Implications of paper textbook multimodality for eight-year old students' language learning:

A case-study content analysis

Sarah Hage-Obeid

Abstract

Purpose. The purpose of this study is to examine how SABIS® as a publishing house and an owner of its own school curriculum system materially represents its educational beliefs based on the curricular demands of the Common Core State Standards within the school textbooks it produces for one of its private schools in the United States.

Theory. The theory used for this study is Hodge and Kress (1988) social semiotic theory in combination with an educational focus on the qualities of resources produced which are aimed at supporting first language learning.

Method. A qualitative content analysis (QCA) approach was used as the research design in order to analyze the images within the *Anthology Level E* textbook. QCA was further studied based on a taxonomy created by Marsh and White (2003).

Results. The findings and data for this study suggested that the SABIS® *Anthology Level E* textbook, is designed primarily based on the US Common Core State Standards requirements however, they proved to have more than what is mentioned in the standards alone. Visuals provided within the informative and non-fictional pieces proved to have a close relation to text where they provided the means for students to learn new concepts. Many images proved to be beneficial for students' understanding of the text, others showed very little connection to the text and hence ineffective in the social semiotic process of teaching and learning.

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Abbreviations

SABIS®	Saad Bistany
CCSS	Common Core State Standards
ISM	The International School of Minnesota
SIS	SABIS® International School
QCA	Qualitative Content Analysis

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Chapter 1: Introduction

1.1 Background

Education contributes to knowledge and the skill of knowledge acquisition. Pupils acquire these skills through different forms of communication, one of which is teaching using school textbooks. According to Ferlin (2014), textbooks are regarded as an important tool for teaching as they are "the subject knowledge that teachers teach from" (p. 65). Specifically, this teaching material provides pupils with the opportunity to make a connection between new information and their prior knowledge of subjects. However, textbooks, school textbooks and schoolbooks are terms which one could mix up while also supposing that they have the same meaning. In one way they are similar as they are all books with text. Nevertheless, the terms differ in their meanings with regards to their purpose and the expectation of their use. Johnsen (1993) defines a textbook as a book that has an instructional purpose whereas Purves (1993) categorizes dictionaries, encyclopedias and even cookbooks as forms of these textbooks. Therefore, one cannot claim that textbooks are solely written for schooling purposes but rather for any instructional use (as cited in Heyneman, 2006).

On the other hand, schoolbooks can refer to many different materials written uniquely for schools whereas school textbooks "pertain to an instructional sequence based on an organized curriculum" (Heyneman, 2006, p. 37). One element of this sequence is acquiring the skill of reading. Reading is not only vital to learning a language but also paves the way to the comprehension of several subjects within a school curriculum such as Mathematics and Sciences. As Larkin (2010) states, "learning to read is the fundamental skill necessary for accessing the rest of the curriculum" (p. 66). If school textbooks are designed in a comprehensive manner, then they would reflect what the "professional education community, parents and families, and the state" (Heyneman, 2006, p. 37) are all searching for with regards to teaching while changing with time to fit the needs and requirements of certain curricula. However, if their design does not meet the expectations that students, parents and teachers have in meaning making, then their value for learning—their use and who is to benefit from them—becomes questionable and a matter of concern. The focus of this dissertation is on school textbooks, and in particular the purpose of using the images in these textbooks for teaching and learning purposes.

There is of course a phenomenal range of school textbooks and publishing houses one might study. However, the focus of this study in particular is an English Anthology textbook used for a private school in Minnesota and published by the publishing house of the global SABIS® network of schools. SABIS® is an educational institution founded in Lebanon in 1886. As a start, SABIS® had one school (The International School of Chouefat) in the area of Choueifat, a suburb of Beirut, Lebanon that provided education only for girls. Subsequently, and because of high demand, the school eventually became co-educational, providing schooling opportunities for both boys and girls. According to SABIS® social media, its schools operate in 20 different countries in are present in North and South America, Europe, and Middle East, educating over 70,000 students (SABIS® History, n.d.). The SABIS® network of schools is managed by a team of education specialists in three different educational development corporations; the U.S., Lebanon, and the U.A.E (United Arab Emirates). The Lebanon-based SABIS® publishing house is part of its Educational Services department. It aims to develop K-12 schoolbooks and teaching material to provide only their own schools worldwide with a curriculum that is aligned with each country's own school requirements. A K-12 program is a term used to denote the American school programs that cover 13 years of basic school education; from Kindergarten up to Grade 12 (About SABIS®, n.d.).

The reason behind this particular choice of institution for this research study is the author's combined motivation of a life long personal experience with SABIS®; firstly as a highschool student and secondly as an employee. Being a student at *The SABIS® International School* in Lebanon gave hands on experience of the use of the SABIS® educational material: the school textbooks and curriculum. Whereas working as an editor and project manager at the SABIS® Educational Services headquarters in Lebanon for five years provided an insight into the operational and product production system of the institution itself.

The SABIS® curriculum is a company-designed curriculum aimed at an international market. It uses the US system of education as its main focus on the books with a combination of some aspects from the French Baccalaureate system; the curriculum and qualification system primarily used in European international schools. Even though SABIS®'s core set of books is based on the US school system, they will cater, so would be the claim, for any other school system as well. Hence a significant reason for focusing the study on the SABIS® school textbooks is precisely their universalist claim of providing learning resources across

school systems, that is, of being school system and learning culture independent. For example, if SABIS® intends to open a school in the US, it will compare its core set of books to the Common Core State requirements for that specific State and then enhance and alter the content based on the States requirements (SABIS® Curriculum, n.d.).

The SABIS® curriculum is build around the SABIS Point System® which uses an interactive approach in teaching where the whole class is involved in the learning process. The Points in this system refer to several concepts identified at the beginning of each section and chapter of a book that also need to be taught during one or several teaching sessions. The Points for each session are introduced and taught one at a time while applying the Teach, Practice, Check, and Re-teach cycle. Students always sit in groups with an assigned leader and subject expert; Subject Prefect. This cycle is listed below:

- Teach: teacher explains one Point and presents an example of how it can be used within the subject context
- Class Practice: teacher assigns an activity that the class does interactively with the teacher
- Individual Practice: teacher assigns another activity for the class. Students (even though seated within their groups) do this activity individually
- Check: teacher checks the individual practice of the Subject Prefects. Subject Prefects check their groups' work and present the results to the teacher
- ❖ Re-teach: if more than 60% of the students have made mistakes, the teacher has to re-teach the concept (SABIS Point System®, n.d.).

This process allows students to learn actively rather than listen to lengthy explanations and in certain cases take dictated notes. Only when 85% of the students prove that they have understood the Point, does the teacher move to the following one. Through this teaching method, teachers ensure that each student masters the concepts and knowledge required for further advancement in the course.

SABIS® book series includes around 1800 book titles in several languages and for all the different core subjects some of which are English, math, sciences, social studies, and Arabic. SABIS® books are written, designed, and divided in such a way to be in line with all the various courses found within their curricula where each book covers the key concepts that form the building blocks of student learning. The goal of the books within the English series is for students to develop proficiency in the English language as a communicative tool that

will trigger their thinking and learning as well as their imagination skills. They are designed in a structured series of texts and supporting material such as customized workbooks and teacher guides making the courses aligned to the various international and national frameworks. One of these book series is the SABIS® Anthology Series (SABIS® Book Series, n.d.).

1.2 Purpose of the study

The purpose of my research study is to examine how SABIS® as a publishing house and an owner of its own school curriculum system materially represents its educational beliefs within the school textbooks it produces for the US. In light of this foregrounding of the *material representation of educational beliefs*, the study focuses not on the structure and organization of the learning contents, but precisely on the material or graphic composition and ordering of these learning contents. In theoretical terms, the study focuses critically on the *social semiotics* of the school textbooks, as given by the graphic language of these textbooks and their particular graphic ordering of learning content through text and imagery, in order to have the books approved by and function within the US school systems.

1.3 Research questions

Given this focus on a social semiotic analysis of the SABIS® Anthology school textbooks for English language learning, the following research questions were formulated:

a. What social semiotic strategies are followed in the design of the SABIS® Anthology textbook?

b. In educational terms, what meaning may be attributed to the blending of texts and images? What do the pictures in the SABIS® Anthology textbook suggest about their social semiotic effectiveness as learning resources?

Chapter 2: Theoretical Framework

According to Hodge and Kress (1988), anything in a society or a culture can be viewed as a form of communication organized in a way that is similar to verbal language. Nowadays, it is common that these forms are fragmented into different disciplines such as psychology, sociology, history, and linguistics. For this research, I have taken an educational stance that focuses on the qualities of resources aimed at supporting English language learning while looking at my study from a social semiotic theory perspective. In language learning, text and visuals have to be rich enough and well structured in order for children to make meaning. It is the resources that either make children enthusiastic about the topic at hand or even scaffold their learning abilities. This chapter aims at describing the combination of a social semiotic theoretical framework in context of school textbooks.

2.1 Social semiotics

School textbooks not only support the development of meaning making and language (that what needs to be learnt), but they themselves—in their physical or material form—also already constitute meaning and language, hence the focus on social semiotic theory for this study. Books present meaning that is communicated through the languages of instructional graphic design, of typography and of book design, the language of illustration, and even the language of paper: how paper smells, feels and sounds 'tells' us something, and even that telling is *a communicative choice that was made*, consciously or not, in the making of a book. According to Hodge and Kress (1988), semiotics attributes power to the meaning of things rather than vice versa. Conceived as social semiotics, the focus of this dissertation is precisely on *what may be said* about how these latter graphic languages of textbooks (as themselves already constituting a particular mode of communication—or a form of address), support modern language learning.

According to Kress (2010), semiotics is mainly developed from signs. Signs are the basic units of social semiotic investigations and "the fusion of form and meaning" (p. 58), in the same way that words are the basic units, the signs, of a language as a semiotic system. Within semiotic theory, signs may generally be thought of as similar to the words of a language. Yet such signs exist in many different kinds of modes. Social actions initiate signs, including the clothes and perfume we decide to wear, the way we walk, and the gestures we

use. But so does the social action of traffic, leading to traffic signs, the separation of roads into lanes, walkways, crossings and roundabouts—these are all signs with a particular meaning; drive here but walk there, stop here, don't go or park here, and so on. When defining social semiotics, we look at the production of sign making and communication in reference to, and amongst, individuals and how they behave in a social setting and how they are socially shaped and located within an environment. "In a social-semiotic multimodal account of meaning, all signs in all modes are meaningful" and attend "to general principles of representation: to *modes*, *means* and *arrangements*" (Kress, 2010, p. 59). This varies from the reasons behind the placement of an image in a given space or the addition of certain details on the characters or scenery and even the choice of colors used. When modes such as numbers, images, color and writing are used, you then have a multimodal text and using social semiotics, one can/should give reasoning behind what the function of each of these modes is, why it was chosen and what its relation to other modes is (Kress, 2010).

Social semiotic theory is concerned with the different forms of meaning and the different modes used in shaping and communicating meaning. Meaning comes from interactions within a social setting. Social interactions are therefore the generators of semiotic processes and forms of meaning. The proposal that all meaning—not just of language but of all communicative forms—is the product of social settings is the key claim of Hodge and Kress' (1988) social semiotic theory. They write that social structure and processes provide an important starting point for studying meaning. In semiotic analyses, a focus on words alone is not enough since meaning has a strong universal existence in other systems of meaning such as the codes of multiple visual, aural, and behavioral systems. They are all related and one cannot be studied without the other. "Verbal language has to be seen in the context of a theory of all sign systems as socially constituted, and treated as social practices" (Saussure, 1974 as cited in Hodge and Kress, 1988, p. 1).

2.2 The pragmatics of social semiotics

Semiotics is "the science of the life of signs in society" (Saussure, 1974 as cited in Hodge and Kress, 1988, p. 1) and meaning has in various ways been defined in terms of a linguistic perspective of language. However, communication can be presented in either a linguistic, pragmatic, or a social-semiotic viewpoint (Hodge and Kress, 1988). Looking at this researchfrom a social semiotic approach and in particular why semiotic forms are used,

involves asking questions such as "*Whose interest* and *agency* is at work here in the making of meaning?" and "*What meaning* is being made here?" (Kress, 2010, p. 57) With regards to a social semiotic perspective, there is a tendency to view meaning making from the interest of the sign maker and the environment in which it is made. However, in a pragmatic approach, questions such as under what conditions, when and where would also be asked in order to get an explanation of why—to what particular intention or goal—certain semiotic forms or a semiotic style or genre were used. Consequently, within social semiotic theory more generally, a pragmatic orientation focuses less on details pertaining to the source and content of meaning-making and more on their intended and actual purpose and application: to what particular ends, and for which practical conditions or context of doing, are signs and meanings created and circulated? In capitalist societies, there is an inequality in the distribution of power and other things. These societies have forms of domination and in order to keep this type of society functional, the groups in control represent the world in forms which are of interest to them and which reflect their own power. Dominated groups often try to resist the dominance and its effects and most often, they succeed in doing so. This account leads us to identifying ideology as it both represents the world and represents the world in an inverted form: how it displays an image of the world as it ought to be and as seen from the point of view of the dominant groups **or** even the point of view of the dominated group (Hodge and Kress, 1988).

In order to explain this paradox, Hodge and Kress (1988) present the term "ideological complexes" (p. 3) as a set of contradictory ideas of the world that are set and imposed by one specific social group based on its own interests. They "represent the social order as simultaneously serving the interests of both dominant and subordinate" (Hodge and Kress, 1988, p. 3). The opposing interest is what creates the contradiction within the complex: 1) Relational models: different types of social agents, and 2) Actional models: the actions and behaviors required of, permitted and forbidden by the social agent. Ideological complexes are hence there to pressure behavior as they "exploit contradictory semiotic forms in order to resolve contradictions in attitudes and behaviors, therefore they cannot function on their own" (Hodge and Kress, 1988, p. 3). Ideological complexes use the different contradictory semiotic forms to resolve contradictions.

With reference to the production and reception of meanings, Hodge and Kress (1988) believe that producers rely on recipients in order for their message to function. Recipients in this case must have some background knowledge as to how to read and analyze a message in

order to receive it the intended way; knowledge of a set of messages on another level. Misinterpreted messages are common in situations where there are cross-cultural interactions –where second-level messages regulate the function of that message by a higher-level control mechanism. Hodge and Kress (1988) call this "control mechanism a *logonomic system,* from the Greek *logos*" where **logo** means a "thought/system of thought" and **nomic** means a "control/ordering mechanism" (p. 4). For example, if a person doesn't have prior knowledge of what a joke is and how it is meant to be taken, then he/she would most probably choose to reject the message expressed by it as dubious or erroneous information; an aspect mostly common in cross-cultural interaction. In this case, the storytelling type or genre acts as a controlling mechanism for an appropriate shared understanding of the message.

2.3 The logonomic system

A logonomic system provides for a system of prearranged rules that describe the conditions under which meanings are successfully produced and received. These rules decide **who** can claim to produce the messages, receive them, what topics they cover, and with which modalities; **how**, **when**, and **why**. More specifically, social semiotic behaviors are suggested by logonomic systems at the point which messages are produced and received. "The logonomic rules are specifically taught and policed by concrete social agents" such as parents and teachers "coercing concrete individuals [children] in specific situations by processes which are in principle open to study and analysis" (Hodge and Kress, 1988, p. 4). Social agents such as children and students also challenge logonomic rules, as is visible in situations that expect/require etiquette and politeness, but in general terms, logonomic rules are based on a classification of people, topics, circumstances which initially comes from the ruling ideas of a dominant group it is adults who define what childhood is and who fall within that category. In relation to logonomic systems and their functionality within society, SABIS® as a production house and more specifically its Academic Development department plays the role of a social agent producing school material – in particular school textbooks – for other social agents. When concerned with the production of material for its schools in the US, SABIS® has an obligation to produce all the material, both student and teacher, aligned with the US Common Core State Standards (CCSS) specific and unique to each state. This puts pressure on what the developers need to create, based on their subject knowledge and expertise, and in turn affects what and how the students view the material presented to them in the form of school textbooks. In this case, the students play the role of the social agents

who are likely to both affirm and challenge the logonomic rules set by the books' design, through the ways in which they read the textbooks and look at the images.

Logonomic systems, in conclusion, imply a theory of society, an epistemology and a theory of social modalities and conflicts within its social formations. Logonomic systems reflect contradiction and conflicts in the social formations. They usually have a structure which consists of general rules that establish and maintain social hierarchy: dominance of the dominant, opposition of the subordinate. Logonomic systems and ideological complexes are related in content and function. They express ideological content by controlling one category of behavior; semiosis (Hodge and Kress, 1988).

Chapter 3: Literature Review

This chapter provides a review and critical analysis of a collection of articles ranging from topics such as learning and understanding for children, multimodal experiences through images and textbook, as well as language learning through social semiotics. This literature helps to ground the social semiotic theory while also presenting examples of social semiotics in other empirical studies. In the concluding part of this chapter, an investigation on several articles which use social semiotic theory and tackle the methods they use, as well as the questions asked and hence how the analysis was conducted paving the way into the methodology chapter is presented.

3.1 Children's cognitive development

According to Schleppegrell (2001), "not all children come to school equally prepared to use language in the expected ways, nor do all share the same understanding that certain ways of using language are expected at school" (p. 434). These language uses are hence affected by the students' differences in social class. In reference to reading in schools and for an educational purpose. Schleppegrell (2001) also believes that students' reading level defines their success in subjects such as mathematics and scince in later stages. Nevertheless, Shirley Larkin (2010) believes that whilst inside a classroom, it is hard to know if children are engaging in either cognitive or metacognitive processes unless they get involved in discussions to show their way of thinking. However, while still reassuring that "metacognitive skills have a positive impact on learning" (Shirley Larkin, 2010, p. 8).

So what is metacognition? It is a process that can help children and adults understand and achieve more in an efficient way. It also allows for a shift in the way of thinking by helping one to stop and think 'why' before acting upon a decision. In the educational world, metacognition can also motivate one into learning something new. According to Larkin (2010), and in a classroom context, this is often not encouraged because it is time consuming for both students and teachers. It is often more favorable to finish a task quickly and move on to the next one. Metacognition can be a combination of a both conscious act as well as an automatic way of processing information. For example, when you learn how to read, this process eventually becomes automatic unless you're faced with a new word for which you have to stop and think (Larkin, 2010). In order for a child to reach a proficient level of

comprehension, there are several steps involved. However, according to Bjorklund (2012), not every child has the capability to hold the same amount of information in the working memory at once. This is an aspect that differentiates the learning process for reading. According to Dooley (2011), "readers are known to develop at their own pace, in fits and spurts, often with overlapping proficiencies" and their "unique cognitive, social, and emotional developmental patterns will inform their ability to comprehend" (p. 172). Another important aspect for efficient reading is the prior knowledge the child has of the subject at hand. Richard Anderson and his associates (1984), define reading as "a process in which information from the text and the knowledge possessed by the readers act together to produce meaning". They also view reading as "a constructive process in which the background knowledge that one brings to a text interacts with what is written on the page to produce understanding" (as cited in Bjorklund, 2012, p. 452). "No two readers will create exactly the same meaning with the same text" (Rosenblatt as cited in Dooley, 2011, p. 170) and each person will create meaning based on their own prior knowledge, experiences, and even beliefs. The reason behind why a person reads a text will in turn impact the way he/she looks at and constructs meaning. This transaction is also affected by social and political elements with focus on the socio-cultural contexts.

For students who have a difficulty in comprehension rather than the decoding of words, Palinscar and Brown argue that through guided practice students will be directed by the more expert readers about the strategies they are to use when reading a text. Poor readers are often given texts that aren't suitable for their age. Regardless of this notion, Le Fevre believes that simply giving easy texts to poor readers will also not solve the problem at hand (as cited in Larkin, 2010). In a school context, Bjorklund (2012) argues that the most efficient way of teaching students how to read is through the "bottom-up process" or a "top-bottom process" (p. 453). A bottom-up process involves a strategy in which students learn the individual components of reading and put them together to make meaning. They also learn how to identify letters and letter sound correspondence. Through the Point System, SABIS® follows a bottom-up process in which the learning process is teacher-centered where the drilling of information is promoted and a phonological approach is much favored. "Phonological skills are the single best predictor of reading ability (and disability)" (Bjorklund, 2012, p. 454). In the absence of phonological recoding skills, students would not be able to read words that they are not familiar with.

3.2 Children's comprehension and literacy

Children experience comprehension and literacy from very early stages in their lives. They make meaning of the things they see in their surroundings as well as their day-to-day experiences, which eventually contribute to a life long process of learning and development. Even though children at their early stages are not conventional readers and writers, Dooley and Matthews (2009) believe that there is an extensive connection between their actions and 'emergent literacy', a term coined by the researcher Marie Clay in 1966. According to Bjorklund (2012), emergent literacy is the continuous development of a preschooler's reading skills up to a proficient reader. Likewise, Sulzby and Teale (1996) define emergent literacy as "the processes, knowledge, skills and dispositions related to the later development of conventional reading and exhibited by young children, from birth to onset of conventional reading" (as cited in Dooley & Matthews, 2009, p. 270). However, with reference to mainstream literacy, there is still a wide gap and separation between emergent literacy and the young learners' non-print practices.

In her article *The Emergence of Comprehension: A Decade of Research 2000-2010*, Caitlin Dooley (2011) provides evidence that bridges the gap between "emergent comprehension and conventional reading comprehension" (p. 169) by presenting a theoretical connection between the two. In relation to texts, children's meaning making process commences much earlier than when they become conventional readers and hence develops as they are taught 'how' to read while at the same time interacting with texts. According to Rosenblatt, every reader has his/her own approach to a text, while looking at the contents with different qualities and purposes (as cited in Dooley, 2011). Readers in turn make meaning of that text which might not necessarily be aligned with its intended meaning. Dooley (2011) also states that, "young children's emergent comprehension experiences are likely to emerge from playful; and/or caring experiences and will be influenced by their social, cognitive, and emotional qualities…" where "…the most significant social activities are "interactions, listening, and responsiveness of talk" (p. 174). When it comes to books, children construct meaning through a shared interaction between the book itself and the child's caregiver. With time, these shared experiences are what give the child the actual purpose of the book. Eventually, the child also learns that if the expectation is to make meaning of the text, they will seek to construct meaning. Students from early stages build a typical understanding of what is expected of them at the level of learning at school. They are to follow a certain path that teaches them how to describe objects in the 'correct' manner;

'correct' in the eyes of the teacher or any other academic providing guidance. Children who follow this expected style, are labeled as 'good' learners while others who are not able to track the same path, would be considered 'bad' learners (Schleppegrell, 2001). As readers, we tend to link what we're reading to experiences from past events or pre-existing knowledge. This "impinges on how we select the text we decide to read, including the effect of the visual images on the book's cover" (Larkin, 2010, p. 70).

We live at a time where visual aids and elements are integrated in almost every form of communication; one of which is school textbooks where communication is provided using text and images. Therefore, it is important for designers and writers to have good reasoning behind changing the way texts are laid out. More specifically, how and why visual images are added to school textbooks since this affects the different ways in which children make meaning out of them. Not only are children affected by the prior knowledge of learning outcomes, but just like other readers, the writing process itself also affects them as well as the design of a book (Maun and Myhill, 2005). According to Maun and Myhill (2005), writing is still a very powerful tool for communication but as a result of "computer-supported writing" and "writing boundaries in e-mail and text messaging" its forms have changed and developed over the years (p. 7). Students tend to bring with them prior knowledge of topics to the writing and reading of texts, rather than following the traditional writing process, one needs to imagine this procedure again and think of it as a design process instead. Viewing writing as a design seems to be limited when discussing its integration into school curriculums where creating image-based texts and reading these texts, are presented as two separate skills. Students are not always expected to pay attention to the layout of their essays; they are given the impression that these visual elements such as the placement or choice of images are not as important as the actual writing on that same page. However, in one particular study of the AS level French students' perceptions of text difficulty, the design and layout of the text was what influenced the students' responses rather than the text itself. A page full of text can be more overwhelming than one with text and images; it is simply a visual perception (Maun and Hill, 2005).

3.3 Multimodal learning

Kress et al. (2001) believe that language has proven to be a dominant communication approach in learning and teaching systems. These systems appear in several different modes and representations. Multimodal products are created from any combination of these representations varying from sign systems to semiotic resources as well as modalities. The offered meaning and design of a communicative product are influenced by the choice of modalities that can in turn offer opportunities for meaning making processes. "A product that stimulates meaning making is said to have high aptness for the recipient" (Kress, 2010 as cited in Ferlin, 2014, p. 68). According to Ferlin (2014), textbooks contain many semiotic resources "such as written text, photographs, drawings and diagrams" (p. 2 of paper IV). Not only do modes such as illustrations simply appear everywhere in textbooks, but according to Bezemer and Kress (2008), they are also integrated within the written text itself and therefore, affect student learning. Jewitt (2008) states that "both the design of the textbook and their content may influence students' opportunities for meaning making" (as cited in Ferlin, 2014, p. 2 of paper IV).

Bezemer and Kress (2010) present a new form of literacy that students have to learn. This literacy is as a result of the multimodality integrated into many of today's textbooks. Students are expected not only to read and understand their school texts, but also to "interpret the information presented using multimodal modes" (Ferlin, 2014, p. 2 of paper IV). Bezemer et al. (2012), suggest that "a multimodal social semiotic approach focuses on meaning-making, in all modes. It is a theoretical perspective that brings all socially organized resources that people use to make meaning into one descriptive and analytical domain" (p. 1). These modes of learning vary from but are not limited to images, gestures, notebooks as well as speech and are used in different settings designed for learning. Therefore, a multimodal social semiotic approach is suitable for studying learning. "A textbook seen from a social semiotic perspective is a cultural artifact adapted for a specific social perspective" (Ferlin, 2014, p. 67). For van Leeuwen (2005) when a textbook is created, it has a culturally rooted meaning potential with two perspectives for meaning making; the *offered meaning* and the *perceived meaning*. The former presents the authors' and publishers' initial purposes behind the actual production of the text whereas the latter shows how the reader interprets the contents of that text. Selander and Kress (2010) state that the presentation of the texts in relation to subject and design, should "capture the reader's attention" (p. 67) in order for them to make meaning out of what's read and studied (as cited in Ferlin, 2014). "A semiotic

view of comprehension requires attention to multiple modes and symbol (or sign) systems, printed text being just one symbol system of many" (Dooley, 2011, p. 176). As previously mentioned, the term semiotics refers to the study of different types of signs and symbols studied in relation to meaning making. Traditionally, semiotic texts studied signs and systems of signs as separate entities. However, social semiotics was first introduced into linguistics and language by Michael Halliday who argued against this traditional view on semiotics while instead focusing on the relationship between the signs and their context. Halliday states:

> By their everyday acts of meaning, people act out the social structure [. . .] establishing and transmitting the shared systems of value and of knowledge. [. . .] This twofold function of the linguistic system ensures that, in the microencounters of everyday life where meanings are exchanged, language not only serves to facilitate and support other modes of social action that constitute its environment, but also actively creates an environment of its own, so making possible all the imaginative modes of meaning, from backyard gossip to narrative fiction and epic poetry (p. 2).

He built on the semiotic studies and described language as a means of making meaning where language, from a social semiotic perspective, played the role of a metaphor for the reality of things.

Changes in communicative patterns mean that valuable information comes "from many sources, and the ways to 'learn' new things differ a lot from the experiences of older generations and their ways of communicating and sharing information" (Kress and Selander, 2012, p. 265). This could also affect the role that schools play in teaching and learning. In order to follow this change and understand it, it isn't enough to only count on the verbal texts. This leads to the importance of the role that the communication in multimodal form plays. The teachers of today "like many other professionals, are asked to take part not only in planning processes but also in assessment practices" (Kress and Selander, 2012, p. 265). As a result, both the teachers and students have themselves become designers where students have developed into creators of learning processes that have their own construction. In conclusion, according to Kress and Selander (2012), design is when new products are formed from thoughts, ideas, and patterns. In line with Kress and Selander's (2012) views, Bezemer et al. (2012) also write that not only "writing and image, but also typography, and layout" (p. 2) are all different modes of representation. Two-dimensional spaces such as textbooks can

comprise multimodal designs created for the purpose of learning. Layout in relation to color, design and the placement of other material, as a mode of design of spatial disposition, paves the path students take while reading a text. Writers "create reading paths" (Bezemer et al., 2012, p. 2) that in turn shape how readers browse through and read a text and it is these paths that students would use in order to make meaning of what's read and build their knowledge about the skills at hand.

Looking at reading, Lynch et al. (2008), suggest that children develop comprehension skills such as making inferences, identifying cause and effect relationships as well as learning the sequence of events from multimodal texts. Picture books, one body of children's postmodern literature, present a type of complexity in their texts, which provides opportunities for children to mold their responses in extraordinary ways. Being exposed to several modes while looking through a picture book, allows the mind to create a diversity of cognitive paths that teach children how to navigate through and understand the content of narrative picture books that cover several subjects at the same time. Based on a study for children at the age of 8-9, Arizpe (2001) shares a book titled *Voices in the Park* with students from several different schools in the UK. Her findings show that these students "searched for narrative structure among the pictures. And their familiarity with the text (after repeated readings) increased the depth and dimension to their responses" (as cited in Dooley, 2011, p. 177). Aimulatenously, these students thoroughly looke for and justified visual and eccentric referents in this narrative structure. Pantaleo (2004) suggested that the "multimodal (and postmodern) texts necessitate an expansion of interpretive repertoires. The synergy among the various metafictive devices in *Voices in the Park* creates an overarching indeterminacy in the text and positions the readers in a coauthoring role" whereas "Duke and colleagues also found that access to informational texts did not impede children's attitudes toward narrative texts and they were just as able as the comparison group to write narrative texts" (as cited in Dooley, 2011, p. 178).

However, in reference to writing and pictures, Bezemer et al. (2012) present an example from a science textbook, which illustrates the communication between these two modes. Through images; shape, size and placement are interpreted, whereas through writing, processes and entities are described. Without these modes being placed together as one entity, communication and hence meaning making would be fragmented. As said by Bezemer et al. (2012, a key principle "of multimodal social semiotics" is that "meaning-makers always draw on a multiplicity of modes to make meaning" (p. 3). Learners need to be drawn to a text and

especially a school text that is written and designed to teach them new material. Therefore, careful assessment of the chosen text and the relevancy of images as well as text type and size are crucial for good learning methods. Taking a look at an example from Kress' (2010) book *Multimodality A Social Semiotic Approach to Contemporary Communication*, students were asked to recount their trip to the museum in written and drawing format, their results proved two different things. In relation to the written format, the focus was more about what they did after entering the museum, during and leaving. However, based on the recount through drawings, the focus was on the actual things they saw at the museum as well as what they thought they looked like and their recollection of the museum itself and what it entails. The focus on these details shows that students do place an importance on the images and their details. What they draw also shows what they see and how they see it. Therefore, I would say that the image that is put into place for them has to be chosen very cautiously because it plays a big role for their understanding and interest.

There are several different ways of teaching and learning the same concept. Learners also interpret and respond to the multimodal designs for learning in various ways depending on their age, the situation they are in, their prior experience, knowledge and interest in the subject. While reading a factual piece of information, an academic article, or a novel for leisure, you build an understanding of things in the mind. Meaning varies from one text to another and from one reader to the other but is based on the reader's background knowledge as well as the motivation behind reading. According to Kress (2010) and from a multimodal social semiotic approach, meaning is hypothesized from three different perspectives:

1- Semiosis –making meaning from different categories
2- Multimodality –issues related to all the modes and relations amongst them
3- Specific mode –categories describing forms and meanings of a mode along with its history, social shaping and cultural background.

Looking at Kress' (2010) 'specific mode', and regardless of the varieties within meaning, they all have the same purpose; gaining new sets of information in order to build and modify existing understandings. Children also tend to go through a never-ending process of making new meanings as their existing resources are continuously transforming into new learning outcomes where multimodal signs of learning can be interpreted by using drawings and bodily action. "As children, and other readers, search for converging meanings among multiple modes and intertextual narratives, they are positioned more and more as active meaning makers" (Dooley, 2011, p. 178). Meaning making is understood and strengthened

through different modes such as play, talk and even image. Bezemer et al. (2012), present an example of a 3-year old child – whom I will refer to as Julie – drawing a picture of a car as an illustration with several circles around the page. In this regard, Julie's implementation of learning has taken place in two different standpoints; position and interest. Her *position* in relation to the object (in this case the car) was the source of motivation for her selection of the wheel (circle in the drawing) as the primary focus of her drawing. Another source that could have shaped her focus is the *interest* she has in cars and what specifically attracts her attention to them –more specifically the choice of the wheel in itself. For Julie, learning has taken place; learning and making new meanings through drawing which is in itself a "*sign of learning*" while at the same time achieving new capacities from her existing resources. In keeping in line with what Bezemer et al. (2012) state, one can say that at this level, Julie "has achieved an augmentation of" her "capacities for representation, through" her "making of new meanings" (p. 6). Nonetheless, one should not fail to mention the impact that adults have on children's learning experiences either as this could also impact the focus of their interest. "In many countries, children engage with stories and informational texts early in life, on the laps and by the sides of caring adults" (Dooley, 2011, p. 180). This familiarizes children with story telling that eventually builds up their knowledge about the world; this is when narrative starts to be constructed.

According to Kress and Selander (2010), students not only use what's been presented as material for them at school. Nowadays, they tend to use resources such as the internet rather than a printed dictionary or an encyclopedia in order to look up words and meanings. These sources might not always be reliable so it is "perhaps more important than even before to think about how information is selected and presented". "Design is the planning of something new to happen" (p. 265). Looking at design from a multimodal point of view, everyone who has taken part in the learning and communication process is a designer or even an interactive designer. An interactive designer is a process of design in which users themselves as well as professional-designers are all taking part in the different aspects of design. A multimodal approach focuses on the process of learning as communication. In order to understand learning as a process of making meaning, one has to understand the various designs available in learning. It is vital to focus on "what takes place *when* human beings learn and *how* possible learning paths, including all kinds of options and decisions, are constructed" (Kress and Selander, 2012, p. 266). With the availability of a wide variety of digital media comes an increased choice of meaning making. Most of the available

representations are multimodal. These representations vary from the choices made for font and point sizes, letters and colors, to the layout of images.

Moving on, it is important at this point to note that there are several multimodal modes of learning that stretch beyond for instance, 'drawing' that can shape and support the process of meaning making. Throughout history, new technologies have reshaped the sources that are made available for meaning makers. One example is the layout of textbooks. Printing technologies used to be limited to the number of images that could be placed within a textbook (Bezemer et al., 2012). However, through multimodal responses from children, comprehension, meaning making and the build up of knowledge can nowadays be constructed through "media beyond print". "Bearne (2003) suggests that the field of literacy studies is undergoing a 'paradigm shift' because children today are exposed to an environment full of multimodal digital texts" (as cited in Dooley, 2011, p. 180). With media beyond print and other technological advancements made available today, there has been a drastic increase in the number of images used as well as visual means referenced in for example interactive whiteboards and e-books. This situation has in turn raised a concern that the increased use of images and visuals and their "implications for learning" plays a threat on literacy, could lead to a "dumbing down", and will be harmful for economic performance (Bezemer et al., 2012, p. 10). Nevertheless, through the lens of a semiotic landscape, multimodal social semiotics contributes with both gains and losses of this technological advancement. Yet, looking at multimodality from a social semiotic perspective, 'choice' is what makes the meaning. The choices one makes for the different fonts and images are what defines the meaning and whether or not they make it significant. Meaning is made in various ways two of which are the 'logic of time' and 'the logic of space'. The former involves movement in speech or through gestures and the latter includes still images, colors, and layout. "Choices derive from and rest on the 'interest' of the maker of the sign, who is at the same time the *maker* of the meaning" (Kress and Selander, 2012, p. 267). By 'interest' Kress and Selander (2012) take into consideration the availabilities given for the meaning making and the social situation the designer is in. Nevertheless, both in the end lead to that specific sign that is made. This is what makes it possible "to connect the form of the sign with the social givens of the making of the sign" (p. 267). According to Halliday, Hodge and Kress, and Kress and van Leeuwen's theory of social semiotics, "signs are always newly *made* in social interaction; signs are *motivated*, not *arbitrary* relations of meaning and form". It is the interest of the sign makers that gives rise to the motivation behind making that specific sign

in a semiotic culture (Kress, 2010, p. 54). These choices are further depicted in five different articles that use social semiotic theory in order to implement the analysis of multimodality with regards to the relationship between text and image. More focus was placed on the how and why analysis of the studies conducted by Bezemer and Kress (2010), Marsh and White (2003), and well as Dimopoulos et al. (2003) as they both relate more specifically to the analysis of the image in direct relation to text rather than to student reactions.

3.4 The relationship between text and image

3.4.1 Analysis of the images only

According to Bezemer and Kress (2010), writing is not necessarily the focus for meaning making when looking at texts, "the writing of Authors sits alongside the images provided by Visual Artists and the layout of the Graphic Designer" (p. 10) whereas readers are guided by their own curiosities that allow them to map a way through the material that is selected and created by others for them. Back in history, the mode of writing would have been sufficient in order to create school textbooks. However, with this shift in time, today, one would need to include several modes within the same text at once and not only that but the new technological advancements have yielded many new opportunities within the use of several modes at the same time. Nevertheless, this change is as a result of the shift in social structure and control within the society since there is a new way of distribution of power, production, and distribution and therefore there is a "… shift from 'vertical' to 'horizontal' social structures, from hierarchal to more open, participatory relations" (Bezemer and Kress, 2010, p. 11). Even though images have been a feature for quite some time, the use of images in textbooks could reach an extent where they even take over some pages. The increase in the use of images in textbooks whether inside or on the cover, has given rise to a worry which some educationalists view as a threat to literacy and "must lead to a general 'dumbing down' and is bound to have deleterious effects on economic performance" (Bezemer & Kress, 2010, p. 12). Knowing this fact, in their study, Bezemer and Kress (2010) have limited their focus on just a certain number of modes as they demonstrate their analysis by creating and analytical framework derived from 92 excerpts taken from 59 textbooks, published within a certain timeframe and totaling 700 pages. Social semiotics is used to to present the theory and analytical means for the description and analysis of images; discourse analysis is used to provide description and analysis for writing, whereas graphic design is used to provide the description and analysis for typography and layout. This framework is hence dissected into

several levels of descriptive aspects that fall under the following categories: images, writing, typography, and layout (see Appendix 1, Table 2). Within each category, the researchers even looked at deeper levels of detail such as contexualiztion, clause realtions, spacing, and even page formatting (Bezemer and Kress, 2010).

On the other hand, Marsh and White (2003) identified 49 functions from the relationships between images and text of different subjects while creating several taxonomies each one in more detail and depth than the previous all of which at the end can be merged with the total functions placed into one. Kress and van Leewen (1998) similarly to Walma van der Molen (2001) use a principle provided by a semantic relationship which suggests having a variety in functions that ranges from "indirect or partial correspondence of semantic overlap to divergent or conflicting text-pictures relations". In contrast, Hodnett (1988) believes that images should be categorized into three different functions; "to decorate, to inform, and to interpret" – the latter being the one closest to the taxonomies used for this specific study (as cited in Marsh & White, 2003, p. 654). No matter how many different functions are significant to each study, the taxonomies used in this article can be used as a template for any other documents or subjects than the ones presented in the article. However, in order to apply this taxonomy to other studies it is important to "code each image-text pair with as many illustration functions as necessary since a single illustration may have several functions, and to code each function at the most specific level possible" (Marsh & White, 2003, p. 652). Similarly, Bezemer and Kress (2010) believe that even though they have chosen the depiction of certain modes to go hand in hand with a specific subject – English with typography and layout whereas Science with writing and image – they suggest that they "could have turned the matching of these modes and subjects around, and still be able to make the same claims" (p. 16). The reason for using qualitative content analysis is because it "focuses on the meaning and other rhetorical elements in the message" in contrast to "quantitative analysis, which emphasizes the objective content of the message" (Marsh & White, 2003, p. 653). In Addition, Philips and Hausbeck (2000) believe that the investigation using qualitative content analysis stretches much further than counting the occurrences of chosen variables and focuses rather on the analysis of "more subtle aspects of textual construction, layout, and content" (as cited in Marsh & White, 2003, p. 651). In agreement with this notion, Miller and Crabtree (1992), describe qualitative content analysis as "an essentially inductive process in which the analyst approaches the date, reaches an

understanding of its essential parts, and formulates a conception of its meaning in terms of a longer context, perhaps a theory" (as cited in Marsh & White, 2003, p. 651).

Additionally, Dimopoulos et al. (2003) present their study in which they use a grid to analyze the pedagogical functions they have identified. These functions are derived from 2819 images in 6 mandatory school science textbooks from 9823 Greek schools, and 1630 images in 1876 daily press articles published during a specific timeframe: between 1996-1998. The reason for this specific choice is that "two of the most important text forms through which science and technology are communicated to non-specialized publics are school science textbooks and press articles" (Dimopoulos et al., 2003, p. 189). Here, the authors use three main categories to describe the functions of the visual images. Classification; which "determines the epistemological relationship between knowledge categories", framing; that uses the "controls on communication", and formality; which is the level "of abstraction, elaboration and specialization of the expressive codes employed" (Dimopoulos et al., 2003, p. 191). Looking at the study in more detail, the analysis of these functions was constructed by identifying variables within each category (see Appendix 1, Table 3). Dimopoulos et al. (2003) formulated and presented their results in 4 different perspectives. They measured the image and text relationship through density, the expert and day-today knowledge, the social pedagogical relationships, as well as the formality of the visual code. The general conclusion one can draw is that science textbooks rely more on visual images than the press does knowing that "the role of the school science textbooks is to bring their readers closer to the interior of the specialized techno-scientific knowledge domain whereas press material aims more at relating science and technology with broader social and cultural concerns" (Dimopoulos et al., 2003, p. 204). There are even some teaching implications provided by the authors where they list suggestions for teachers to use as teaching material in their classrooms. One of these suggestions is for teachers to use press material in order to teach scientific topics. However, teachers would need to supplement this material "with additional iconographic material since the press tends to use far fewer visual images than primary science textbooks" (Dimopoulos et al., 2003, p. 213).

3.4.2 Analysis of student and teacher reactions

According to Knecht and Najvarorá (2010), "some studies indicate that students rate textbooks as difficult, too abstract, and uninteresting, despite the fact that they – the students – are the intended primary recipients of those media" (p. 1). The method Knecht and Najvarorá (2010) use in their study is systematic analysis of video recordings in order to present results on how students feel about the books they read while giving a critical viewpoint on their level of level of difficulty and efficiency. Not only do students feel that textbooks are tough and boring, but teachers also label them as uninteresting and incomprehensible and therefore feel the need, in some parts of the world, to alter the content or even conduct the teaching without the use of textbooks and accompanying material. Looking at some examples of these cases, in the Czech republic, teachers reduce content and hence select only what 'they' feel is suitable for their age group. Whereas according to researcher Zuzana Sikorova, "teachers stated that the textbook contents are hardly comprehensible for students, too extensive, and overloaded with scientific terminology and abstract concepts" (Najvarorá, 2010, p. 3). In addition, a textbook critic Harriet Tyson-Bernstein concluded that "the best we can say about textbooks at present is that they are graphically attractive and that they fully suit the needs of teachers" (as cited in Knecht and Najvarorá, 2010, p. 4) while putting the blame solely on the publishers of these books and there is a constant struggle in adjusting the content based on what the teachers 'actually' need. According to Tyson-Bernstein, students should also be the focus of the textbook production and "although students constitute the largest group of textbook users, their needs tend to be underrated both in the process of textbook production and in education research" (as cited in Knecht and Najvarorá, 2010, p. 4). Nevertheless, students' input should not be underestimated as they can provide critical and important information on the functionality of the textbook. Therefore, the focus of this study is on how students see and hence evaluate textbooks. Students were handed questionnaires and other asked questions directly. In total, 17 researchers investigated students of elementary to college level from eight different countries covering subjects ranging from Social Sciences to Science, Computer programming, Geography, Physics, Mathematics, Chemistry, Literature, English, Estonian Language and History. The results from each country revealed in some cases positive feedback and in others negative, where many issues, worries, and concerns were depicted. However, it is important to note that the answers students gave were "influenced by various cultural backgrounds and didactic traditions" (Knecht and Najvarorá, 2010, p. 9). As a result

of their studies, Knecht and Najvarorá (2010) even raised questions as to what makes school textbooks attractive and interesting for students? They also made the conclusion that textbooks are created for students their production and "evaluation should therefore draw on their needs" as they are the primary users which "play a crucial role when determining textbooks' attractiveness, clarity, and comprehensibility" (Knecht and Najvarorá, 2010, p. 11-12).

Julianne Coleman (2010) also addresses the use of images in her study but more specifically graphical representations of images seen through the lens of teachers' practices in classrooms rather than the students'. The purpose of her study is to provide "insights into the role of visual literacy within elementary classrooms of today" while examining "instructional practices, strategies, and knowledge base involving graphical representations general elementary educators across the United States" (Julianne Coleman, 2010, p. 199). Coleman (2010) conducted this study through an electronic survey in the United States with a random sampling of teachers from K-5 (students of ages 3 to 10 years) Elementary classes. 5000 electronic surveys were sent across the United States to all the teacher participants, only 405 were returned and 388 used by the researcher. Even though the number of respondents was very low, the actual answered surveys were all evenly distributed across the elementary grades. Coleman (2010) even conducted an analysis of the respondents' demographic and educational background. This survey was divided into categories such as: teacher demographics and education, school and student demographics, and teacher instructional practices. The results were further divided into two categories: graphical use and instructional practices involving graphical representations. The results that Coleman (2010) presented showed that referring to a graphical representation was the most frequently used activity, as it required very little or even no preparation. Using graphical representations as organizers is a commonly used strategy used for facilitating the process of text comprehension. Students in this case would use web diagrams in order to organize a plan for a writing task or for a reading activity. This helps students in having a visual representation of the texts they are reading. Coleman (2010) concluded by claiming that even though the inclusion of images in books is intended to help students, it is vital for teachers to know how to make use of them so that students benefit.

3.4.3 Summary: The relationship between text and image

Within each study reviewed, this collection of texts and images has been selected from schoolbooks of several different subjects to dictionary and encyclopedia entries as well as press releases. Having looked at these five articles in particular, conclusions have been made that some researchers focus on the analysis of the images themselves while others have placed emphasis on studying the reactions and opinions of teachers and students with regards to the use of images in the textbooks they use in the teaching and learning process. Being aquainted with these different studies, this study in particular, leans towards the former studies where it follows the path of following Marsh and White's (2003) taxonomy in defining the relationship between images and text. However, this study is specifically oriented to defining this relationship within school textbooks produced by the SABIS® publishing house for a school that teaches English as a first language.

Chapter 4: Methodology

In this chapter, the research design of this study as well as details of the study's empirical setting, the data collection, its analysis, and coding, followed by some research ethics relative to this research are presented. For this study, a qualitative content analysis (QCA) approach has been adopted as the research design. Qualitative research takes a naturalistic approach as it is directly related to natural events and settings. Its discoveries lead to new insights and its events are not predefined. As a researcher you are directly confronted with the reality of the situation you are faced with and see things from different perspectives while viewing these situations as a whole rather than separate conditions (Guest, Namey and Mitchell, 2012). Qualitative content analysis:

> "is a complex process in which we bring together our perception of the material with our own individual background: what we know about a topic, the situation in which we encounter it, how we feel at the time, and much more." It also come in handy "…when you are dealing with meaning that is less obvious." (Schreier, 2012, p. 2).

4.1 Why qualitative content analysis?

QCA is suitable for this study as it analyzes the function of the content of the chosen SABIS® schoolbooks. Qualitative approaches of content analysis are sometimes labeled as 'interpretive approaches' that create verbal, symbolic, pictorial, and communicative data interpretations. Klaus Krippendorff (2004) defines content analysis as a "research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (p. 18). He also suggests that data used for content analysis is not restricted to written text but could also contain aspects such as images, maps, signs, and symbols.

In the context of this research topic, content can be defined as the material made available in books used for reading and learning as well as teaching concepts and ideas. This material could be anything from the text, to the layout and images within each page. According to Prior (2003), a "document is a product. It is a work – often an expression of a technology. And, in the ordinary way of things, products are produced – they are produced by humankind in socially organized circumstances" (p. 5). The studied document in this research paper is the chosen schoolbook however, the focus is on the content as a medium of thought

and action. Even though a document is composed or written by a specific person or a group of people, it is "open to manipulation by others: as an ally, as a resource for further action, as an enemy to be destroyed, or suppressed" (Prior, 2003, p. 4). According to Prior (2003), in order to use these documents as more than just a resource of evidence and data for this study, their functionality and more importantly their functionality in ceratin situations have to be analyzed (p. 4). According to Margrit Schreier (2012), data cannot speak for itself and it doesn't only have one specific meaning. Meaning varies because it is interpreted by the person studying and analyzing it. Fredric Bartlett states that meaning is not inherent in a text but that as recipients of material, we play an active role in constructing it (as cited in Schreier, 2012). This applies to the wide selection and variety of modes found in the SABIS® anthology series where the meaning making authors have in mind when creating the text is not always the same as the one received by the students. The multimodality of these modes is affected by social change and the power of social agents who are involved in the process of the text creation; from the developers of the CCSS to the authors and designers of the books themselves. Therefore, social semiotics at the base of qualitative content analysis will set the ground for the multimodal analysis of these textbooks.

4.2 Empirical setting

The research field of this study is one third-grade English student book used in a SABIS® school: *The International School of Minnesota* (or ISM) in Minneapolis-USA. The reason behind this specific choice of school out of SABIS®'s 76 schools worldwide is because it is the only private school in the US which uses these books as the main focus of the English curriculum. All the sub-subjects lessons such as grammar, reading comprehension, and vocabulary are taken from this book giving this study a wider range of material to choose from. The International School of Minnesota provides students with a K-12 English school program that ranges from teaching reading and writing to vocabulary and spelling. Students in the third grade are eight year-old students who come from various backgrounds. When publishing the schoolbooks for ISM, SABIS® is challenged with not only following their own curriculum requirements but also the CCSS (The International School of Minnesota, n.d.).

4.3 Data collection

Qualitative data are collected in relation to one SABIS® English reading textbook – *Anthology Level E* while referencing the US CCSS section on reading. The *Anthology Level E* is a 224-page textbook that is part of the anthology book series. Its content is divided into six units that are linked thematically as well as a Supplementary Reading section. Each unit has between three to five pieces that cover three main narratives -fictional, information, paired texts- all with one specific topic approaching the same chosen topic from several different outlooks. Texts of several different genres are depicted under each narrative ranging from fantasy, to poetry, mystery, historical, scientific, and technical pieces. The *Anthology Level E* textbook is designed in such a way that it provides students with all the various genres of literature introducing them to both classic and contemporary texts. Based on the needs of the CCSS, the third grade anthology book and ancillary material includes texts designed to nurture the students' appreciation for literature which will help them build their knowledge in several fields, such as history and science (SABIS® Anthology Series, n.d.). The US Common Core State Standards "are the culmination of an extended, broad-based effort to fulfill the charge issued by the states to create the next generation of K–12 standards in order to help ensure that all students are college and career ready in literacy no later than the end of high school" (National Governors Association Center, Council of Chief State School Officers, 2010, p. 3). They set the requirements that students need to be ready for college and careers in several different disciplines. The SABIS® Anthology book is compiled based on the requirements of the third grade English Language standards that fall under the CCSS section "*Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects K-5*". Unit 2 in the *Anthology Level E* provides the largest available range of texts from within this book and will therefore be used as data for the analysis. The pieces in this unit cover all of the three types of narratives: informational, fictional, and paired texts and four different genres: scientific informational, folktale, fable, and poetry (see Appendix C, Figures 1-4).

4.4 Data analysis

The challenge in this selection of study material is having to turn what is not typically a 'data-set' into one. Therefore, a taxonomy model created by Marsh and White (2003) is adopted in order to interpret and analyze the selected data. Through this taxonomy, Marsh and White (2003) claim that "researchers can analyze the relationships between image and prose to identify and predict the effects of combinations once documents have been published" (p. 647). The effect of the relationship between image and text on students' learning is measured by looking at whether or not the images have: 1- little relation to the text, 2- close relation to the text, 3- a relation that extends beyond the text. The categorization of this taxonomy is developed in two different stages, based on Marsh and White's (2003) process. Stage one provides an identification as well as the description and organization of all the standards available within each selected story in Unit 2 of the *Anthology Level E*. This process involves detecting the concepts used while labeling them with a coding sytem based on the standard descriptions. Stage two uses the information derived from the taxonomy in stage one in order to be able to apply the categories selection for identifying the relatioship between image and text.

4.5 Data coding

Data was coded based on Marsh and White's (2003) coding system used for their taxonomy. The topics were chosen and grouped by subject, before getting to the actual taxonomy. In order to develop the functions needed for this study, Marsh and White (2003) established a methodology built in two stages. Phase one focuses on: identifying functions, collapsing these variants, combining them, grouping the different concepts based on their degree of relationship found between the image and text, developing the scope notes. Using the initial chosen variants to categorize the concepts into three general terms: (a) Low relationship between text and image, (b) Close relationship between text and image, (c) Extend beyond relationship between text and image. Phase two focuses on the use of Marsh and White's (2003) analytical approach, concentrating on qualitative rather than quantitative content analysis. The structure they use in their study involves reading the text closely, looking for and recognizing meaningful segments, creating a summary of these segments and hence categorizing and identifying them with patterns and themes that they have in common.

In relation to this research study, the functions chosen are based on the CCSS used for each piece. These standards are coded based on the type of standard and its reference from within the official CCSS document. Stage one of the taxonomy is shown in table 1 below where the unit number, title of each story, narrative type, genre, as well as the standards covered in the pieces in Unit 2, the code of the standard and the standard itself are all listed (see Appendix B, Figures 1-4). Stage 2 of the taxonomy uses the final functions from Marsh and White's (2003) coding system.

Table 1. Different sources the taxonomy is built on; stage 1

No.[1]	Title[2]	Narrative type[3]	Genre[4]	Standard[5]	
U2	Turtles	PairT & InfT	Sci	RS.I.Gr3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.
				RS.I.Gr3.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
				RS.I.Gr3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
U2	Tortoises	PairT & InfT	Sci	RS.I.Gr3.9	Compare and contrast the most important points and key details presented in two texts on the same topic.
				RS.I.Gr3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.
				RS.I.Gr3.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
				RS.I.Gr3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
				RS.I.Gr3.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
U2	Anansi and the Turtle	FicT	Folk	RS.L.Gr3.7	Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).
				RS.L.Gr3.3	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.
U2	The Hare and the Tortoise	FicT	Fab	RS.L.Gr3.2	Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it its conveyed through key details in the text.
				RS.L.Gr3.6	Distinguish their own point of view from that of the narrator or those of the characters.
U2	Eletelephony	FicT	Poe	RS.L.Gr3.5	Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.
				RS.L.Gr3.4	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.
				LS.Gr3.4b	Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat).

Notes: [1]Unit number. [2]The title of each piece found in Unit 2. [3]PairT: Paired text, InfT: Informational text, FicT: Fictional text. [4]Sci: Scientific, Folk: Folktale, Fab: Fable, Poe: Poem. [5]The Common Core State standards: RS: Reading standard, LS: Language standard, I: Informational, L: Literature, Gr3: Grade 3, Number: the number of the standard as listed in the official CCSS document.

Table 2. Functions of image with text in the taxonomy; stage 2

A. Little relation to text	B. Close relation to text	C. Relation extended beyond text[3]

A1 Decorate
  A1.1 Change pace
  A1.2 Match style
	B1 Reiterate
	  B1.1 Concretize
	  B1.1.1 Sample
	  B1.1.1.1 Author/Source
	  B1.2 Humanize
	  B1.3 Common referent
	  B1.4 Describe
	  B1.5 Graph
	  B1.6 Exemplify
	  B1.7 Translate
		C1 Interpret
		  C1.1 Emphasize
		  C1.2 Document

A2 Elicit emotion
  A2.1 Alienate
  A2.2 Express poetically
	B2 Organize
	  B2.1 Isolate
	  B2.2 Contain
	  B2.3 Locate
	  B2.4 Induce perspective
		C2 Develop
		  C2.1 Compare
		  C2.2 Contrast

A3 Control
  A3.1 Engage
  A3.2 Motivate
	B3 Relate
	  B3.1 Compare
	  B3.2 Contrast
	  B3.3 Parallel
		C3 Transform
		  C3.1 Alternate progress
		  C3.2 Model
		  C3.2.1 Model cognitive process
		  C3.2.2 Model physical process
		  C3.3 Inspire

	B4 Condense
	  B4.1 Concentrate
	  B4.2 Compact	

	B5 Explain
	  B5.1 Define
	  B5.2 Complement	

4.6 Ethical consideration and limitation

From early stages, a researcher has the duty to be open and clear about the research process with regards to both personal biases and interests, therefore an email listing the details concerning this research as well as the purpose of the study was drafted and sent to the head of the Academic Development department headquarters at SABIS® in Lebanon for approval. The fidelity of the researcher in the reporting process is a vital aspect of affirming its validity. "Social researchers must take into account the effects of the research on participants, and act in such a way as to preserve their dignity as human beings" regardless the topic or nature of the research (Cohen et al., 2011, p. 84). However, since this research did not involve any direct contact with specific individuals, it was important to make sure to have the publishers consent in using the textbooks chosen for this research. Based on the email communication, an agreement was made that the contents of the *Anthology Level E* textbook could be used as long as the content wouldn't be altered to fit the needs of the study. On the other hand, content could be scanned while also referencing the text and images found within the books.

In accordance with the SABIS® copyright laws, the books should not be used by another entity other than the researcher. After the research process is over, the content should either be kept in safekeeping with either the researcher or even destroyed after use in order to avoid plagiarism and other copyright issues.

With regards to the research method used and in order for this study to be reliable and valid, QCA has to follow some standard ethical protocols. In QCA, reliability is central as it can say something about the quality of the coding frame and provide information about the acceptability of the analysis (Schreier, 2012). An important aspect to keep in mind is that the textbooks were most probably not written with the researcher as an audience or reader. With the texts being written for a different purpose leaves the researcher having to state the original and intended purpose of the document in use. This creates an uncertainty and a worry about the validity of the research, as these specific documents could be limited, biased, or even incomplete. Another issue of questionable reliability that Weber (1990) states is that the documents in use "may deliberately exclude something for mention, overstate an issue or understate an issue" (as cited in Cohen et al., 2011, p. 572). Keeping this in mind, it is important that the research and analysis can be used for the understanding of other comparable situations. The aim is generalizing within the specific group which is the SABIS® (internal validity) schools but being able to apply this beyond this specific community (external validity) will allow this research to be valid. Therefore, it is vital for the researcher to check if the understandings and conclusions can be tested for reliability within the coding frame. This is the case because QCA involves putting ones own understandings, efforts and background experiences into the research itself where "the goal of QCA is to go beyond individual understanding and interpretation" while at the same time checking the gathered information for consistency (Schreier, 2012, p. 6).

In relation to coding and categorization, the researcher has to be careful not to lose the richness of the words, as well as their connotations, used for the research. Giving significance to these words can also be tricky as some may be portrayed having less or more importance than others where in fact it would rather be the other way round. Also, Cohen et al., presents a worry that when words are categorized, they could become devalued and lose their significance. Weber (1990) also believes that a researcher uses sentences, words and phrases for more reliablity rather than "paragraphs and larger incomplete portions of text" (as cited in Cohen, et al., 2011, p. 573).

Chapter 5: Findings

The findings presented in this chapter, provide a detailed account of the empirical data collected and presented in chapter 4. Keeping in mind the descriptive information provided within each taxonomy, this data is hence examined in relation to the visual images provided within each story of Unit 2. Following the three main categories selected for the image and text relationship, social semiotics provides guidance in order to address and hence respond to the questions posed in Chapter 1 while using the analytical approach of qualitative content analysis:

a. What social semiotic strategies are followed in the design of the SABIS® Anthology textbook?

b. In educational terms, what meaning may be attributed to the blending of texts and images? What do the pictures in the SABIS® Anthology textbook suggest about their social semiotic effectiveness as learning resources?

5.1 Application of the taxonomy

For the application of the taxonomy, the following descriptions and discussions were all based on the images from within the *Anthology Level E* textbook and more specifically from Unit 2 texts. In total there are five texts covering 25 consecutive pages. Each story was labeled with a short description before moving on to the figures found within each page. The images on each page were labeled as follows: a) Figure, b) page number in the textbook, c) title. The titles either come directly from the headings mentioned on the pages from within the textbook, or created to match the information or events taking place on that page. In some cases the titles are the same for two or more figures since the information provided on several pages is concerned with the same topic, however what distinguishes them from each other are the page numbers. The vocabulary word definitions listed at the bottom of each page are disregarded in the analysis, as they do not relate to the context of this specific research (see Appendix D).

5.1.1 *Turtles*

Turtles is both a Paired text with *Tortoises* as well as an Informational piece. It is a story about what turtles are, the different types, what animal species they belong to, their composure, habitats, how they reproduce, and the dangers they face today. The text is eight pages (including the cover page) with everything from one image to several on each page. All the selected images are real life photographs expect for one with the description of the skeletal structure of the turtle. *Turtles* covers three common core standards where only one R.S.I.Gr3.7, depicts the need for the use of illustrations and photographs in order for students to be able to make a connection between words and images in order to enhance understanding of text. More specifically, the images should provide the where, how, when, and why of events that are happening in the story.

Figure p. 23: "Turtles" (one image)

It is common to have an image on the front cover of either a textbook or story and so is the case here. The title of the story is *Turtles* and therefore an image of a turtle swimming in the water is provided. This image is at first hand there to ornament the page (A1-Decorate). It makes the page and perhaps even the story more interesting to read. It captures the students' attention with the size of the turtle and the colors of the water in the background that match the colors reflecting on the turtle itself. This image does not have a direct connection with the related standard listed for this story.

Figures p. 24: "Seven types of turtles" (seven images)

Each text line provided on this page is coupled with one specific image linked to it by using arrows in order to make sure that the students know which image the text relates to. While using these photographs of the different types of turtles, there is no need for more information about how these seven types of turtles look like. However, looking more closely at each image, there seems to be focus on certain parts of the turtle as well as the background in order to identify habitat. The image of the tortoises is double the size of the others, this emphasizes the importance of tortoises in this category as they will appear again later in a separate text. These images are there to (B1.1 Concretize), they make the way the types of turtles look, explicit to the reader. The images on this page also direct the attention of the reader to look at certain parts of the turtles presented: the snapping turtle, focus is on the back: *"powerful*

beak-like jaws, however, the focus of the image is not on that" (A3 Control). In relation to the state standards, the images prove to have a direct connection with the related standard listed for this story. The images provide information about the types of turtles so that students can imagine what they look like in reality. They also show show 'where' they live.

Figures p. 25: "Reptiles" (four images)

The text on this page is connected to another topic, reptiles: *"Other reptiles include snakes, lizards, and crocodiles"*, there is mention of three types of reptiles however in the images, there are four different types of reptiles; the chameleon is not mentioned but only shown. It is there to embellish the page (A1-Decorate) since there is no mention of that description in connection with the text even though it is also a reptile. The main idea of this page is to explain that reptiles are cold-blooded animals and what that specifically entails in terms of preserving body temperature: *"Reptiles are also cold-blooded. This means that they must warm their bodies by using heat from another source such as the sun."* Using this information, the students are to answer the question in the caption which reads the following: *"Why would these be good spots to choose if you wanted to warm up?"* With the images as guidance, the answer should be deduced from the images, as it is not present in the text itself; however, this information fails to exist in three out of fours images. The only image that shows where the animal is sitting, on a rock in a sunny atmosphere, is the crocodile photograph (B1.1 Concretize). Only one image out of the four presented proves to have a direct connection to the standard listed for this story: the image with the crocodile which depicts the 'where' and 'why' of its habitat.

Figures p. 26: "Skeleton" (four images)

The text on this page is descriptive of the turtles' construction and how the body is formed with main focus and reference to their skeletal structure. *"The top of the shell is called the carapace and the bottom is the plastron"*. As this concept might be tough to understand and imagine in concrete form, illustrations of the carapace and plastron are provided with specific indication of how they are constructed. Looking at the image which provides an 'inside' view of the turtle's body, students are provided with further concrete information on how the shell is formed as part of the turtle's skeleton (C1. Interpret): *"The shell is attached to the turtle's backbone and ribs."* Not only do these images provide concrete information on the turtle's

bone structure but also factual support to what is written in the text (C1.2 Document). Because the images of the carapace and plastron are not 'real' but only a drawing, they present a model of the reality of what the shells of a turtle look like in order to capture the critical meaning behind it (B1.6 Exemplify). Looking at the information and images as a whole, the text provides evidence that is reinforced by the visual forms presenting the same concepts throughout the page (B1.7 Translate). These images have a direct connection with the standard as they depict the 'how' and 'why' the turtles have the shell and its formation.

Figure p. 27: "Construction fit for habitat" (one image)

This text provides facts about turtles' construction which makes it fit for its habitat: *"They have several adaptations that help them live in water"*. These constructional features are depicted both within the text as well as re-written on the image which reinforces the portrayed meaning (B1.7 Translate). Labels of the parts of the turtle's body are depicted with black lines, which direct the attention of the students (A3 Control) to the understanding of a concept that has been mentioned, shown, and discussed earlier on in the text: *"Their feet are webbed… A turtle's shell is flat and streamlined."* This set of images also shows a direct connection with the standard chosen for this piece.

Figure p. 28: "Habitat & Reproduction" (one image)

On this page is a continuation about the habitat of the turtles along with a matching image. The concept of where they live and how they *"climb out to enjoy the sun"* and how they *"are often seen sunning themselves on rocks or logs next to ponds or lakes"* is translated from text into the image placed right over it (B1.7 Translate). The information about their reproduction process is described in detail starting from where, how, and who lays the eggs. However, the following text, *"Many of the babies don't make it from the nest to the sea. They may die or be eaten by predators"* shows empathy with the new eggs laid by the turtles and makes the students think about this as an unhappy process (A2. Elicit emotion). This image proves to have a direct connection to the standard R.S.I.Gr3.7. The information about the reproduction of the turtles with 'who', 'how' and 'where' they lay their eggs is discussed in detail.

Figures p. 29: "Food" (two images)

All the text on this page discusses the nature of food for the different types of turtles, however both images on this page only depict the process of reproduction as well as its outcome. The images on this text are related to the text on the former page. Even though this is the case, students can use the information provided in the captions of the images: *"A female turtle laying eggs"* and *"baby turtles crawling out of the nest"* in order to concretize the concept of reproduction for turtles, how they lay their eggs, as well as the way the baby turtles crawl out of their nest (B1.1 Concretize). These images prove to have a direct relation to the standard listed for this story event though the images themselves are in fact irrelevant to the text specific to this page.

Figures p. 30: "Endangered Turtles" (four images)

"Turtles face dangers that may affect their survival": the information provided on this page not only translates the written information into a visual one (B1.7 Translate), but is also a cry out for help. The text provides students with the risks that can endanger turtles by stipulating facts about the consequences of for instance building roads, fishing, pollution, and climate change while also placing images of warning signs below the text (C1.2 Document): *"People often build roads, houses, and businesses near the turtles' home at the edge of ponds, lakes, or oceans. This means that it is becoming harder for turtles to find safe places for their nests."* This information along with the compilation of images encourages a response from the students to be aware of the situation and perhaps even motivate them to take action when possible (A3.2 Motivate): *"In order to save the turtle, people have formed groups that teach others about protecting the turtle's habitat"*. This set of images, yet again, has a direct connection to the standard selected for this specific story.

5.1.1.1 Summary: *Turtles*

Table 3: Summary of the story elements and functions found in Turtles

Story elements		Functions		
Figure	**Image title**	**A. Little relation to text**	**B. Close relation to text**	**C. Relation extended beyond text**
Figure p.23	Turtles	A1 Decorate		
Figure p.24	Seven types of turtles	A1 Control	B1.1 Concretize	
Figure p.25	Reptiles	A1 Decorate	B1.1 Concretize	
Figure p.26	Skeleton		B1.6 Exemplify	C1 Interpret
			B1.7 Translate	C1.2 Document
Figure p.27	Construction fit for habitat	A1 Control	B1.7 Translate	
Figure p.28	Habitat and Reproduction	A2 Elicit emotion	B1.7 Translate	
Figure p.29	Food		B1.1 Concretize	
Figure p.30	Endangered turtles	A3.2 Motivate	B1.7 Translate	C1.2 Document
* 23 out of 24 images have a connection to the chosen standard				

5.1.2 *Tortoises*

Tortoises is similar in style to *Turtles* in the sense that it is also a Paired text and an Informational piece. This text provides evidence and knowledge about three different types of tortoises, what animal species they belong to, their incredible life span, their composure, habitats, how they reproduce, what determines the sex of the baby turtles, and the dangers they face today. This text is six pages long (including the cover page) with a range of images on each. Unlike the text *Turtles*, all the selected images are real life photographs. *Tortoises* also covers only one common core standard which describes the need for the use of illustrations and photographs. In fact, it is the same standard used in *Turtles* with however, a total of five more related to other concepts. R.S.I.Gr3.7 is to provide images that show students the where, how, when, and why of events that are happening in context.

Figure p. 31: "Tortoises" (one image)

Similar to the cover page of *Turtles*, *Tortoises* has one image under the title of the piece that shows a tortoise eating green leaves and standing on dry land. This image is again at first hand there to make the cover page more exciting for students to read on (A1-Decorate). In contrast to the image used on the cover of *Turtles*, the colors of this photograph are a bit bland and not as colorful but still reflect the actual real life color of tortoises. Looking more closely at the image, students would be able to tell 'what' tortoises eat, and even 'where' they live. This image has a direct connection with the standard.

Figures p. 32: "Three types of tortoises" (three images)

Similar to the text on page 24 of *Turtles*, the image is coupled with the information provided under it with no need for arrows as there is a clear depiction of which tortoise is related to which name. Images in this case provide students with a strong relation to what the three types of tortoises look like and concretize the textual reference in the caption to the tortoise (B1.1 Concretize). Just like the effect of the image on the cover page, these images if looked at more closely, can show the habitats of the different types of tortoises. This set of images also has a direct connection with the chosen standard for this piece.

Figure p. 33: "Lifespan of tortoises/Reptiles" (one image)

The information on this page can be divided into two sections. The beginning is about the tremendously long life span of tortoises depicted in the caption of the image (B1.1 Concretize) and the fact that they have existed on earth for over 200 million years: *"They are known for living quite a long time… they are one of Earth's oldest species… they have been on Earth for over 200 million years"*. The image of the young boy and an old turtle named Jonathan grabs the attention of the students (A3.1 Engage) while making the concept more real and easier to relate to. The caption read as follow: *"A boy visiting a 179-year-old tortoise named Jonathan, in 2012"*. The second part of the text provides repeated information about reptiles and their construction which is almost identical to the description of these concepts from the piece *Turtles* (B1 Reiterate). Repeating text emphasizes the importance of the concepts covered (C1.1 Emphasize). Even though this image shows a lot of connection to the text, it doesn't provide a direct connection with the standard chosen for this piece.

Figures p. 34: "Skeleton/Habitat" (two images)

The first part of the text on this page is also almost identical with the information provided in *Turtles* on page 26 (B1 Reiterate). The first time this information appeared, there was a need for more images to describe and concretize the concept, however when the text information is mentioned for the second time then an image is sufficient:

> *"Like turtles, tortoises have shells that are made up of about sixty different bones. These bones are connected and covered by plates. The entire shell is connected to the tortoise's backbone and ribs. The top of the tortoise's shell is called the carapace. The bottom is called the plastron"*.

Repeating descriptive text about the tortoises' shell and showing its similarity with the turtles' construction highlights its significance to the text (C1.1 Emphasize). At two instances on this page, the text and image are shown to repeat the same concept (B1.7 Translate): *"When a tortoise is in danger, it will tuck its head and feet inside its large shell"* and *"Their feet are hard and scaly and often have claws for digging."* These two images provide the students with information that helps them concretize the standard chosen for this text and therefore prove to have a direct connection with not only the images but also the standard itself.

Figures p. 35: "Reproduction/Food" (two images)

The top image portrays a detailed vision of a hatched egg, a baby turtle, and the soil which turtles use to cover the eggs with which translates into the text: *"They lay their eggs and cover them with soil and leaves"*. So does the second image with the text beside it: *"They may eat shrubs, flowers, and grasses"* (B1.7 Translate) where the text and image are again repeating the same concept. These images also provide a direct connection with the standard. They show 'where' and 'how' the turtles lay their eggs.

Figure p. 36: "Habitat/Endangered tortoises"(one image)

The focus of the information on this page is both on habitat and the endangerment of tortoises. Loss of habitat as a factor of the decrease in survival of tortoises is similar to the ones of turtles where text is repeated with little change (B1 Reiterate): *"Several factors threaten the survival of tortoises. Loss of habitat is one of the major causes for the*

decreasing tortoise populations". Providing the students with information about the decrease in the desert and gopher tortoise population and the placement of a large photo of a tortoise which is looking right into the camera, attracts their attention in an emotional way that changes their mood when reading which makes them think more about the decreasing number of tortoises in the world (A2 Elicit emotion): *"The desert tortoise and the gopher tortoise are types that are endangered. People have reacted by forming groups that are working to save these creatures"*. This image has a strong connection with the text as well as the standard as it provides the students with the learning outcomes of 'why' there is a risk of turtles becoming extinct and 'how' to solve this situation.

5.1.2.1 Summary: *Tortoises*

Table 4: Summary of the story elements and functions found in Tortoises

Story elements		Functions		
Figure	**Image title**	**A. Little relation to text**	**B. Close relation to text**	**C. Relation extended beyond text**
Figure p.31	Tortoises	A1 Decorate		
Figure p.32	Three types of tortoises		B1.1 Concretize	
Figure p.33	Lifespan of tortoises and Reptiles	A3.1 Engage	B1.1 Concretize	C1.1 Emphasize
			B1 Reiterate	
Figure p.34	Skeleton and Habitat		B1 Reiterate	C1.1 Emphasize
			B1.7 Translate	
Figure p.35	Reproduction and Food		B1.7 Translate	
Figure p.36	Habitat and Endangered tortoises	A2 Elicit emotion	B1 Reiterate	
* 9 out of 10 images have a connection to the chosen standard				

5.1.3 *Anansi and Turtle*

Anansi and Turtle is a fictional text that falls under the genre folktale that originated from Nigeria. This text trickster tale teaches students a moral at the end of the piece. This story is eight pages long (including the cover page) with only one image placed on each page. Unlike both *Turtles* and *Tortoises*, all the images in this story are illustrations rather than real photographs. *Anansi and Turtle* covers two main common core standards where only one, RS.L.Gr3.3, describes the need for the use of illustrations. These illustrations should contribute to the words in a story by referencing to mood, character, and setting. There is one function that is evident throughout the whole story and will therefore not be mentioned over and over again (B1.2 Humanize): where the characters of *Anansi and Turtle* are represented in the form of beings that can speak and act like humans. This will give the reader more accessibility to the content of the story and hence a better understanding of the sequence of events.

Figure p. 37: "Anansi and Turtle" (one image)

Similar to other classic cover pages, this one also entails a large image of the characters found within the story along with the title. The title: *Anansi and Turtle* in combination with the image of a spider and a turtle shows how one mode helps another in order to deliver a specific message to the reader (B5.2 Complement). The placement of each character under its name assists students to figure out that Anansi is a spider and Turtle is a turtle before even reading the story itself. The text within the box at the bottom of the page creates contrast in both style and mood, allowing the reader to go beyond the text itself (B3.3 Parallel) when thinking about the historical information provided on Nigeria and the history of trickster tale amongst other fables, fairy tales, proverbs, as well as poetry originated from there. No direct connection to the standard is evident here.

Figure p. 38: "Baked yams" (one image)

The focus of this image is the process of baking the yams: *"One day, Anansi the spider picked some fat and tasty yams from his garden. He baked them with care, and the yams came out smelling delicious"*. The illustration of Anansi standing by a fireplace and baking yams while looking at them with a very content look, provides a translation of what is written in the text into the details of the illustration (B1.7 Translate). The text then moves on to

another aspect of the story that is not illustrated giving way to the progression on the story before the next illustration appears (C3.1 Alternate progress):

> *"Just then, there was a knock at his door. It was Turtle. Turtle had been traveling all day and was very tired and hungry."*and *"Hello, Anansi, said turtle. I have been walking for so long. As I came near your home, I smelled the most delicious yams I've ever smelled. Would you be so kind as to share your meal with me?"*

There is a connection between the image and the first of the text written on the page however, in reference to the standard chosen for this piece, a connection only appears in the second part of the text. The text provides the students with an insight to what kind of character Anansi is in relation to Turtle.

Figure p. 39: "Custom at dinner time"(one image)

The events within the story continue on this page and build up to the observation Anansi makes about Turtle having dirty hands: *"Turtle looked down at his hands and saw that they were filthy"*. This action is clearly translated into the image where you can observe that Turtle is actually looking down at his hands and that they are colored in a darker brown so as to depict dirt (B1.7 Translate). Not only the character type but also the moods of the characters are both displayed here on this page creating a direct connection to the standard.

Figure p. 40: "Custom at dinner time"(one image)

The fact that the beginning of the page as well as the end portrays text that is not illustrated in a drawing whereas the middle events are, creates a movement between the events of the story where illustration and text take turns in providing progression in the sequence of events (C3.1 Alternate progress):

> *"I didn't want these tasty yams to get cols, so I had to begin without you, said Anansi. But please join me now, Turtle. Turtle sat down again and reached for a yam, but again Anansi yelled at him."*and *"So Turtle walked down to the river once more to wash himself off. This time, he was carful to walk on the grass so his hands would stay clean. But by the time he sat down at the table, Anansi had finished up the last bit of the tasty yams. Not so much as a morsel was left"*.

The angry facial expression and the fact that Anansi was yelling at Turtle for showing up at the table yet again with dirty hands is well translated into the illustration where the reader can see that his face and eyes seem angry and that he has a tentacle pointing right at Turtle as if to show guilt and shame (B1.7 Translate). Not only is his facial expression conveyed, but also the concept of 'not coming to the dinner table with dirty hands' has been repeated in a similar manner as earlier in the story (B1 Reiterate). This image displays a direct connection with the standard for this story.

Figure p. 41: "By the riverbank" (one image)

The story goes on and folds into several different events. The main idea is the invitation Anansi gets to dine at Turtle's house. The illustration on the top of this page converts the written text of the time when Anansi arrives at the riverbank into a visual one (B1.7 Translate): *"He found Turtle sunning himself on a riverbank just around dinnertime"*, there is also a clear translation of the tone of the text into the actual facial expressions on both Anansi's and Turtle's faces; the former is excited about a free dinner and the latter happy he could 'return the favor', this way the text is used as a starting point for the illustration deviates into new content that lies a little bit further than the direct text (C3.3 Inspire). From the images and text, students can both depict the setting and mood of the charcters at this point in the story, therefore the direct connection to the standard.

Figure p. 42: "Floating Anansi" (one image)

The events in the story develop and soon enough the table is set and dinner is ready. While Anansi keeps trying to get under the water, this shows the reader that a spider is too light and cannot dive and stay under water (teaches a new concept?). This is yet again directly translated into the illustration (B1.7 Translate): *"Anansi jumped into the water, but could not get down to the bottom of the river. He tried to swim down, but he was too light. He kept popping back up to the surface!"* Closely observing the content of the text, the reader can also understand that the insistence of Anansi in trying to get to the bottom makes his facial expression look angry and disappointed as we see him floating back to the top, this main idea of the illustration grabs the attention of the reader to it rather than to other parts of the text (B4.1 Concentrate). With regards to this image, there is a direct connection with the standard chosen for this story, this image portrays clear details about the setting of the events.

Figure p. 43: "Stones in jacket" (one image)

On this page, we see a very happy Anansi. He has finally succeeded in getting to the bottom of the riverbank where the table was set (B1.7 Translate): *"He started grabbing stones and rocks and stuffing them into his jacket pockets… he sank right down to the bottom. He was finally able to take his place at the table. The table was beautiful and full of delicious food."* Yet another aspect that keeps recurring, is the focus of Anansi's facial expression. This plays a major role in several images from several pages as the main idea of the common core state standard here is that the illustration should contribute to what the words of the story are telling about the characters and show a direct connection with the standard with regards to setting and character.

Figure p. 44: "Removal of the jacket" (one image)

The happiness portrayed in the earlier illustration is quickly transferred into a disappointed expression when he is told by Turtle that he can't sit by the table with his jacket on as it goes against his customs. We can observe Anansi floating right up to the top of the water again as soon as the jacket disappears from the illustration (B1.7 Translate): *"… he went zooming back up to the surface and popped out onto the riverbank."* Towards the end of the page, a moral of the story is added in order to convey the message of story in more detail (B5.2 Compliment): *"**Moral of the story:** When you try to outsmart someone, you may find that you're the one outsmarted."* Not only does this message complement the regular text, but it also allows the reader to think back to several events that took place during the story and think beyond them. The characters' moods are clearly depicted in the images and the text on the page shows the students the result of Anansi's actions; it has a direct connection with the standard.

5.1.3.1 Summary: *Anansi and Turtle*

This story has provided a compilation of illustrations that in the end turn several complex concepts of outsmarting someone, being greedy as well as foolish into concrete forms (C3 Transform).

Table 5: Summary of the story elements and functions found in Anansi and Turtle

Story Elements		Functions		
Figure	**Image title**	**A. Little relation to text**	**B. Close relation to text**	**C. Relation extended beyond text**
Whole story			B1.2 Humanize	
Figure p.37	Anansi and Turtle		B5.2 Complement	
			B3.3 Parallel	
Figure p.38	Baked yams		B1.7 Translate	C3.1 Alternate progress
Figure p.39	Custom at dinner time		B1.7 Translate	
Figure p.40	Custom at dinner time		B1.7 Translate	C3.1 Alternate progress
			B1 Reiterate	
Figure p.41	By the riverbank		B1.7 Translate	C3.3 Inspire
Figure p.42	Floating Anansi		B1.7 Translate	
			B4.1 Concentrate	
Figure p.43	Stones in jacket		B1.7 Translate	
Figure p.44	Removal of the jacket		B1.7 Translate	
			B5.2 Complement	
Compiled figures				C3 Transform
* 7 out of 8 images have a connection to the chosen standard				

5.1.4 *The Hare and the Tortoise*

The Hare and the Tortoise is a fictional text that falls under the genre fable written and told by Aesop. This fable, like all others, also teaches a lesson towards the end of the story. This story is only two pages long (including the cover page) with one larger illustration on the cover page and one smaller one on the second page neither of which are real life images. 'The Hare and the Tortoise' only covers two common core state standards where neither of them is to be related to illustrations but rather merely to more language oriented concepts.

Figure p. 45: "The Hare and the Tortoise" (one image)

Similar to other cover pages within Unit 2, on the top of this page we see the title of the story and an illustration in the background however this time with a named author. Not only is the name of the author mentioned but also a caption with information about the author's life and origin, and how he went about to tell more fables written and told by him (B1.1.1.1 Author/Source). From within this text is historical information about several aspects of the authors life which makes the reader shift his/her thought into other places (A1.1 Change pace). The illustration in the background and along the whole page, portrays a tortoise and a hare on two different points of what seems like a green path.

Figure p. 46: "The race" (one image)

Here just as in *Anansi and Turtle*, there is also one specific function that is evident throughout the page where the characters of the Hare and the Tortoise are given human representations since they are involved in direct conversation and act as human beings do (B1.2 Humanize). This provides the reader to feel more accessible to the contents of the story. Several events take place in the story where the text and illustration give way to each other in the progression of the story (C3.1 Alternate progress). However, only one written aspect is specifically depicted into the form of the illustration (B1.7 Translate): *"… (he) to take a nap. The tortoise plodded on and plodded on."* In contrast to 'Anansi and Turtle', there is no moral that is clearly stated at the end of the story, this will leave the reader to think for him/herself and understand the concept behind the events in this story.

5.1.4.1 Summary: *The Hare and the Tortoise*

Table 6: Summary of the story elements and functions found in The Hare and the Tortoise

Story Elements		Functions		
Figure	**Image title**	**A. Little relation to text**	**B. Close relation to text**	**C. Relation extended beyond text**
Figure p.45	The Hare and the Tortoise	A1.1 Change pace	B1.1.1.1 Author/Source	
Figure p.46	The race		B1.2 Humanize	C3.1 Alternate progress
			B1.7 Translate	
* 0 out of 2 images have a connection to the chosen standard				

With regards to the common core standards chosen for this piece and as mentioned earlier, none of the two are related to the use of images in order to depict meaning and learning for students, therefore none of the images presented have a direct connection to the standards.

5.1.5 *Eletelephony*

Eletelephony is a fictional poem written by Laura E. Richards. It is constructed of two stanzas on only one page where both the title and the text share the same page with one larger sized illustration found at the bottom with an additional special element added to the title. *Eletelephony* covers three common core state standards in total but none of which are related to the use of illustration. The three standards are all connected to language aspects.

Figure p. 47: "Eletelephony" (one image)

The way the title of the poem is written is striking as the last letter (y) is extended by a red curvy line that looks like a telephone cable. At first hand, this draws the attention of the reader to believe that there must be some sort of connection to a telephone or telephone calls involved in the poem. Under the title is yet again, a named author: *"Laura E. Richards"* and a caption within a textbox with information about the author (B1.1.1.1 Author/Source). Several instances of the events within the poem are not directly portrayed into visual illustrations, but only a *"telephone"* and an *"elephant"* as well as the instance where the elephant entangles the telephone in his trunk (B1.7 Translate): *"… he got his trunk – Entangled in the telephunk;"*

5.1.5.1 Summary: *Eletelephony*

Table 7: Summary of the story elements and functions found within Eletelephony

Story Elements		Functions		
Figure	**Image title**	**A. Little relation to text**	**B. Close relation to text**	**C. Relation extended beyond text**
Figure p.47	Eletelephony		B1.1.1.1 Author/Source	
			B1.7 Translate	
* 0 out of 1 image have a connection to the chosen standard				

5.2 Summary of the findings

This set of images selected and analyzed from Unit 2 in Anthology Level E, has demonstrated the availability of 21 different functions used from Marsh and White's (2010) taxonomy where some of which appeared several times within the same story whereas others only once. In 10 instances, the images can be seen to have little relation to the text, in 33 instances, the images can been seen to have a close relation to the text, and in 10 instances, the images can been seen to have a relation that extends beyond the text itself. There was one particular function (B1.7 Translate) that appeared the most could probably have the most significance at in relation to the context of these stories. The table below shows a summary of all the functions that appeared in the analysis as well as how many times they have appeared in each story separately. As for the connection to the standards chosen for each story, if any, a total of 39 images had a direct connection with the common core standards whereas only six showed no connection at all. These results are analyzed further in the discussions chapter.

A. Little relation to text	B. Close relation to text	C. Relation extended beyond text
A1 Decorate	**B1 Reiterate**	**C1 Interpret**
2 Turtles	3 Tortoises	1 Turtles
1 Tortoises	1 Anansi and Turtle	**C1.1 Emphasize**
A1.1 Change pace	**B1.1 Concretize**	2 Tortoises
1 The Hare and the Tortoise	3 Turtles	**C1.2 Document**
A2 Elicit emotion	2 Tortoises	2 Turtles
1 Turtles	**B1.1.1.1 Author/Source**	**C3 Transform**
1 Tortoises	1 The Hare and the Tortoise	1 Anansi and Turtle
A3 Control	1 Eletelephony	**C3.1 Alternate progress**
2 Turtles	**B1.2 Humanize**	2 Anansi and Turtle
A3.1 Engage	1 Anansi and Turtle	1 The Hare and the Tortoise
1 Tortoises	1 The Hare and the Tortoise	**C3.3 Inspire**
A3.2 Motivate	**B1.6 Exemplify**	1 Anansi and Turtle
1 Turtles	1 Turtles	
	B1.7 Translate	
	4 Turtles	
	2 Tortoises	
	7 Anansi and Turtle	
	1 Eletelephony	
	1 The Hare and the Tortoise	
	B3.3 Parallel	
	1 Anansi and Turtle	
	B4.1 Concentrate	
	1 Anansi and Turtle	
	B5.2 Complement	
	2 Anansi and Turtle	

Chapter 6: Discussion

This research study has aimed at examining the use of images and text in a set of textbooks published by SABIS® Academic Development. In order to find out how their educational beliefs are represented, in this chapter, the findings previously investigated. The analysis will be examined with regards to the common relations found between the images in each story as well as the connection found across all stories. This discussion will help in concluding which strategies are followed when including/not including images in the SABIS® textbooks, the function of the meaning obtained by students when having a combination of text and image on one page, and how effective they in fact are in the process of meaning making. These findings will in this regards, seek to answer the research questions outlined on page 4 and 34.

Concerning the first research question, the following conclusions have been made. The SABIS® Anthology textbook is compiled primarily on the requirements of the CCSS but also in alignment with the SABIS® curriculum requirements. Social agents such as education administrators and American governors in the United States set these standards with the intention of preparing students for their college education (National Governors Association Center, Council of Chief State School Officers, 2010). These standards range from Reading Comprehension to Language standards across different genres of writing. Some of these standards are specifically oriented to the use of multimodal modes such as illustrations and photographs as a source of learning and understanding for key concepts in written text. Just as the common core depicts the use of visual modes, Bezemer and Kress (2010) state that literacy comes as a result of multimodality found in today's textbooks where students are expected to read and make interpretations of information present in the different multimodal forms. Looking more closely at the standards chosen for each story in Unit 2 of Anthology Level E, only three out of a total of 15 are related to the use of images whilst the stories include a total of 44 images/photographs/illustrations within only the five pieces. According to Jewitt (2008) the design along with the content of a textbook influence meaning making for students (as cited in Ferlin, 2014, paper IV). Using social semiotic theory as a starting point has paved the way into the analysis of specific stories within the *Anthology Level E* textbook in its physical form while looking at meaning making as a means of support for students' learning process.

Looking at the second research question, the following conclusions where made with regards to students' meaning making and learning processes in relation to the blending of texts and images. The visuals provided within the informative and non-fictional pieces *Turtles* and *Tortoises* prove that most of the photographs and images used have a close relation to the text (B) whereas few have little relation to the text (A) and even less have a relation that extends beyond the text itself (C). In this regard, meaning making in both stories is supported by the standard RS.1.Gr3.7: *"Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur)"* (National Governors Association Center, Council of Chief State School Officers, 2010, p. 14). According to Bjorklund (2012), "vision gives us information about both near and distant objects that touch and hearing cannot easily provide" (p. 106). Therefore, what students see in the images provided in school textbooks is impotant to the make meaning as it goes beyond what they can touch and hear. The images that showed close relation to text in *Turtles* and *Tortoises* provided the means for students to understand for example, *where* turtles and tortoises lay their eggs and *when*, *why* they specifically choose the spots they do as well as *how* this process occurs. They have also provided the *where*, *when*, *why*, and *how* of other topics such as lifespan and endangerment of these species. They concepts wouldn't have portrayed the same way without the use of images. All in all, the images provided within these informative texts alongside their connection with the related common core standards, provide meaning making processes for students that have a close relation between text and image. The remaining pieces within Unit 2 provide a slightly different strand of information when it comes to meaning making and the relation that images have to text, as they are fictional texts and contain illustrations rather than real life photographs. Similarly to *Turtles* and *Tortoises*, all three have dominance in the functions under the category (B) and therefore also show close relation between image and text. However, looking at meaning making from the perspective of an association with the common core, *Anansi and Turtle* is the only fictional text which has a direct connection to the standard RS.L.Gr3.3: *"Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of character or setting)"* (National Governors Association Center, Council of Chief State School Officers, 2010, p. 12). On each page of the story, the illustrations in connection with the written words on that same page contribute directly to learning and making meaning. This illustrates the mood of the characters shown on their facial expressions. Meaning is also made in relation to

the understanding of the term setting. Whereas, "The Hare and the Tortoise" as well as *Eletelephony* have no connection to standards related to the use of image/photographs/illustrations.

SABIS® claims to create it's school textbooks and supporting material such as student workbooks, teacher's guides, audio CDs, and vocabulary books in compliance with its own SABIS® curriculum. It sets out to market and sell its scholastic package to schools across the world regardless of the educational system they follow. By doing so, SABIS® states that it is there to cater for students from various countries, backgrounds and cultures by altering their core set of books to meet the demands of the different national curriculums and state requirements. Based on the conclusions made from the analysis of the images and text in *Anthology Level E*, questions are raised about the effectiveness of this scholastic package in the process of meaning making and the students' achievements of the best results. Not all readers view images the same way neither do they have the same comprehension skills when it comes to reading. This develops based on prior background knowledge and the readers' comprehension abilities unique to each one separately. Knowing that the common core is the main drive to the creation of the stories within the *Anthology Level E*, in the way they are written and illustrated, what is the purpose of having images if not to satisfy the needs of the Common Core? This question paves the way into answering the last question with regards to what role SABIS® specifically plays as an educational institution. Not all images/illustrations/photographs are effective learning sources, as some did not produce any functions at all whereas others produced several which were however not related to the common core standards. In *Figures p. 25: "Reptiles"*, the readers are to find the answer to the question in the caption by simply looking at the images presented. However, only one image out of four succeeds in providing the information of *where* they are sitting/lying and *why* these places would be good spots to choose in order to warm up the body whereas the other three fail to do so. In conclusion, even though many images have proven to be beneficial for students' understanding of text, some showed very little connection with the text and hence no effectiveness in the social semiotic process of teaching and learning while on the contrary, possibly creating confusion. An increased number of images and their relevance play a big role on literacy and the threat to students' economic performance (Bezemer et al. 2012), therefore, it is vital for social agents to make the right choices when selecting images for text. It is these choices that make the meaning significant or not (Kress, Selander, 2012).

Chapter 7: Conclusion and suggestions for further studies

The aim of this study was to primarily assess the effectiveness of SABIS®'s educational beliefs that are represented within its *Anthology Level E* book. This book is used as the main textbook for instruction in the *International School of Minnesota* in the USA. Social semiotics set the grounds for this study while paving the way for the critical analysis of the use of images within the book and their relationship in combination with the text on each of its pages. Looking at this relationship and its effectiveness on meaning making and student learning, the results from the analysis suggested that there were many images that had a close relationship with the text just as these images even had a direct connection to the CCSS selected for each story except for two. The informational pieces not only proved to have a selection of images that had a close relation to the words on the related pages but also a direct connection to the chosen standards.

Keeping that in mind, and in accordance with Maun and Myhill's (2005) notion, layout and design play a big role on students' effectiveness in learning. Images and design elements not only give students a visual influence but also a more concrete one that shows in their results for learning and hence meaning making. On the other hand, the process of introducing an increased number of different types of modes can be a threat to literacy (Bezemer et al., 2012). Therefore, even though SABIS® as a publishing house is dominated by the social agents such as the common core, as suggestions for further studies and in order to take this study some steps further, it would be thought-provoking to explore the relationship designers and writers have in the process of book and content production. And also, whether this relationship paves a clear path for students to make use of all the different modes and components of their reading texts through both the layout as well as its related visuals. Focusing on books from several subjects covered within the SABIS® curriculum such as sciences and mathematics would also make this study even more generalizable.

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Appendix A: The relationship between text and image

Table 1: Summary of the results of Knecht and Najvarorá's (2010) study

Country	Social Science	History	Physics	Science	Geography
Germany	High-quality & positive responses	Texts are: long, difficult, incomprehensible, demotivating, overwhelming, enough number of images, boring			
North America	Texts are: boring & feel incomplete				
Australia		Texts need: colorful illustrations, better structure & organization			Texts need: colorful illustrations, better structure & organization Texts are: long
Czech			Texts need: better graphics, content, appearance of the book & weight		Texts are: comprehensible, brief & well illustrated
Norway				Satisfied with the used texts	
Serbia		Texts have: a lack of illustrations, no variety in the choice of topics, interesting themes, many colorful images & graphs Texts are: clear & well explained, long & incomprehensible chapters			
Poland				Texts need: and increase in images & tables	

Table 2: Bezemer and Kress' (2010) analytical framework for the analysis of images in texts

Social Semiotics	Discourse Analysis	Graphic Design	
Images (Kress & van Leeuwen)	**Writing** (Halliday, Hodge & Kress, Fairclough)	**Typography** (Stöckl's toolkit)	**Layout** (Ambrose and Harris, Haslam)
contextualization	mood	type	page format and grid
color	clause relations	spacing	number of columns per page
pictorial detail	drawing	orientation	column width
illumination		Indentation	orientation and alignment of page elements
depth		typography	
movement			

Table 3: Variables and functions for Dimopoulos et al.'s (2003) study

Classification		Framing	Formality
Type	**Function**	**Visual Syntax**	**Degree of Abstraction**
realistic	narrative representations	close distance	low formality
conventional	classificational	medium distance	high formality
hybrids	analytical metaphorical representations	distant distance	

Appendix B: Standards for English Lanaguage Arts K-5

US Common Core State Standards

Figure 1: Reading Standards for Literature K-5

Reading Standards for Literature K-5 [RL]

The following standards offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades. Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

	Kindergartners:	Grade 1 students:	Grade 2 students:
Key Ideas and Details			
1.	With prompting and support, ask and answer questions about key details in a text.	Ask and answer questions about key details in a text.	Ask and answer such questions as *who, what, where, when, why,* and *how* to demonstrate understanding of key details in a text.
2.	With prompting and support, retell familiar stories, including key details.	Retell stories, including key details, and demonstrate understanding of their central message or lesson.	Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
3.	With prompting and support, identify characters, settings, and major events in a story.	Describe characters, settings, and major events in a story, using key details.	Describe how characters in a story respond to major events and challenges.
Craft and Structure			
4.	Ask and answer questions about unknown words in a text.	Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.	Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.
5.	Recognize common types of texts (e.g., storybooks, poems).	Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.	Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.
6.	With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.	Identify who is telling the story at various points in a text.	Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud.
Integration of Knowledge and Ideas			
7.	With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts).	Use illustrations and details in a story to describe its characters, setting, or events.	Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.
8.	(Not applicable to literature)	(Not applicable to literature)	(Not applicable to literature)
9.	With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.	Compare and contrast the adventures and experiences of characters in stories.	Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.
Range of Reading and Level of Text Complexity			
10.	Actively engage in group reading activities with purpose and understanding.	With prompting and support, read prose and poetry of appropriate complexity for grade 1.	By the end of the year, read and comprehend literature, including stories and poetry, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Figure 2: Reading Standards for Literature K-5

Reading Standards for Literature K–5 [RL]

Key Ideas and Details

	Grade 3 students:	Grade 4 students:	Grade 5 students:
1.	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
2.	Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.	Determine a theme of a story, drama, or poem from details in the text; summarize the text.	Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.
3.	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).	Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).

Craft and Structure

	Grade 3 students:	Grade 4 students:	Grade 5 students:
4.	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.	Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).	Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.
5.	Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.	Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.	Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.
6.	Distinguish their own point of view from that of the narrator or those of the characters.	Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	Describe how a narrator's or speaker's point of view influences how events are described.

Integration of Knowledge and Ideas

	Grade 3 students:	Grade 4 students:	Grade 5 students:
7.	Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).	Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.	Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem).
8.	(Not applicable to literature)	(Not applicable to literature)	(Not applicable to literature)
9.	Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).	Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.	Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.

Range of Reading and Level of Text Complexity

	Grade 3 students:	Grade 4 students:	Grade 5 students:
10.	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently.	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.	By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently.

Figure 3: Reading Standards for Informational Text K-5

Reading Standards for Informational Text K–5 [RI]

	Kindergartners:	Grade 1 students:	Grade 2 students:
Key Ideas and Details			
1.	With prompting and support, ask and answer questions about key details in a text.	Ask and answer questions about key details in a text.	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
2.	With prompting and support, identify the main topic and retell key details of a text.	Identify the main topic and retell key details of a text.	Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
3.	With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.	Describe the connection between two individuals, events, ideas, or pieces of information in a text.	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
Craft and Structure			
4.	With prompting and support, ask and answer questions about unknown words in a text.	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
5.	Identify the front cover, back cover, and title page of a book.	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
6.	Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.	Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
Integration of Knowledge and Ideas			
7.	With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).	Use the illustrations and details in a text to describe its key ideas.	Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
8.	With prompting and support, identify the reasons an author gives to support points in a text.	Identify the reasons an author gives to support points in a text.	Describe how reasons support specific points the author makes in a text.
9.	With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).	Compare and contrast the most important points presented by two texts on the same topic.
Range of Reading and Level of Text Complexity			
10.	Actively engage in group reading activities with purpose and understanding.	With prompting and support, read informational texts appropriately complex for grade 1.	By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Figure 4: Reading Standards for Informational Text K-5

Reading Standards for Informational Text K-5 [RI]

	Grade 3 students:	Grade 4 students:	Grade 5 students:
Key Ideas and Details			
1.	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
2.	Determine the main idea of a text; recount the key details and explain how they support the main idea.	Determine the main idea of a text and explain how it is supported by key details; summarize the text.	Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
3.	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.	Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
Craft and Structure			
4.	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 3 topic or subject area*.	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area*.	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 5 topic or subject area*.
5.	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.	Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.	Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
6.	Distinguish their own point of view from that of the author of a text.	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
Integration of Knowledge and Ideas			
7.	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
8.	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).	Explain how an author uses reasons and evidence to support particular points in a text.	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).
9.	Compare and contrast the most important points and key details presented in two texts on the same topic.	Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.	Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
Range of Reading and Level of Text Complexity			
10.	By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.	By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.	By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

Appendix C: Anthology Level E Table of Contents
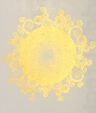
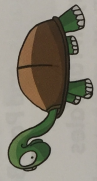Figure 1: List of texts within Unit 1 and Unit 2

Figure 2: List of texts within Unit 3 and Unit 4
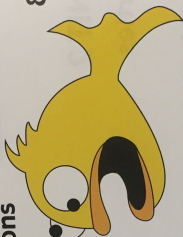
Figure 3: List of texts within Unit 5 and Unit 6
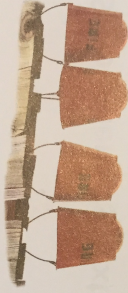
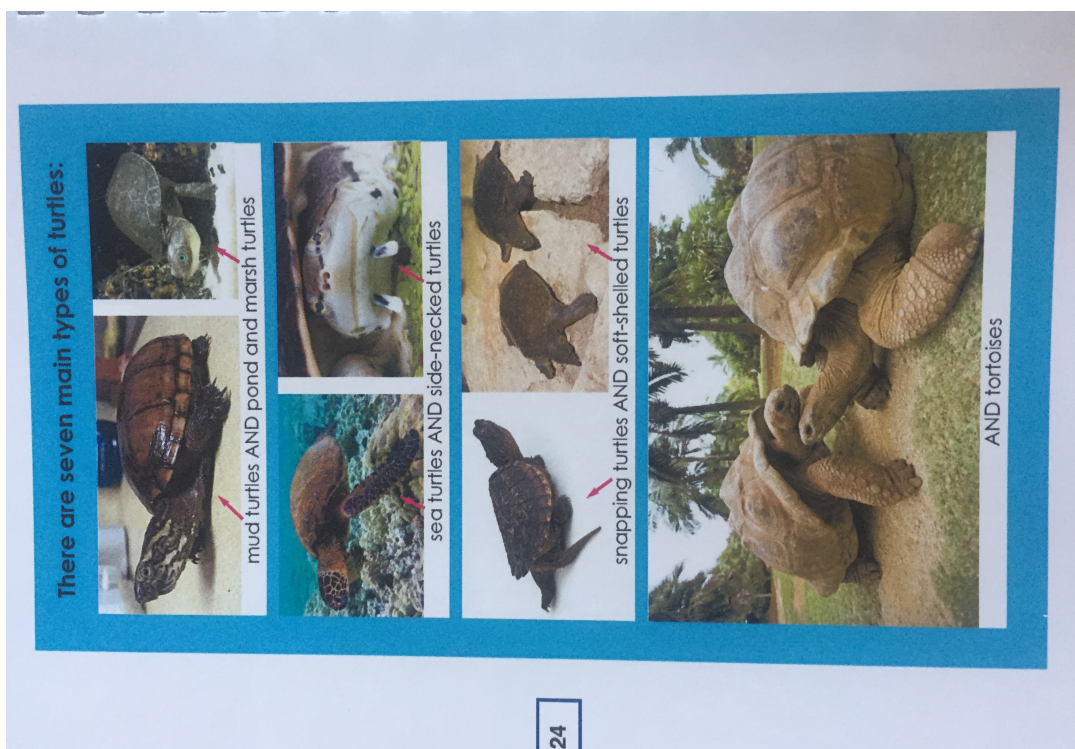Figure 4: List of texts within the supplementary reading section

Appendix D: Unit 2 images listed by story

Turtles

Figure p. 23: "Turtles" (one image)

Figures p. 24: "Seven types of turtles" (seven images)

Figures p. 25: "Reptiles" (four images)

Turtles are easy to identify. They have a flat shell, leathery skin, and a tiny tail. A tortoise is a kind of turtle, but not all turtles are tortoises.

Turtles belong to a group called reptiles. Other reptiles include snakes, lizards, and crocodiles. All reptiles have a backbone and scaly skin, and they reproduce[1] by laying eggs. Reptiles are also cold-blooded. This means that they must warm their bodies by using heat from another source, such as the sun. Reptiles are found over much of Earth. When the weather is too cold or too hot, they hide in places where the temperature is more comfortable.
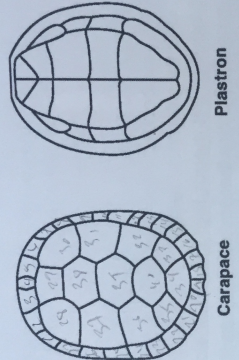
Why would these be good spots to choose if you wanted to warm up?

1 reproduce: to create or give birth to young

25
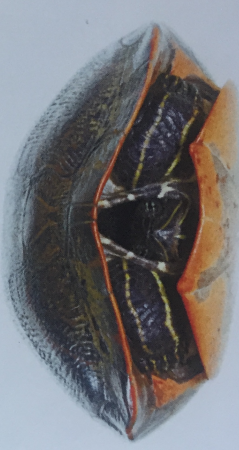
Figures p. 26: "Skeleton" (four images)

Carapace   Plastron

All turtles have a shell, which is a part of their skeleton.[2] The shell is made up of 59–61 bones. These bones are covered by plates that protect the turtle. The shell is attached to the turtle's backbone and ribs. This makes it impossible for this animal to ever crawl out of its shell. The top of the shell is called the carapace and the bottom is the plastron. Some turtles tuck their heads and legs inside their shells for protection. Others can only tuck their necks alongside their shells.

2 skeleton: the structure of bones that make up the bodies of humans and many animals

26

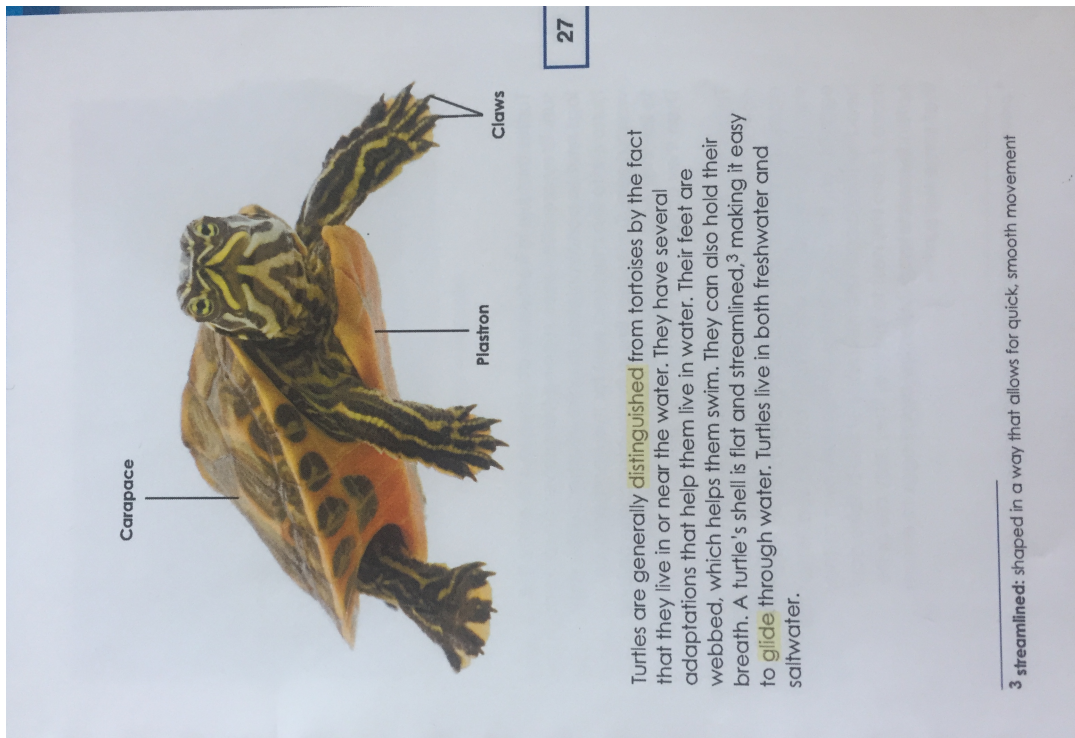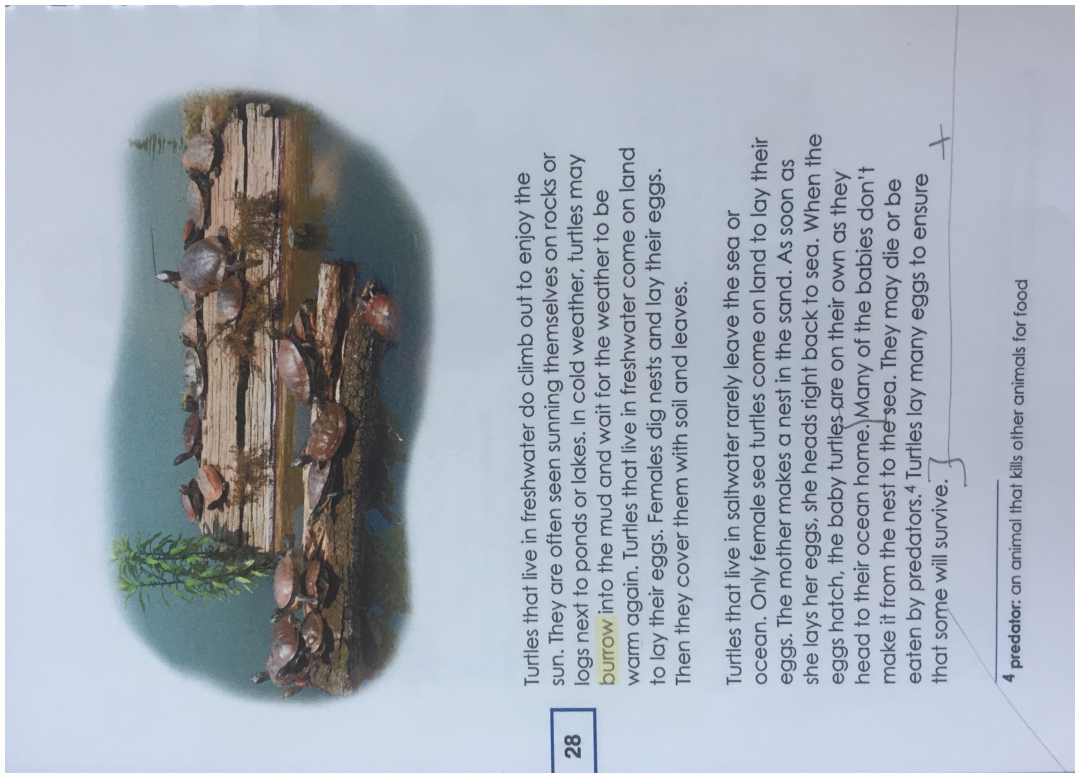Figure p. 27: "Construction fit for habitat" (one image)

Carapace

Plastron

Claws

Turtles are generally distinguished from tortoises by the fact that they live in or near the water. They have several adaptations that help them live in water. Their feet are webbed, which helps them swim. They can also hold their breath. A turtle's shell is flat and streamlined,[3] making it easy to glide through water. Turtles live in both freshwater and saltwater.

3 streamlined: shaped in a way that allows for quick, smooth movement

Figure p. 28: "Habitat & Reproduction" (one image)

28

Turtles that live in freshwater do climb out to enjoy the sun. They are often seen sunning themselves on rocks or logs next to ponds or lakes. In cold weather, turtles may burrow into the mud and wait for the weather to be warm again. Turtles that live in freshwater come on land to lay their eggs. Females dig nests and lay their eggs. Then they cover them with soil and leaves.

Turtles that live in saltwater rarely leave the sea or ocean. Only female sea turtles come on land to lay their eggs. The mother makes a nest in the sand. As soon as she lays her eggs, she heads right back to sea. When the eggs hatch, the baby turtles are on their own as they head to their ocean home. Many of the babies don't make it from the nest to the sea. They may die or be eaten by predators.[4] Turtles lay many eggs to ensure that some will survive.

4 predator: an animal that kills other animals for food

Figures p. 29: "Food" (two images)

A female turtle laying eggs.

Most turtles, except tortoises, are omnivores.[5] They eat plants, insects, and fish. However, their favorite foods vary from one type of turtle to another. Pond turtles, such as the painted turtle, like to eat leafy plants, crickets, worms, small snails, and fish. With large and powerful beaks, snapping turtles will eat plants along with small fish, snakes, frogs, and birds. Green sea turtles eat only plants, while other sea turtles add shrimp, jellyfish, and crab to their diet.

29

Baby turtles crawling out of the nest.

5 omnivore: an animal that eats both plants and animals

Figures p. 30: "Endagered Turtles" (four images)

Turtles face dangers that may affect their survival. People often build roads, houses, and businesses near the turtles' homes at the edge of ponds, lakes, or oceans. This means that it is becoming harder for turtles to find safe places for their nests. Sea turtles face other risks such as fishing, water pollution, and climate change.[6] In order to save the turtle, people have formed groups that teach others about protecting the turtle's habitat.

30

6 climate change: a gradual and significant change in weather patterns across the world caused by both natural processes and the actions of humans

69

Tortoises

Figure p. 31: "Tortoises" (one image)
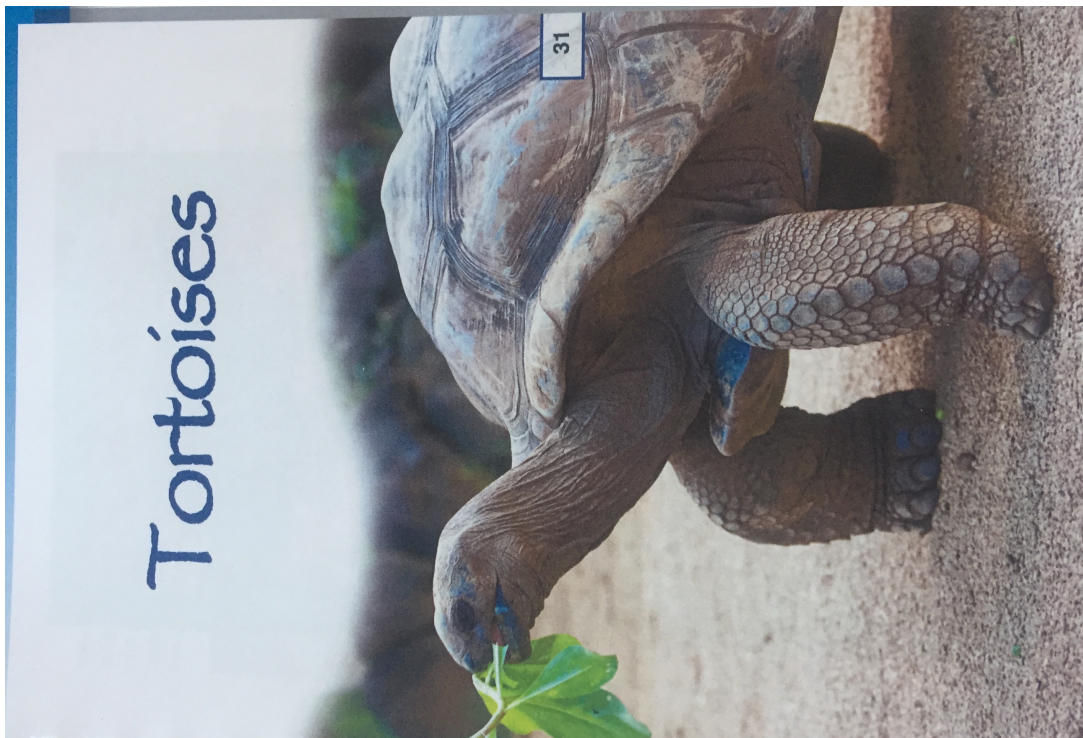
Figures p. 32: "Three types of tortoises" (three images)

Figure p. 33: "Lifespan of tortoises/Reptiles" (one image)

Tortoises are a type of turtle. They are known for living quite a long time. Not only do they have long life spans,[1] they are also one of Earth's oldest species.[2] Tortoises, and other turtles, have been on Earth for over 200 million years. They are older than the dinosaurs!

A boy visiting a 179-year-old tortoise named Jonathan, in 2012.

Tortoises are reptiles. This means that they share traits with snakes, lizards, and crocodiles. All reptiles have a backbone and scaly skin. They lay eggs and are cold-blooded. Cold-blooded animals do not warm themselves from the inside. Their body temperature is the same as their surrounding environment. Like all other turtles, tortoises are protected by their hard shells. Turtles are the only reptiles that have a shell.

Reiterate

1 **span:** a period of time between two dates
2 **species:** a group of plants or animals that share important traits

33

Figures p. 34: "Skeleton/Habitat" (two images)

Like turtles, tortoises have shells that are made up of about sixty different bones. These bones are connected and covered by plates. The entire shell is connected to the tortoise's backbone and ribs. The top of the tortoise's shell is called the carapace. The bottom is called the plastron. When a tortoise is in danger, it will tuck its head and feet inside its large shell.

Unlike other turtles, tortoises typically live on land. Their feet are hard and scaly and often have claws for digging. Tortoises may go in the water to drink or bathe, but they are not adapted for swimming. In fact, they can drown in very deep water. Their shells are high and domed. This protects them from land predators, heat, and rain. Since they are not swimmers, they do not need a flat, streamlined[3] shell.

Translate

3 **streamlined:** shaped in a way that allows for quick, smooth movement

34

Figures p. 35: "Reproduction/Food" (two images)

35

Like most turtles, tortoises make nests on dry land by digging holes. They lay their eggs and cover them with soil and leaves. Most tortoises walk away from the nests and never come back. An interesting fact about some turtles and tortoises is that the temperature of the nest can decide if the babies will be females or males. A warm nest produces females. A colder nest produces males. When they hatch, baby tortoises use their beaks to break through the shells. Then they head for a safe spot to call home.

Unlike other turtles that eat both plants and animals, most tortoises eat only plants. They may eat shrubs, flowers, and grasses. Tortoises that live in the desert will even eat cacti.[4] Only a few types of tortoises eat insects and worms.

4 cacti: plural of cactus

Figure p. 36: "Habitat/Endagenred tortoises" (one image)

? no mention of that before

Like other turtles, tortoises are found all over the world. They are also similar to turtles in their dislike of very cold or very warm weather. The desert tortoise, for example, is well adapted for its hot environment. To stay cool, it can live about 95 percent of its life underground.

Several factors threaten the survival of tortoises. Loss of habitat is one of the major causes for the decreasing tortoise populations. The desert tortoise and the gopher tortoise are types that are endangered. People have reacted by forming groups that are working to save these creatures.

36

Anansi and Turtle

Figure p. 37: "Anansi and Turtle" (one image)

Figure p. 38: "Baked yams" (one image)

Figure p. 39: "Custom at dinner time" (one image)
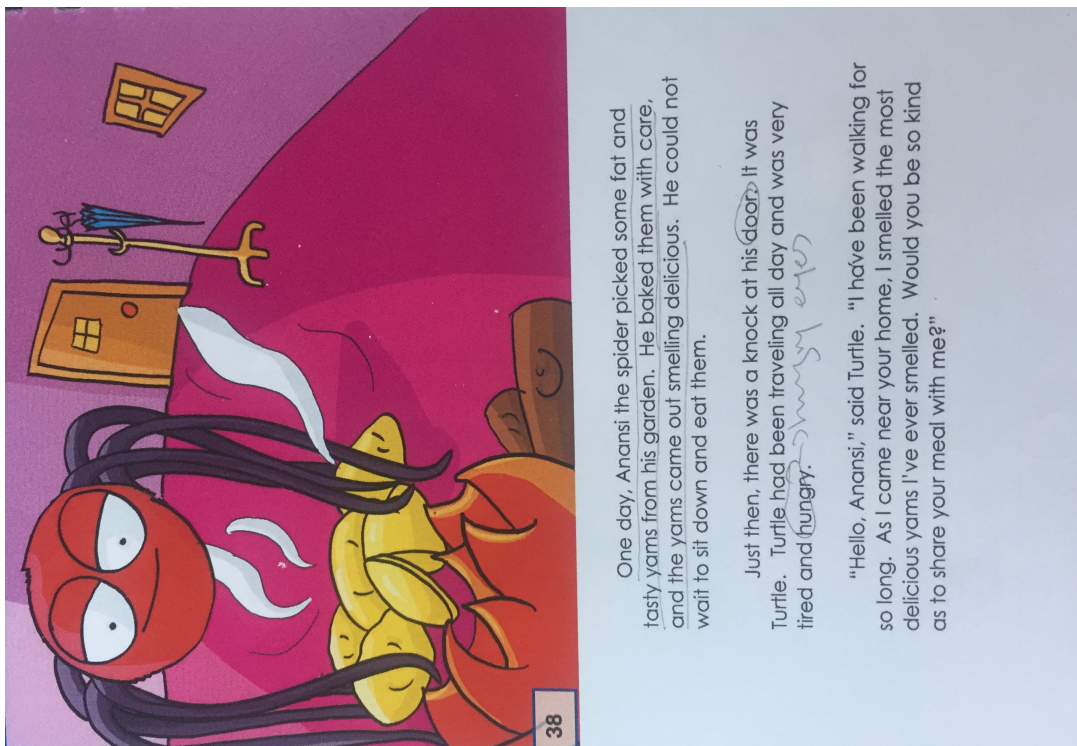
Anansi could not refuse. It was the custom[1] in his country to share a meal with visitors at mealtime. But he was not very happy. Anansi was a little too greedy and wanted the delicious yams all to himself. So Anansi thought to himself and came up with a plan.

"Please do come in, Turtle. I would be honored[2] to have you as my guest. Sit down. Have a chair and help yourself."

Turtle came inside and sat down. But just as he reached for a yam, Anansi yelled, "Turtle, don't you know better than to come to the table with dirty hands?"

Turtle looked down at his hands and saw that they were filthy. He had been crawling all day and had not had a chance to clean up. Turtle got up and went to the river to clean his feet. He then walked all the way back up to the house.

Anansi had already begun to eat.

1 **custom:** the normal way of behaving in a specific culture
2 **honored:** feeling respected; pleased

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Figure p. 40: "Custom at dinner time" (one image)

"I didn't want these tasty yams to get cold, so I had to begin without you," said Anansi. "But please join me now, Turtle."
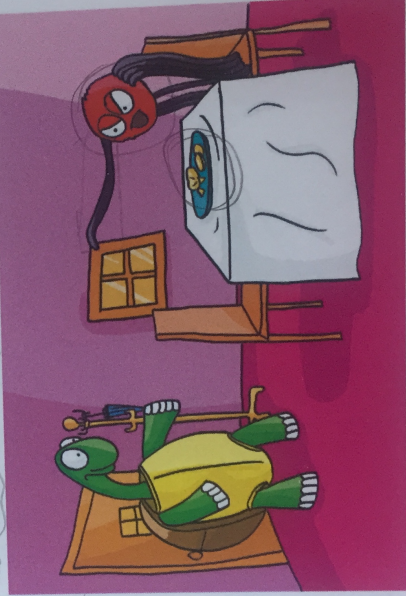
Turtle sat down again and reached for a yam, but again Anansi yelled at him.

"Turtle, did you not hear me before? It is not polite to come to the table with dirty hands!" Anger

Turtle looked down and saw that his clean hands had turned dirty once more, since he had had to walk on them to get back to the house.

So Turtle walked down to the river once more to wash himself off. This time, he was careful to walk on the grass so his hands would stay clean.

But by the time he sat down at the table, Anansi had finished up the last bit of the tasty yams. Not so much as a morsel[3] was left.

3 **morsel:** a very small piece

40

Figure p. 41: "By the riverbank" (one image)

41

Turtle looked at Anansi and said, "Thank you for sharing your meal with me. If you ever find yourself near my house, please let me return the favor." Then he slowly walked out the door and continued on his way.

As the days went by, Anansi thought more and more of that meal that Turtle had offered him, and he got more and more interested in a free dinner. Finally, he could not stand it anymore. He set off one day to find Turtle's house.

He found Turtle sunning himself on a riverbank just around dinnertime.

Turtle looked up and saw him and said, "Hello, Anansi. Have you come to share an evening meal with me?"
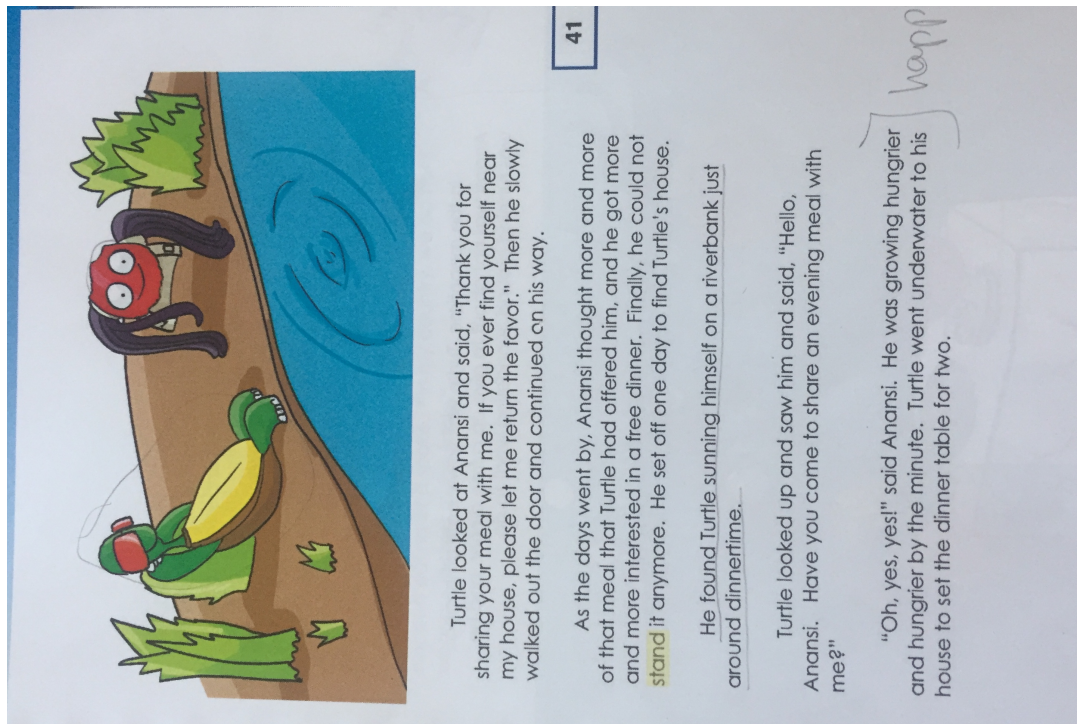
"Oh, yes, yes!" said Anansi. He was growing hungrier and hungrier by the minute. Turtle went underwater to his house to set the dinner table for two.

Figure p. 42: "Floating Anansi" (one image)

Soon he came back to the riverbank and said, "Your place is waiting and the food is ready. Please join me, Anansi." And then Turtle dived underwater and began to slowly eat his meal.

Anansi jumped into the water, but could not get down to the bottom of the river. He tried to swim down, but he was too light. He kept popping back up to the surface! He tried diving. He tried belly flops. He tried a running jump. Nothing would help him get down to the river bottom.

In the meantime, Turtle was slowly eating his meal. Anansi was not about to give up a free dinner, and he was running around, wondering what to do.

42

Anansi had an idea. He started grabbing stones and rocks and stuffing them into his jacket pockets. When he jumped into the water, he sank right down to the bottom. He was finally able to take his place at the table.

The table was beautiful and full of delicious food. Anansi could hardly believe how many tasty things were before him. He could not wait to start eating.

But just as he reached for the first morsel, Turtle stopped eating and spoke. "In my country, we do not wear our jackets to the table."

43

Figure p. 44: "Removal of the jacket" (one image)

Anansi noticed that Turtle had removed his own jacket before sitting down. Anansi started to remove his jacket. As soon as it was off his shoulders, he went zooming back up to the surface and popped out onto the riverbank. He stuck his head down into the water and saw Turtle slowly enjoying his wonderful meal.

Moral of the story: When you try to *outsmart* someone, you may find that you're the one outsmarted.
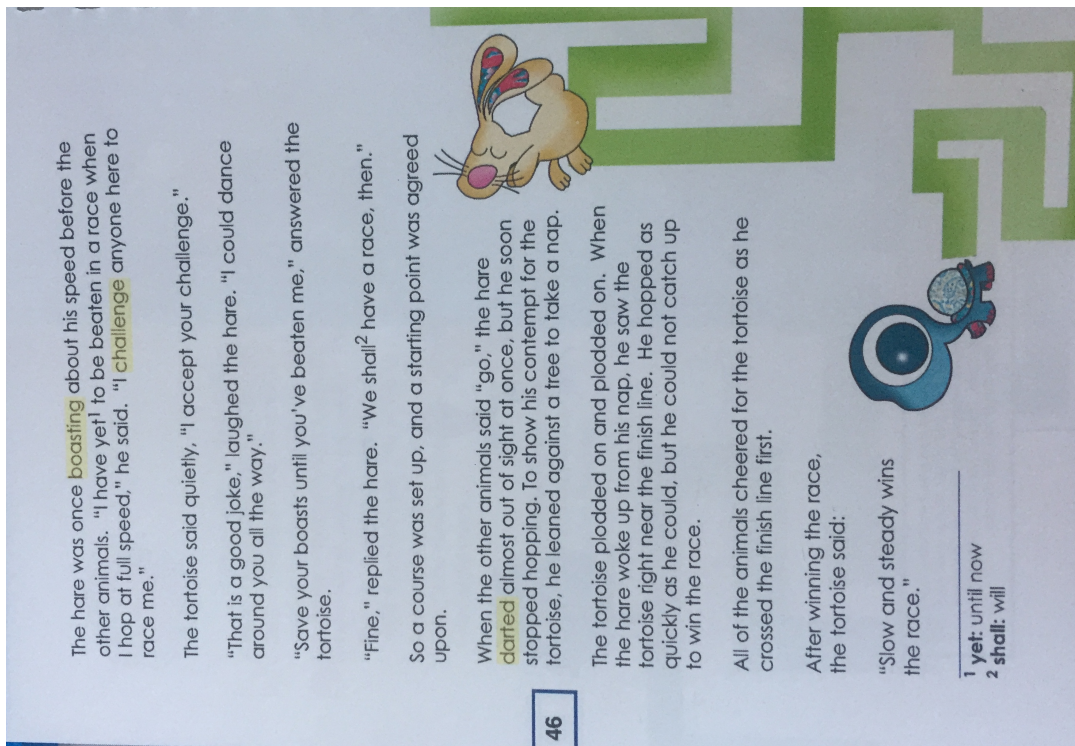
44

* B5.2 Complement

The Hare and the Tortoise

Figure p. 45: "The Hare and the Tortoise" (one image)

Figure p. 46: "The race" (one image)

Eletelephony

Figure p. 47: "Eletelephony" (one image)

Eletelephony
by Laura E. Richards

About the Author

Laura E. Richards (1850–1943), an American writer, was born in Boston, Massachusetts. Her father was a social reformer and her mother, Julia Ward Howe, wrote "The Battle Hymn of the Republic." Laura began writing nursery rhymes to amuse her seven children. She published her first books, Five Little Mice in a Mouse Trap and The Little Tyrant, in 1880, and produced many more about the joys and freedom of childhood. In 1927, she added to her fame by winning the Pulitzer Prize for Biography for a book she and her sister wrote about their mother.

1 Once there was an elephant,
   Who tried to use the telephant –
   No! No! I mean an elephone
   Who tried to use the telephone –
5 (Dear me! I am not certain quite
   That even now I've got it right.)

   Howe'er[1] it was, he got his trunk
   Entangled in the telephunk;
   The more he tried to get it free,
10 The louder buzzed the telephee –
   (I fear I'd better drop the song
   Of elephop and telephong!)

[1] howe'er: however

47