group. Continuous dialogic co-operation of teacher and pupils conducted to the construction of the model in different levels. First, the model of the train was co-constructed as paper-craft in classroom and was placed above the blackboard (Fig. 2) during the intervention period.



Fig. 2. The train of argumentation, as paper-craft placed in the classroom.

Also, the model was independently painted by each student (Fig. 3). Following the three phases of the genre approach to writing [55], the modeling of argumentative genre was accompanied by the analysis of an argumentative text concerning the value of fresh fruit-juices to human nutrition. The argumentative text was written by the teacher-researcher and it was analyzed down to the structural elements of the genre by the pupils. Then, the pupils shared the writing [56] of an argumentative text in classroom, concerning the usefulness of the tram in a city like Athens. As for the content of the text and the invention of arguments, the *brainstorming technique* was used [57]. In a third level, an individual post-test in the form of an informal argumentative letter was written by pupils, independently. Then, it was compared to an analogous pre-test, written in classroom before the construction of the model.

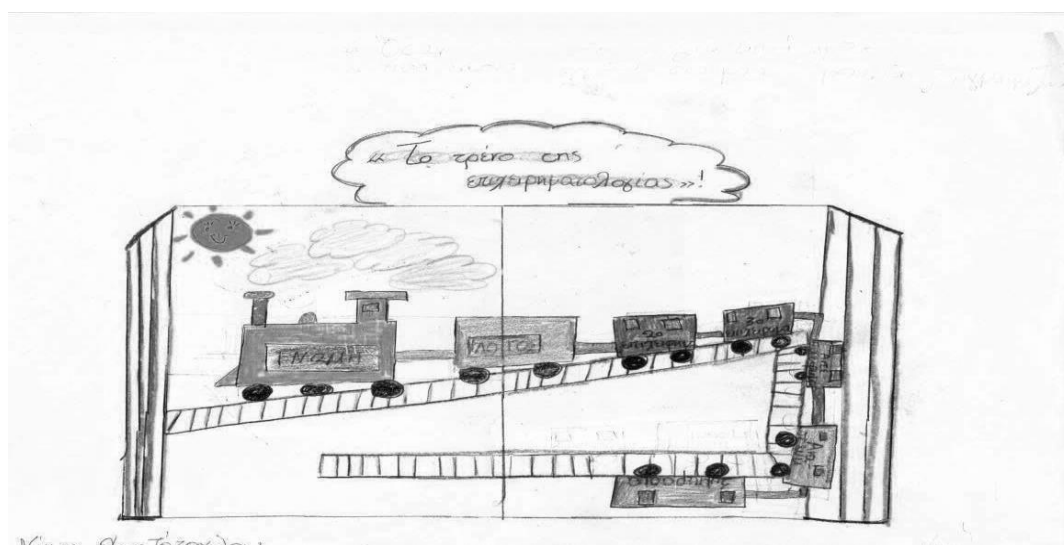


Fig. 3. The train of argumentation designed by a pupil.

Criteria of the research

Two were the criteria of quantitative analysis of pupils' written pre- and post- tests (informal argumentative letters). The first criterion was the awareness of the textual argumentative structure due to the appearance of the following structural elements: a) statement (0-1), b) supporting reasons of the statement (0-1), c) counter-arguments (0-1), d) rebuttal arguments (0-1) and e) final conclusion (0-1). Each of the above elements was marked with one point, if it was present at least once in the pupils' text, creating a rating scale from 0 to 5. As higher was the total sum of marks so more positively was judged the awareness of the argumentative structure. Second criterion was the existence of cohesive devices which guarantee the cohesion and coherence of text's structural elements due to the appearance of: a) connective devices among arguments (0-1), b) connective devices among counter-arguments (0-1), c) connective devices among refutation arguments (0-1), d) oppositional devices (0-1), e) concessive devices (0-1), f) conclusion devices (0-1). Each of the above elements was marked with one point, if it was present at least once in the pupils' text, creating a rating scale from 0 to 6. As higher was the total sum of marks so more positively was judged the cohesion of the argumentative text's structure. Besides the two above dependent variables, the construction and presentation of the proposed model (YES/NO) [58] was considered as the independent variable of the research. The statistical control Paired Sample T-Test was used for the analysis of results referring to the experimental group (E'1) before and after the construction and presentation of the model [59].

Statistical results

Statistical analysis attested a significant improvement to the awareness of the argumentative text structure of the written texts produced by the experimental group. The initial mean (3,2) of the argumentative text structure awareness increased - after the model's construction and presentation - to the final mean 4,56 (Table I).

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Awareness of argumentative text structure (pre-test)	3,2000	25	1,47196	,29439
	Awareness of argumentative text structure (post-test)	4,5600	25	1,04403	,20881

Table I. Initial-final means of the argumentative text structure awareness (experimental group).

The application of the paired samples test showed a significant difference among the two latest means ($p=,000<0,005$) of the experimental group. (Table II). Also, the statistical analysis showed a significant improvement of the cohesive organization of the final argumentative texts (post-test) in confrontation with the initial written texts (pre-test). (3,48 vs. 1, 36) (Table III). The application of the paired samples test showed a significant difference among the two latest means of cohesive organization ($p=,000<0,005$) of pupils' argumentative texts. (Table IV).

Paired Differences		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Awareness of argumentative text structure (pre-test vs. post-test)	-1,36000	1,35031	,27006	-1,91738	-,80262	-5,036	24	,000

Table II. Initial and final means of the argumentative text structure awareness (experimental group).

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Cohesive devices (pre-test)	1,3600	25	1,15036	,23007
	Cohesive devices (post-test)	3,4800	25	1,35769	,27154

Table III. Initial-final means of cohesive organization of argumentative texts of the experimental group.

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper		
Pair 1	Cohesive Devices (pre-test) – Cohesive Devices (post-test)	-2,12000	1,26886	,25377	-2,64376	-1,59624	-8,354	24	,000

Table IV. Initial and final means of cohesive organization of argumentative texts of the experimental group.

Discussion

The use of the proposed structural model, the train of argumentation, seemed to influence positively the argumentative writing of the participants to the research in the elementary school, as it has been shown by the above statistical results. Despite the

objections which underline the contribution of genre models to a formulaic conception of genre structure [60], the results of the current study seem to accord with the conclusions of many other researches which were based on the genre-base instruction and the use of genre models. For instance, theorists attribute pupils' difficulties in argumentative writing, mainly, to the limited recognition of the argumentative text structure [61] and not to cognitive limitations [62]. Better awareness of the argumentative text structure may enhance the coherence of argumentative texts [63] and the macro-structure of the produced texts [64]. Moreover, the efficient representation of argumentative text structure may facilitate the comprehension [65], the recall [66] and the "soundness" of the produced argumentation [67]. In addition, genre models influenced positively the instruction of disadvantaged pupils [68] as well of migrants [69].

Conclusion

To conclude, better awareness of argumentative genre, a genre of power, and, consequently, of argumentative writing, as social, coherent and purposeful action, may be closely related with pupils' successful participation in the formation of an entire future community. This study sought to enhance pupils' awareness of argumentative genre structure and to foster their written argumentative capacities due to the use of a metaphorical structural model hoping that such an effort could conduct them easier to the performance of their individual creativity and identity during the argumentative writing process.

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