



This paper is taken from

*Future Citizens in Europe
Proceedings of the fourth Conference of the
Children's Identity and Citizenship in Europe
Thematic Network*

London: CiCe 2002

edited by Alistair Ross, published in London by CiCe, ISBN 1 85377 356 5

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Chelmis, S K. (2002) An intervention programme for the development of children's argumentative composition competencies upon socio-moral dilemmas, in Ross, A. (ed) Future Citizens in Europe. London: CiCe, pp 239 - 248

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This paper does not necessarily represent the views of the CiCe Network.



This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained herein.

Acknowledgements:

This is taken from the book that is a collection of papers given at the annual CiCe Conference indicated. The CiCe Steering Group and the editor would like to thank

- All those who contributed to the Conference
- Cass Mitchell-Riddle, head of the CiCe Coordination Unit
- The University of North London (now part of the London Metropolitan University) for financial and other support for the programme, conference and publication
- The SOCRATES programme and the personnel of the European Commission Department of Education and Culture for their support and encouragement.

An intervention programme for the development of children's argumentative composition competencies upon socio-moral dilemmas

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Introduction

The introduction of the written word for communication accelerated the development of civilisation and the rise of democratic institutions. Greek philosophers articulated their unique and admirable thinking through their texts, and by communicating their ideas around the Mediterranean influenced the socio-political processes of their era (Romily, 1992). This was the foundation of western civilisation: it is no coincidence that the first democratically-ruled towns and states emerged at about the time that early Sophists in Ionia developed orthodological thinking and the inquiry method that emancipated people from the bondage of magical thinking and social customs (Gaur, 1984). The great philosophers of antiquity used writing to preserve the constantly expanding amount of information and, with direct access to the wealth of ideas, past and present, they had far more opportunities for critical reviewing information and examining diverse point of views (Ong, 1997). Written culture thus offered the basis for exchanging ideas and originating controversy between different schools of thought.

The importance of both oral and written language in the formation of pupils' socio-political identity is now recognised by scholars working in the field of citizenship education, and most citizenship education curricula credit the skills of communication and value the socialising force of language. Active pupil engagement in classroom discussion on various issues is an indispensable feature of most contemporary citizenship education curricula in Europe, as this is regarded as a process conducive to higher level thinking and knowledge acquisition (Wilen & White, 1991). Similarly, contemporary didactics propose teaching writing across all curricular subjects as a means of developing critical thinking skills, for promoting content learning and for boosting self-awareness (Matsagouras, 2001). Teaching writing skills within citizenship education appears to help pupils

- (1) to organise and develop their thinking, reflect on their ideas and values, and communicate their ideas effectively,
- (2) to elaborate their ideas through the confrontation with different stances and through the incorporation of counter-arguments into their syllogisms, and
- (c) to become more tolerant towards different views.

There are psychological and sociological arguments that support the inclusion of linguistic skills within the citizenship education curriculum. Psychologists acknowledge the interrelationship of thought and language, one promoting the development of the other. Language is not only a vehicle for the expression of the content of the mind, but defines the content and method of thinking itself. Plato identified thought with language 2500 years ago; more recently Vygotsky considered words as the microcosm of awareness. Language socialisation within the larger communicative context of a child's life constitutes an important factor of socio-political identity formulation.

The interrelation of language and thinking was also recognised by Bernstein (1975), who considered the societal implications of language codes that different populations use. He

suggested that the use of an advanced language code by people from higher socio-economic groups contributes to better social behaviour and adjustment and better mental development when compared to those used by people from lower groups. This difference divides society into the privileged users of the advanced code and those who use the inferior language code and do not possess those abilities, logical, societal, of expression. Exclusion from the advanced language code, which constitutes the rhetoric of the authority, leads to the exclusion of socially disadvantaged people from decision-making mechanisms.

Aim of the study

In contrast to the theoretical evidence on the educational, psychological and sociological importance of language development, there is hardly any systematic connection of linguistic and citizenship skills within curricula and research on writing within the larger domain of social studies (Gilstrap, 1991). This is partly because the research tradition was greatly influenced by cognitivism and the “cognitive conception of language” which maintains that language is distinguishable from thinking process. According to this, language only serves to communicate thoughts and is not a vehicle embodying them (Slezak, 2002). In this context, the research tradition in humanities, social sciences and cognitive psychology considered language as a “window into mental life”, a tool for viewing children’s thought (Bhatia, 2000). Research aimed at eliminating any perceived deficiencies of language expression in order to obtain a “pure” picture of the thought processes.

Nevertheless, citizenship development does not seem to flourish outside the language communication context and one has to look within language use for those features that denote the transition to higher levels of citizenship awareness. This paper evaluates the results of a school-based intervention program that aimed at developing pupils’ argumentation writing skills as part of the citizenship education curriculum. The research question was whether teaching pupils such skills on socio-moral issues would lead to an improvement of the coherence and the structure of their texts and the development of pupils’ moral reasoning, as expressed through those texts.

The intervention focused on argumentation as a fundamental element of democratic citizenry, since the conflicts of values and interests inherent in a democracy need to be resolved through means of critical thinking and coherent expression of reasoning, which are defining features of argumentation. On the other hand, one would expect that moral reasoning, an important dimension of citizenship identity, would be positively affected by a respective development of argumentation skills. This anticipation is based on the assumption that the structuring of language leads to the structuring of thinking on the grounds of logic, which, in the long run, may possibly lead to children’s moral development.

Pupils' characteristics

The study participants were 30 fifth grade pupils with an average age of ten. Their school is located in Rafina, a rapidly developing area of Attica characterised by a multi-ethnic, multi-cultural population, including a large proportion of immigrants, especially from Albania and Eastern Europe. The demography of the area is reflected in that of the school:

almost half of classroom population consists of children from first generation immigrant families with a low socio-economic background.

The specific age group of children was chosen because recent research has shown that by the age of ten the majority of children are sufficiently competent to meet the challenge of composing an argumentative text (Matsagouras & Chelms, 2001). By that age, a large proportion of children have developed the necessary argumentation prerequisites, such as abstract thinking, which allows them to transcend concrete empirical data and transform them into abstract categories, and empathy.

Their developmental stage can be characterised as transitory: the children have begun to realise that fairness requires more than strict equality, and their concerns for equity (taking into account the special needs, situations, or the contributions of others) are coordinated with reciprocity in structuring moral decisions. As far as conventional rules are concerned, children realise that these are made to preserve order, which are constructions of authority and are passed down by those who are in charge (Nucci, 2001:83).

In our study the children were divided into an experimental and a control group. The experimental group received systematic teaching focusing on both the method of exploring socio-moral dilemmas and the method of composing an argumentative text. As a pre-test for certifying that the two groups did not differ at the starting point of the intervention, children composed an argumentative text referring to a dilemma (see Figure 1). The pre-test showed that there was no statistically significant difference between the two groups.

Figure 1 Pre and post test dilemma

As he leaves school, George he realises that a toy he had brought with him is missing. He suspects that Bill, a fellow student, has taken it. Bill denies it. George asks Bill to open his bag to confirm his innocence. Bill refuses. Nick and John, two friends of George who are aware of the problem, find Bill's bag unattended and try to open it. They realise that it is locked and in their effort to open it, they destroy the bag, but in the bag they discover the missing toy. Do you think that what Nick and John did was right?

Evaluation Method

After the intervention program, and as a post-test, the children were asked to compose an argumentative text concerning the same socio-moral dilemma. The texts pupils produced in pre- and post-tests were evaluated using criteria referring to both content and text rhetoric. Texts were evaluated according to three major dimensions.

The Morphological dimension

Morphological evaluation examines whether a text meets the general morphological standards that constitute it as grammatically and syntactically coherent (Matsagouras, 2001). Among the evaluation indices argumentative texts were evaluated according to:

Sentence Synthesis Indices, which assess the text's structural complexity, and are calculated using the following formula:

$$\text{Sentence synthesis} = \frac{\text{Number of sentences}}{\text{Number of periods}}$$

Word Density Indices, which assess the text's organisational level, and are calculated according to the following formula:

$$\text{Word Density Indices} = \frac{\text{Nouns} + \text{adjectives} + \text{verbs} + \text{proverbs}}{\text{Pronouns} + \text{articles} + \text{prepositions} + \text{conjunctions}}$$

The Rhetorical dimension

The rhetorical dimension examines whether a text meets the general morphological standards of argumentation (Toulmin, 2000; Matsagouras & Chelms, 2001). Rhetoric evaluation examines the inclusion of the following elements within pupils' texts:

- a. Premise inclusion (organising principles)
- b. Use of argumentation supporting their position
- c. Wording of counter-arguments

The Content dimension

This examines the level of the expressed arguments and counter-arguments, and their coordination. The hierarchy is formulated both according to Kohlberg's hierarchy, as operationalised for research purposes by Lind (1995), and to gathered empirical data. Levels 1 and 2 correspond to concerns for act consequences on oneself, levels 3 and 4 to concerns for a just resolution of the conflict, and levels 5 and 6 to an empathetic approach to the conflict:

- Level 1 Punishment vs personal satisfaction
- Level 2 Social acceptance vs social condemn
- Level 3 Appeal to rules and authority
- Level 4 Distributive justice
- Level 5 Alternative action according to personal values and interpersonal bondage
- Level 6 Caring / Empathy

In order to explore any relations between morphological, rhetoric and content dimensions, additional statistical analyses were used.

Instructional considerations

Socio-moral awareness and personal views on various moral, societal and political issues on the one hand (content), and the organisation of this knowledge in a coherent and effective way on the other (structure / rhetoric), constitute two different problems which a pupil has to solve during argumentative text composition (Bereiter & Scardamalia, 1987). These two problems are interconnected, but experienced writers will use each interchangeably to solve a problem. However, novice writers such as primary school children may be able to formulate a text and its structure with relative success by themselves, if they are provided with the content to include, but they cannot achieve the

opposite, i.e. they cannot use skills of formulating text rhetoric to compensate for insufficient content information.

In the case of argumentative writing teacher support concerning text organisation is extremely difficult to achieve compared to support given on content inclusion. This is because instruction of how best to organise text rhetoric tend to be abstract, while instructions on what should be included in the text are more concrete and can be defined through the teacher's mediation and classroom dialogue.

The logic of argumentative text structure, which rests on propositional thinking, is not always clear to pupils due both to the cognitive and socio-emotional constraints set by the pupils' developmental level, and also to a possible discrepancy between the social message of the text and the pupils' culture. Narrative thinking, reflected in stories and myths told to pupils either in family or in school settings, is more familiar than propositional thinking, which tends to become the master language code of school. School aims at gradually socialising pupils in this code, but this task becomes problematic with pupils from disadvantaged social environments because their social milieu distances them from the dominant language code. This is why children, especially socially disadvantaged ones, can rarely meet the challenges of an argumentative text without systematic support from the teacher.

The teaching process

Given the pupils' transition stage from narrative expression to other forms of communication (i.e. argumentation) and the demography of the classroom, pupils need direct and systematic teaching of authority rhetoric. This is why the method of fading scaffolding (Matsagouras, 2001) is best. This has strong ties with Vygotsky's theory of advancement through the ZPD: teaching starts by directly informing pupils about the process and the logic of instruction and continues with pupils' practice within a context of individualised support. The teacher gradually withdraws support until the pupils are capable of autonomous work on both similar and unfamiliar tasks.

The teaching process, based on Lind's method of dilemma discussion (Lind, 2000), starts with the presentation of a socio-moral dilemma in a written form for quiet reading by the pupils, followed by questions from the teacher aimed at making sure that all the children have comprehended its content. The students then vote on a solution to the dilemma, and the teacher leads a discussion in which pupils use argumentation to support their position. The teacher helps the articulation of children's thinking and writes the pros and cons on the board.

The classroom is then divided into pro and con groups, each of which co-operatively composes an argumentative text. This is a demanding task, since pupils have to deal both with content inclusion and text rhetoric. The teacher controls text rhetoric by providing pupils with forms to complete (see Figure 2): this relieves the pupils from the problem of structuring their text. Gradually the teacher withdraws support on the various teaching phases, until the children become able individually to compose a coherent argumentative text.

In the present study, the pupils in the experimental group periodically dealt with socio-moral dilemmas, exchanged ideas and, working co-operatively, produced written texts following rhetoric prompts. Each teaching session lasted approximately 90 minutes.

Results and discussion

Comparative text analysis with the use of statistics revealed significant pupil gains on specific aspects of argumentative composition.

Figure 2 Form of argumentative writing

I write my opinion upon the issue supporting my thesis

Our group believes that the two boys were right / were not right in tampering with their fellow student's

We write down the arguments someone would mention who holds a different position to ours

Of course, we realise that
.....
.....
.....
.....
.....

We write down the arguments supporting our position / We support our original position

Nevertheless, we realise that
.....
.....
.....
.....
.....

Final conclusions, any other comments

For these reasons we believe that
.....
.....
.....
.....

The Morphological dimension

The two student groups, experimental and control, showed no statistically significant difference concerning word density indices at the pre- and post-tests. However, a T-test on the pre-test showed that the two groups differed on the level of sentence synthesis (SYNTH1), with pupils from the control group appearing more competent in structuring a text. The same calculation done on the post-test revealed that not only had this difference vanished (SYNTH2), but the progress of the experimental group upon the specific text indices was notably high (ABSTRACT)¹ (see Table 1).

The Rhetoric dimension

The experimental and control groups did not differ upon the degree of premise (PREMISE), argument (ARGUMENT) and counter-argument (CONARG) inclusion into their original texts (Table 2). After the educational intervention, the experimental group appears to incorporate more arguments referring to the opposite stance into their argumentative text. Moreover, there is a tendency for the experimental group to include more premises into their texts, even though this difference is not statistically significant.

Content dimension

While the experimental and control groups did not differ initially on the level of the expressed arguments (ARGUMENT) and counter-arguments (CONARG), after the intervention the experimental group pupils seem to use higher level arguments (ARGUM2) than pupils of the control group. The two groups do not differ on the level of pre- and post-test counter-arguments

¹ Variable ABSTRACT, which refers to the variation of sentence synthesis indices after the intervention, was calculated through the abstraction of post and pre test sentence synthesis indices.

Table 1. T test. Grouping var.: Class

Group Statistics					
	CLASS	N	Mean	Std. Deviation	Std. Error Mean
ARGUMENT	experimental group	9	2,1111	1,4530	,4843
	control group	7	3,2857	,7559	,2857
CONARG	experimental group	3	2,3333	1,1547	,6667
	control group	0 ^a	.	.	.
ARGUM2	experimental group	14	5,2143	1,0509	,2809
	control group	11	2,9091	1,5783	,4759
CONARG2	experimental group	13	3,6923	1,8879	,5236
	control group	5	3,0000	1,8708	,8367
SYNTH1	experimental group	16	2,3313	,8965	,2241
	control group	14	3,7407	2,2857	,6109
SYNTH2	experimental group	16	3,3469	1,0500	,2625
	control group	14	2,8993	1,4863	,3972
ABSTRACT	experimental group	16	1,1406	1,1406	,2852
	control group	14	-,8414	1,4430	,3856

a. List cannot be computed because at least one of the groups is empty

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval the Difference	
									Lower	Upper
ARGUMENT	Equal variances assumed	6,214	,026	-1,935	14	,073	-1,1746	,6071	-2,4767	,1275
	Equal variances not assumed			-2,089	12,516	,058	-1,1746	,5623	-2,3942	4,5001
ARGUM2	Equal variances assumed	2,383	,136	4,379	23	,000	2,3052	,5264	1,2162	3,3942
	Equal variances not assumed			4,172	16,629	,001	2,3052	,5526	1,1374	3,4730
CONARG2	Equal variances assumed	,007	,935	,698	16	,495	,6923	,9912	-1,4090	2,7136
	Equal variances not assumed			,701	7,370	,505	,6923	,9870	-1,6180	3,0226
SYNTH1	Equal variances assumed	6,218	,019	-2,279	28	,030	-1,4095	,6185	-2,6764	-,1574
	Equal variances not assumed			-2,166	16,476	,045	-1,4095	,6507	-2,7857	-3,3281
SYNTH2	Equal variances assumed	,755	,392	,962	28	,344	,4476	,4653	-,5054	1,4102
	Equal variances not assumed			,940	23,027	,357	,4476	,4761	-,5373	1,4102
ABSTRACT	Equal variances assumed	,537	,470	4,199	28	,000	1,9821	,4720	1,0151	2,9491
	Equal variances not assumed			4,132	24,702	,000	1,9821	,4796	,9936	2,9491

Table 2 Mann-Whitney U test

ARGUMEN	experimental	N	Mean	Sum of
	control	14	13,86	194,00
	Total	30		
CONAR	experimental	16	16,81	269,00
	control	14	14,00	196,00
	Total	30		
PREMISE	experimental	16	15,31	245,00
	control	14	15,71	220,00
	Total	30		
PREMISE2	experimental	16	17,94	287,00
	control	14	12,71	178,00
	Total	30		
ARGUM	experimental	16	17,13	274,00
	control	14	13,64	191,00
	Total	30		
CONARG	experimental	16	18,69	299,00
	control	14	11,86	166,00
	Total	30		

Mann-Whitney	ARGUMEN	CONAR	PREMISE	PREMISE2	ARGUM	CONARG
Wilcoxon	194,000	196,000	245,000	178,000	191,000	166,000
Z	-1,106	-1,679	-,180	-1,910	-1,475	-2,497
Asymp. Sig. (2-	,269	,093	,857	,056	,140	,013
Exact Sig. [2*(1-tailed	,355 a	,400 a	,918 a	,110 a	,294 a	,034a

a. Not corrected for ties.

b. Grouping Variable: CLASS

(CONARG & CONARG2), which are of a lower level comparing to arguments supporting the subject's position (see Table 1).

Conclusion

The instructional intervention for the development of argumentative writing proved effective in elaborating pupils' texts on the morphological, rhetorical and content levels. Pupils were able to produce more coherent texts as far as rhetoric was concerned, to structure them more richly as far as the morphological dimension was concerned and, finally to exhibit socio-moral messages of a higher level through their arguments. The

intervention seems to have mostly benefited those who scored lower on the morphological and rhetoric levels during the pre-test, and who performed better in argumentation level during the post-test.

Nevertheless, and contrary to expectations, our data suggest that argumentation and morphological structure do not relate to the content level of arguments. In other words our research produced no evidence that the perceived advance in moral reasoning is due to the corresponding development in argumentation skills and vice versa. Their relation remains an open question and more research, especially longitudinal research, is needed in order to explore more deeply and comprehensively the role language plays in overall citizenship development.

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