Teaching Multimodality in Greek Elementary School Language Arts

Anna Fterniati

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Anna Fterniati, University of Patras, Patras, Greece

Abstract: The digital era requires new approaches to the development of literacy through multimodal media of communication. It also requires a rethinking of the ways that research data can be used in the teaching practice, so as to support the students' efforts to enhance multimodal communication skills. From very early on, children develop a variety of cultural experiences, by dealing with texts combining words, symbols, images, movement, graphs and sound, as well as with new types of printing and digital technology (e.g. newspapers, advertisements, magazines, movies, television and radio shows, the web, etc.). The school subject of Language Arts cannot ignore these developments, if it is to meet the actual communication needs of contemporary people. In order to meet these needs, schools should implement systematically designed practices, featuring a variety of modes and media of communication for the elaboration of multimodal texts. The present aims to investigate the degree to which Greek Language Arts textbooks attempt to develop the students' multimodal communication skills through the elaboration of multimodal texts. More specifically, this research attempts to investigate whether the choice of texts and the activities of text comprehension-analysis and written discourse production fall under the concept of multimodality in multiliteracies. The findings indicate a great effort towards in-class elaboration of multimodal texts, in terms of both rates and different types of multimodal discourse, through varied medium site of display. However, this bears no homology with the study and use of varied modes and media, so as to provide students with sufficient means to develop multimodal experiences in Language Arts .

Keywords: Multimodality, Multimodal Texts, Multiliteracies, Language Arts Textbooks, Elementary School

Introduction

THE RAPID DEVELOPMENT of technology and the subsequent accumulation of vast amounts of information have radically changed the landscape of contemporary communication, forming a new reality for texts. Information is drawn from various types of texts, using not only linguistic elements, but also other semiotic media. Language, as written or oral discourse, used to be the main or even the only way of transmitting a text's meaning; in the new reality, language loses its central place, shaping the text's meaning in combination with other semiotic modes. Today, language functions in a *multimodal* scene, coexisting with other types of representation (Kress, 2000, 2003). Far from being secondary, these modes contribute to the text's multimodal composition, affecting the way in which the text is perceived by its readers. The exclusive focus on language is no longer able to reveal what a text is or what language does, in relation to the other component parts of the text. To understand a text means to understand both the linguistic and the visual or other utterance of discourse (Kress et al., 2001).

COMMON
GROUND

Multimodal Texts

Multimodality

Multimodality first appears as a term in the programmatic manifesto of the New London Group (1996), a text addressing the need to review the concept and pedagogy of literacy, so as to renegotiate them towards *multiliteracies*. According to this text, the new, rapidly developed, technologies modified not only everyday reality but also the way in which the new multicultural world is conceived. The subsequent overabundance of communication media made it clear that it is no longer possible to research and interpret communication and its modes in the ways of the past. Due to the new conditions, it became necessary to develop a new skill, namely multiliteracy, so that the recipients of information can be able to elaborate it critically. For these reasons, in 1994 a team was formed by twelve scientists, who met in New London, New Hampshire, Australia, in order to discuss the future of teaching literacy under the new conditions. The team was named the New London Group, and in 1996 it published its first text, introducing the concept of multiliteracy.

By coining the term *multiliteracies*, the members of the group stressed two main interconnected changes, typical of contemporary society:

The first change has to do with the increasing importance attributed to cultural and linguistic differentiality in today's world, as well as with our need to be able to overcome any linguistic and cultural boundaries.

The second change has to do with the variety of semiotic systems by which texts are shaped. Specifically, it relates to the variety of *semiotic modes* utilised in text production, in contrast to the single mode texts of the past. In order to produce meaning, contemporary texts are no longer exclusively based on the linguistic semiotic mode, but rather on the latter's function parallel to other semiotic modes, i.e. visual, audio, spatial, etc. Multimodality is now viewed as substantial and fundamental to any text; language is losing its central role in communication, while the contribution of the other semiotic systems to the production of meaning is considered equally important, not complementary to language. This means that we cannot arrive at a text's meaning by simply adding up; in contrast, it is necessary to examine all semiotic modes simultaneously, since they constitute a single sign (Kress & Van Leeuwen, 1990, 1998).

Teaching Multimodal Texts

As seen above, the presentation of a cultural product today includes and combines more than one semiotic modes. Consequently, multimodal texts are defined as texts that combine words, symbols, pictures, movement, graphs and sound, which are increasingly expressed through new types of press and digital technology, like newspapers, advertisements, illustrated magazines and documents, movies, television and radio shows, the web, etc. (Kress, 2000· Kress & Van Leeuwen, 1996, 2001).

If text multimodality is now a reality, we all have to master the skills necessary to interpret such texts, that is we ought to develop our ability to perceive the various forms of both the semiotic modes and the multimodal texts produced in multilingual and multicultural societies. Due to the impact of new technologies, literacy is modified, evolving into multiliteracy. In

this way, we are able to decode, evaluate and perhaps even utilise the plethora of communication messages that are transmitted daily, in search of recipients.

The school subject of Language Arts cannot ignore these developments, if it is to meet the actual communication needs of contemporary people. Therefore, the aim of contemporary school is to familiarise the students with other sources of meaning, apart from language. The teaching principles proposed by the pedagogy of multiliteracies aim at broadening the students' horizon, nurturing ways of utilising all sources of meaning, so that students can familiarise themselves with how the written discourse of mass communication is now presented. This approach stresses the importance of the students practicing with different genres and text types, drawn from a wide range of cultural sources. Practice provides the right conditions for students to be able to develop their judgment, so as to discuss and understand the social and cultural power of these texts, and the corresponding social practices (Cope & Kalanzis, 2000).

Because of the students' need to understand the main features of contemporary communication, which is constantly changing, schools have to approach real contemporary samples of written and oral discourse, from genres and text types that have been little studied, if at all, even by the educators themselves. For these texts to be accessible in the classroom, they have to be analysed, so that their main features can be pointed out. It is therefore necessary to approach various types of discourse through multimodal texts, so that the students can understand the texts' function in specific socio-cultural environments and produce discourse in relevant contexts of communication.

Research Description

Research Objective

The present aims to investigate the degree to which Language Arts textbooks attempt to develop the students' multimodal communication skills through the elaboration of multimodal texts. More specifically, this research attempts to investigate whether the choice of texts and the activities of text comprehension-analysis and written discourse production fall under the concept of multimodality in multiliteracies.

Research Questions

1. What is the percentage of multimodal texts presented for comprehension – analysis?
2. What kind of multimodal texts are they?
3. To what extent is the texts' multimodality examined (reference to the modes themselves, as well as to their media and resources)?
4. Which visual functions are approached?
5. What is the percentage of multimodal texts' production activities?
6. What kind of multimodal texts are they?
7. Does the teaching material provide the necessary support/guidance (in terms of modes media and resources) for the production of these texts?

Methodology

In order to provide answers for the research questions, the researcher examined the entire teaching material of Language Arts for all grades of Greek elementary school (students' books – 2 volumes for 1st grade and 3 volumes for all other grades – and activity books – 2 volumes per grade), along with the guidelines provided in the Teacher's books. All texts presented were recorded and categorised, while all activities of text comprehension-analysis and text production were analysed and classified on the basis of the categories/criteria described below, corresponding to different measurements. In order to conduct the necessary comparisons, measurements are estimated in percentages, based on the presentation of multimodal texts, both in terms of comprehension and in terms of text production.

Categories of Recording, Classifying and Analysing the Texts for Comprehension-Analysis and the Relevant Activities

1: Multimodal texts for comprehension-analysis

Initially, all texts offered for comprehension-analysis in the teaching material were analysed, depending on whether they were multimodal or not.

1 st measurement

- **Non multimodal texts** for comprehension-analysis.
- **Multimodal texts** for comprehension-analysis.

Multimodal texts were defined as texts displaying an instrumental relationship between text and image, e.g. newspaper articles, advertisements, comics, cards, posters, maps, etc. Cases of simple text illustration were not included in the measurement.

In addition, certain texts were measured as multimodal without featuring in the written material, but emerging from the student's book, the activity book, or the Teacher's book as analysis activities. For instance, students are asked to search online for information to be used in an interdisciplinary project, study maps, record and interpret road signs, conduct audio or video recordings of social events, etc.

The measurement excluded multimodal texts that were not accompanied by any analysis activity, not even on the written text, which appeared as decorative, with neither the student's book nor the Teacher's book providing any relevant instructions.

The measurement also **excluded** multimodal compositions for the teaching of grammar phenomena, that is cases where multimodality is utilised for teaching purposes (example **1**). Measuring these texts would have a point only if the research focused on the extent to which the teaching material is multimodally constructed, not whether it is utilised in order to teach multimodality, which is the objective of the present research.

Example (Excluded Texts) 1: Grade D, Student's Book, Volume 2, p. 14 Table Entitled "The Line of Time", Presenting the Verb System in the Greek Language

2: Use of modes in text composition (as presented in the teaching material)

Texts were then classified on the basis of the use of modes or mode media in text composition.

2 nd measurement

- Use of **written text and image** for the composition of the multimodal text (as presented in the teaching material)
- Use of **other modes**, apart from the above (**or another medium**, apart from the printed page).

In the case of multimodal construction, like the Language Arts teaching material, the main medium is printed paper, while the main modes are the written text and image. Yet, as seen above, the research scanned for any analysis activities on different mode combinations brought in the classroom by students or teachers, e.g. combination of words and sound in the analysis of an audio recorded social event, or combination of words, sound and movement in the analysis of a video recorded scene or television show, etc.

It is considered that, apart from the use of a different mode, the use of a different medium than the usual one (book page), also contributes to the multimodality and the development of multimodal experience, i.e. activities involving the comprehension and use of a web page (the modes remain the same – written text and image – but the medium here is the screen).

3: Medium site of Display

This measurement dealt with the site of display of the medium in question, that is of printed paper.

3 **rd** **measurement**

• **Usual site of display** of the medium
• **Different site of display** of the medium

If we take an ordinary sheet of written paper containing specific information and pin it on the wall, it turns into a poster; folded in two, it becomes a booklet; folded in four and cut, it turns into a flyer. Each of these different sites of display of the medium "printed paper" constitutes a different vehicle of meaning in the context of the modes' semiotic system (Bezemer & Kress, 2008), since it is a factor that shapes different discourse types, and as such, its contribution to the teaching of multimodality should be studied.

The measurement of different sites of display included the presentation of original multimodal texts, as they appear in their tridimensional form on the printed page (medium), i.e. cards, invitations, tables and signs, tickets, identity cards, various documents, etc.

4: Reference to the Text's Modes during Comprehension-Analysis

This measurement focused on whether the comprehension-analysis of multimodal texts included a reference to all the text's modes (e.g. reference to the image, apart from the text), and the way in which this reference was conducted.

4 **th** **measurement**

• Analysis of multimodal texts **with no reference to all the modes**
• Analysis of multimodal texts **including reference to all the modes** (example 2)

Example 2: Grade F, Student's Book, Volume 2, p. 50

The above exercise asks the students to *"Go surfing with Webby"*, noting that

"3.a. The article is accompanied by several icons . What do they show? Can you define which of these websites corresponds to which icon?
b. Do you think that the article provides us with enough information on these websites? What else would you like to know? Collect and write down your ideas, so as to use them in written activity 6".

5: Study of Media or Modal Resources during Analysis

This measurement focused on whether the media or modal resources where studied during text analysis.

5 th   measurement

- The **media** or **modal resources** are **not studied**
- The **media** or **modal resources** are **studied**

If the written text's resources deal with syntax, grammar, vocabulary as well as graphic resources (e.g. font type, shape and size, or logos), the meaning of an image is transmitted through its colour, shape, size, symbols and through their spatial relations. In the case of animated cartoons, the resources include the temporal succession of images, that is movement. In the case of sound, the relevant resources include intensity, intonation, length, etc. Consequently, each mode displays different affordances and different constraints, depending on the available modal resources, and the medium in question (Bezemer & Kress, 2008).

The criterion of the above measurement was whether the analysis activities refer explicitly to media or modal resources (see example 3), excluding any cases of conventional text analysis, in terms of syntax, grammar, or vocabulary.

Example 3: Grade B, Student's book, Volume 2, p. 18

The above exercise asks the students to

"Observe the poster, read it, and say:

What does it announce? - Who organises this event? - When will it take place?
Where? - Do all letters in the poster have the same size? - Which ones are bigger?
- Why?" noting that
"This poster wants to draw our attention .
It announces an event, a show, a happening. It provides us with information (who, what,
where, when). It is written in bold letters, both low case and capital. It often has various
colours, photographs or drawings."
It then prompts the student
"To see and make a poster, go to the Activity Book, exercises 1 and 2, pages 59 and
60 . "

6: Transduction of Mode or Medium during Analysis

This measurement dealt with the transduction of the mode or medium during the text analysis, e.g. analysing pictures by transforming them into stories.

6 th measurement

- Analysis of multimodal texts **with no transduction** of mode or medium
- Analysis of multimodal texts **including transduction** of mode or medium (see example 4)

The transduction of one mode into another, especially when taking place through a different medium, which could be a screen or even the speaker-as-body-and-voice, when participating in a role playing game, was viewed as an important contribution to the development of multimodal experiences in the classroom.

The main reason for this is that, since the process of transduction of semiotic material from one mode into another brings significant changes on how the message is managed, children practice the analysis of modal resources and affordances fruitfully (Bezemer & Kress, 2008).

Example 4: Grade F, Student's Book, Volume 3, p. 20

The above exercise asks the students:

"Did you like the comic you read about the adventures of Pico Apico? Would you like to narrate this story to a friend who hasn't read it?
Write the story, making sure your words include all the details of the pictures: scenes, place, time, emotions, facial expressions, gestures, intensity of voice, etc.
You also have to transform ditect speech into indirect speech, since it is no longer the characters who are speaking, but you are transcribing their words.
Be careful with the changes necessary when writing indirect speech (change of person, tense, etc.).

For help, first locate the main features of the story:

Where does it take place? - Who is the main character and who else is involved?
What are their actions (what do they do)? - What do they think and feel?"

7: Approaching the Functions of Image during Analysis

This measurement investigated whether the text analysis included the approach of the three functions of images – ideational, interpersonal and textual – as these were described by Kress & Van Leeuwen (1996), based on the analysis of M.A.K. Halliday (1978, 1994; see also Halliday & Hasan, 1989).

7 th measurement

• Attempt to approach the **ideational** function of image (see example 5)
• Possible attempt to approach **the other two functions** (see examples 6, 7 and 8)

According to Kress & Van Leeuwen (1996), the **ideational** function has to do with how one may encode experience visually, that is how one uses the image in order to express what is occurring in the world and in his mind, and thus communicating information.

Example 5: Attempt to Approach the Ideational Function. Grade B, Activity Book, Volume 2, p. 33

The above exercise asks the students to

"Observe the photograph and answer the following questions in your notebook:
In which part of the world do you think the picture was taken? - How can you tell? -
What is the little girl looking at? - What do you think she is doing?"

The **interpersonal** function involves the interaction between the addresser and the addressee of a visual text, that is the attempt of one to influence the other.

Example 6: Possible Attempt to Approach the Interpersonal Function. Grade E, Student's Book, Volume 2, p. 20

The above exercise asks the students:

"1. Can you describe the paintings of the above painters? Why do you think they chose this topic? What did they want to show? Draw a picture that is relevant to music.
2. Pick one of the above paintings, or another painting of your choice. Based on the thoughts and feelings it provokes, you too can compose your own poem or short story. You can start as follows: Three musicians with a harp, a guitar and a violin…"

Finally, the **textual** function deals with the way in which representations and communication acts cohere into meaningful wholes, which are compatible with the specific social process that is being conducted. That is, it addresses whether all the elements of the image cohere internally and which itself coheres with its relevant environment (situational or social context).

Example 7: Possible Attempt to Approach the Textual Function**.** Grade F, Student's Book, Volume 1, p. 54

The above exercise asks the students:

"What are the features of advertisements seen (in magazines, newspapers, posters, TV, cinema) or heard (on the radio)?
To draw our attention, advertisements usually have:
A "vivid" image with bright colours; - The name of the product or its brand (not always both); - A funny, short and easy to remember slogan , relevant with the image, the name or the main advantage of the product; - A short text describing the product, informing us of its properties."

Example 8: Possible Attempt to Approach the Textual Function. Grade F, Student's Book, Volume 1, p. 56

The above exercise asks the students to

"A. Talk with your classmates about which of the four advertisements you liked best and why. Also, which one do you think is better in informing us of the usefulness of the product advertised?
B. Find some of each product's advantages, as presented in each of the four advertisements. Are there any disadvantages? Why don't we learn anything about them?
C. The advertisers of advertisement 2 had a smart idea. They drew the instructions for making a paper boat on the chocolate's wrapper. Why do you think they did that?
D. Advertisement 3 uses a pun, that is it "plays" with the expression "to eat the world". Does this expression have anything to do with the products advertised?
E. What does the product shown on advertisement 4 relate to? Which words of the short text or slogan are relevant to the picture, showing the advertisement's main idea? What is this main idea?"

Categories of Recording, Classifying and Analysing for Text Production Activities

8: Multimodal Text Production Activities

This measurement classified all text production activities, depending on whether the texts to be produced by the students had to be multimodal (e.g. instructions on how to illustrate a text, creation of comics, posters, cards, advertisements, drama, audio and video recordings, etc.) or not.

8 th   **measurement**

- **Non multimodal text** production activities
- **Multimodal text** production activities

9: Use of modes to compose texts during text production
   The next measurement investigated the use of modes (or their media) necessary for text composition during text production.

 9 th **measurement**

- Use of **written text and image** for the composition of the multimodal text
- Use of **other modes**, apart from the above (**or another medium**, apart from the printed page), e.g. instructions for audio or video recording, drama, use of sign language, etc.

10: Medium site of display during text production
   This measurement focused on the site of display of the medium during text production, i.e. whether students are simply asked to write a text and illustrate it or they actually have to draw a full size poster, create cards or invitations, publish a newspaper, etc.

 10 th **measurement**

- **Usual site of display** of the medium
- **Different site of display** of the medium

11: Support/guidance during text production
   It was then investigated whether students enjoy support/guidance during text production – by the exercise itself, previous teaching, or both – in terms of the modal resources and media.

11 th **measurement**

- Multimodal text production activities **without support/guidance**
- Multimodal text production activities **with support/guidance** (see examples 9 and 10)

γ. Όσο περισσότεροι μάθουν για την παράστασή σας, τόσο μεγαλύτερη επιτυχία θα έχει. Βάλτε τη φαντασία σας να δουλέψει και δημιουργήστε μια **αφίσα** που θα τη δουν και έξω από το σχολείο σας. Πρέπει να αναφέρετε σύντομα όσα χρειάζεται κάποιος για να έρθει στην παράσταση (τίτλος, συγγραφέας, τόπος, χρόνος, ποιος οργανώνει την παράσταση). Επίσης, είναι πολύ σημαντικό να τραβήξετε την προσοχή με το μέγεθος και το είδος των γραμμάτων (τυπογραφικοί χαρακτήρες), με έντονα χρώματα, με δυνατές αντιθέσεις, με εντυπωσιακές εικόνες ή φωτογραφίες και ό,τι άλλο σκεφτείτε. Δείτε το παράδειγμα της σελίδας 50.

Μην ξεχνάτε ότι οι χώροι όπου τοποθετείται μια αφίσα είναι δημόσιοι και με μεγάλη κίνηση και γι' αυτό πρέπει να τραβάει εύκολα την προσοχή.
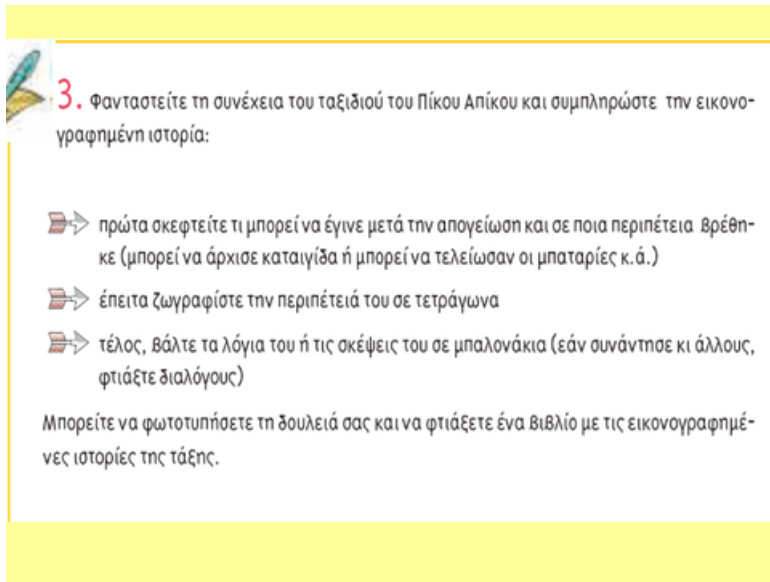
Example 9**:** Grade F, Student's Book, Volume 3, p. 50-51

The above exercise tells the students that

"The more people learn of your show, the more successful it will be. Put your imagination at work and create a poster , which will be seen outside of school too. You have to briefly mention all the information necessary for someone to come to your show (title, author, place, time, who organises the show). Also, it is very important to draw

the people's attention with the size and type of the letters (font), with bright colours, with vivid contrasts, with impressive drawings or photographs, and whatever else you can think of. See the example on page 50.
Don't forget that posters are placed in public places, with lots of traffic, so they should be easily noticed."

Example 10: Grade F, Student's Book, Volume 3, p. 21

The above exercise asks the students to

"Imagine how the journey of Pico Apico continues, and complete the comic :
- First think what could have happened after take-off, and what adventure he got into (maybe there was a storm, or he ran out of batteries etc.).
Then draw his adventure in squares.
Finally, put his words or thoughts in balloons.
You can make photocopies of your work and make a book with the comics of the whole class."

12: Transduction of modes or media during text production
Finally, the research studied the degree of transduction of modes or media during text production, i.e. based on a written text, students are asked to produce a comic, a drama, etc.

12 th measurement

- Multimodal text production activities **with no transduction** of mode or medium
- Multimodal text production activities **including transduction** of mode or medium

Results

The investigation of the research questions relates to the results of the corresponding measurements:

•   The first measurement (see Table 1 - Graph 1) looks into the first research question: *What is the percentage of multimodal texts presented for comprehension – analysis?*

Table 1: Graph 1: Multimodal Texts for Comprehension-Analysis

	Number	%
Non multimodal texts	281	49
Multimodal texts	295	51
Total: Texts for comprehension-analysis	576	100
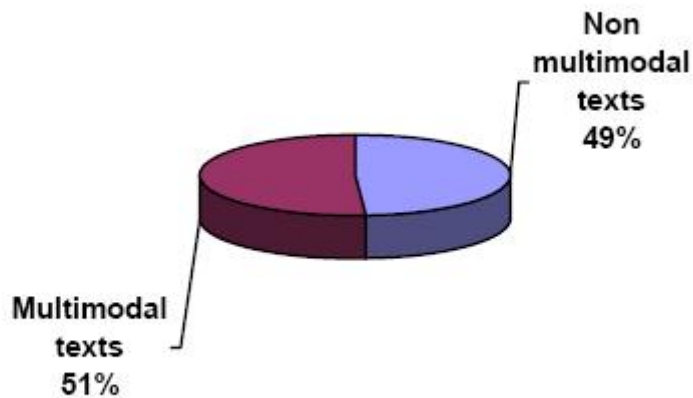
As can be seen in Table 1, the teaching material features a large percentage (51%) of multimodal texts for comprehension – analysis, which is a positive starting point. (Percentages are calculated based on the total number of texts offered for comprehension – analysis).

•   The second and third measurements (see Tables and Graphs 2 and 3) correspond to the second research question: *What kind of multimodal texts are they?*

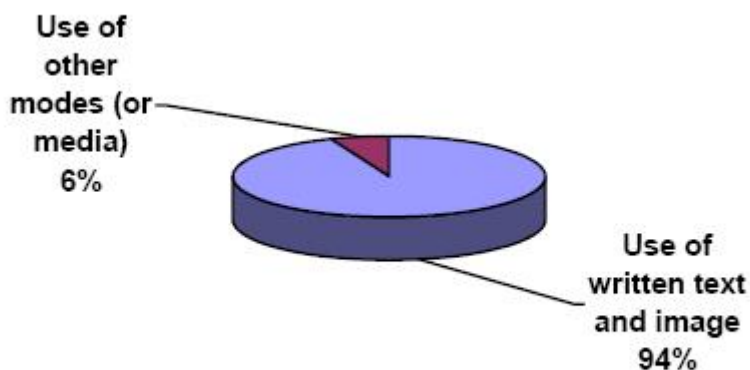**Table 2: Graph 2: Use of Modes in Text Composition (As Presented in the Teaching Material)**

	Number	%
Use of written text and image	278	94
Use of other modes (or media)	17	6
Total: Multimodal texts for comprehension-analysis	295	100

Use of
other
modes (or
media)
6%

Use of
written text
and image
94%

Table 3: Graph 3: Medium Site of Display

	Number	%
Usual site of display	154	55
Different site of display	124	45
Total: Multimodal texts with written text and image	278	100

Different
site of
display
45%

Usual site
of display
55%
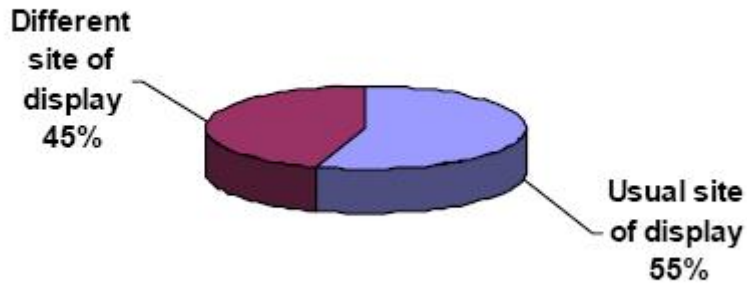
Regarding the use of other modes apart from the written text and image, the percentage is quite low (6%), as can be seen in Table 1. (Percentages are calculated based on the total number of multimodal texts offered for comprehension – analysis.)

On the contrary, the presentation of a different site of display, and therefore different discourse types, scored quite a high percentage (45%), as can be seen in Table 3. (Percentages are calculated based on the total number of multimodal texts featuring written text and image.)

• The third question -*To what extent is the texts' multimodality examined?*- is investigated by the fourth, fifth and sixth measurements (See Tables and Graphs 4, 5 & 6).

Table 4: Graph 4: Reference to the Text's Modes during Comprehension-Analysis

	Number	%
Analysis with no reference to all the modes	78	26
Analysis including reference to all the modes	217	74
Total: Multimodal texts for comprehension-analysis	295	100

Analysis
with no
reference to
all the
modes
26%

Analysis
including
reference to
all the
modes
74%
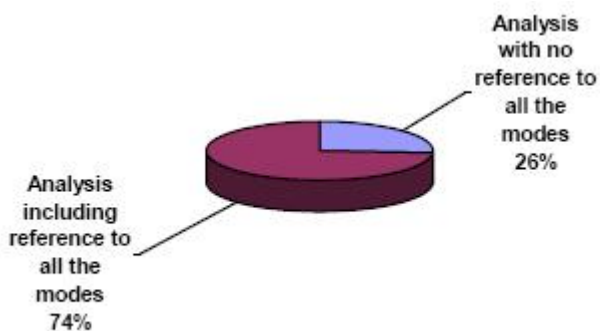
Table 5: Graph 5: Study of Media or Modal Resources During Analysis

	Number	%
The media or modal resources are not studied	178	82
The media or modal resources are studied	39	18
Total: Multimodal texts with reference to the text's modes	217	100

The media
or modal
resources
are studied
18%

The media
or modal
resources
are not
studied
82%
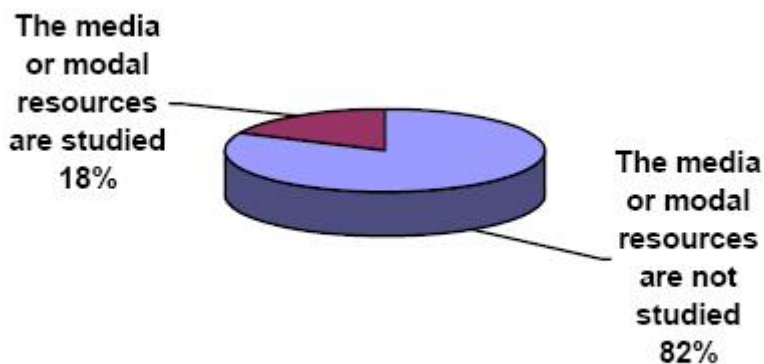
Table 6: Graph 6: Transduction of Mode or Medium During Analysis

	Number	%
Analysis with no transduction of mode or medium	273	93
Analysis including transduction of mode or medium	22	7
Total: Multimodal texts for comprehension-analysis	295	100
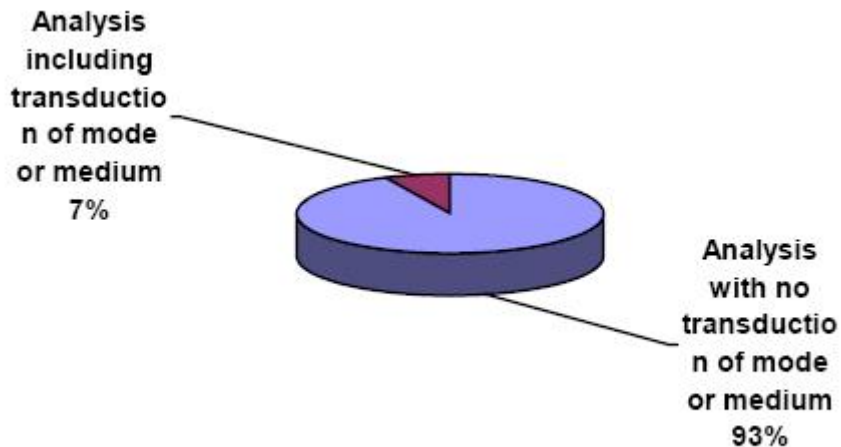
As can be seen in Table 4, the percentages of the instructions for the analysis of multimodal texts that include a reference to other modes apart from the written text (mainly the image) are also quite high (74%). (Percentages are calculated based on the total number of multimodal texts offered for comprehension – analysis.)

Regarding the criterion of Table 5, that is whether the media or modal resources are studied or not, which is actually the main criterion defining whether multimodal communication is taught or not, measurements show a low percentage (18%). (Percentages are calculated based on the total number of multimodal texts with reference to the text's modes during analysis.)

The percentage is even lower (7%) for the cases where the transduction of the text's modes or media is suggested, as can be seen in Table 6. (Percentages are calculated based on the total number of multimodal texts offered for comprehension – analysis.)

- The seventh measurement (Table and Graph 7) looks into the fourth research question: *Which visual functions are approached?*

Table 7: Graph 7: Approaching the Functions of Image During Analysis

	Number	%
Attempt to approach the ideational function	203	93
Possible attempt to approach the interpersonal function	10	5
Possible attempt to approach the textual function	4	2
Total: Multimodal texts with reference to the text's modes	217	100
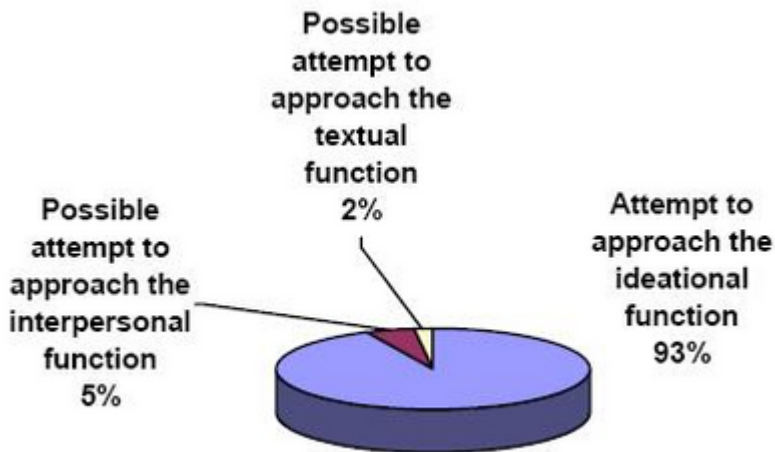
As one can see in Table 7, in most cases (93%), only certain elements of the image's ideational function are referred to. The analysis of images is usually limited to exercises urging the students to "Observe the picture. What do you think is happening?" However, in some cases, both the ideational function and the specific modal resources are more thoroughly examined (see example 5). Furthermore, in few cases, the analysis puts forward not only the image's ideational elements, which constitute the majority, but also certain of its interactive elements (5%), [see example 6] or elements relating to how the information is organised regarding a specific communication aim (2%), [see examples 7 and 8].

Yet it could not be said that the teaching material offers a systematic analysis of any of the three functions (ideational, interpersonal, textual), as defined by Kress & van Leeuwen (1996). In other words, there is no systematic analysis of how one can encode the visual experience, or of the interaction between addresser and addressee, or of how the information in the image is organised regarding the situational context. (Percentages are calculated based on the total number of multimodal texts with reference to the text's modes during analysis.)

• The eighth measurement (Table and Graph 8) looks into the fifth research question: *What is the percentage of multimodal texts' production activities?*

Table 8: Graph 8: Multimodal Text Production Activities

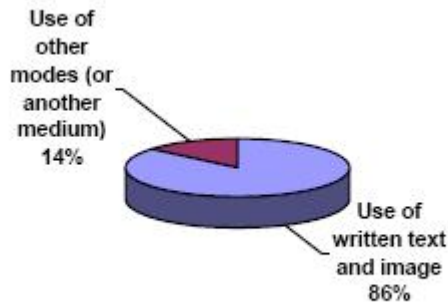|	Number	%
Non multimodal text production activities	214	59
Multimodal text production activities	148	41
Total: Text production activities	362	100
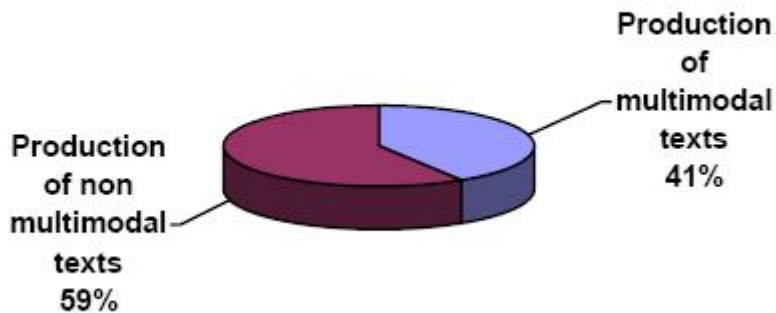
As shown in Table 8, the percentage of multimodal text production activities is quite high (41%), but not as high as the percentage of multimodal texts offered for comprehension-analysis (51%). (Percentages are calculated based on the total number of text production activities.)

• The sixth question -*What kind of multimodal texts are they?*- corresponds to the ninth and tenth measurements (Tables and Graphs 9 and 10).

**Table 9: Graph 9: Use of Modes in Text Composition (During Text Production)**

	Number	%
Use of written text and image	127	86
Use of other modes (or another medium)	21	14
Total: Multimodal text production activities	148	100

Use of
other
modes (or
another
medium)
14%

Use of
written text
and image
86%

Table 10: Graph 10: Medium Site of Display (during Text Production)

	Number	%
Usual site of display	87	69
Different site of display	40	31
Total: Production of multimodal texts with written text and image	127	100

Different
site of
display
31%

Usual site
of display
69%
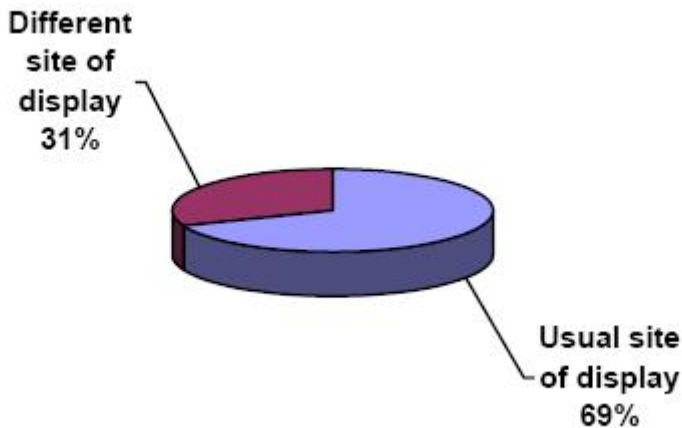
However, Table 9 shows a low percentage of use of other mode or medium apart from the written text and image (14%), which is in any case higher than the corresponding percentage for comprehension-analysis activities (6%). (Percentages are calculated based on the total number of multimodal text production activities.)

A different than the usual medium site of display is frequent (31%), but not as frequent as the corresponding figures for comprehension-analysis (45%), as can be seen in Table 10.

(Percentages are calculated based on the total number of multimodal text production activities demanding the use of written text and image.)

• The seventh research question -*Does the teaching material provide the necessary support/guidance?*- corresponds to the eleventh and twelfth measurements (Tables and Graphs 11 and 12).

Table 11: Graph 11: Support/Guidance during Text Production

	Number	%
Activities without support/guidance	74	50
Activities with support/guidance	74	50
Total: Multimodal text production activities	148	100
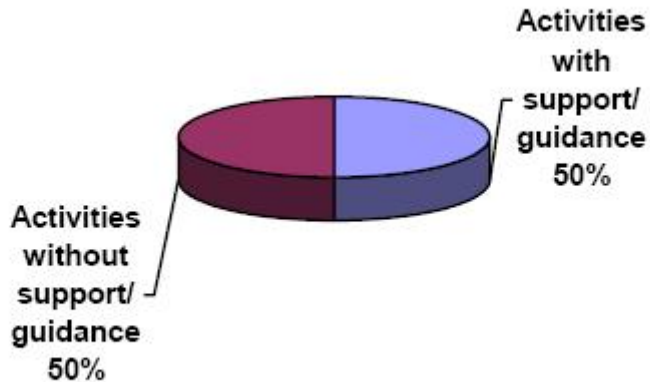
Table 12: Graph 12: Transduction of Modes or Media during Text Production

	Number	%
Activities with no transduction of mode or medium	93	63
Activities including transduction of mode or medium	55	37
Total: Multimodal text production activities	148	100
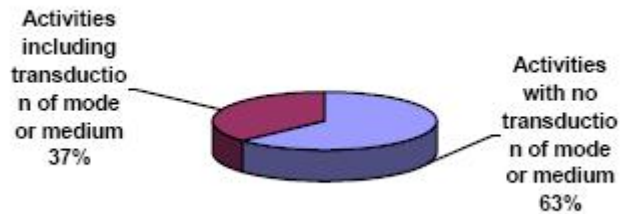
An impressive figure is the percentage of support/guidance regarding the media and modal resources (50%), particularly compared to the percentage of analysis including the study of media or modal resources (18%), as shown in Table 11. (Percentages are calculated based on the total number of multimodal text production activities.)

It should be noted that the guidance measurement includes not only the exercise instructions, but also the support offered through previous teaching (of the text analysis that preceded). This is due to the fact that, according to contemporary didactics, the teaching of written text production begins during the analysis of the initial text. Therefore, since the text type to be produced has already been taught and the modes have already been examined during comprehension-analysis, it is considered that previous teaching supports the students during text production.

Table 12 shows a high percentage of production activities which include mode or media transduction (37%), while the corresponding figure for comprehension-analysis activities is markedly lower (7%). Yet it is natural for transduction to be used more frequently in text production than in comprehension-analysis (Percentages are calculated based on the total number of multimodal text production activities.)

Conclusions

The study's results indicate significant efforts on multimodal text **analysis**, both in terms of percentages and in terms of the presentation of different types of multimodal discourse through various medium sites of display. Yet there are significant limitations regarding the use of various modes and media, the study of modal resources and media, and the practice of text analysis through transduction or relating to visual text functions. Consequently, the study of the modes by which the teaching material texts are composed is quite limited.

Regarding multimodal text production, results indicate significant efforts in terms of percentages and support on the use of modal resources and media, through either direct (exercise) or indirect (previous teaching, mode transduction) guidance. However, the activities have no great demands regarding the production of different multimodal discourse types and the use of various modes and media.

It may be concluded that, despite good intentions, there has been no significant attempt to provide students with the necessary means to develop multimodal experience in the context of Language Arts, so as to be able to develop multimodal communication skills.

It should be noted that the teaching of multimodality does not constitute an explicit objective of the Curriculum or the Guidelines of the written teaching material of Greek elementary

school Language Arts; in fact there is no mention of the term, or of any relevant concepts. Perhaps it was expected that the teaching of multimodality would be implemented through the students' involvement with the educational software that would accompany the written material, providing fertile ground for future research.

It should also be noted that the approach of the school textbook as a multimodal construct is relevantly recent. Moreover, the research on the teaching of multimodality through Language Arts textbooks has not been broadly disseminated, so there are no well-known points of reference.

The present study's conclusions could be utilised in future attempts to enhance the teaching material for Language Arts, so as to better meet the students' needs in view of the new multimodal communication technologies and cultural and linguistic pluralism. Lastly, it should be stressed that the above could not be implemented without providing educators with further training on related issues and practices, since it is becoming increasingly necessary to adopt new approaches on literacy development.

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About the Author

Dr. Anna Fterniati

Dr. Anna Fterniati (Bachelor in Letters, D.E.A. in Linguistics, D.E.A. in Educational Psychology, PhD in Language Teaching) has been employed as a teacher in secondary education since 1987 and as a researcher at the Hellenic Pedagogical Institute of the Ministry of National Education and Religious Affairs between 1997-2005. In 2006 she has been elected to the position of Lecturer in the Department of Elementary Education, Division of Pedagogy, of the University of Patras. She has participated in various research projects and has published papers and books in the field of Language Education and specifically in the field of instruction and assessment of written discourse . She also has experience and publications in curriculum design and development. She has served as a member of the board of designers of the new National Curriculum for Language Arts in the Greek Primary School (2003) and was a member of the board of editors of the new teacher manuals for Language Arts for elementary education (2003-2005). She has also participated, since 1993, in initial and continuing in-service teacher training.

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