

CHAPTER TWENTY ONE

DIGITAL ENRICHMENT OF EFL TEXTBOOKS

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Abstract

This paper explores the notion of enrichment in the context of EFL textbooks and it argues for the adoption of a principled approach to digital enrichment. The first part of the paper discusses different conceptualisations of enrichment in educational and foreign language research and it then moves to an account of three cases which use different technologies (mobile devices, companion websites and interactive whiteboards) in order to enrich EFL textbooks with digital content. The second part of the paper presents the case of the Digital School Project, a large scale project of the Greek Ministry of Education for primary and secondary education. After a short description of the project, the paper outlines the principles of enrichment and the methodology employed by the group which developed digital enrichment for the Greek EFL textbooks. The different stages and phases of this methodology are exemplified by the detailed presentation followed in the development of a specific type of multimedia applications which draw on genre-based theories for writing instruction. It is suggested that the specific approach could be useful in other foreign language contexts where digital enrichment of textbooks is attempted.

1. Introduction

The growing trend of making educational materials digital and the expanded use of the Internet have given rise to new learning environments designed around student-centred interaction and technologically based learning tools (Horsley, 2001). A complex relationship is formed between EFL textbooks and electronic resources which has only recently become the subject of educational research. Online educational resources, for

instance, have been the focus of recent research (Mitsikopoulou, 2013) and their effects on classroom teaching and practices have attracted the attention of language researchers involved in textbook and educational materials research (Bruillard, 2011). The changing role of textbooks has been a central issue in this discussion, since they are often supplemented by publishers' related websites with additional educational resources suggested to be used in combination with textbooks (Pingel, 2010).

There has been a lot of discussion recently about the digital textbook and the different forms it might take in the future. Until 2005, a digital textbook was probably a .pdf document which incorporated several features similar to print textbooks (e.g., bookmarking pages, making notes, highlighting pages and saving selected texts). However, as Davy (2007, p. 101) supports, delivering textbooks digitally in .pdf format is not adding a great deal of value pedagogically. On the other hand, the widespread adoption of Internet broadband connection, which led to the exchange and rapid downloading of large audio and video files, has allowed digital textbooks to become like websites. Some EFL digital textbooks, for example, have been designed specifically for the Internet or for interactive whiteboards and in addition to features found in conventional textbooks, they also include functions such as built-in dictionaries and pronunciation guides, hyperlinks to other sites or other sections of a text, animated graphics, interactive simulations, and multimedia content with audio and video resources, whose function is to help learners assimilate the information contained in a text. Today, EFL textbooks have been enriched with multimedia content and have therefore become much more than simply digital versions of print textbooks.

How though do we enrich an EFL textbook with digital content and what different forms can digital enrichment take? Most importantly, how do we select materials for enrichment for specific parts of an EFL textbook and to what effect? In an attempt to provide answers to these questions, this paper will explore the notion of enrichment and will suggest a methodology that may be applied for the digital enrichment of EFL textbooks. The first part of the paper will explore different conceptualisations of the term 'enrichment' and will present three different cases which may be used in order to enrich EFL textbooks with digital content. The second part of the paper will present the case of the Digital School Project, a large scale project of the Greek Ministry of Education for primary and secondary education. After a short description of the project, the focus will turn to the methodology which was developed in order to enrich EFL textbooks with digital content. This methodology will be illustrated by a presentation of the phases used in the development of a multimedia application which

draws on genre-based theories for the teaching of writing. The paper argues that a principled approach to enrichment with clear aims and objectives is required.

2. Conceptions of enrichment in education

The term ‘enrichment’ generally refers to making richer, fuller, more meaningful or more rewarding and to ‘improving the quality of something by adding something else to it’ (*Cambridge Dictionary*). Synonyms include words such as enhancement, refinement, upgrading and augmentation. In almost all of its different meanings, enrichment refers to an add-on quality, something attached to something else. Consequently, it refers to a quality that cannot stand on its own, but that it requires the existence of what it qualifies. In educational contexts, this has often been assumed to be a textbook, a curriculum, a lesson or a skill (e.g., vocabulary building).

Several educational researchers have defined the notion of enrichment. In literacy education, language enrichment is a term often used for school or out-of-school activities which aim to develop children’s receptive and productive language skills (Khatib & Nasrollahi, 2012; Robertson, 2009). Over the last few years in the United States, in particular, language enrichment programmes have often been related to test achievement. Eyre and Marjoram (1990) define enrichment as any type of activity or learning that takes place outside the core of learning most students undertake, while for Clendening and Davies (1983) enrichment refers to any learning experience which replaces, supplements or extends instruction (beyond the restrictive boundaries of a textbook or a curriculum) and makes connections to students’ world.

Feng (2005) provides a detailed account of existing descriptions and definitions of the term and he supports that a number of authors use this term intuitively without having a clear picture of what the term means. He identifies problems with conceptions of enrichment which do not clarify the educational purpose of enrichment nor explain how it could be measured and assessed. He proceeds to distinguish three main trends in education which assume different conceptualisations of enrichment. The first trend views enrichment as acceleration or curriculum compaction exposing only the brighter and gifted students to more advanced subject matter or higher-order treatment of regular material. This trend refers to ‘individualised’ enrichment which acts as additional support for a few gifted students only. The second trend focuses on enrichment as a means of offering all students more opportunities for personal and social development, greater fulfilment and intellectual satisfaction than the basic

curriculum (e.g., through problem solving). Proponents of this trend support that enrichment should permeate the whole curriculum and it should not be made available only to those who work faster (Piggott, 2004). Enrichment here presents alternative approaches to curriculum topics, encourages extended investigatory activities, introduces accessible aspects of the subject matter not covered by the curriculum, and highlights links with other school subjects. A third trend approaches enrichment as a set of techniques that can be used flexibly for students' educational needs. Feng argues that how we define enrichment will have significant implications for the issues related to it: For whom enrichment is meant and why, where and when enrichment should take place, which parts of the curriculum should be enriched and whether all students could benefit from enrichment.

3. Enrichment in foreign language teaching

The notion of enrichment in foreign language teaching is not new but it goes back to 1930s when Vera Peacock first published an article entitled *Effective enrichment of the textbook in foreign language* in which she talked about “enriching a basic textbook along broadly cultural lines” (Peacock, 1939, p. 24). She particularly suggests that “photographs, maps, calendars, posters, foreign money, phonograph records, newspapers, magazines, and plays may all be splendid classroom materials *if* they are carefully adapted to the primary aim of the class” (ibid., p. 26). This conception of enrichment defines it as supplementary cultural materials. Peacock also outlined some principles of enrichment for foreign language textbooks, which are paraphrased below, according to which:

- enrichment must be within the grasp of the students;
- concern must be taken as to the amount of enrichment to be added in an already crowded syllabus;
- enrichment materials should not develop into ends in themselves, but they should be kept subservient to the purposes of a specific textbook;
- enrichment materials should be taught, not simply presented to students, in order for learning to take place;
- enrichment materials should not be introduced without first establishing some natural connection with the pupils' lives;
- which enrichment materials are to be chosen and how they are to be introduced are matters that cannot be established definitely for all

situations but they should be related to specific textbooks (Peacock, 1939, pp. 24-29).

The enrichments that Peacock referred to are different kinds of realia and technological artifacts of that period, namely radio programmes and films. However, the principles that she identifies above are quite relevant for other kinds of enrichment and, as we shall see below, they can also constitute the basis for the digital enrichment of EFL textbooks.

At this point it should be noted that with the advent of new technologies and the Internet the notion of enrichment has taken on new meanings in the EFL classroom. Quite often in EFL contexts, enrichment is often defined in terms of the opportunities the various media offer to students, and the use of the technology itself in the EFL classroom is considered a factor which enriches student learning (see, for instance, Wang, Jaeger, Liu, Guo & Xie, 2013). For instance, internet teleconferencing between Taiwanese English classes and an American class has been found to enrich EFL classroom instruction because it exposed students to authentic pronunciation and usage and improved their understanding of the target language culture (Wu & Marek, 2007; Wu, Yen & Marek, 2011). In another study, the potential of videos and blogging has been used in order to enrich an EFL literature classroom (Wu, Marek & Wu, 2009).

Our focus in this paper is on the enrichment of textbooks with digital content. All four cases presented below make use of a different technology and they all reside on this intermediate stage where the old is mixing with the new creating hybrid forms. In order to describe the hybridisation of textbooks and digital technology, Horsley (2001, p. 38) borrows from biology the metaphor of 'ecotone' to describe the space where two adjacent ecosystems overlap supporting forms of life not found in either of the adjacent systems, and he argues: "Today, there exists the educational equivalent of an ecotone between traditional learning environments and the emergence of new learning environments designed around student-centred interaction and the Internet and technology based learning tools". Acknowledging that in each age the features of textbooks evolve, Horsley turns to examine how textbooks will be possibly authored and designed in the future, how texts will be used in the Internet age, what text and text design features will evolve, and what forms the textbooks might take in the information age. Although we may not know what the digital textbook will look like in the future, how it might possibly be authored and designed, supporting new types of online genres, the examples presented below verify Lemke's (1998, p. 287) argument that when a text or a genre, in this case the print textbook, moves online, its "old practices migrate en masse" too, recreating what is already familiar. The same recreation of the

familiar seems to happen with the media, as well: Going against the modernist myth of the new which assumes that digital technologies must divorce themselves from earlier media for a new set of aesthetic and cultural principles, Bolter and Grusin (1999) argue that the new media achieve their cultural significance by refashioning and by building upon earlier media, in this case the print media.

3.1 Digital Enrichment-Case 1: QR-mobile

The first example of digital enrichment brings mobile technology and print textbooks together through the use of QR codes. Quick response tags (QR) – those black square modules on white background which have become popular with mobile phones and function like the well-known 2D barcodes – are widely known as a means of product identification and advertising (see Figure 1). These scannable images are readable by specific software, which can be downloaded to a mobile phone (QR barcode readers) through a camera-equipped mobile phone, and they lead to a specified digital destination (e.g., a link, an email, an SMS, a bookmark, or a unique URL address).



Figure 21-1. Samples of linear barcode (on the left) and QR code (on the right)

Since they are free to create and use, QRs have found a number of educational applications (Law & So, 2010; Uluyol & Agca, 2012). In EFL teaching, it has been suggested that QRs be used for specially designed treasure hunts or webquests, offering learners the necessary online resources to do creative tasks with that information. They may also be used on handouts to link learners to a helpful online resource or a video, offering them a strategy for problem solving and a number of other EFL activities (Rivers, 2009).

Most importantly, QRs may be placed on specific parts of EFL textbooks to enrich them with digital supplementary content, such as

hypertext, video and audio material. They may also connect to a particular website that is related to a specific part of the EFL textbook and provide text or audio in an alternative language. Figure 2 below illustrates how QR codes may be used in an EFL textbook. A QR code representing a unique URL address is placed on specific parts of a textbook (step 1). A mobile phone scans and encodes the information provided by the tag by using a QR reader software installed on the mobile phone (step 2). As soon as the mobile phone scans and encodes the information, it connects to the internet (step 3) and gets access to the webpage with the digital content (step 4).



Figure 21-2. How QR codes work (steps 1-4)

Research on mobile learning explores the potential of the mobile devices to enhance learning. For Ozcelik and Acarturk (2011), QR codes are an alternative to the use of computer screen for supplementary course material. They conclude that since recent studies have found that students prefer to use print to digital textbooks, mobile devices offer the opportunity to integrate digital content and print information sources, such as animations and textbooks.

3.2 Digital enrichment-Case 2: EFL Companion websites

Another form of digital enrichment of textbooks is the companion websites which often accompany EFL and other school textbooks providing additional information, downloads, tools and supplementary materials for the books they accompany. The accompanying websites include interactive versions of some tasks of the print textbooks, several interactive games and additional resources. In Norway, for instance, as part of the key strategy for the development of digital competence and the use of ICT in schools, publishers provide companion websites for the main school subjects. Vareberg (2009) argues that companion websites

constitute a relatively new genre compared to textbooks, with their own content, design, presentation and navigation, and their own multidisciplinary production teams which, in addition to visual designers, typographers, photo editors and authors, also include specialists such as computer programmers, interactive designers, multimedia designers and corporate identity specialists. The author suggests three useful guiding principles for the design of companion websites, according to which the design should:

- (a) be based on the book design to make the navigation of the website easier and to construct strong cohesive ties with the print textbook
- (b) be based on mainstream design principles for information websites to make the navigation transparent to the user, and
- (c) make connections between school and everyday lifeworld in an attempt to come closer to the digital media students come into contact with every day in their free time (Vareberg, 2009, p. 633).

Vareberg discusses two examples of companion websites for the teaching of the Norwegian language, one with tight connections to the print textbook which only provides a modest supplement to the main course material in the print textbook, and another with connections to students' experience with the digital media that draws on intertextual references from outside school. From this case, in particular, it becomes clear that an analysis of digital enrichment of textbooks requires analytic tools that draw on hypertextual and hypermedia theories, as well as theories of multimedia design.

In another direction, Shiao-Chuan and Tun-Whei (2002) used EFL/ESL websites by independent publishers as digital enrichment to their classroom textbook, and they found that their use had a positive impact on students' learning. The incorporation of reference material as enrichment has been generally found to contribute positively when direct ties to classroom teaching are made, yet this constitutes a research area which requires further investigation.

3.3 Digital Enrichment-Case 3: EFL textbooks in interactive whiteboards

The use of the interactive whiteboard in the EFL classroom has been very popular (Aydinli & Elaziz, 2010; Bakadam & Sharbib Asiri, 2012; Coyle, Yañez & Verdú, 2010; Cutrim Schmid, 2010). Print textbooks are transformed into digital textbooks through the use of interactive whiteboard software. The print textbook pages are presented on the screen

of a touch sensitive board which is connected to a computer, with some indication as to what parts of the page have become interactive (Figure 3).

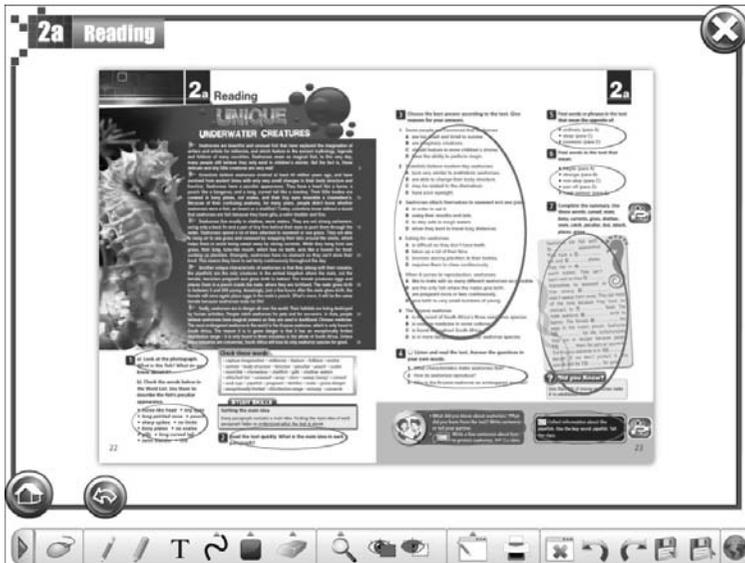


Figure 21-3. A screenshot from the interactive video software of an EFL textbook (*On Screen B2*, Express Publishing)



Figure 21-4. A teacher simultaneously using a digital textbook on the interactive board, a whiteboard and print textbooks

By clicking on specific parts of each page, students and teachers have access to the interactive activities. Aimed to be used with an interactive whiteboard inside the class, these digital versions of an EFL textbook offer digital enrichment including the audio of the listening comprehension tasks, suggested answers and models, additional references such as illustrations and word definitions, games, quizzes, videos and documentaries.

As is the case with other types of technologies, the interactive whiteboard comes as an additional resource to the existing ones in the EFL classroom. This can clearly be seen in Figure 4, in which a gymnasium EFL teacher in Aliartos, a small town north of Athens, is integrating the use of interactive whiteboard (2) with the use of a traditional whiteboard (1) and print textbooks (3). The EFL teacher in the picture, a member of the Digital School Project for the enrichment of the English language textbooks, is conducting her teaching through the interactive whiteboard and a traditional whiteboard next to it, while students are following from their print textbooks. The connection of the various media noted above (Bolter & Grusin, 1999) is illustrated in this picture indicating some of the ways the 'old' is mixing with the 'new' media.

4. The Digital School Project

Initiated by the Greek Ministry of Education and implemented by the Computer Technology Institute and Press, the Digital School Project (<http://dschool.edu.gr/>) includes a number of different actions, one of which is the digitisation of all school textbooks used in primary and secondary education in Greek schools and their enrichment with digital content. Initially the .pdf versions of the textbooks were turned into .html form. By turning textbooks into websites, it was then possible to add to them links to digital enrichment resources. In other words, the .html form then served as a kind of canvas upon which multimedia enrichment materials would be added, and used by teachers and students through an open access platform available to all users.

In February 2011 the English Language Group of the Digital School Project was formed with the purpose of developing digital enrichment for ten EFL textbooks for primary and lower secondary (gymnasium) school. The Group consisted of 14 members, including nine highly qualified teachers of English with extensive experience in EFL materials development and ICT training, two e-learning experts, two computer engineers, and myself as the coordinator. One of my main aims as the coordinator of the group during the first phase of the programme was primarily to try to build a form of group solidarity, to explore the potential

and perspective offered by each group member, and to establish a common language of communication and a common understanding of the aims of the project. This was of utmost importance in order for all these specialists from different disciplines to work efficiently together in the next phases of the project.

5. The ‘What’ of digital enrichment: A principled approach

At the beginning of the project it was also important for our group to come to an understanding of the notion of digital enrichment in EFL textbooks and to define the term within the context of our work. This proved quite a challenging task, since enrichment could take on different meanings and forms in different books. At the same time, group members had to be aware from the beginning of the project that every answer to the question “how do we select what to enrich, which parts of the book and to what effect?” and every choice for digital enrichment that was made left out other possible alternatives of enrichment that could have been used instead. It was therefore important to have clear criteria upon which to base our decisions for the digital enrichment of the EFL textbooks, since any selection that was made ultimately affected the overall project work in different ways. Taking into account Peacock’s (1939) principles presented above, as well as specific project constraints, we decided upon a principled approach to enrichment, which is briefly outlined below.

Principle 1: Digital enrichment should be systematic, targeted with specific aims, and running throughout the book.

Enrichment is necessarily a selective process (Mitsikopoulou, in print) addressing specific parts of a textbook. In order to be meaningful, enrichment should be methodical and purposeful, it should follow step-by-step procedures and it should be characterised by planning and regularity. This principle ensures that incidental enrichment, which may occur by chance in an unplanned way, is excluded. Systematic enrichment permeating all units in a textbook also constructs strong cohesive ties among enrichment resources, making the resources more easily recognizable by end users, i.e., students and teachers, and creating a sense of familiarity and continuity.

Principle 2: An analysis of the digital textbook should precede any decisions made for the type and extent of digital enrichment.

Informed decisions about enrichment (i.e., what and to what extent to enrich) result from the systematic evaluation of the textbook in terms of the structure of individual units, the types of activities and texts, the overall organisation of the textbook, the teaching philosophy employed in the specific textbook, and the accompanied materials.

Principle 3: Enrichment should not follow the same design for all digital textbooks.

Decisions concerning the extent and type of enrichment are based on textbook analysis and are not necessarily the same for all textbooks to be enriched. For instance, in highly dense textbooks with a great number of activities, long texts and challenging vocabulary, the addition of new materials is avoided and attention is paid to illustrating existing materials and to simplifying long and complex texts. In other cases, content enrichment with additional material might be more appropriate. This eclectic approach to digital enrichment ensures that each textbook receives different treatment according to its specific characteristics.

Principle 4: The nature of the intervention should be supportive of the textbook not subversive of textbook philosophy.

Digital enrichment should be supportive of the textbook and its philosophy, not subversive of it. In other words, the nature of enrichment should not be a corrective one, trying to “fix” problems or alter the textbook design, but a positive one, aiming “to add to the quality” of the existing textbook.

Principle 5: Whenever possible, the digitally enriched resources are delivered in a wide range of forms for multiple uses.

Particular attention is paid to deliver digital enrichment resources in different formats and to offer various views of the same digital content. In this way, students and teachers are offered the opportunity to select, from a range of different forms of the same materials, the one that would best fit their particular educational aims each time.

Principle 6: Digital enrichment is a multidisciplinary project which requires the cooperation of different specialisations.

The development of digital enrichment requires the collaboration of EFL materials designers who function as content developers, e-learning experts who undertake the multimedia implementation, and computer engineers who provide technical support. They should all work as a group developing strong ties and should learn to cooperate and ‘speak’ the same language. Since all group members should be aware of the decisions taken at each step of the process, it is recommended that they are all involved in textbook analysis and the design process.

The above principles were gradually developed during the first year of the Digital School Project and were closely followed by the English Group. Refinements were added along the way during the second and third year of the project which are represented in the steps and phases presented below.

6. The ‘How’ of digital enrichment: Stages and steps

What follows constitutes a methodology for materials developers who would like to attempt digital enrichment of EFL textbooks. It consists of three main stages, the *Textbook Analysis and Planning*, the *Enrichment Design* and the *Implementation* stages, each including a number of steps. The suggested methodology to enrichment, which is summarised in Table 1, developed during the three-year project in which we prepared digital content for the Greek state EFL textbooks using the principled approach mentioned above. However, although it has been tried out and finalised in practice, it should be seen as a suggested methodology towards a systematic approach to enrichment that may need to be adjusted in different contexts, and not as a one-fit-all methodology. In addition, it should be noted that while the use of steps may reflect some linearity, the whole process proved to be quite recursive. Often we had to go back and forth, through steps and stages searching appropriate pedagogical and technical solutions.

In the *Textbook Analysis and Planning Stage*, the first step involves analysis of the textbook package including the students’ book (for the overall structure of each chapter, the book themes, the types of texts and the tasks used in each book), the teachers’ book (for the employed teaching philosophy and the pedagogical approach) and the workbook (for the scale, type and amount of offered activities). Strengths and weaknesses of the textbook are here identified and attention is drawn to the employed

teaching methodology. The types and extent of activities (e.g., project work, activities for differentiated learning, etc.) are noted. The second step includes interviews with the textbook authors to get their insights both on the difficulties they encountered during the production of the textbook (e.g., constraints imposed by the Ministry of Education and by the publishers, copyright issues, etc.) and their suggestions as to what kinds of enrichment would be useful for the specific textbook. This step also involves interviews with EFL teachers who use the textbook to be enriched in their classroom in order to get their side of the story about what works well and what needs strengthening in the book. Whenever possible, informal interviews are also held with students. After collecting feedback from textbook analysis and the interviews, the development group meets to exchange notes and to identify areas in the EFL textbook that would benefit from enrichment and to discuss ideas about enrichment and possible applications (step 3). At this initial meeting the textbook authors are also invited and their feedback is taken into account. In the next step, a list with all possible suggestions for enrichment is prepared (step 4) and attention is paid so that different aspects of the textbook are covered. At this point it is important to clearly identify the aims and objectives of digital enrichment to be followed in the specific textbook (step 5) before we finalise the types and extent of enrichment (step 6).

In the *Enrichment Design Stage*, the first step concerns the development of specifications for each type of enrichment (step 7). This includes a detailed description of the application to be developed, the work to be done, the media to be used and all necessary requirements for the development of the application. After deciding on specifications, it is important to search for an appropriate, pedagogical and technical solution, a step that often proves quite time consuming (step 8). The potential of different available software packages is explored. Next, samples for each type of enrichment are prepared (step 9) by more than one different e-learning experts often using different software which are then piloted with EFL students and teachers (step 10). Important feedback from this pilot phase results in the selection of the application that best fits the pedagogical aims, and suggested changes of the produced materials are made (step 11). The sample is then finalised (step 12) and the development stage is about to begin. Quite often there are significant improvements between the original sample and its finalised form.

Table 21-1. Phases and steps to enrichment

TEXTBOOK ANALYSIS AND PLANNING	<p><i>Step 1:</i> Review student book, workbook and teacher book</p> <p><i>Step 2:</i> Involve interested parties (textbook authors, teachers, students) through interviews, observations, etc.</p> <p><i>Step 3:</i> Identify areas in the EFL textbook that would benefit from enrichment</p> <p><i>Step 4:</i> List possible enrichment types</p> <p><i>Step 5:</i> Formulate aims and objectives</p> <p><i>Step 6:</i> Finalise types and extent of enrichment</p>	STAGE ONE
ENRICHMENT DESIGN	<p><i>Step 7:</i> Design specifications</p> <p><i>Step 8:</i> Search appropriate pedagogical and technological solutions</p> <p><i>Step 9:</i> Prepare a sample for each type of enrichment</p> <p><i>Step 10:</i> Pilot samples with students (in class, if possible) and teachers</p> <p><i>Step 11:</i> Get feedback from the samples</p> <p><i>Step 12:</i> Finalise sample, proceed with development</p>	STAGE TWO
IMPLEMENTATION	<p><i>Step 13:</i> Develop content</p> <p><i>Step 14:</i> Review content and provide feedback</p> <p><i>Step 15:</i> Develop application</p> <p><i>Step 16:</i> Review application and check user interface</p> <p><i>Step 17:</i> Make final changes</p> <p><i>Step 18:</i> Publish application</p>	STAGE THREE

During the *Implementation Stage*, which usually lasts for several months, the complete scripts and storyboards are developed (step 13) by content developers; these are thoroughly reviewed by group members (step 14) before applications are developed by e-learning experts (step 15). Features concerning user interface (e.g., navigation issues from one part of the application to another) are closely attended (step 16) and final changes

are made (step 17). Quite often at this stage we need to return back to the *Design Stage* in order to modify specifications or the prototype sample. Progressively as the development of the multimedia content moves to its next stages and becomes more mature, it requires minor changes which may affect even the completed applications. The last step includes the addition of the credits page and the publishing of the applications on the digital textbook (step 18).

7. The implementation of a genre-based writing application

To illustrate how the above procedure was put into action, we will focus on a particular example of an enrichment type that was developed for the writing tasks of gymnasium (junior high school) EFL textbooks. During the textbook review process (steps 1 and 2), a need for more guided instruction for writing tasks was reported (step 3) by textbook authors and several EFL teachers. A suggestion was made for the development of writing applications (step 4) which would guide students in every step of the writing process. Taking into account the approach to writing adopted by the textbooks, our group decided that these applications would draw on genre-based approaches to writing instruction (Martin, 1999; Rothery, 1996) which place emphasis on the communicative context of the writing task, on analysis of a model to illustrate appropriate organisational and language choices and on scaffolding, a process whereby the writing task is prepared following a step-by-step procedure (step 5).

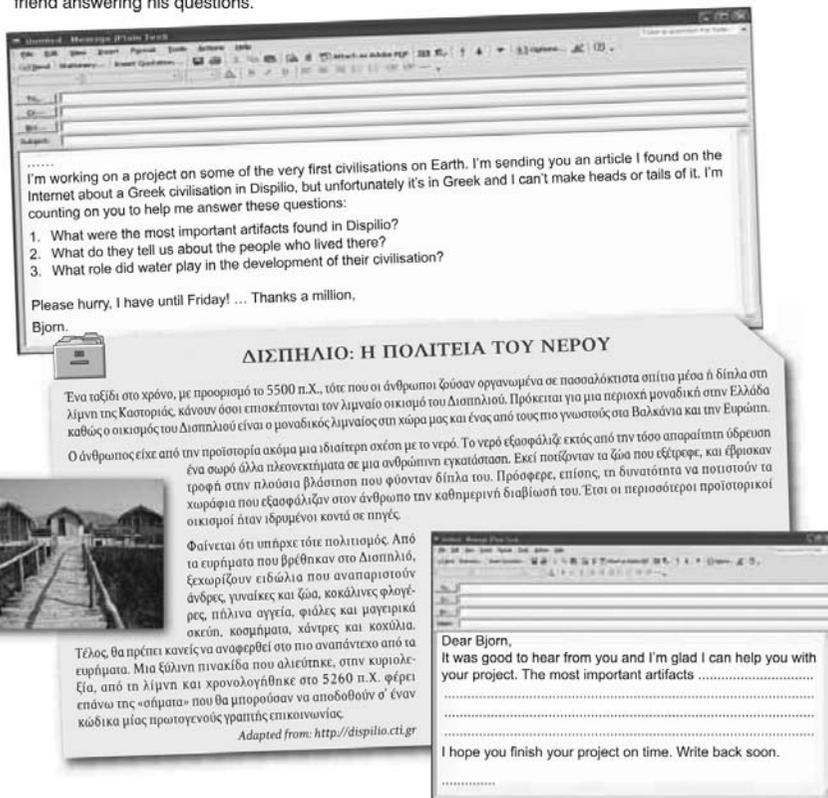
From a list of writing tasks that was prepared by group members, twelve writing tasks from the five gymnasium EFL textbooks were selected (step 6) as representative of different writing genres that students should master. These include the genres of article, report, narrative, biography, description, mediation, journal entry, poster, cv, application and advice letter.

The writing tasks are often presented in the textbooks through a model text and some guidance in the form of steps about how to reproduce the specific writing genre paying particular attention to specific generic conventions, as it is evident from the example given in Figure 21.5 below. This is a cross-language written mediation task in which students are invited to selectively extract and relay information from one language to another. In the specific writing task, students read a text about an ancient Greek civilisation found in Dispilio and write an email to a Swedish penfriend about important artifacts found there, the life of people who lived in Dispilio and about the role of water in the development of their

civilisation. Students are given the email Bjorn, the Swedish penfriend, wrote, the Greek text as well as a plan for the email to be prepared.

8 A city under water

You have received the following e-mail from your Swedish penfriend. Read the e-mail and reply to your friend answering his questions.



.....

I'm working on a project on some of the very first civilisations on Earth. I'm sending you an article I found on the Internet about a Greek civilisation in Dispilio, but unfortunately it's in Greek and I can't make heads or tails of it. I'm counting on you to help me answer these questions:

1. What were the most important artifacts found in Dispilio?
2. What do they tell us about the people who lived there?
3. What role did water play in the development of their civilisation?

Please hurry, I have until Friday! ... Thanks a million,
Bjorn.

ΔΙΣΠΗΛΙΟ: Η ΠΟΛΙΤΕΙΑ ΤΟΥ ΝΕΡΟΥ

Ένα ταξίδι στο χρόνο, με προορισμό το 5500 π.Χ., τότε που οι άνθρωποι ζούσαν οργανωμένα σε πασσαλόκτια σπίτια μέσα δίπλα στη λίμνη της Καστοριάς, κάνουν όσοι επισκέπτονται τον λιμναίο οικισμό του Δισπιλίου. Πρόκειται για μια περιοχή μοναδική στην Ελλάδα καθώς ο οικισμός του Δισπιλίου είναι ο μοναδικός λιμναίος στη χώρα μας και ένας από τους πιο γνωστούς στα Βαλκάνια και την Ευρώπη.

Ο άνθρωπος είχε από την προϊστορία ακόμα μια ιδιαίτερη σχέση με το νερό. Το νερό εξασφάλιζε εκτός από την τόσο απαραίτητη ύδρευση ένα σωρό άλλα πλεονεκτήματα σε μια ανθρώπινη εγκατάσταση. Εκεί ποτίζονταν τα ζώα που εξέτρεφε, και έβρισκαν τροφή στην πλούσια βλάστηση που φύονταν δίπλα του. Πρόσφερε, επίσης, τη δυνατότητα να ποτιστούν τα χωράφια που εξασφάλιζαν στον άνθρωπο την καθημερινή διαβίωσή του. Έτσι οι περισσότεροι προϊστορικοί οικισμοί ήταν ιδρυμένοι κοντά σε πηγές.

Φαίνεται ότι υπήρχε τότε πολιτισμός. Από τα ευρήματα που βρέθηκαν στο Δισπιλίό, ξεχωρίζουν ειδώλια που αναπαριστούν άνδρες, γυναίκες και ζώα, κοκάλινες φλογέρες, πήλινα αγγεία, φιάλες και μαγειρικά σκεύη, κοσμήματα, χάντρες και κοχύλια.

Τέλος, θα πρέπει κανείς να αναφερθεί στο πιο αναπάντεχο από τα ευρήματα. Μια ξύλινη πινακίδα που ολιέυτηκε, στην κυριολεξία, από τη λίμνη και χρονολογήθηκε στο 5260 π.Χ. φέρει επάνω της «ήματα» που θα μπορούσαν να αποδοθούν σ' έναν κώδικα μίας πρωτογενούς γραπτής επικοινωνίας.

Adapted from: <http://dispilio.cti.gr>

Dear Bjorn,
It was good to hear from you and I'm glad I can help you with your project. The most important artifacts

.....

I hope you finish your project on time. Write back soon.

.....

Figure 21-5. A mediation writing task about Dispilio (from *Think Teen!* 2nd Grade of Junior High School, Advanced, Unit 2, Lesson 5)

The *Enrichment Design Stage* for this writing task started with the specifications of the application (step 6) and the search for appropriate pedagogical and technological solutions (step 7). Although the general pedagogical framework upon which we would work had been decided

when we selected the genre-based approach to writing instruction, at this stage it became more specific. Taking into account related literature, students' level and exposure to the English language, as well as the pedagogy of modeling and process writing that was selected by the textbook authors, we decided on a pedagogical model that would consist of the following parts:

- Introduction** presents the genre students are asked to produce and the general theme they will deal with in the writing task
- Writing task** introduces the specific writing task and analyses the communicative context of the task: who writes, what to whom and for what purpose
- Model text** presents a model text and analyses it in terms of organisational patterns (what is included in the introduction, main body and conclusion) and lexicogrammatical features to illustrate the writing style of the specific text (formal, semi-formal, informal, chatty, etc)
- Scaffolding** provides a step-by-step guide to help students construct their own text
- Language Bank** offers some examples of lexis and grammar that would be useful for the specific task.

After deciding on the pedagogical model to be used for this writing application, we turned to the technical aspect of the application. Two well-known software packages were explored and the one that allowed the greater customisation was selected. While the user interface and the interactive designing of the application were constructed, content developers prepared two sample storyboards which consisted of two main parts: What will be shown on the screen and what will be heard. Taking into account students' age and level, we decided to present information in English and to have a voice over in Greek explaining what students have to do in their task and elaborating on the presented materials. The selection of Greek was made in order to make the application friendlier to students and easier for them to follow. On the other hand, it would develop their interlinguistic awareness as they would practice reading in English and

listening in Greek at the same time. Good quality computer-generated voice over was selected both for convenience purposes and for adding a playful tone in the application.

The next step included the development of two samples (step 9) by two members of the group. The two applications which were prepared were piloted with some students (step 10) and feedback was collected (step 11). Based on this feedback, we decided to shorten the storyboards and take out reviewing slides we had included which proved to be repetitive and tiring for users, without at the same time offering new information. The samples were finalised (step 12) and then we were ready to proceed to the next phase.

During the *Implementation Phase* content developers prepared the storyboards for the other selected writing tasks (step 13). The storyboards were reviewed taking into account the feedback given at the piloting phase and the experience from the previous storyboards which were prepared (step 14). For instance, it was reported that the samples were repetitive and very long. Consequently, we went back to the storyboards to shorten them and give them a quicker pace in order to keep the interest of the teenagers to whom these applications are addressed. Next our e-learning experts developed the applications (step 15) which were reviewed by the rest of the group and details concerning navigation issues were added (step 16). After several revisions, the final changes were made (step 17), and after the additions of the credits page, they were published online in the digital textbook (step 18). Screenshots from the various parts of the Dispilio writing application are presented in the Appendix.

8. Conclusion

This paper explored the notion of digital enrichment in the context of EFL textbooks and suggested a principled approach to enrichment. It also outlined the methodology that was employed by the English Group of the Digital School Project and argued that it could be useful in other EFL contexts where digital enrichment of textbooks is attempted. It should be stressed, however, that during the different phases of the project we faced a number of challenges. For instance, we were called upon to reconcile two opposing views on digital enrichment. On the one hand, the rationale of online repositories required the development of learning objects which would stand on their own and be reusable in other educational contexts. On the other hand, the digital enrichment of textbooks required the development of materials that are directly tied and dependent on the

textbook, something that could lead to materials that can only be used with a specific textbook.

Although these two views on digital enrichment clearly embed different ideologies about the role of digital materials and about how people learn (Mitsikopoulou, in print), in the Digital School Project we were asked to reconcile these two traditions and to create digital enrichment for specific textbooks which would then be included in the national repository of learning objects. Different solutions were selected by our group to account for this critical issue. In the case of the genre-based writing applications we developed rich, self-contained and contextualised (yet extremely time-consuming to produce) applications which could stand on their own and be used with other textbooks of the Greek junior high school.

Drawing on the experience obtained from the first three years of the project, the paper has adopted the perspective of the multimedia materials designers. However, although digital enrichment has become quite popular with the use of new technologies and web-based media, its impact on language educational contexts remains to be investigated. For instance, future research needs to explore the impact of these multimedia enrichment materials on the end users, students and teachers. Such an investigation is necessarily multidisciplinary and includes analysis of the broader pedagogies these materials draw upon, of the different forms of textuality which emerge from the interaction of different semiotic resources and of the complex nature of hypermedia and interactional design employed in these applications. Another aspect of research should concern the different impact of the various types of digital enrichment materials that were produced. Following Tomlinson's (2012) taxonomy, we classified our materials (Mitsikopoulou, 2014) to *informative* (e.g., glossaries, picture dictionaries and grammar comics), *instructional* (e.g., edugames, reading and listening apps), *exploratory* (e.g., a Mystery and a Lost series), and *experiential* (e.g., digital stories, English quests and writing apps). The effects of each one of these produced enrichment types on language learning as well the complexity and the interconnectedness of the changes that are affecting the EFL textbook in the digital era remain to be seen.

Acknowledgement

The author would like to thank Express Publishing for giving permission to use in this article a screenshot from the interactive video software of the EFL textbook *On Screen B2* (Figure 3).

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Appendix

Extracts from the various stages of the writing application on Dispilio

Introduction: students are introduced to the genre they are asked to produce and the general theme

Language Bank

Writing a mediation task about Dispilio

ΑΙΣΘΗΑΙΟ: Η ΠΟΛΙΤΕΙΑ ΤΟΥ ΝΕΡΟΥ
 Ένα παλιό, στο 2800π.μ, με εμβαστούς το 5000 π.Χ., είχε μια εκ διαίτητων ζώουσ οπρρωπιούα δε αυτομ/ακτινούα οστρω...

LEARN HOW TO WRITE

Introduction
 Writing Task
 Model Text
 Scaffolding

Writing task: presentation of the specific writing task and analysis of the communicative context (who writes, what to whom and for what purpose)

LEARN HOW TO WRITE

Language Bank

Writing a mediation task about Dispilio

The communicative context of the task

Your role:
Kostas, a teenage student from Greece

Your audience:
Bjorn, your penfriend from Sweden

Purpose:
to inform Bjorn who doesn't speak Greek about the civilization in Dispilio, mediating information from Greek to English

Type of text:
an e-mail (with introduction, main text and closing)

Introduction

Writing Task

Model Text

Scaffolding

Language Bank icons: Greek and Swedish flags, two cartoon characters, a target, and an email symbol.

Illustration of a man in a hat holding a document.

Model text: analysis of Bjorn's e-mail and the Greek text to identify what to relay into English

LEARN HOW TO

WRITE

Language Bank

Writing a mediation task about Dispilio

Analysing the source text

Introduction

Writing Task

Model Text

Scaffolding



ΔΕΙΞΗΛΙΟ: Η ΗΘΙΛΠΗΤΗ ΤΟΥ ΝΕΡΟΥ

Ένα ταξίδι στο χρόνο, με προορισμό το 5500 π.Χ., είτε σου οι άνθρωποι ζούσαν οργανωμένα σε βασισμένα σε ένα μέσο ή άλλα στη λίμνη της Καστοριάς, κάνουν όσα επικρατούν τον λιμναίο οικισμό σου Διαπιλιό. Πρόκειται για μια περιοχή μοναδική στην Ελλάδα καθώς ο οικισμός του Διαπιλιό είναι ο μοναδικός λιμναϊκός στη χώρα μας και ένας από τους πιο γνωστούς στα Βαλκάνια και στην Ευρώπη.

Ο άνθρωπος είχε από την προϊστορία ακόμα μια ιδιαίτερη σχέση με το νερό. Το νερό χρησιμοποιεί εκτός από την τόσο απαραίτητη ιδιότητα ένα κομμάτι πλεονεκτήματα σε μια ανθρώπινη εγκυρότητα. Εκεί λοιπόν τον ταξίδια σου εξέλιξε, και έφτιαξαν τροφή στην ελπίδα βλάστηση σου φάντασε διάλα σου. Πρόσοψη, εστιας, τη δυνατότητα να ποτιστούν τα χωράφια σου εξοικονόμζαν στον άνθρωπο την καθημερινή διαβίωση του.

Έτσι οι περισσότεροι προϊστορικοί οικισμοί ήταν ιδιαιτέρως κοντά σε πηγές. Φαίνεται ότι παλιότες τότε πολιτισμός. Από τα ευρήματα σου βρέθηκαν στο Διαπιλιό, ξεχωριστών ειδώλια σου αναριστούν άνδρες, γυναίκες και ζώα, κοβάλτινες φλογέρες, πήλινα αγγεία, φιάλες και μεταφορικά οστόνη κοσμήματα, ζάντες και κορδάν.

Τέλος, ένα πράξι κανείς να αναφέρει στο σου αναφέροντο από τα ευρήματα. Μια ζώλη ανοξείδια σου αλιεύθηκε, στην κυριότητα, από τη λίμνη και χρονολογήθηκε στο 5260 π.Χ. φέρει πάνω της σφίγματα σου θα μπορούσαν να αποδοθούν σ' έναν κώδικα μιας πρωταρχικής γραμμής ελακωνανίας.

Scaffolding: a step-by-step guide to help students construct their own text

LEARN HOW TO WRITE

Language bank

Writing a mediation task about Dispilio

Use a spidergram and add words

Paragraph 1: Introduction
I was glad to get your e-mail.
It was good to hear from you.
Of course, I can help you with your project.

Paragraph 2: Artifacts / conclusions
figurines, flutes, vessels, bottles, utensils, jewels, beads,
people lived together, artistic,

Paragraph 3: Role of water
drinking water, water animals, ...

Paragraph 4: Closing
I hope I have helped.....

email to Bjorn

Introduction

Writing Task

Model Text

Scaffolding

U