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Abstract

This thesis is an investigation into the use of images in a selection of English as a Foreign Language (EFL) textbooks used in upper secondary school in Norway. The aim of the study was to explore the role and function of images in the individual textbooks and examine to what extent their use may differ between textbooks aimed at vocational study programmes and those aimed at general studies programmes. The basic assumption here is that images may have pedagogical functions besides simply illustrating the written words.

The material for the study consists of a selection of seven available textbooks which were made for the current National Curriculum for Knowledge Promotion in Primary and Secondary Education and Training, also known as LK06. All the images in the seven textbooks were studied using a combination of quantitative and qualitative methods. A quantitative approach was used to produce overall descriptive statistics of the kinds of images and their placement and use. Each image was classified into several categories, including size, placement in the book and/or page, the presence of caption, type of image, main element depicted, distance between the viewer and the viewed, and the occurrence of eye contact. Collectively, these categories enabled an analysis of the potential level of difficulty in the decoding process, the information value in the image, and to what extent the image connects and communicates with the viewer. Some of the findings were followed up with a qualitative approach. Specific patterns and characteristics of image use in the different textbooks were investigated more closely by looking at specific examples.

As the study is concerned with both learning and the use of images, its theoretical basis combines learning and reading theories. In addition to theories of learning and reading, Kress & van Leeuwen's theory of 'visual grammar' and descriptive framework was applied when conducting a visual analysis.

The curriculum in English for both vocational and general studies is identical, with only a small section allowing for adaptations for the particular study program (general or vocational). However, one could argue that the pupils enrolled in the different study programmes have different needs, both with regard to the learning process and its future applications. It was therefore of particular interest to find out whether there is a significant difference in the use of images between EFL textbooks aimed at vocational and general studies. The findings did not give straightforward answers; some differences were discovered

in the use of images between the two study programmes, but much variation was found between the individual textbooks.

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1 Introduction

The present thesis is an investigation into the use of images in a selection of English as a Foreign Language (EFL) textbooks used in upper secondary school in Norway. The aim of the study was to explore the role and function of images in the individual textbooks and examine to what extent their use may differ between textbooks aimed at vocational study programmes and those aimed at general studies programmes. The basic assumption here is that images may have pedagogical functions besides simply illustrating the written words. Accordingly, the following research questions were addressed:

- 1) How do the different textbooks differ in their use of images?
- 2) Is there a significant difference in the use of images between textbooks aimed at vocational studies and those aimed at general studies?
- 3) How does the image use in the different textbooks relate to theories of reading and of learning?
- 4) How do the different textbooks take into account the needs of different learners in their use of images?

The material for the study consists of a selection of seven available textbooks which were made for the current National Curriculum for Knowledge Promotion in Primary and Secondary Education and Training, also known as LK06. The three major publishers of textbooks for the upper secondary level, Aschehoug, Gyldendal, and Cappelen Damm, are all represented with two books each, one aimed at vocational studies and one aimed at general studies. These six textbooks are: *Access to English*, *New Experience*, and *Targets* (general studies), and *Workshop VG1*, *Skills*, and *Tracks 1* (vocational studies). In addition, there is one more textbook from Gyldendal, *Gateways*, which is identical for both study directions and was included as the seventh book.

All the images in the seven textbooks were studied using a combination of quantitative and qualitative methods. A quantitative approach was used to produce overall descriptive statistics of the kinds of images and their placement and use. The data were collected and processed in Excel. Each image was classified into several categories, including size, placement in the book and/or page, the presence of caption, type of image, main element depicted, distance between the viewer and the viewed, and the occurrence of eye contact. Collectively, these categories enabled an analysis of the potential level of difficulty in the

decoding process, the information value in the image, and to what extent the image connects and communicates with the viewer. The large sample of numerical data made it possible to compare the findings for the different books. These results provide answers to the first two research questions: ‘How do the different textbooks differ in their use of images?’, and ‘Is there a significant difference in the use of images between textbooks aimed at vocational studies and those aimed at general studies?’.

Some of the findings were followed up with a qualitative approach. Specific patterns and characteristics of image use in the different textbooks were investigated more closely by looking at specific examples. This made it possible to explore the use of images in a more flexible and interpretative way, and to suggest several answers to the last two research questions: ‘How does the image use in the different textbooks relate to theories of reading and of learning?’, and ‘How do the different textbooks take into account the needs of different learners in their use of images?’

As the study is concerned with both learning and the use of images, its theoretical basis combines several directions. First of all, reading theories provide a basic understanding of reading in a foreign language (e.g. Nunan 1999; see p. 14) as well as defining some of the reading strategies the pupils may apply in the different stages of the reading process (Grabe 2009; see p. 16). Gardner’s (1983) theory of multiple intelligences and his idea of the different learning profiles of learners was used when examining how images may affect the reading process. Vygotsky’s sociocultural theory of learning (1978) has also been applied to the materials, with his concept of the ‘Zone of Proximal Development’ as the most relevant model of learning for the present study (see p. 20). In addition, Mayer’s (2001) theory and research on multimodality proved useful when determining how the different textbooks take into account the needs of different learners in their use of images (see p. 23).

In addition to theories of learning and reading, a theoretical framework dealing with the use of images in particular was needed. Kress & van Leeuwen (2006) outline a theory of ‘visual grammar’ dealing with the individual elements in images and how these elements are combined into meaningful wholes (Kress & van Leeuwen 2006: 1). Their theory and descriptive framework was applied when conducting a visual analysis in order to reveal patterns and regularities in the images in the study. One useful direction was to interpret the interactive mode and communicative function of the image: that is, the relationship between the participant(s) in the image and viewer(s) of that image. Images were analysed as to what extent the participant(s) in the image address the viewer and their level of social connection.

Another was the compositional mode and the textual function of the images which is concerned with the arrangements of elements and how they work together. The placement of the elements was given different informational values as suggested by Kress & van Leeuwen (2006: 177). Images placed in the margin will have different values than an image mid-text, and the values attached to an image placed before a text are different to those that are placed after a text.

The initial assumption when carrying out this study was that there is a general need for research on visual representation in EFL textbooks in relation to their use and function. Images may have a more immediate impact on the learner than the written word, and it could therefore be argued that they potentially play a significant role in the learning process. As a result, textbook illustrations might be expected to have more than just a decorative function as they have the potential to affect the learning process. The curriculum in English for both vocational and general studies is identical, with only a small section allowing for adaptations for the particular study program (general or vocational). However, one could argue that the pupils enrolled in the different study programmes have different needs, both with regard to the learning process and its future applications. It was therefore of particular interest to find out whether there is a significant difference in the use of images between EFL textbooks aimed at vocational and general studies.

Elevundersøkelsen (2018) shows a decrease in motivation levels among students from primary school to the end of lower secondary school. However, when pupils reach the end of lower secondary, at the age 16, there is a change from compulsory schooling to an entitlement to attend upper secondary.¹ The pupils may not be overly motivated, but for the first time there is a choice between a more practical direction with vocational study programmes, or a more theoretical path with general study programmes. The Norwegian Directorate for Education and Training (Udir) report a higher average grade intake for the general study programmes than for most of the vocational study programmes.² Moreover, a PISA report from 2018 indicates a decrease in reading ability among Norwegian teenagers.³ Many teenagers also claim that they do not read in their spare time and very few pupils report to be

¹ New in Norway (2019): <http://www.nyinorge.no/en/Ny-i-Norge-velg-sprak/New-in-Norway/Children--Schools/The-school-system/Upper-secondary-school/>

² Utdanningspeilet (2019): <https://www.udir.no/tall-og-forskning/finn-forskning/tema/utdanningspeilet-2019/gjennomforing/>

³ For more information about PISA: www.oecd.org/pisa/

reading for pleasure. This project initially arose from an interest in the ways in which textbooks might handle this situation: in particular, how the fact that different pupils and/or study programmes have different needs might be reflected in the use of images.

The majority of the vocational pupils have chosen this path because of an interest in practical work rather than in continuing to get a higher education. The assumption was therefore that the textbooks aimed at vocational studies, in comparison to the books aimed at general studies, had a higher number of images, larger images, and a large proportion of images which affect the reader's emotions and feelings. These expectations are linked to the fact that the average grade intake for these pupils is lower than for general studies with the presumption that a high proportion of the weaker readers choose a practical education. As images could be considered more easily accessible than written texts in a foreign language, images could potentially benefit pupils of all abilities. Furthermore, the large proportion of emotive images were suspected to be found more often as a strategic choice due to the low motivation levels found with the pupils at the start of upper secondary school, with the lowest motivation levels most likely found among vocational pupils who aim to finish their education after only two years of school-based instruction. Pupils of general studies, on the other hand, are being prepared for higher education and will eventually be required to read and study long, theoretical texts. The assumption was therefore that the general studies books might show fewer and smaller images overall. It was also expected that, compared to the textbooks aimed at vocational studies, these books would show a more extensive use of impersonal, abstract images which offer information. The findings did not give as straightforward answers as expected; some differences were discovered in the use of images between the two study programmes, but much variation was found between the individual textbooks.

The thesis is divided into nine main chapters, of which the first five introduce the materials and approach. Chapter 2 provides background information, outlining the Norwegian school system as well as describing the position of the English language in Norway. Chapter 3 presents the theoretical background for the study, dealing in turn with reading theories, learning theories, multimodality, and finally, Kress & van Leeuwen's theoretical framework. Chapter 4 reviews some relevant related studies, both in Norway and internationally. Finally, Chapter 5 presents the materials included and describes the choice of methodology.

The findings of the study are presented in Chapters 6-8. Chapter 6 gives an overview of the general findings, while Chapter 7 discusses in detail the results for each individual textbook. Chapter 8 looks at the findings from a more theoretical point of view, and the

starting point of the discussion is based on the main theories which form the background to this study. Finally, Chapter 9 summarises the main conclusions which can be drawn from this study, together with suggestions for further study.

2 Background

2.1 Knowledge Promotion - 'Kunnskapsløftet' (LK06)

The National Curriculum for Knowledge Promotion, also known as LK06, is a Norwegian school reform introduced to primary school pupils in 2006 and to upper secondary school pupils in 2007.⁴ It encompasses the 10-year compulsory school and upper secondary education and training as a whole and is comprised of the Core Curriculum, Principles of Education, distribution of teaching hours per subject and subject syllabuses.

According to the Norwegian Ministry of Education and Research, the Core Curriculum 'deepens appreciation for basic values and the view of humanity underlying the instruction.' (Knowledge Promotion: 6) It includes key themes from the Act governing education in Norway, which are grouped and expanded under the headings *moral outlook*, *creative abilities*, *work*, *general education*, *cooperation*, and *natural environment*. A *moral outlook* is linked to the promotion of intellectual freedom, tolerance and a sense of values, particularly with regard to the Christian values fundamental in Norwegian society. *Creative abilities* are understood as both mental and physical abilities. *Work* includes preparing pupils for life at work and in society, and giving equal access to knowledge, insight and skills. The *general education* element explains the importance of giving pupils a broad basic knowledge so that they can become useful and independent in home and society. In addition, the individual should be helped to lead a more meaningful life. *Cooperation* has to do with strengthening cooperation at work and in society. The formulation also highlights the democratic ideals and the international co-responsibility. The last theme, *natural environment*, deals with the environmentally aware citizen.

The second main part of the Knowledge Promotion, the Principles of Education, is found in a document titled the Quality Framework. The Quality Framework is another document developed by the Royal Ministry of Education and Research as part of the Knowledge Promotion and it summarises and elaborates on the provisions in the Education Act and its regulations. The document is described as being 'an integral part of the foundation

⁴ Knowledge Promotion (2006):
https://www.regjeringen.no/globalassets/upload/kilde/kd/bro/2006/0002/ddd/pdfv/292311-kunnskapsloftet2006_engelsk_ii.pdf

on which the quality of primary and secondary education and training can be further developed and on which the school and apprenticeship-training enterprise can be systematically assessed' (The Quality Framework: 1) More specifically, the Quality Framework helps to clarify the responsibilities of the school owners in providing education according to the legislation and regulations and the principles of human rights.

The Principles of Education are categorised into *social and cultural competence, motivation for learning and learning strategies, pupil participation, adapted education and equal opportunities, the competence and roles of teachers and instructors, cooperation with the home, and cooperation with the local community*. Introducing these seven principles, Udir refers to the Core Curriculum when stating that:

The comprehensive school for all shall be based on and address the diversity of the pupils' backgrounds and aptitudes. [...] The school and apprenticeship-training enterprise must also take the different aptitudes and progression rates of pupils into consideration so each and every pupil can experience the joy of mastering and reaching his or her goals.

(The Quality Framework: 1).

In addition, a Framework for Basic Skills has been developed by the Norwegian Directorate for Education and Training, to be incorporated into each subject curriculum. The Framework consists of five skills fundamental to learning in school, work and social life, namely *oral skills, reading, writing, digital skills and numeracy*. Reading as a basic skill is defined as 'creat[ing] meaning from the text in the widest sense.' It is further explained as 'including illustrations, graphs, symbols, or other modes of expression.' (Framework for Basic Skills: 8)

English is introduced and mandatory for the pupils from the first year of school. There are competence aims which are supposed to be accomplished at the end of each curriculum, with the number of years connected to each curriculum varying. In upper secondary school, the curriculum states that 140 hours of English is compulsory. In addition, some study programmes offer optional English courses.

The curriculum in the compulsory subject of English is divided into four main areas, each with a set of competence aims. The four areas are *language learning, oral communication, written communication, and culture, society and literature*. In upper secondary school, English is a common core subject for all the education programmes and the

subject curriculum emphasises the importance of making learning in this subject as relevant as possible for pupils by adapting the instruction to the different education programmes.

2.1.1 Adapted Education

Adapted education has been a known term in the Norwegian education system since the 1960s when 9-year mandatory education for all children was implemented for the first time. Adapted education can be defined as ‘instruction adapted to each individual pupil’s predispositions and needs’ (Kolbjørnsen 2006: 5). The need to differentiate the instruction was acknowledged when children of all mental and physical abilities were placed together in the same classroom, but it was not until 2008 that the principle of adapted education was given a clause in the Education Act. Ever since, pupils have had a legal right to adapted and differentiated instruction as a means for learning (Education Act: §1-2).

Håstein & Werner (2015) have developed a set of values for the Norwegian Directorate for Education and Training which describe the principle of adapted education. The seven values are as follows: inclusion, variation, experience, relevance, valuation, coherence, and contribution. Collectively, these values address the various aspects of an adapted and differentiated education where instruction is adjusted to suit the individual pupil’s needs.

Adapted education is also included as one of the seven core principles of education in Norway and explained as ‘a basic premise of the comprehensive school for all’ (The Quality Framework: 4). Further on, adapted teaching is characterised as ‘variation in the use of subject materials, ways of working and teaching aids, as well as variation in the structure and intensity of the education.’ (The Quality Framework: 5). The Core Curriculum reminds us repeatedly about the school’s responsibility to have room for everybody, and consequently explains that: ‘The mode of teaching must not only be adapted to subject and content, but also to age and maturity, the individual learner and the mixed abilities of the entire class’ (Core Curriculum: 19). In addition, the Core Curriculum (19) insists on ‘showing particular concern for those who get stuck, struggle stubbornly and can lose courage.’

2.2 The Role of Textbooks in Norway

There is a long-held tradition in Norway to use paper-based teaching resources, in this connection understood as textbooks, in schools. A textbook is defined in Norwegian as:

Trykte læremidler som dekker vesentlige sider av et fags mål, lærestoff og hovedmomenter eller hovedemner etter læreplan for vedkommende klassetrinn og kurs, og som elevene regelmessig skal bruke.

(Johnsen 1999:9)

‘Printed teaching materials which cover essential aspects of a subject’s aims, study material, and main subjects or main topics according to the curriculum for the respective class and programme, and which the students should regularly use’.

The definition can also be used to explain and clarify to what extent textbooks in Norway have significance and power. As textbooks are expected to contain everything a teacher needs when teaching a subject, this may justify why textbooks are reported to be important resources for teachers.

Despite the rise of digital educational resources, studies repeatedly show that teachers rely heavily on the use of textbooks, both during the planning stage and while teaching (Waagene & Gjerustad 2015, Gilje et al. 2016) This tendency, however, is stronger in primary- and lower secondary schools, and teachers of English in upper secondary schools report equal use of paper-based and digital resources (Waagene & Gjerustad 2015:7). Still, the majority of teachers believe in using the textbook when working on interpreting the curriculum and planning lessons. The Education Act used to make sure that all textbooks available to teachers were approved by the Ministry of Education before being published (Education Act §9-4). This approval was seen as an assurance that the textbook contained texts and tasks which together covered the curricular aims. Since the year 2000, there is no longer a governmental approval of textbooks. However, Gilje et al. (2016: xxi) claim that a trust in the publishing companies and their textbooks is still prominent and that teachers make use of a textbooks’ topics and progression plan when interpreting the curriculum. Additional learning resources, on the other hand, are reported as being incorporated into lessons as teachers see fit.

2.3 Study Programmes in Norwegian Upper Secondary School

When pupils reach the age of 16, there is a change from compulsory schooling to an entitlement to attend upper secondary school. In upper secondary school there is a choice between specialising in general studies or vocational studies. According to vilbli.no (the counties' information service for applicants to upper secondary education and training), the three-year specialisation in general studies is recommended to pupils who are interested in working with theoretical subjects and interested in writing or calculations. One is expected to be structured and self-disciplined as these three years prepare pupils for taking higher education when upper secondary school is completed.

The vocational path, on the other hand, consists of two years of school-based instruction, followed by two years of apprenticeship. A trade certificate is obtained after a practical and theoretical exam is passed. Vilbli.no (2019) suggests choosing a vocational study programme if one is practically minded. Depending on the study programme, the personal attributes emphasised include having good communication skills, enjoying physical work, and being service-minded. As this programme leads to a vocational competence, the pupils are being prepared for a vocational career.

English is a core subject for both study programmes in upper secondary school, and the curriculum in English for both vocational and general studies is identical. However, the 140 appointed hours of compulsory English are distributed differently for the two study directions. In general studies, English is taught five hours a week and completed in the first year. Vocational pupils, on the other hand, have three hours of English a week in the first year, and two hours a week in the second year.

Both study programmes have identical competence aims in the English subject. However, the curriculum makes it clear that learning should be adapted to the different education programmes as a way of increasing the relevance for the subject (English subject curriculum: Section 2). One could argue that the pupils have different needs in their respective study programme as the different programmes train different skills. A vocational path includes a strong focus on communication and practical skills, whereas the general study path includes preparing pupils to read and write lengthy, academic texts.

Irrespective of which study path a pupil chooses to attend during upper secondary school, a basic knowledge of the English language is of importance to anyone living in Norway as the language is used in many situations for a variety of reasons.

2.4 The English Language in Norway

The English language has a very strong position in Norway. In 2018, Norway ranked as number four of 88 countries on the English Proficiency Index (EF EPI) and is placed in the category of ‘very high proficiency’. Historically, from the age of the Vikings, the country has had strong connections with England, and today’s involvement with international affairs through organisations such as NATO, the Council of Europe (CoE), and the European Economic Community (EEC) underlines the importance of English as a language of communication for Norwegians.

Several study programmes are taught in English in Norwegian universities. Essentially, this leads to some Norwegians studying in English, but the country also attracts international students and English then becomes the lingua franca among the students. Incentives in form of funding from the Norwegian State Educational Loan Fund has also led to a large proportion of students studying abroad, with 16 000 Norwegian students taking studies abroad in 2016 (Bekkengen et al. 2017).

English is also used extensively at work in Norway. The Language Council of Norway (2015) reports that 80% of the establishments in the Norwegian business sector have several nationalities among their employees. Moreover, 67% of the establishments in the survey make use of English, the larger companies to a larger extent than the smaller ones. The survey also claims that employees on all levels are affected, with the main purpose of using English being to obtain effective external communication. For some companies, English is determined as the working language, resulting in all internal communication being conducted in English and all programs and systems being in English.

In other words, a variety of work-related tasks are performed in English in different companies, from informal small talk to formal written communication. It also means that it is very likely that any potential customer might encounter a non-Norwegian through the purchase of a service, with the expectancy of being able to communicate using English. The extensive use of English is evident in many everyday situations, such as when a taxi driver

wants to know where to drive, a waiter wants to take the order, a carpenter needs a clarification of the work which is to be done, to mention a few examples. Basically, the English language is essential to any citizen in Norway, and it is extremely important to achieve a basic understanding of the language as well as obtain a certain confidence in using it.

Norway has been subject to four large immigration waves over the years (Sandnes 2017: 9). The first wave took place in the 1960s when there was a demand for manpower. As a result, skilled workers from around the world came to Norway. Around ten years later, the second phase occurred. This phase was mainly characterised by reunification of family members of the immigrants from the first wave. The third wave started in the 1980s with a clear increase in asylum seekers as well as a continuation of family reunifications.

Immigration in recent years has been marked by an increase in workers, as well as more family reunifications following earlier immigration. In 2004, there was an expansion of the EU. Eight countries of central and eastern Europe, namely the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia, joined the EU. As part of the internal market where people can circulate freely, members of these countries could immigrate to Norway. According to Sandnes (2017: 40), a large proportion of migrant workers from the EU have since arrived, mainly from Poland and Lithuania. These workers lack Norwegian skills and rely on using English when they live and work in Norway.

Finally, in 2015, over 1 million refugees entered Europe. Most of these refugees came from Syria, Afghanistan and Iran, and some settled in Norway. As pointed out by Sandnes (2017: 10), Norway expects family reunifications from the countries of these immigrants to rise drastically over the next few years, as they often decide to settle down and stay. According to [ssb.no](https://www.ssb.no)⁵, immigrants now make up 17.3% of Norway's population. This group also includes children born in Norway to immigrant parents, and together they have a background from 221 different countries and regions. The upshot of all this is that Norway has become a highly multilingual society at all levels.

⁵ Statistics Norway (2020): <https://www.ssb.no/en/befolkning/artikler-og-publikasjoner/14-per-cent-of-population-are-immigrants>

3 Theoretical Orientation

3.1 Reading

3.1.1 Reading Habits and Ability among Teenagers in Norway

The competence in reading, mathematics and science knowledge is measured every third year by PISA.⁶ PISA is the OECD's Programme for International Student Assessment, and in 2018 there were 79 countries which participated in the assessment of 15 year-olds' ability to use their knowledge and skills to meet real-life situations (Jensen et al. 2019: 2). The test examines several cognitive processes which define a person's reading literacy: the ability to seek and extract information, to understand and use the information, and finally to reflect and assess on it (Jensen et al. 2019: 2).

Since the test was first implemented in 2000, Norwegian PISA results have been relatively stable. Reading literacy levels in 2018 show the same results as in 2009, and they are significantly higher than the OEC- averages (Jensen et al. 2019: 6). Only Finland scores higher among Scandinavian countries. However, the results show that one out of five pupils in Norway is below the critical level of proficiency which pupils are expected to have at this stage. The pupils in the lowest performing group struggle with extracting and understanding the content in unknown texts and they are not considered to have the necessary competence required in order to continue their education or to function at work with their current reading abilities (Jensen et al. 2019: 8). Possible reasons for why some pupils end up on a critical score may be that they read too slowly and lack endurance when reading longer texts, or there may be a general lack of vocabulary and understanding of concepts and terms. According to Jensen et al. (2019: 8), the main issue for the majority of weak readers is that they do not have enough practice or experience in reading longer texts.

In contrast, 10% of the Norwegian participants in the study are considered highly proficient readers (Jensen et al. 2019: 6). The pupils in the highest performing group are able to understand and interpret long and abstract texts containing unfamiliar topics. They are able to compare and contrast, and show an ability to deduce information from conflicting sources (Jensen et al. 2019: 8).

⁶ For more information about PISA (2019): www.oecd.org/pisa/

The PISA report also includes a survey of reading habits among 15-year-olds. In PISA 2018, more pupils than ever – nearly half the responders – claim that they never read in their spare time (Jensen et al. 2019: 17). The results also show that more time is devoted to online activities; however, these activities are not considered reading among the responders. The effect of digitalisation is evident, and very few pupils report to be reading for pleasure, a type of reading often associated with longer texts (Jensen et al. 2019: 17). Reading longer texts allow pupils to focus on a text over a longer period of time, and consequently train their endurance and ability to remain concentrated over time.

The findings in PISA 2018 reflect international tendencies. The easy access to technology has changed reading habits; people tend to read more often, but the texts are generally shorter, and less time is spent on each text (Jensen et al. 2019: 17).

3.1.2 Reading in a Foreign Language

According to Grabe & Stoller (2002: 1), approximately 80 per cent of the world's population is reported to be able to read and the majority of humans are able to read in their first language at some basic level. Literacy is recognised as a way of getting by in the world, and as pointed out by Grabe & Stoller (2002: 1), it is 'seen as necessary for improving earning potential and quality of life'. The importance of being able to read in a second language, particularly in English, continues to increase as the world becomes more and more globalised, with English being the language of science, technology, and advanced research (Grabe & Stoller 2002: 2).

3.1.3 Reading Theories

Reading is often defined as one of the four skills of language which are considered necessary in order to comprehend and produce a language effectively. These skills are reading, writing, speaking and listening (Nunan 1999: 197). In foreign language classrooms, reading is for several reasons a crucial skill to develop. A text can be adapted to each learner's level and interest, and it can be worked on alone in contrast to speaking which requires a partner. This allows for effective instruction in a classroom with mixed-ability pupils, which is the case for many schools. Furthermore, reading is a skill which in itself facilitates further learning. Texts are gateways to essential information for a foreign language learner, as they demonstrate

language in use. In addition, texts may contain content which is new to the learner, such as undiscovered vocabulary and/or unfamiliar topics.

Nunan (1999: 252) explains two main approaches which describe the nature of reading a foreign language: the *bottom-up* and the *top-down* model. The bottom-up approach is the traditional view where second language reading is seen as a passive, linear process in which words are decoded one by one. Ultimately, arriving at an understanding of the text is considered the final step in the reading process. The learner starts at the ‘bottom’ with small units (words) and works his or her way up to the ‘top’, comprehending the full sentence or text (Nunan 1999: 252).

The top-down approach is a cognitive view of reading comprehension which acknowledges the learning process as interactive (Dole et al. 1991: 241). According to this view, reading is an active process where the learners use their pre-existing knowledge in order to process the text and construct meaning. Prior knowledge may include information about the topic in the text or knowledge about the organisation and/or genre of the text. Essentially, the reading is assisted by the existing knowledge which helps the learner in the process of constructing meaning from a text. In contrast to the bottom-up approach where reading is regarded as a process of decoding form, the top-down approach explains reading as a process of reconstructing and readjusting meaning according to predictions set prior to reading (Nunan 1999: 253)

The two models deal with the reading process in very different ways, and Block (1992), among others, has argued that the debate is not whether reading is a top-down or a bottom-up process. Nunan (1999: 254) suggests that readers have the ability to move between the two models and use the strategy and skill needed in order to make sense of a text. It is not always possible to rely on prior knowledge or predictions. After all, some new words are necessary to decode, letter by letter.

The control the learner has over the reading process may be defined as meta-cognition. Metacognition is defined by the *Merriam Webster Dictionary* as ‘awareness or analysis of one's own learning or thinking processes’.⁷ In other words, readers are consciously thinking about the reading process while reading.

⁷ Merriam Webster Dictionary (2020): <https://www.merriam-webster.com/dictionary/metacognition>

Furthermore, Dole et al. (1991:242) suggest that reading strategies are linked to critical thinking abilities and that they are used intentionally by good readers when constructing and reconstructing meaning from texts. Good readers will therefore assess their reading progress and consider which strategy to use, and when to use it. Consequently, effective reading in a foreign language is dependent on learners' strategic use of reading strategies and skills.

3.1.4 Reading Strategies

In the study of reading, an important difference has been made between reading skills and reading strategies. Paris, Wasik & Turner (1991), cited in Grabe (2009: 221) explain skills as 'informational processing techniques that are automatic'. It is also pointed out that skills are applied unconsciously when reading a text, which agrees with the *Merriam Webster Dictionary*'s definition of a skill as a 'learned power of doing something competently: a developed aptitude or ability'.⁸ In short then, a skill can be defined as being acquired by practice and later on applied automatically and unconsciously when reading.

Strategies, on the other hand, are applied consciously when reading. According to *Oxford Learner's Dictionary*, they are part of a 'plan that is intended to achieve a particular purpose'.⁹ Because strategies are part of the conscious reading act, they can be taught to pupils. With the repetition of the use of a strategy over time, it may eventually end up as a reading skill, a 'learned power'.

The reading process can be split into three stages: *pre-reading*, *during reading* and *post-reading*. The stages are connected, and together they can influence to what degree a text's content is understood and retained. In order to maximise the learning outcome from a text, there are comprehension strategies which may be applied for each reading stage (Grabe 2009: 229).

The stage of *pre-reading* involves preparing the reader for what is to come. It is at this point that background knowledge is activated and the reader starts predicting what the text might be about. According to Carr & Thompson (1996), putting in effort at this stage is

⁸ Merriam Webster Dictionary (2020): <https://www.merriam-webster.com/dictionary/skill>

⁹ Oxford Learner's Dictionary (2020): https://www.oxfordlearnersdictionaries.com/definition/american_english/strategy

beneficial for understanding the text, especially for those with learning disabilities, but also when passage topics are unfamiliar. Being better prepared for the text can result in the learner being encouraged to want to read. In addition, this stage helps the reader with connecting the new information to what they already know, a process that may be described as schema activation.¹⁰ Pre-reading activities may be carried out alone or in cooperation with a teacher or peer. Examples of possible pre-reading strategies include the following:¹¹

- **Making predictions** about the text. What topics and ideas may be covered in the text and how may these be communicated? The predictions can be based on questions, images, keywords, or even the title of the text.
- **Asking questions** which are likely to be answered in the text.
- **Building knowledge** around the topic. Get familiar with the content, language and format of the text.

During reading is the stage when the main text is read and understood. The predictions obtained in the pre-reading stage will be adjusted or confirmed and meaning restructured as the reader continues to make use of the different strategies which are available. The text is not necessarily read in a linear order and a mix of the following strategies may be used:

- **Skimming** a text: locating general information or main ideas by surface-level reading a text. Elements of interest may be sub-headings, visuals, or highlighted words.
- **Scanning** a text: carrying out a quick search for specific elements like visuals, words, or phrases.
- **Attending to the different elements in the text** and paying attention to what the text is trying to convey.
- **Guessing**: using clues in the text to guess the meaning and try and avoid stopping reading.
- **Visualising** what is being read enables reading comprehension.

¹⁰ 'Schema Theory is based on the notion that past experiences lead to the creation of mental frameworks that help us make sense of new experiences.' (Nunan 1999: 201)

¹¹ The examples of typical activities in the different reading stages are adapted from Grabe (2009: 228) and from the University of Westminster's presentation of 'Reading Strategies' (2019): https://www2.wmin.ac.uk/eic/learning-skills/literacy/strat_read.html

- **Close reading:** reading a text carefully and attentively in order to gain a deep, precise understanding of the text.

The reading process is not fully complete once the text has been read. The *post-reading* stage provides readers with activities which allow for an improvement of the understanding of the text. These activities may also encourage readers to reflect and question what has just been read (Grabe & Stoller 2002: 233). In addition, this stage is considered necessary to support the learners in better retaining the content from the text. Following are some of the possible post-reading strategies:

- **Answering comprehension questions** as a way of checking comprehension.
- **Discussing** some of the ideas which can be found in the text. The prompt here may be an image or a phrase.
- **Evaluating** the text by giving an opinion on the content.
- **Finding related information** by searching the internet or studying a diagram.
- **Responding** to the topic in the text by generating a written or oral text.

Although reading strategies are agreed upon as helping the learner in the process of comprehending a text, they are not the only aspect which affects reading comprehension. As learners learn in different ways, a discussion of reading needs to take into account the more general field of learning theories.

3.2 Learning Theories

3.2.1 Multiple Intelligences and Different Learning Styles

The Norwegian classrooms today are filled with a diverse group of pupils. These differences include cultural background, language ability, interests and motivation level. In addition, it has become apparent that pupils learn in different ways, which may also be referred to as learning styles. Gardner (1983) proposes a theory which gives each pupil a unique learning profile based on their way of interacting with the world. The learning profile consists of a configuration of seven intelligences, namely logical-mathematical, linguistic, musical, visual-spatial, bodily-kinesthetic, interpersonal, and intra-personal intelligence. The core components of each of the seven intelligences may be defined as follows (Gardner 1983; 1989: 6, Brualdi 1996: 1):

- **Logical-mathematical Intelligence** consists of the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking.
- **Linguistic Intelligence** involves having a mastery of language. This intelligence includes the ability to effectively manipulate language to express oneself rhetorically or poetically. It also allows one to use language as a means to remember information.
- **Musical Intelligence** encompasses the capability to recognize and compose musical pitches, tones, and rhythms.
- **Visual – spatial Intelligence** gives one the ability to manipulate and create mental images in order to solve problems.
- **Bodily-Kinesthetic Intelligence** is the ability to use one's mental abilities to coordinate one's own bodily movements.
- **Interpersonal Intelligence** is the ability to understand and discern the feelings and intentions of others.
- **Intrapersonal Intelligence** is the ability to understand one's own feelings and motivations.

In foreign language learning, it is the linguistic intelligence which has traditionally been focused on in the classrooms. However, by including different visual representations in textbooks in addition to the written word, a wider range of learner profiles may be addressed. Although it may seem impossible to give each pupil a task adapted to their specific learning profile every time, relying on more than one intelligence could be the solution in order to engage the multiplicity of pupils.

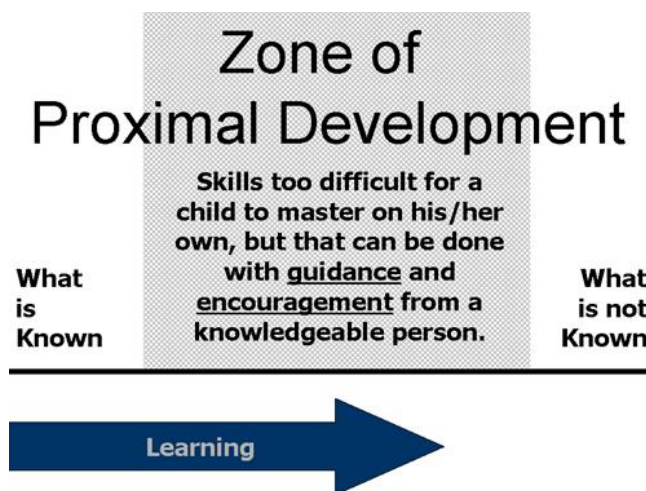
Adapting the instruction to different learning styles is a way of providing each pupil with a chance to increase their learning potential and maximise learning outcome. This relates to Vygotsky's (1978) Sociocultural Theory of Learning and his notion of the Zone of Proximal Development as an explanation of when learners learn the most.

3.2.2 Vygotsky's Sociocultural Theory of Learning

The sociocultural theory is an educational theory proposed by Vygotsky (1978) which suggests that learning takes place through social and cultural interaction. By contrast, the earlier work of Piaget (1936) represents the cognitive-constructivist theory which sees learning as the construction of an understanding of the world through experiences absorbed by the environment, without the need for social interaction.

One of the central concepts developed by Vygotsky is the Zone of Proximal Development (ZPD), which refers to the ideal zone in which a learner must be situated for learning to occur. The Zone of Proximal Development has been defined by Vygotsky as 'the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers' (Vygotsky 1978: 86). As illustrated in Figure 1, Vygotsky's three 'zones' refer to 1) what a learner can do without help, 2) what a learner can do with guidance and encouragement from a knowledgeable person, and 3) what a learner cannot do, even with help. According to Vygotsky, it is in the middle zone (2) where the best cognitive development happens.

Figure 1: Vygotsky's Zone of Proximal Development.¹²



¹² Source: <https://www.simplypsychology.org/Zone-of-Proximal-Development.html>

In order to assist the learner in the learning process, social interaction with a skilful tutor is essential (Vygotsky: 1978). By getting to know the learner and their prior knowledge, such a tutor may provide tasks and texts which fit inside the learner's ZPD. This person is referred to as a 'More Knowledgeable Other' and may be a teacher, parent or any other person with a higher ability level or experience than the learner.

Another term often mentioned in connection with the Zone of Proximal Development is 'scaffolding'. This term was introduced by Wood, Bruner & Ross (1976) and explains some of the processes conducted by the 'More Knowledgeable Other'. According to Wood, scaffolding is defined as that which 'enables a child or novice to solve a task or achieve a goal that would be beyond his unassisted efforts' (Wood et al. 1976: 90) In other words, scaffolding consists of different ways of supporting the learner with the necessary help in order to be led through the ZPD. As the learner becomes more and more competent, the scaffolding gets reduced and finally removed completely. The task may now be completed without help and is from this moment on placed in the 'what is known' zone.

3.3 Multimodality

3.3.1 A Brief History of the Text-Image Relationship

Text and images are often referred to as two different modes of communication. Image-based communication can be traced back to the early cave paintings by primitive settlements, whereas the written word has traditionally been associated with a more advanced and developed system of communication which in many historical periods has mainly been accessible for the privileged. The introduction of the printing press in the fifteenth century gradually made books available to everyone, even though the literacy levels as we know them today were not reached until centuries later. The start of mass-production of the written word was not the end of communication using images. Although it was easier and cheaper to print letters rather than images, low literacy levels saw the need for images to explain the written words.

Images and text have complemented each other for a long time and there are traces of images combined with text since the origins of writing. However, the status of images has varied from time to time. Illuminated manuscripts were particularly popular during the Middle Ages and could contain lavishly decorated pages, the most popular type of illuminated

manuscript being the Book of Hours, a prayer book made for family and individual use.¹³ The decorations found in medieval manuscripts include initials, borders, and miniature illustrations, with a varying degree of relative size and importance of the illustrations in relation to text. In contrast, the Reformation during the sixteenth century in Europe was a period when images and image-worshipping were largely rejected, and religious art in particular was generally restricted.

An early example of a book where images complement text in education is the *Orbis Pictus*, printed by Comenius in 1658. This book is the earliest known educational textbook for children containing images, and it is claimed to have been the defining children's textbook with a strong influence on children's education and layout of textbooks for centuries after (Mayer 2011: 428).

The comic book is an important example of a format where the visual and verbal work together in order to convey meaning.¹⁴ They have been, and still are, enormously popular in many cultures, with the *manga* production in Japan being the largest comics industry in the world.¹⁵ However, as with religious art, the value given to comics has varied over the years. A hostile attitude towards pictorial information as a narrative resource has often been grounded in a concern for lack of intellectual activity when reading images (Bateman 2014:91). According to this view, comics are considered unsuitable as reading material and claimed to deteriorate a readers' imagination.

The decrease in cost of manufacturing colour images, together with an improvement in quality which has occurred over the last decades, makes it possible for more people to make use of images more often. Today, the significance of using images as an important mode of communication is demonstrated by the increased popularity of media which use mainly images to convey messages, such as Snapchat, Instagram, and, to some extent, Messenger. The current technology has also had a significant impact on the increased occurrence of multimodal texts. As a consequence, special attention has been directed towards the meaning of the visual (Kress & Van Leeuwen: 2006, Sturken & Cartwright: 2017), as well as the

¹³ Encyclopedia Britannica (2020): <https://www.britannica.com/topic/book-of-hours-prayer-book>

¹⁴ According to McCloud (1994: 9), comics can be defined as: 'juxtaposed pictorial and other images in deliberate sequence, intended to convey information and/or to produce an aesthetic response to the viewer.'

¹⁵ Encyclopedia Britannica (2020): <https://www.britannica.com/art/comic-strip/Asia-and-the-manga#ref1005726>

relationship between images and text and what happens when they occur together (Bateman: 2014, Mayer: 2001; 2011, Unsworth: 2006).

3.3.2 Mayer's 'Promise of Multimedia Learning'

Mayer (2011) claims that people learn better from words and pictures than words alone. He calls this proposal the 'multimedia instruction hypothesis' (Mayer 2011: 247) with multimedia being defined as material presented in both a verbal and a pictorial form (Mayer 2001: 2).¹⁶ His views are based on the idea that humans have two processing channels, one for verbal material and one for visual material, and that presenting material in words and pictures takes advantage of the full capacity of our brain's processing capabilities (Mayer 2001: 4). His work on dual-channel processing is most closely linked to Paivio's Dual-Coding Theory which claims that if material is presented in two codes, verbal and non-verbal, learners are able to build bridges between the two with the double stimuli resulting in an increase of the chance of remembering the content (Paivio: 1989).

Mayer refers to two common assumptions for why it is better to use two channels instead of one. The first one is that by presenting the same material twice, the learner will get double the exposure to the material. Although this idea is rejected by Mayer, he admits it makes sense. The more valid explanation, according to Mayer, lies in the assumption that the two channels are not equivalent and that they complement each other (Mayer 2001: 5). In other words, some material works better explained with words whereas other material is best explained with an illustration. Ultimately, understanding occurs as the learner realises the connection between the written word and the image and the result is a better and deeper understanding of the material than with words alone.

Mayer's research on possible learning effects from a multimedia text shows a greater benefit for low-knowledge learners. The results indicate that high-knowledge learners are able to compensate for badly designed texts and still retain the information, whereas low-level learners struggle with the processing (Mayer 2001: 167). Another test on the effect of material presented as text and illustrations or as text only, shows a strong effect of multimedia texts for low-knowledge learners. High-knowledge learners, however, do not seem to benefit strongly

¹⁶ 'Verbal' includes printed or spoken text. 'Pictorial' includes all illustrations: graphs, photos, maps and paintings (Mayer 2001: 2).

from illustrations. Therefore, presenting material both verbally and visually appear to be most helpful and meaningful for learners who lack prior knowledge about a topic, as long as the multimedia presentation contains corresponding, well-integrated images (Mayer 2001: 189).

3.4 Kress & van Leeuwen's Visual Analysis

The rapid growth of visual communication in modern society has led to the demand of an understanding of the effects of this mode of communicating. Accordingly, Kress & van Leeuwen (2006 [1996]) propose a theoretical framework within the field of visual representation.¹⁷ Their critical theory of 'visual grammar' provides a system of 'major compositional structures which have become established as conventions in the course of the history of Western visual semiotics' (Kress & van Leeuwen 2006: 1).

Inspired by the preceding work of Barthes, Halliday & Arnheim within social semiotics, Kress & van Leeuwen have developed a theory which functions as a practical tool for visual analysis, useful for both analytical and critical purposes. As a result, their framework is regularly used within several fields of visual communication, in teaching as well as research. On the one hand, it provides a system of principles of the effects of visual communication, especially beneficial within the field of media and advertisement. On the other hand, there are educationalists who see the need for a tool when speaking about the forms and meanings of learning materials. Researchers in the field of textbook research in particular find the comprehensive theory useful (Kress & van Leeuwen 2006: x, 14) and for that reason, Kress & van Leeuwen's theoretical framework has been chosen for this study.

The 'grammar of visual design', according to Kress & van Leeuwen (2006:1), describes how depicted elements in images are combined into meaningful wholes in visual statements. Such descriptions further allow for an analysis of the meaning in the compositions and will therefore prove a useful tool in the present study where the aim is to reveal and explore the meaning of patterns and regularities in the use of images in an educational setting. Although Kress and van Leeuwen have developed many potentially useful structural concepts

¹⁷ Kress & van Leeuwen's theoretical framework was introduced in the first edition of *Reading Images* (1996). The second edition was published in 2006.

for conducting an image analysis, only the ones considered important to the present study are presented and explained in what follows.

Kress & van Leeuwen make use of Halliday's (1978) terms when they claim that visual design fulfils three functions, namely the *ideational*, the *interpersonal*, and the *textual* function (Kress & van Leeuwen 2006: 42-43). The *ideational* function relates to the representational mode; the visual structures which represent the world and the different aspects of it. This function defines the ability to represent humans and objects, and the circumstances. However, the same aspect of reality can be reproduced using different visual representations, and there is never a one-to-one correspondence between the real world and the representation (Kress & van Leeuwen 2006: 47). Kress & van Leeuwen (2006: 47) further claim that 'images are bound up with the interests of the social institutions within which the images are reproduced, circulated and read'; in other words, they are ideological.

In addition, images are charged with cultural-dependent meaning (Kress & van Leeuwen 2006: 54). Regardless of the reproduction being a realistic photograph or a diagram using geometrical shapes, it will never be able to convey the same meaning to all viewers because the elements in the image carry and represent different values to different viewers. Diagrams can be especially demanding as they are abstract and have the potential to carry a large amount of meaning with very few elements (Kress & van Leeuwen 2006: 61). However, although image captions provide limited information, a short, accompanying text can be helpful in order to explain what is represented. In short, the more realistic the image, the easier the decoding process, and for abstract images like diagrams, the decoding becomes more demanding. Additionally, the surrounding context of an image usually aids the understanding of it (Kress & van Leeuwen 2006: 60).

The *interpersonal* function refers to the interactive mode and communicative function of an image; the relationship between the participant(s) in the image and viewer(s) of that image. The interaction and relationship between the viewer and the viewed may be measured by investigating to what extent images connect, communicate with, and address the viewer (Kress & van Leeuwen 2006: 114). According to Kress & van Leeuwen (2006: 117), contact between the represented participant and the viewer can be established if the depicted person (or animal) is looking directly at the viewer. Even if the contact is imaginary, the gaze creates 'a visual form of direct address' (Kress & van Leeuwen 2006: 117) and it 'demands the viewer to enter into some kind of imaginary relation with him or her' (Kress & van Leeuwen 2006: 118). These images are classified as 'demand' ones by Kress & van Leeuwen. By

contrast, images which address the viewer indirectly are classified as ‘offer’ ones. These are explained as offering information in an impersonal way, and the viewer may experience a sense of disengagement from the represented participant (Kress & van Leeuwen 2006: 120).

Interestingly, Kress & van Leeuwen (2006: 121) point out that school textbooks have had a tendency to move from ‘demand’ images to ‘offer’ images. Objective and impersonal knowledge has traditionally been valued higher than knowledge where emotion is involved, and this is reflected in the context of education. ‘Demand’ images are associated with beginners and lower level pupils, whereas ‘offer’ images, diagrams and maps are more often found in highly valued contexts. Accordingly, there is a tendency to include fewer ‘demand’ images as the pupils move higher up the educational system. However, the emotive appeal of these images is also sometimes found to be used strategically as a way of attaching pupils emotionally to the knowledge they are being presented with.

Another feature of the interactive meaning of an image is related to the size of the human participants exposed in the frame. The social distance between the represented participant(s) and the viewer may be determined by looking at how close or far away the participant is depicted. Three main distinctions are suggested; close shot, medium shot, and long shot. Firstly, a close shot, which includes only the head and shoulders, indicates an intimate or personal involvement. Secondly, a medium shot at about waist level addresses the viewer on a social level. Lastly, a long shot expresses an impersonal connection (Kress & van Leeuwen 2006: 124-125).

The *textual* function depicts the compositional mode of images. It is concerned with the arrangement of elements and how they work together; the textual meaning of the different compositions within single images, but also in composite visuals like a textbook page containing text and images. For this study, the elements considered will be the images and their placement in relation to text. The composition value of the elements found within single images will not be explored. The meaning of the composition may be analysed using three interrelated systems: information value, salience and framing.

Information value has to do with position within an image or page. As Kress & van Leeuwen (2006: 177) formulate it, ‘the placement of elements endows them with the specific informational values attached to the various “zones” of the image: left and right, top and bottom, centre and margin’. It is suggested that the ‘top’ of a page usually has an emotive appeal and that it carries a promise to the reader of what is to come, often it may be a

presentation of the generalised essence of the information. The ‘bottom’, by contrast, contains the informative and practical element of the page (2006: 186-187). The centre-margin composition is relatively uncommon but can be found in textbooks with the use of images in the left or right margin of the page, often with the use of frames to emphasise the disconnection between the two elements. Elements in the ‘margin’ are generally subservient and dependent on the other element(s), which could indicate a lack of significance (Kress & van Leeuwen 2006: 196).

Saliency is, according to Kress & van Leeuwen (2006: 177), ‘[how] the elements are made to attract the viewer’s attention to different degrees, as realized by such factors as placement in the foreground or background, relative size, contrasts in tonal value, difference in sharpness, etc’. Many factors are at play when a viewer intuitively judges the level of saliency of an element and saliency is arguably not objectively measurable (Kress & van Leeuwen 2006: 202). Despite there being many factors affecting to what degree an image in a textbook attracts the reader’s attention, the size of the image is a factor which can be measured to some extent.

Finally, Kress & van Leeuwen (2006: 177) explain framing as ‘the presence or absence of framing devices (realized by elements which create dividing lines, or by actual frame lines) disconnects or connects elements of the image, signifying that they belong or do not belong together in some sense’. Elements may be presented as separate from the rest of the page with the use of dividing lines, or they may be presented as joined and connected with a sense of belonging together if there are no framing devices. The margin in textbooks, sometimes indicated with a dividing line or marked off with a white, empty area, is an example of how an element can be presented as a separate unit of information.

4 Related Studies

Previous studies of visual elements in EFL textbooks in Norway include two Stavanger MA theses dealing with lower secondary school. Brown (2016; see also Brown & Habegger-Conti 2017) analysed the representation of indigenous cultures in images with the premise that images are carriers of ideologies. Her findings include a strong emphasis on the traditional settings and costumes in the illustrations of indigenous cultures. In addition, the indigenous people are often depicted from a high angle, indicating that the viewer is in a higher position of power than the participants in the image.

Dyrskog (2017) conducted a quantitative analysis of gender representation in illustrations, as well as a qualitative analysis of pupils' ability to decode and reveal hidden meanings in illustrations. Dyrskog also questions pupils on their thoughts and beliefs regarding gender equality. Her findings reveal that more men than women are used in illustrations and that women are more frequently depicted in stereotypical roles. The students were positive to gender equality but failed to draw connections to gender inequality being communicated through visual representations.

Among international studies, Jalilehvand's study from 2012 is highly relevant to this thesis. Jalilehvand examined the effects of text length and picture on reading comprehension among Iranian EFL high school students. Her study is based on Paivio's 'Dual Coding Theory' (1986) which claims that information is easier to retain when it is represented with two different knowledge systems, namely visual and verbal. Jalilehvand's results support the claim that pictures have a positive effect on reading comprehension as the students performed better on texts with pictures. Moreover, her findings suggest that text length has no significant influence on learners' comprehension.

Elmiana (2019), finally, analysed the use of visual images in Indonesian senior high school EFL textbooks. She explores their functions as well as their appropriateness and suitability for pedagogical purposes. Her findings suggest an impersonal connection between images and viewers, and the text-image analysis indicates that the images carry meaning and are being helpful for the students in order to engage with the exercises and reinforce what is stated in the text.

The two Norwegian studies were content analyses of particular elements found in the images, Brown (2016) focussing on the representation of indigenous cultures and Dyrskog

(2017) analysing gender representation. The present study differs from these in that it explores the use of images in different parts of the textbooks and how they may be used in the reading process. The international studies had a strong focus on the pedagogical functions of the images during the reading process, and Elmiana's (2019) analysis of whether or not the images connect with the viewer is one aspect also included in the present study. In addition, because this study deals with textbooks used in upper secondary schools, a comparison between image use in vocational and general studies textbooks will be conducted.

5 Material and Methodology

5.1 The Choice of Material

The material for this study consists of images found in seven EFL textbooks used in upper secondary school in Norway. A study conducted by Waagene & Gjerustad (2015) indicates that teachers have a free choice of textbooks in upper secondary school. The same study reports that teachers of English in upper secondary school base their instruction equally much on textbook use and on digital media use (Waagene & Gjerustad 2015). The scope of this study would make it difficult to include images from the digital media as well as images in textbooks. Thus, a selection of available textbooks produced for the current National Curriculum was chosen as the basis for the study. Including several books in the study, rather than focussing on one or two in detail, was preferred for two reasons. First, it would allow for the collection of a large amount of data, representative of the range of materials used in Norwegian schools. Secondly, it would make possible a comparison both between the individual books and, more generally, between books aimed at vocational and general study programmes.

The three main publishers of textbooks for upper secondary, *Aschehoug*, *Gyldendal*, and *Cappelen Damm*, are represented with two books each, one aimed at vocational studies and one aimed at general studies. The choice of study direction for the individual vocational textbooks ('service & transport' and 'health') was simply based on the material which was available. However, both 'service and transport' and 'health' studies lead to professions which have a great deal of situations with people involved, and it was therefore assumed that the choice of images in the vocational parts of the textbooks would not differ significantly, for the purpose of the present study, between these two study directions. The following six textbooks are included in the study: *Access to English*, *New Experience*, and *Targets* (general studies), and *Workshop VG1*, *Skills*, and *Tracks 1* (vocational studies). In addition, there is one more textbook from Gyldendal, *Gateways*, which is identical for both study directions and is included as the seventh book.

The textbooks are all-in-one books, meaning that texts and activities are included in the same book with no need for external resources. Six of these textbooks were chosen because they are represented in the list over the most frequently used textbooks in upper secondary school given by Waagene and Gjerustad (2015). *Gateways* was not included in their overview

but was included in the present study because it is the only textbook available on the market which is produced for both vocational and general study programmes. It is published with two different front covers, one for each of the study programmes, but the content in both textbooks is identical. If the analysis reveals differences between the role and use of images in textbooks aimed at a specific study programme, it is of interest to investigate any possible similarities in the use of images in this book in comparison to the rest of the corpora.

Pupils who attend a general studies programme have English as a compulsory five-hour subject in the first year. Consequently, any single textbook produced for the English subject for general studies should contain topics in response to all the competence aims in the curriculum. By contrast, pupils who attend a vocational studies programme have the compulsory five hours a week over two years: three hours a week in the first year, and two hours a week in the second year. Thus, the vocational textbooks could be produced as a single resource or as separate books for the first and second years. Of the vocational textbooks included in this study, *Gateways* and *Skills* are resources aimed at being used both years, whereas *Tracks 1* and *Workshop VG1* are produced for the first year only and is expected to be followed by *Tracks 2* and *Workshop VG2* the following year. These textbooks may therefore lack the variety of topics the other textbooks promise they have. This could affect the type of images included but has not been taken into consideration.

5.2 The Textbooks

Tracks 1 (Anvik et al. 2006) is a first edition textbook from Cappelen Damm. It is aimed at the first year of English in vocational study programmes.¹⁸ Rather than alternating chapters, the textbook has two parts: a general part, identical in all first-year textbooks, and a vocational part. The version produced for the study programme ‘Service and Transport’ was chosen for this study.

Skills (Lokøy et al. 2014) is a first edition textbook series for vocational studies published by Gyldendal. The version chosen for the present study is *Skills* ‘Service and Transport’, one of the possible vocational study programmes available for upper secondary pupils. The publisher claims that the resource focuses especially on instruction of the basic

¹⁸ Cappelen Damm (2020): <https://www.cappelendammundervisning.no/verk/Tracks%20YF-107921>

skills.¹⁹ It also states that every second chapter is allocated the specific vocational programme, with texts and topics especially chosen for their relevance. Furthermore, Gyldendal highlights *Skills'* focus on adapted learning, with a good variation of texts and methods as well as the use of differentiated tasks in order to obtain an increase in motivation and a positive learning environment. Finally, it is pointed out that *Skills'* ambition is to contribute to the pleasure of reading. The use of images is not mentioned in the presentation of the textbook series.

Workshop VGI (Langseth, Lundgren, & Skanke 2006) is the oldest textbook in the study. With only a 4% market share according to the report from Waagene & Gjerustad (2015), it comes in as the least popular of the six textbooks with available statistics. This textbook is also aimed at being used during the first year of English in vocational study programmes, and the version produced for the study programme 'Health and Social Care' was chosen for this study. Gyldendal claims that 'the textbook contributes to an adapted and differentiated instruction; texts and tasks are varied and with different degrees of difficulty, the included topics are engaging and authentic, and there is a general focus on raising awareness around the different learning strategies'.²⁰

Access to English (Burgess & Sørhus 2013) is a first edition textbook produced for general studies and published by Cappelen Damm. The publisher describes the book as having a particular focus on well-written, engaging texts and includes *variation* as important for both texts and activities.²¹ In addition, the textbook contains several sections of mini-courses on improving the different skills. Since these appear as completely separate parts from the rest of the book, functioning more as a reference section and not easily comparable to the other textbooks, images on these pages have not been included in the data collection (see p. 34).

Targets (Balsvik et al. 2015) is published by Aschehoug and produced for general studies. According to Waagene and Gjerustad (2015: 34), this is the most frequently used textbook among general study pupils. The fifth edition was published in 2015 and is described as having an increased attention on skills and strategies in language learning and oral and written communication.²²

¹⁹ Gyldendal (2019): <https://www.gyldendal.no/vgs/SKILLS>

²⁰ Gyldendal (2020): <https://www.gyldendal.no/vgs/Workshop>

²¹ Cappelen Damm (2020): <https://www.cappelendammundervisning.no/verk/Access%20to%20English-144212>

²² Aschehoug (2019): <https://www.aschehoug.no/Undervisning/Verk/Targets>

New Experience (Heian et al. 2009) is a second edition from 2009, the latest available version and an update from the 2006 textbook called *Experience*. It is aimed at general studies and Gyldendal, the publishing company, describes the book as working systematically with the training of basic skills.²³ In addition, adapted learning through differentiated texts and activities is emphasised.

Finally, *Gateways* (Rugset & Ulven 2011) consists of two identical textbooks with different front pages, one aimed at vocational studies and one aimed at general studies. Aschehoug, the publishing company, claims that this is an advantage for the teachers as the curriculum is the same for both study programmes.²⁴ At the same time, the need for adaptations is acknowledged and teachers are referred to websites with study programme-specific content. For this study, the textbook will not be classified as belonging to either study programme.

5.3 Data Collection and Analysis

The images in the seven textbooks were analysed using a combination of quantitative and qualitative methods. All the images from seven textbooks were categorised and counted, making it possible to see patterns of how images are used and make generalisations and comparisons based on these findings. However, numbers do not mean much without context and numerical data alone do not offer much detail or insight into the varied uses of images. Thus, it was deemed essential to follow up some of the findings with a qualitative approach, looking more closely at the pedagogical functions of specific images in the different textbooks. A detailed description of the procedure is given in what follows.

For the quantitative analysis, all the images found in the seven textbooks were recorded and categorised. Images, for this purpose, include all types of visual representations, such as photos, paintings, drawings, symbols, and diagrams. However, repeated symbols which function as pointers to tasks or listening exercises were excluded from the count as they were not regarded relevant for this study.

²³ Gyldendal (2020): http://mml.gyldendal.no/flytweb/default.ashx?folder=10755&redirect_from_tibet=true

²⁴ Aschehoug (2019): <https://www.aschehoug.no/Undervisning/Verk/Gateways-SF-YF>

Recurring images were counted separately for each occurrence, as they may function differently depending on their placement in the book. In the case of symbols being grouped together to form one image, whether or not clearly framed, the image has been counted as one. For example, if several individual snowflakes are grouped together to form one illustration they are deemed to function as one image and are thus counted as one. Similarly, if one clearly framed image contains several overlapping illustrations it is still counted as one image but may then be categorised as consisting of a mixed image type or motif. Comic strips with a continuous storyline were counted as one image even if they consisted of more than one frame, as they are mostly read and understood collectively.

In order to facilitate comparison between different textbooks, certain sections were excluded from the study. These were sections typically used for reference and marked off as separate from the main build-up of chapters with texts and corresponding tasks; such sections vary greatly from book to book, making comparison difficult. The following sections in the seven textbooks were excluded: Improve your skills and Language lab (*Skills*), How to.. (*Workshop*), Improve your writing/oral skills (*Access to English*), Target your skills and Language work (*Targets*), Toolbox (*New Experience*), Look it up! (*Gateways*). Apart from the preface and these reference sections, data were retrieved from the inside of the cover through to the end of the book.

The data were collected and processed in Excel. Each image was classified into several categories which allowed for further analysis. In the following, all the categories are defined and discussed.

Size is perhaps the most obvious measurable factor that may be used to determine to what degree an image attracts attention. In short, the larger the image, the more salient it may be considered (see p. 27). Each image was therefore classified according to size into one of the following categories:

- 1) smaller than 20% of the full page
- 2) between 20% and 49%
- 3) between 50% and 99%
- 4) one page or more
- 5) two full pages or more

In cases where it was difficult to decide the actual size, the size in relation to text was the determining factor. For instance, if the image takes up significantly more space than the corresponding text on a page, the image has been classified as being between 50% and 99% and not between 20% and 49%, even though it might not in fact cover half the page area. On the other hand, 'one page or more' is only used when the image fully covers the page, with no frame or margin in white. Yet, if an image extends over to the next page and covers nearly the full page on both pages, it is classified as 'one page or more'.

The images were then organised depending on their placement in the book and/or on the page. According to Kress & van Leeuwen, the context gives an image information value (see p. 26), and an image placed at 'the top' (above the text) is suggested to have an emotive appeal. It may also carry a promise of what is to come (see p. 26). Images that are clearly framed are presented as disconnected from the other elements, sometimes containing a separate unit of information. By contrast, an absence of frames connects the elements on a page, and the text and the image are presented as belonging together (see p. 27). Finally, images in the margin tend to be subservient, indicating a lack of significance (see p. 27).

The placement of an image is also relevant when discussing the potential use of reading strategies (see p. 16). Images placed before or above a text may be used in the *pre-reading* stage of the reading process. This stage is beneficial in order to prepare the learner for the following text, or chapter, and any usual background knowledge may be activated (see p. 16-17). Images which belong together with a longer text may be useful *during reading* in order to confirm or restructure meaning (see p. 17), and finally, images in the activity section may be used in the *post-reading* stage. This stage allows for reflection and discussion of the text and is considered important in order for learners to better retain the content from the text (see p. 18). The images have, accordingly, been classified as follows with regard to placement:

- 1) in the pre-read section
- 2) as part of a longer written or oral text
- 3) in the activity section
- 4) in the margin
- 5) boxed in

Images in the pre-read section include all images placed on pages which function as an introduction to the book or to the chapters in the book. Images placed above or next to the title of a longer text were also considered to belong in this category as they may function as an introduction to the text in question. For a margin to be present, it had to be clearly framed, either by the use of a line or by a straight white area separating the margin from the rest of the page, on either the left-hand side or the right-hand side of the page.

Textbooks regularly include content that is boxed in using frame lines. The boxed-in content is always clearly separated from the longer factual or fictional texts typically found in textbooks, and consists of either text on its own, or text and image together. Because these images have a function which is different from the others, it was of interest to classify them in a separate category.

The presence of captions was also recorded. Kress & van Leeuwen note that an accompanying text can be helpful in order to understand what is represented in the image (see p. 25). A caption is in this study defined as any text which explains what is depicted in the image, and may be placed under, over, next to or, directly on top of the image. A highlighted name in the corresponding text may also function as a caption, as well as titles of what is depicted on a map or in a diagram. However, titles of movies or books written on the covers are not considered captions.

Every image was classified as a certain type of image. The interest lies in the level of difficulty in the decoding process, with realistic drawings and photos being easier to decode and understand than abstract art, symbols, and diagrams (see p. 25). Adding any visual content in addition to text is supported by Gardner (see p. 18-19), who claims that a learner with a strong visual-spatial intelligence will get a high learning outcome from the use of images. However, some abstract representations, such as diagrams and some maps, may come across as challenging for some learners. It was therefore of interest to explore whether textbooks include a range of different types of visual representations, a way of possibly addressing and engaging different learner profiles (see p. 18-19). Another aspect to explore was whether particular types of images were used more commonly by some textbooks rather than others. The images were sorted into the following categories:

- 1) photos and movie stills
- 2) drawings, including comic strips
- 3) film/book covers, adverts and other posters
- 4) art, including reproductions of paintings, as well as digital visual art
- 5) diagrams, including tables which can be read and interpreted
- 6) symbols, including (road) signs, flags and decorative letters
- 7) maps
- 8) mixed

The most notable difficulty connected to the classification of the different types of images was when to classify an image as a photo and not as a different category. A reproduction of a painting for example, is often a photo of a painting. Posters, too, are often photographs of posters. The solution was to only classify images as photos or movie stills when they were realistic and clear representations of elements in their natural surroundings. A painting was classified as a painting, even if the image is based on a photograph of it. In the case of, for instance, a photo of a road sign, the relative size of the road sign decided the category. If the sign is only one of several elements in a larger image, it was classified as a photo. On the other hand, if the road sign takes up the whole image with no visible surroundings, it was classified as a symbol. Similarly, digital visual art also includes photographic art if the image is no longer a natural, realistic representation of the world, but rather abstract and/or heavily edited.

The *mixed* category is comprised of images which combine several categories, such as reproductions of a newspaper page, or a website. An example of a *mixed* image is an image of a website that contains both a photograph and a diagram, together with some text.

Next, the main element depicted in the image was classified. This category is one of several which are used to investigate to what extent images connect, communicate with, and address the viewer (see p. 25). There may be an imaginary interaction and relationship between the viewer and the viewed, if the image contains a person or an animal. Subjective, personal images have the potential to create an emotive appeal, a strategy often used to attach pupils emotionally to specific content (see p. 25-26). On the contrary, objective, impersonal images with no distinct element or motif, such as abstract paintings and diagrams, tend to be

especially demanding to decode and are considered less accessible to lower level pupils (see p. 26). Thus, the possible motifs were decided as:

- 1) human
- 2) animal
- 3) individual unit, including plants, objects and food
- 4) motif with no distinct element, including landscapes, cities and diagrams
- 5) mixed motif

Despite plants being live beings, their lack of eyes, and therefore of means of direct visual interaction, made it seem appropriate to classify them together with objects and food items for the present purpose. In cases where several elements were depicted in a single image, the element with the most emphasis decided the category. For instance, if an image contains a car and a person, the motif is human if the person is more salient than the car. According to Kress & van Leeuwen (Kress & van Leeuwen 2006: 202), salience is not objectively measurable, but judged on the basis of a complex interaction of several visual clues. A number of factors are at play, and a viewer is, supposedly, intuitively able to judge the ‘weight’ of the various elements in the composition. Furthermore, in all instances when a person was part of the main motif, it was considered ‘human’. This was done in order to simplify the process and ensure more consistent results. In the case of equal emphasis on several elements, as in the case of a depiction of a busy city centre filled with people, the image was categorised as containing a mixed motif.

It was also of interest to record whether the image depicted a face, or more than one face. This could be the face of an animal or a person, as long as the majority of the face was clearly visible. If the face was hardly visible, or if only a small part of it was visible, the image was not counted as depicting a face. This category is connected to the previous one, which determines the main element in the image, and will help investigate whether or not an image may be able to connect with a viewer (see p. 25).

The participant’s interaction with the viewer was measured with the occurrence of eye contact or not. The use of sunglasses and other instances where the eyes are hidden, prevented possible eye contact. The occurrence of eye contact with the participant, defined by Kress & van Leeuwen as ‘demand’ images, demands the viewer to engage on a personal level, whereas the absence of eye contact, ‘offer’ images, are explained as offering information in a less

personal way (see p. 25). Objective and impersonal knowledge is generally valued higher than knowledge where the viewer is emotionally engaged. This is often reflected in the level of education with less use of 'demand' images the higher up you get in the system (see p. 26).

Finally, the participant's distance to the viewer was also included. A participant may be a person or an animal. The distance between the viewer and the viewed is another relevant factor when determining the interactive meaning in the image, and the body size in the frame may indicate a personal connection between the two (see p. 26). The connection ranges from an intimate involvement to an impersonal level and the participant's distance to the viewer was classified using the following distinctions:

- 1) close shot
- 2) medium shot or
- 3) long shot

A close shot is defined as an image including only the head and shoulders, a medium shot is about waist level, and finally, a long shot is when the whole body is included in the frame. In cases where the distance was not clearly apparent, the closest category was chosen.

The study was carried out in three stages. First, descriptive statistics were produced of the kinds of images and their placement and use. Second, the findings from each textbook, but also from the two study programmes, were compared. Third, specific characteristics and patterns in the use of images were followed up. The role and function of the images in these textbooks and how they might affect the reading process were investigated more closely. The first two stages of analysis are basically quantitative, providing a general overview and making it possible to identify patterns in the data. For the third stage, the qualitative method was best suited as it allowed for deeper insight and was helpful as a way of exploring and exemplifying the various pedagogical functions found in the quantitative analysis.

6 Findings

6.1 Overview of the Findings

In total, the seven textbooks contain 1454 images, distributed over 2021 pages. Of these images, 779 are in textbooks aimed at vocational studies and 513 in textbooks for general studies (see Table 1). The remaining 162 images are found in *Gateways*, a textbook which is not directed towards any particular study programme.

Five of the textbooks studied (*Workshop*, *Access*, *Targets*, *Experience*, and *Gateways*), show relatively similar numbers, with the average number of images per page around 0.6 (see Table 1). However, in *Tracks* and *Skills*, both of which are aimed at vocational studies, the number of images is significantly higher. The vocational studies category therefore ends up with a very high total figure compared to the textbooks for general studies, despite the fact that *Workshop*, the third textbook in this category, shows a similar frequency of images to the non-vocational books.

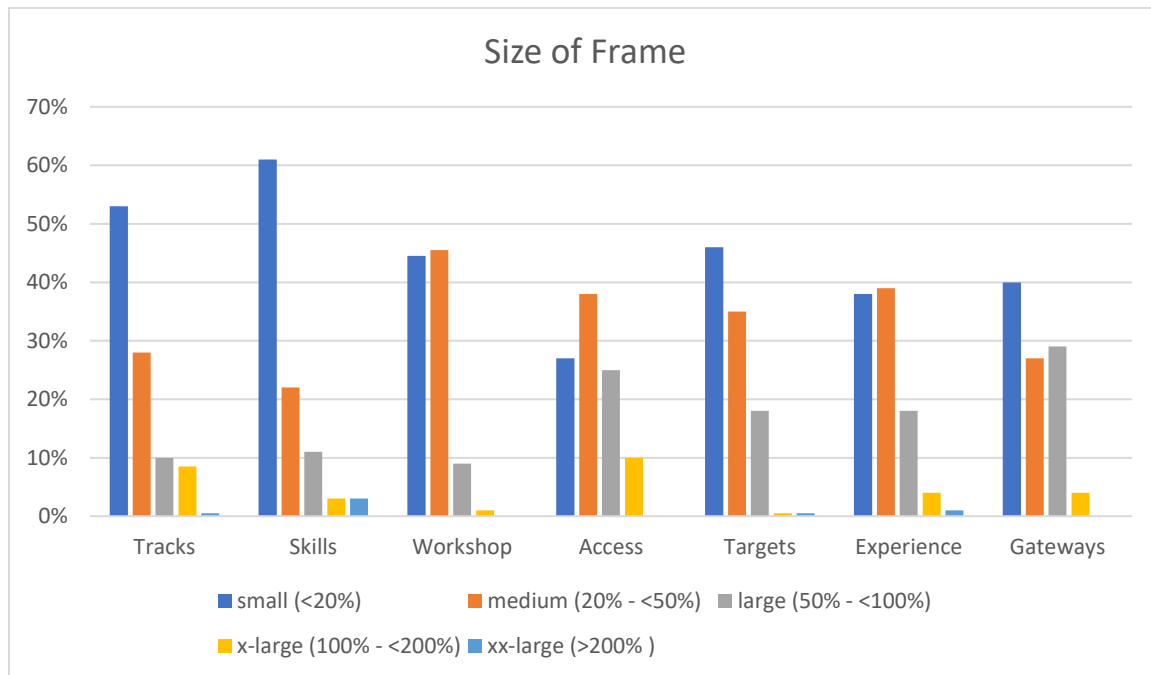
Table 1: Number of images

Study Programme:	Textbook:	Number of images in total:	Number of pages (reference sections not included):	Number of images per page:
Vocational studies	Tracks	275	289	0.95
	Skills	363	361	1.01
	Workshop	141	230	0.61
	Total:	779	880	0.89
General studies	Access	154	258	0.60
	Targets	165	265	0.62
	Experience	194	336	0.58
	Total:	513	859	0.60
Both study programmes	Gateways	162	282	0.57
	Total:	1454	2021	0.72

Figure 2 shows the percent distribution of the size of frame by category for each textbook. In all the textbooks, a large proportion of the images are small and medium sized, with relatively few large images and hardly any which cover the whole page or more. However, the images in the books for general studies, as well as in *Gateways*, are more evenly distributed in terms of size, and all four books have a higher percentage of large images compared to that of the

vocational study textbooks. In the vocational study textbooks, there is a more frequent use of small and medium sized images.

Figure 2: Distribution of Size of Frame (%)



The majority of the images are placed in connection with a longer text (see Figure 3). Only *Skills* deviates from this tendency, with a higher percentage of images in the pre-read section and in the activity section than together with a longer text. Because the number and length of texts have not been taken into consideration in this study, it is difficult to say to what extent text length might play a role here. However, it is clear that, with 46 images, *Skills* has the lowest number of images in the text section of all the textbooks, even though it has the highest total image count of them all.

As for the difference between vocational and general study textbooks, the findings indicate that vocational textbooks have a higher percentage of images in the pre-read section than the other textbooks (see Figure 3). The same tendency can be seen with images in the activity section: the three textbooks with the highest number of images are all aimed at vocational studies.

Figure 3: Distribution of images, organised by section (%)

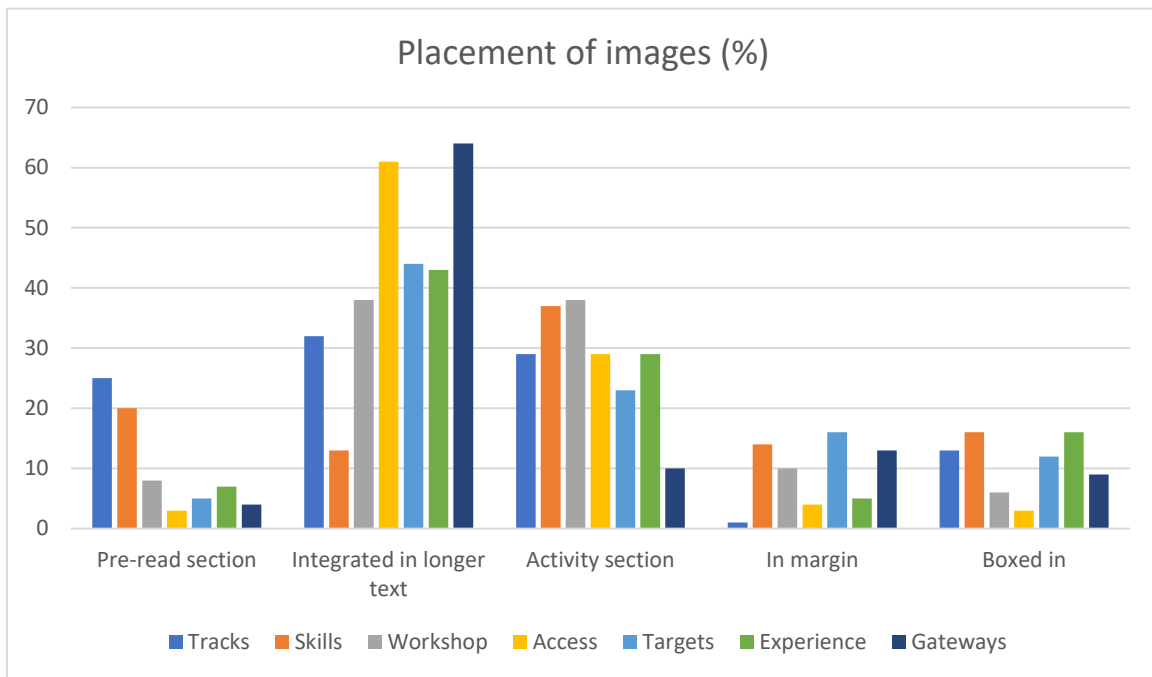
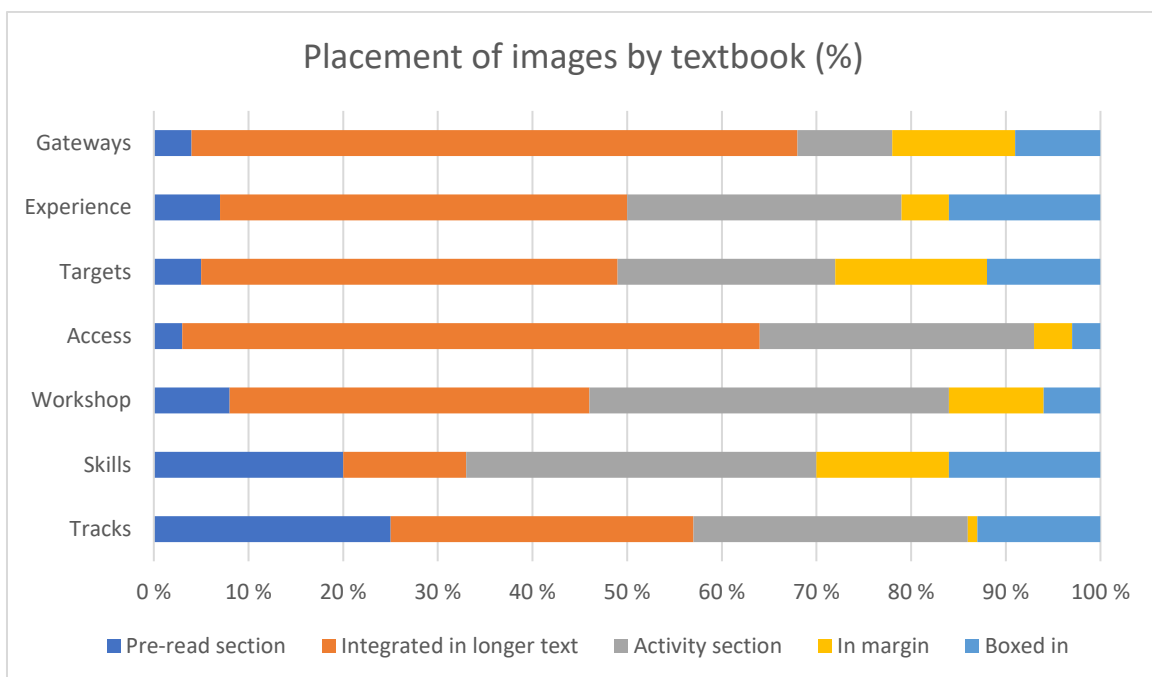


Figure 4: Distribution of images in each textbook (%)



As shown in Table 2, every textbook has a higher number of images without a caption than with a caption. However, the proportion varies from book to book, with *Targets* having the most even distribution: 47% captioned images and 53% without. The captioned images in

Targets include a wide range of images, from representations of paintings to maps, diagrams, and, the largest category: photographs, with a total count of 45 captioned images. At the opposite end, there is *Workshop*, with only 5% captioned images and 95% without a caption. Five of the seven captioned images in *Workshop* are maps, an image typically requiring an explanation of what is depicted.

Table 2: The use of captions

Textbook:	Caption:		Total Image Count:
	Yes	No	
Tracks	96 (35%)	179 (65%)	275
Skills	37 (10%)	326 (90%)	363
Workshop	7 (5%)	134 (95%)	141
Access	33 (21%)	121 (79%)	154
Targets	78 (47%)	87 (53%)	165
Experience	46 (24%)	148 (76%)	194
Gateways	66 (41%)	96 (59%)	162

With regard to the type of image, there is a clear majority of photographs in all textbooks, as shown in Figure 5. 50% or more of the images in every textbook belong in this category, with all other image types being relatively infrequent in comparison. *Tracks* and *Workshop*, both textbooks aimed at vocational studies, show a significantly higher percentage of drawings than the other textbooks (see Figure 5). In numbers, the vocational study programme textbooks collectively contain 120 drawings, whereas the general study programme textbooks only contain 39. Conversely, *Targets*, the textbook with the lowest number and proportion of drawings (6 drawings (4%)), show the highest number of diagrams (26 diagrams (16%)).

Figure 5: Distribution of type of image (%)

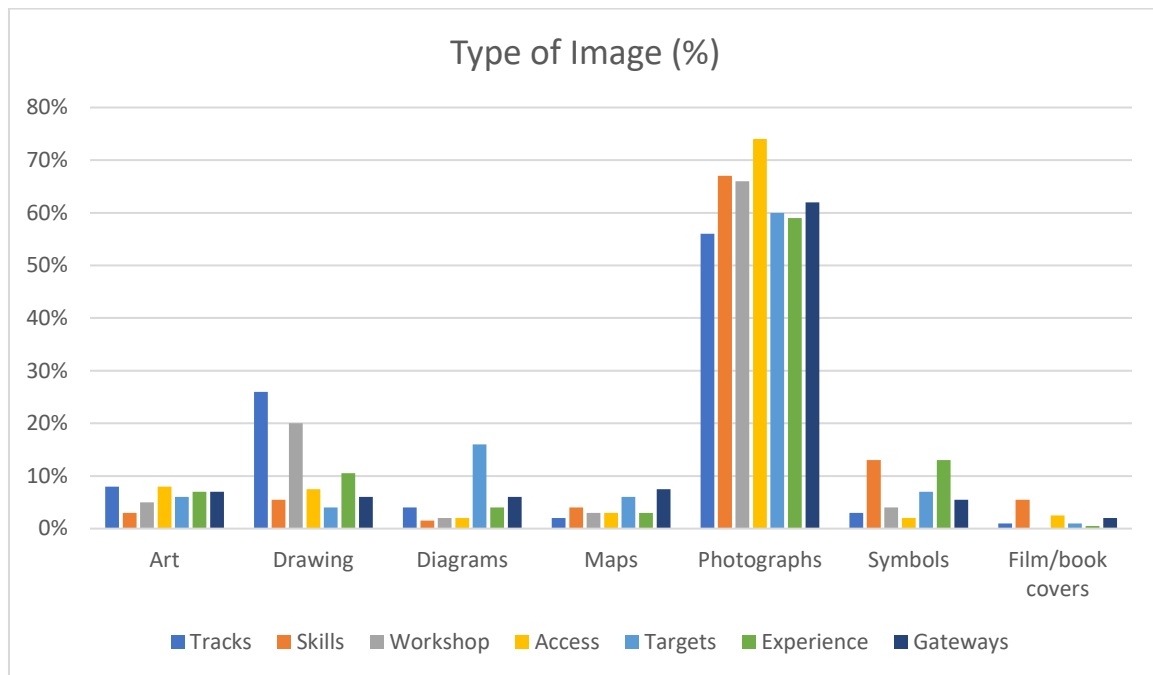
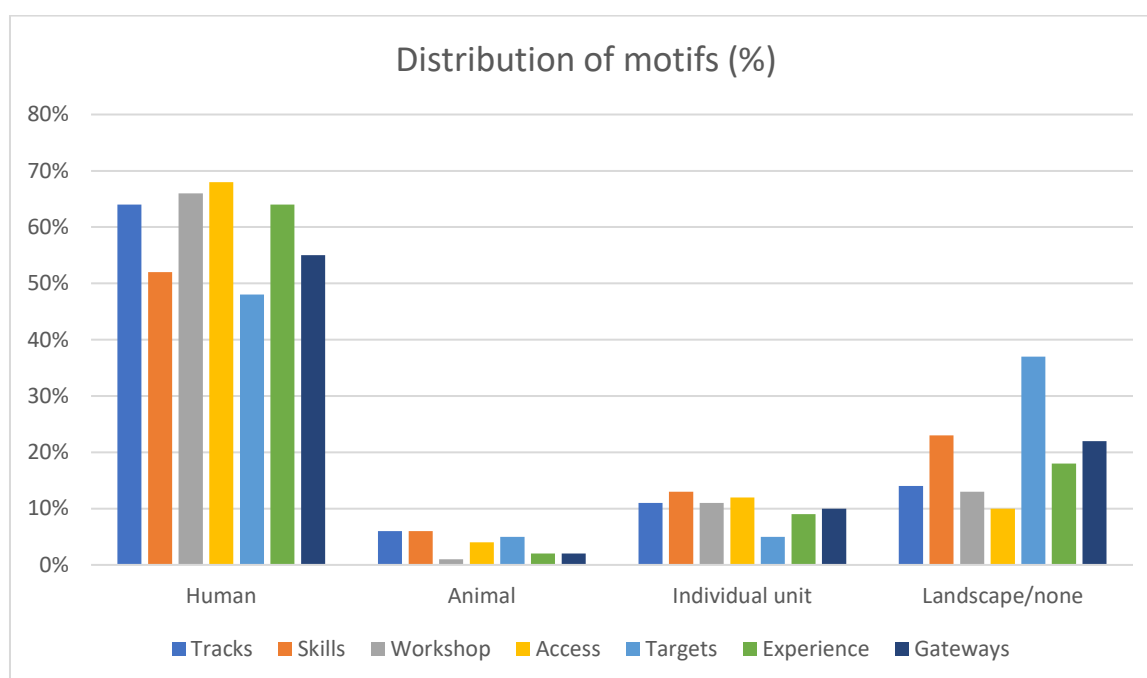


Figure 6 shows the percent distribution of the main element in the images in the different textbooks. The images which did not fit into these categories but were placed in the mixed category were not included in this table. A large majority of the images in every textbook have a human motif, or they include a person as part of the main motif. Here, *Targets* shows the lowest percentage as well as the lowest number of images with a human motif. Conversely, in the category with images with no particular motif, or a portrayal of a landscape, *Targets* has by far the highest percentage. Overall, animals are rarely portrayed on their own, with absolute numbers ranging from one image to 22 images, in *Workshop* and *Skills* respectively.

Figure 6: Distribution of motifs (%)



Over half of all the images in every textbook show one or more faces (human or animal) (see Table 3). The lowest number, and also percentage, is found in *Targets*, with only 87 images (53%) in this category. The highest percentage, on the other hand, is found in *Access*, with 75% of the images depicting a face. As for the level of interaction, the numbers are relatively similar in all textbooks, with between 14% and 20% of the images establishing eye contact with the viewer. There is no overall difference between vocational and general studies textbooks with regard to faces and eye contact.

Table 3: Interaction between the participant and the viewer

Textbook:	One or more faces depicted	Eye Contact:		Total Image Count:
		Yes	No (or N/A)	
Tracks	189 (69%)	54 (20%)	221 (80%)	275
Skills	238 (53%)	68 (19%)	295 (81%)	363
Workshop	88 (62%)	20 (14%)	121 (86%)	141
Access	115 (75%)	25 (16%)	129 (84%)	154
Targets	87 (53%)	27 (16%)	138 (84%)	165
Experience	128 (66%)	39 (20%)	155 (80%)	194
Gateways	90 (56%)	25 (15%)	137 (85%)	162

Finally, Figure 7 and 8 shows the variation in length of shot in the textbook images, indicating the distance between a participant (the person or animal depicted in the image) and the viewer. Only images which contained at least one participant were included in the count. A long shot, indicating very little personal connection, was used more often than a medium or a close shot in every textbook. Only two textbooks, *Skills* and *Experience*, have a higher number of close shot images than medium shot images.

Figure 8 gives a clear illustration of how little variation there is between each textbook in the distribution of medium shots and long shots. The numbers for the close shots, on the other hand, show a great deal of variation from book to book. These are images which indicate a possibility of a personal and intimate involvement with the participant. *Skills* has the highest number of close shot images with 76 images in total (21%). In comparison, *Targets*, the textbook with the lowest number of close shots, has 11 of them (6.5%).

Most of the books show a consistent preference for longer shots, with long outnumbering medium and medium outnumbering close; close shots are more common than medium ones in only two books (*Skills* and *Experience*) and equally frequent in one (*Access*).

Figure 7: Distance between the participant and the viewer, organised by textbook (absolute figures)

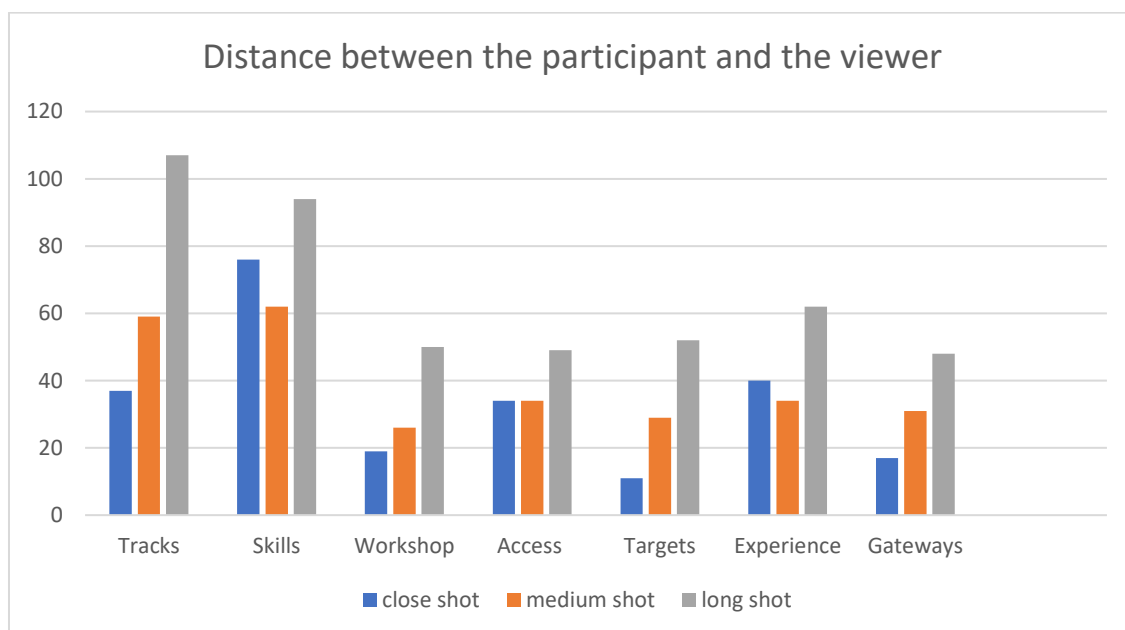
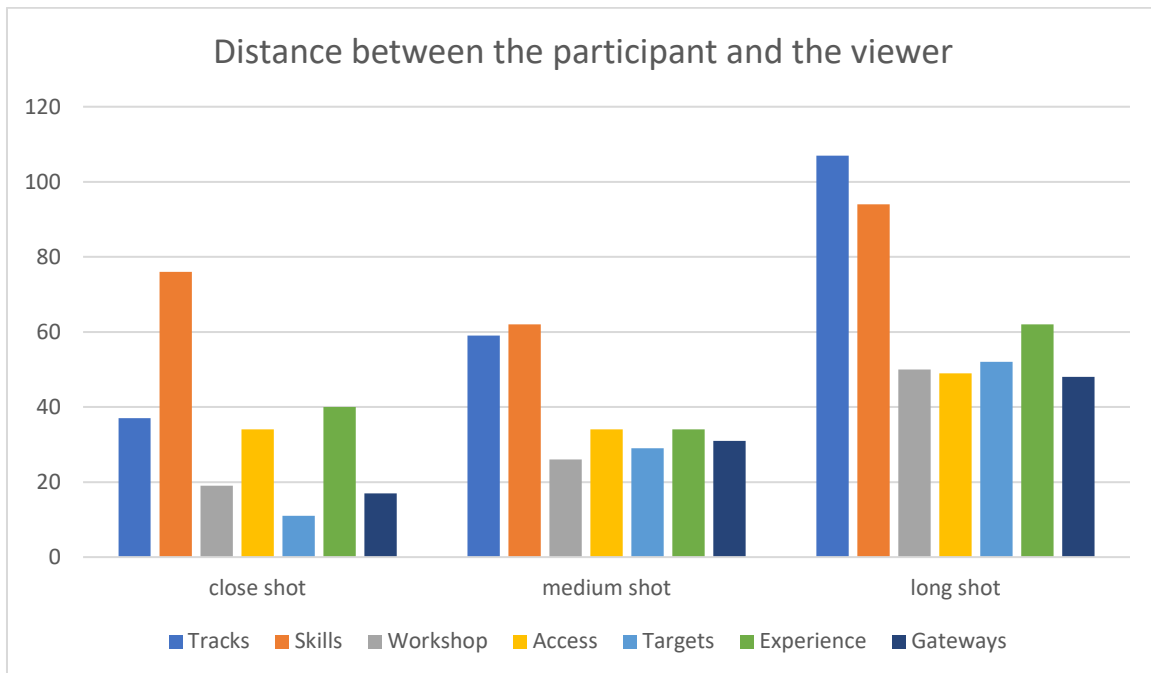


Figure 8: Distance between the participant and the viewer, organised by type of shot (absolute figures)



6.2 Summary of the Main Findings

The findings outlined above answer the second research question: 2) Is there a significant difference in the use of images between textbooks aimed at vocational studies and those aimed at general studies? As expected, the findings show differences between these two categories. The most significant finding is that vocational study textbooks contain a substantially higher number of images, with *Skills* and *Tracks* as the two textbooks with the highest number of images in relation to number of pages.

Other differences in the use of images between vocational and general studies textbooks were not as noticeable or numerous as expected. However, some tendencies were detected. Although the majority of all the images were placed in connection with a longer text, the textbooks aimed at vocational studies had a higher percentage of images in the pre-read section as well as in the activity section compared to the general study textbooks. Moreover, although photographs were the most common type of image in every textbook, drawings were more prevalent in *Tracks* and *Workshop*, both vocational study textbooks. Additionally, small and medium sized images occurred more frequently than larger images in all textbooks, but

the number of small images in relation to other sizes was especially high for vocational study books.

Two textbooks stand out from the other textbooks with regard to several categories. *Targets*, a general studies textbook, had the lowest percentage of drawings, the lowest percentage and number of human motifs, and the lowest number of close-shot images. In addition, it had the highest percentage and number of diagrams, the highest percentage of images with no particular motif or element depicted, as well as the highest percentage of captioned images. On the other hand, *Skills*, a vocational study textbook, was found at the other end of the scale in some of the same categories. First of all, it had the highest number of images, with nearly a hundred images more than the textbook with the second highest number. Furthermore, it had the highest number of human motifs, highest number of close shot images, and the lowest percentage of diagrams. This polarisation suggests significant variation in the use of images between the individual textbooks. These differences will be explored in the following chapter.

7 The Individual Textbooks

As shown in the previous section, some of the image categories studied indicate a general difference in the use of images between general study and vocational study textbooks. However, the most notable differences in image use were discovered between the individual textbooks. This chapter explores the first research question: how do the different textbooks differ in their use of images? The findings for each textbook will be presented individually, followed by a discussion of the results.

7.1 Vocational Studies: *Tracks*

Tracks is the textbook with the second highest number of images (275 images), and it also has the second highest number of images per page, with 0.95 images per page (Table 1). The images are mainly, and quite evenly, distributed in the following three main sections of the book: the pre-read section, in connection with a longer text, and the activity section, with a distribution of 25%, 32%, and 29% of the images found in each respective section (Figure 3 and 4). A large majority of the images are small, and *Tracks* has the second highest number and percentage of small images (Figure 2). Moreover, *Tracks* is the textbook with the highest number and percentage of drawings and cartoons out of the seven textbooks in this study (Figure 5), also found evenly distributed in the three main sections. Figure 9 is an illustration of a typical page in *Tracks*, where a drawing of a communicative situation between a worker and a tourist is used in combination with a longer text describing the role of English in the service sector.

96 (35%) images have a caption (Table 2), and these images are found with regular frequency in all the studied categories. First of all, images with a caption occur quite frequently in all the different contexts in the book. In addition, the captions are not restricted to a certain type of image, motif, or size, but appear equally often in connection with them all.

Diagrams and maps are very rarely represented in *Tracks* in comparison with the other textbooks, with 12 diagrams and five maps (Figure 5). However, even these very few images are distributed in several sections of the book, and can be found in the pre-read section, in connection with a longer text, and in the activity section.

In terms of interaction between the participant(s) in the image and the viewer, *Tracks* has the second highest number of images with one or more faces depicted and is the textbook with the highest percentage (20%) of images with participants which establish eye contact with the viewer (Table 3). When it comes to distance between the participant and the viewer, the distribution of the images with direct eye contact is as even as with the other categories. Eye contact is established in close shot, medium shot and long shot images with 16, 18 and 20 images respectively.

Figure 9: Example of drawings in use (*Tracks*, p. 182)



When taking all these findings into account, it can be argued that *Tracks* is a textbook which aims especially to reach the weaker readers. To start, the even distribution of the many images is an indication that all the reading stages (pre-reading, during reading and post-reading) are supported with images. Mayer's research (see p. 23) shows that using images in connection with text is very useful for weaker readers, and that it benefits low-knowledge learners more than high-knowledge learners.

There are other findings which support the view that *Tracks* is mainly aimed at the weaker pupils. First, the high number of drawings. Drawings are usually associated with younger children and often considered the easiest type of image to decode. The example in Figure 9 shows the use of a drawing together with the main text. The text is about the role of English in different work situations within service and transport, and arguably, the drawing

could easily have been replaced by a photograph. This means that the editors of the textbook have made a choice to specifically use drawings.

Tracks also makes much use of images which establish eye contact between the viewer and the participant in the image. According to Kress & van Leeuwen (see p. 25-26), images which communicate with the viewer can be used to connect pupils emotionally with the content and are sometimes used strategically, possibly more frequently with weaker readers in order to make them connect more strongly with what they read. Kress & van Leeuwen (see p. 26) also claim that images which address the reader directly, ‘demand’ images, are valued less and found in contexts with lower level pupils. *Tracks* appears to be catering for these pupils in particular.

These findings suggest that *Tracks* uses images which may prove beneficial for low-knowledge learners and weaker readers in the process of improving their reading skills and knowledge of the English language. It could be argued, however, that the lack of diagrams and informative images is an issue from the point of view of the learning objectives. First of all, one of the competence aims for the subject English is to be able to interpret and use mathematical information, generally presented in tables and diagrams. Secondly, numeracy is one of the basic skills in the Knowledge Promotion (see p. 7) and should be included in every subject. Because reading, another basic skill in LK06, is explained as including graphs and illustrations, it seems essential for every textbook to include a certain number of diagrams. Kress & van Leeuwen (see p. 25) claim that diagrams and maps are usually found in higher valued educational contexts, and that they can be demanding to decode. As a result, the images in *Tracks* will be more beneficial for weaker pupils in their learning process as they might struggle with the more demanding images. A classroom, however, will always contain learners of different abilities and learning styles, and images which present a challenge for high-knowledge learners may be necessary in order to maximise their learning outcome. In addition, diagrams and tables could be very useful in the learning process for pupils with a learning profile which consists more strongly of a logical-mathematical intelligence (see p. 18-19).

7.2 Vocational Studies: *Skills*

Skills is the textbook with the highest number of images, and it is the only one with an average of more than one image per page (Table 1). A large majority of the images are small (61%), however, 13 images cover two pages or more (Figure 2) and this is the highest number among all the textbooks. Nine of these 13 xx-large images have landscapes as the main motif and the example below shows a typical page in *Skills* where such an image covers two full pages (Figure 10). Here the image of a scenic landscape from the UK is in the background underneath seven smaller images representing things typically associated with Britain.

It should be noted that, as *Skills* has a very high total number of images (363 images), there is a tendency that even where it has the lowest percentage in a category, as for instance in faces depicted in images (53%), it still ends up with the highest absolute number of images (208 images) in the same category (Table 3).

Skills has the highest number of images in the pre-read section (73 images, 20%) and in the activity section (134 images, 37%). In contrast, only 13 % (46 images) of the images are placed in connection with a longer text. This is the lowest percentage of all the textbooks, the second lowest (*Tracks*) having 32% (89 images) of the images in this section (Figure 3 and Figure 4). When looking through the textbook, the general impression is that texts are introduced with a large image, and that the text itself is not complemented with images. The exception seems to be if the text deals with several topics, in which case the tendency appears to be that there is one image connected to each individual topic. This can be seen in the example below (Figure 11) where the longer text presents several aspects of American society, with images representing each of these aspects. The main texts, however, are more often than not without any images mid-text.

1,5% (five images) of the images in *Skills* are diagrams, the lowest percentage of all the textbooks (Figure 5). *Skills* is also the textbook with the second lowest percentage of captioned images, with only 10% (37 images) of them having a caption (Table 2).

Additionally, it has the highest number of close shots (76 images), with nearly twice as many as the next textbook (Figure 8). These are evenly distributed between small, medium and large images, and they occur frequently in different contexts in the book.

Figure 10: Example of a two-page image (*Skills*, p. 202-203)



Figure 11: Example of images in connection with a longer text (*Skills*, p. 190-191)

Aspects of Culture and Values

The US - a multicultural society
 Do you know that about 90% of all American citizens have their roots in other countries? The forefathers of many African Americans were brought over as slaves, in the 1600s immigrants from Europe left their home countries to start a new life as Americans. In more recent years, people from other continents, such as Asia and Latin America, have come to settle in the US. They have brought their traditions, festivals, languages, religions, music and food. This great variety of cultures is most evident in the big cities, but can also be found in small town America. Although the US is a nation of many groups, prejudice and cultural conflicts between the many ethnic groups are not uncommon.

Family life in the US
 Family values are still important in American society. Every time there is an election, showing off a successful and stable family life seems to be almost as important for the candidates as their political message. Traditionally, the ideal American family consists of two adults and two or three children, living in a house in the suburbs. Today, the family structure is changing. For example, 25% of all families consist of a single parent with children, but there are differences between ethnic groups. In general, Americans wait longer before they marry, and families have fewer children than before. Children also stay at home longer before they move out, and often move back in because of high living costs. Nearly half of all marriages end in divorce.

The UK - a multicultural society
 Modern Britain is made up of many different ethnic groups, but the majority of the population is still English, Welsh, Scottish or Irish. In the big cities, you will find a variety of nationalities. Many of them come from former British colonies. In London, for example, at least 300 languages are spoken every day, and you can find restaurants from nearly every corner of the world. However, there are also conflicts between cultures and generations. Young people, whose parents or grandparents come from other countries, may have a very different experience of growing up than their parents. Different values between ethnic groups have sometimes led to violence. Today, there are programmes helping immigrants settle and become part of the local community.

Family life in the UK
 The typical British family is changing. For many people, people's views on marriage are different today than they were 50 years ago. Many couples live together without getting married. Also, more children are born to unmarried couples. Around 25% of the households are single parents with children. The number of single-parent families is increasing, partly because more marriages end in divorce, but also because more women choose to raise their children without a partner. Nevertheless, when asked in a recent poll, three quarters of all Britons said they are optimistic about how family life is today.

Of all the textbooks in this study, *Skills* is the one where the images are the most noticeable. Even the smallest images (less than 20% of the page), have a certain salience. This may be due to *Skills* being the largest textbook in terms of page size in the study, giving even the smallest images more space and, consequently, more prominence overall. Figure 2 might therefore come across as misleading, as it communicates, in percentages, a large proportion of small images and very few of the larger images. Another possible reason for why the images in *Skills* seem particularly salient, may be the high proportion of photographs (245 images, 67%). In addition, the images are very colourful and there are no black and white images.

The images are mainly placed in the pre-read section and in the activity section. The more prepared a reader is for the main text, the better the learning outcome (see p. 17). Using images in the pre-read section could therefore be beneficial for the pupils who have a tendency to jump over an introductory text. An image can be used to catch a reader's attention and is more difficult to ignore than small writing. In addition, it can activate background knowledge automatically, without the need for a specific task or question given by the teacher. An example of a salient pre-read image in *Skills* can be seen in Figure 21. These close-shot images of four teenagers wearing different religious items also demonstrate how *Skills* typically uses direct eye contact to connect the pupils emotionally with the content and topic.

Skills has very few images in connection with longer texts, but a high number of images in the margin. When the marginal images appear on the same page as a longer text, they are usually repeated several times, as smaller and opaque versions of the image used in the pre-read section of the same text. These images may prove useful as a way of repeating and reminding the reader what the text is about. It could also be argued that placing the images in the margin is done to avoid interference of images when reading a longer text, claimed to be more useful for stronger readers (see p. 23). Using frames to separate an image from the text underlines a disconnection between the two (see p. 27) and gives the pupils a choice as to when to address the image. However, as suggested by Mayer (see p. 23-24), weaker readers and others who may struggle to visualise the written content could benefit strongly from the text-image interplay.

The post-reading stage is considered essential in the reading process, not only as a way of further working on what has been read, but also as a way of supporting learners in better retaining the content in the text (see p. 18). The high number of images in this section indicates that *Skills* potentially supports the learners in their post-reading stage using images. In fact, images in this section are used in many ways: Posters, maps and graphs are asked to be studied and commented on, photographs of relevant people are included as prompts when pupils are asked to choose a person and do some research, and learners are often tasked with describing and matching groups of images with corresponding terms and descriptions.

As with *Tracks*, it could be argued that *Skills* has such a strong focus on how to address the weaker pupils using images, that the stronger pupils may be neglected. Diagrams, images which are generally more demanding to decode, are effectively absent. It could also be argued that the low number of captioned images is an indication of images being of a simpler nature,

as complex images, or images which represent something specific, may need a caption in order to be understood. Art and reproductions of paintings is another type of image which often demands more in the decoding process, and also here *Skills* has the lowest percentage among the textbooks (3%, 10 images).

7.3 Vocational Studies: *Workshop*

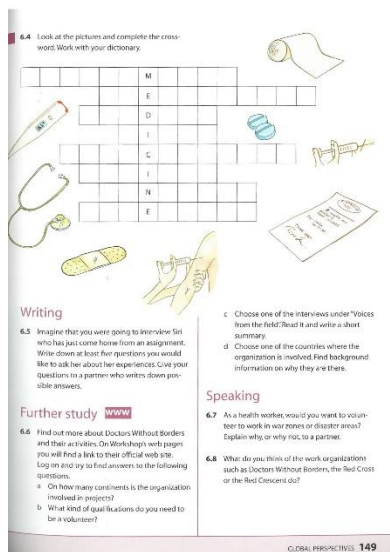
Workshop is the textbook with the lowest overall number of images. However, as the book itself has a very low page count, the average image count per page is not among the lowest. The large majority of the images are small and medium sized, with 63 and 64 images respectively (Figure 2). These 127 images count for 90% of the total number of images in *Workshop*.

Workshop has the highest percent distribution of images in the activity section (Figure 3). These are mainly small images, as illustrated in the example below (Figure 12). However, as they often occur in groups, also illustrated in Figure 12, there are many pages in the activity section without any images. Another feature also found in the example below (Figure 12), is the frequent use of drawings in *Workshop*. *Workshop* has the second highest percentage of drawings after *Tracks* (Figure 5).

Seven images (5%) have a caption, and five of these are maps, which are generally accompanied with an explanation of what is depicted (Table 2). This is the lowest number of all the textbooks, and *Access*, which has the second lowest number of captioned images, has 33 captioned images (21%). *Workshop* also contains the lowest number of diagrams, namely two.

Lastly, *Workshop* has the lowest number (20 images) and percentage (14%) of images with eye contact (Table 3). These images are distributed in various sizes in all the sections of the textbook. Furthermore, the distance between the participant in the image and the viewer ranges from close shots (10 images), medium shots (five images), and also long shots (five images) (Figure 7).

Figure 12: Example of the use of images in the activity section (*Workshop*, p. 149)



Workshop not only has the lowest number of pages, but it is the smallest textbook in terms of page size. When the pages are small, the actual size of the images when categorised as small, medium or large is smaller compared to the other textbooks. It is also worth pointing out that the smaller the image, the more difficult the decoding process, as the detail in the image becomes smaller and less clear. This could result in less accessible images.

Workshop has a high proportion of drawings. This image category is generally considered highly accessible for everyone, and drawings are rarely difficult to decode, even in small sizes. This is seen in Figure 12, where small drawings of medical equipment are used in the activity section to illustrate English terms and to explicitly link the visual with the written word. This strategic use of images may be helpful for weaker pupils and those who struggle with visualising written content (see p. 23).

It appears that images very rarely address and interact with the viewer in *Workshop*. Only 10 images are taken within a close shot range, indicating a personal connection between the two, and only 20 images seek eye contact with the viewer, another strategy of engaging the pupil emotionally with the depicted person in the image and thus possibly making the pupil more connected and interested in the content in the textbook.

Furthermore, the lack of captioned images may indicate that the images do not need to be explained. This could be because they complement the main text and are considered self-explanatory. Another explanation could be that there is less focus in *Workshop* to dwell on

images and decode them individually. Another evidence of the lack of demanding images in *Workshop* is the low number of diagrams (two), typically more challenging images to decode, and often accompanied by a descriptive text or title.

In sum, *Workshop*, like the other two textbooks for vocational studies, seems to prioritise images which may prove helpful for weaker pupils, especially in the post-reading stage. However, the proportional numbers of images differ considerably, with *Workshop* having a very low number of images per page and *Skills* and *Tracks* having a very high number of images per page. Also, the images in *Workshop* seem to have very few functions and the use of images does not appear to be adapted to high knowledge pupils who could benefit from more demanding images. Especially the low number of close shots and the lack of eye contact stood out as a major difference from the other two vocational textbooks.

7.4 General Studies: *Access*

The images in *Access* are mainly found in connection with longer texts and in the activity sections of the book. 90% of the total number of images in the textbook are distributed between those two sections (Figure 4). The textbook has the second highest number (94 images) and percentage (61%) of images integrated with a longer text; Figure 13 is an example of what a typical page of a main text in *Access* looks like. Here the text is accompanied by one x-large image and one medium sized image of young people playing rugby. Both images illustrate the written content on the page.

The use of photographs in *Access* is extensive. With 74% (115 images) of all images, it has the highest percentage of photographs among the textbooks (Figure 5). It is also the textbook with the highest percentage (68%, 106 images) of human motifs (Figure 6) and the highest percentage (75%, 116 images) of faces depicted in the images (Table 3). However, only 16% (25 images) of the images make eye contact (Table 3). All these tendencies are found in the images of the rugby players in Figure 13.

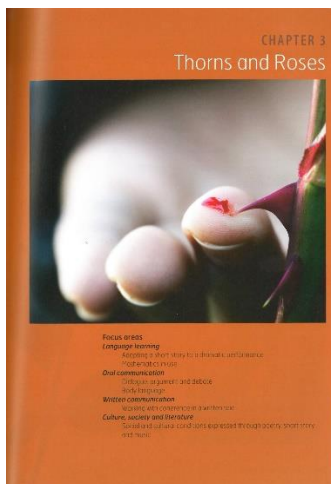
Another characteristic, also seen in the same example (Figure 13), is the use of larger images. *Access* has the highest percentage (10%, 16 images) of images which take up a full page (x-large), and a large majority of these are placed together with longer texts (Figure 2). All but two of these full page-images have a human motif and a large majority of them do not seek eye contact with the viewer.

The final point is that there are very few images in introductory parts of this textbook (Figure 3). There are five (3%) images here, the lowest number among all the books, and these are found in the introduction to every new chapter, five in total. Figure 14 is an example of one such page in the textbook where the image of a thorn cutting a finger introduces a chapter called ‘Thorns and Roses’. *Access* does not use images in pre-reading activities or on any other introductory pages.

Figure 13: Example of images in use together with a longer text (*Access*, p. 90-91)



Figure 14: Example of image in use as introduction to new chapter (*Access*, p. 117)



Access is characterised by the use of large, realistic photographs with human motifs in connection with longer texts. The motifs in the images are typically settings which the pupils

can recognise and identify with, like the example with the football players in Figure 13. The easy decoding of realistic images could be a way of engaging the pupils more quickly in the texts they are reading. Also, the large size makes them salient and they catch the reader's attention very easily. Furthermore, as suggested by Mayer (see p. 23), the use of images in connection with text could have a positive effect on the reading process as content is conveyed using two processing channels.

At the same time, the participant in the image rarely looks directly at the viewer. The majority of the images in *Access* offer information in an impersonal way (84%) rather than relying on involving emotion by directly addressing the readers (16%). According to Kress & van Leeuwen (see p. 25-26), images classified as 'offer' are traditionally valued higher than 'demand' images. They also claim that 'offer' images in particular are found more often in 'highly valued' contexts. This claim is interesting considering that *Access* is a textbook aimed at general study pupils, a study programme often described in media as having higher status than vocational study programmes. Besides, the average grade intake for these programmes are higher than vocational programmes, maybe indicating greater popularity for the general study programmes.

The use of images in *Access* could be very useful for pupils during the reading stage and in the post-reading stage. By contrast, there are no images used in the pre-reading stage in this textbook. As a result, the book seems to expect a lot both from the teachers and the pupils in order to prepare the readers for the main texts. *Access* is also characterised by having very few emotive images, typically connecting the pupils emotionally with the content. This differs from the use of images in *Skills* and *Tracks*, but the same characteristics were found in *Targets* and *Gateways*.

7.5 General Studies: *Targets*

Targets is the textbook with the lowest number of drawings (six images, 4%) and the highest number of diagrams (26 images, 16%) in this study (Figure 5). *Targets'* 26 diagrams (16%) account for more than twice as many diagrams as the next textbook, *Skills*, which has 12 diagrams (2%). As the example in Figure 15 shows, the diagrams are mainly small images placed in the activity section, and around half of them have a caption.

Targets is also the textbook with the lowest number of images with people (78 images, 48%) or objects (nine images, 5%) as part of the main motif, and the number of images with a human motif is nearly the same as the number of images with no particular element depicted (Figure 6). This number, 60 images (37%) with a landscape or city motif, is the highest among the studied textbooks. The photograph of Times Square in New York is an example of such an image (Figure 17). This image also has a caption, another feature prevalent among the images in *Targets*, with 47% (78 images) of all images being captioned (Table 2). The captioned images are distributed in all the sections of the book and do not only consist of maps or diagrams, which often come with a descriptive text or title, but a large majority of photographs are also captioned.

Finally, *Targets* has the lowest number of images with a visible face (87 images, 53%) (Table 3). This is 121 fewer images than *Skills*, the textbook with the highest number of images depicting a face (208 images, 53%). *Targets* has also got the lowest number of close-shots (11 images, 7%) and these images are mainly small photographs placed in the margin like the example of a boy below (Figure 16). Despite *Targets* having a relatively low number of images, it is only *Skills* which has a higher number of images placed in the margin (*Targets*: 26 images (16%), *Skills*: 50 images (14%)). The typical use of placing images in the margin can be seen with both the portrait of the boy and the image of Times Square below (Figure 16 and Figure 17).

Figure 15: Example of use of diagrams (*Targets*, p. 166)

The image shows a page from the textbook 'Targets' with the following content:

- 166 TARGETS**
- READING**
 - 1. Reading for information**
 - Why does the man cry at the start of the song?
 - What can't people understand?
 - Why can't people do something?
 - What will happen? The child will help?
 - What does the little boy learn from playing and roaming in the streets?
 - What does the young man do in desperation?
 - What's the result of his desperate act?
 - What else happens at the same time?
 - 2. Reading poetry**
 - What effect does the season and weather have on the mood of the song?
 - What effect does repetition have in the song?
 - What's the message of the song? Do you think the song offers us a cure or only resignation and pity? Why?
- 2. Expressing opinions**

Discuss in pairs.

 - Who has responsibility for the poor? The poor themselves? The government?
 - What kind of help should be given? Job? Welfare? 'Share and care' schemes? Better education? Charity?
 - In the song, the boy turns to crime. Does being poor justify crime?
- WRITING**
 - 4. Writing a letter to the editor**

There's a new protest because of the new short-sleeved shirts in supermarkets. Write a response to this claim in a letter to the editor of a newspaper or city newspaper.
 - 5. Writing a news article**

The doctor was when over 70 years ago by a white man. Is it still relevant today? More recently news of an old man who was sentenced to 10 years in a poor inner city area. Search for 20th-century songs 'Dear Mama' (1993) and 'Change' (1992) and study the lyrics. Use these lyrics as a starting point for an article about life in poor inner-city areas.
- NUMERIC COMPETENCE**
 - Use the bar chart and the line chart to decide which of the following statements are true or false or whether there is not enough information available.
 - Line chart: There were fewer children living in poverty in 2012 compared to year 2009.
 - Line chart: Beverly showed a reversed trend between 1993 and 2009.
 - Bar chart: There is a lower percentage of white children than black children in low-income families.
 - It is a myth that all poor children in big city centres are black.
 - Hispanic children have less opportunity to join the middle class.
- Poverty in rural and urban areas, 1976-2012**
- Percentage of children in two-income and poor families by race/ethnicity, 2011**
- LANGUAGE WORK**
 - 8. Plurals of nouns**

See page 279 or how to make plurals of nouns. Write the plurals of the following words, with verbs, count, disc, photo.

Figure 16: Example of a typical close-up image (*Targets*, p. 179)



Figure 17: Example of captioned image (*Targets*, p. 144)



The use of images in *Targets* suggests that this textbook is aimed at high-knowledge learners and proficient readers. This assumption is based on several points. First, in comparison with the other textbooks, *Targets* shows extensive use of image types which are challenging to decode. Diagrams are frequently used to challenge the pupils in post-reading tasks by working more in-depth with the topic covered in the main text. As diagrams are associated and found in higher educational contexts, it could also be that *Targets* has included these types of images intentionally as a way of preparing the general study pupils for the next step in the educational

system, higher education. In contrast, the use of drawings, a more easily decoded image type, is almost non-existent in *Targets*.

Another point which suggests that *Targets* is mainly directed towards stronger learners is the high number of images placed in the margin (26 images, 16%). As suggested by Kress & van Leeuwen (see p. 27), frames and dividing lines can be used to disconnect the image from the text. As seen in Figure 16 and Figure 17 it is evident that the images are not placed in connection with the text to support the reader in the *during reading* stage. According to Mayer (see p. 23-24), high-knowledge learners do not seem to benefit from illustrations in combination with text. The use of images in the margin gives the pupils a choice of when they would prefer to address the images. As a result, the images could function as a way of expanding the topic and adding more information about particular parts of the text, but at the same time leaving the text to be read continuously, without visual interruptions. A good example of this use can be seen with the captioned image of Times Square (Figure 17) which functions to elaborate on the content in the text, adding a visual representation of an area of New York which is not mentioned in the corresponding text. The image does not offer any support in comprehending the longer text and is perhaps only useful for those who fully understand the text in question.

The heavy use of captions could indicate that the images demand an explanation, or it could be that there is a certain expectation that the pupils should spend some time studying them. In a sense it gives the images more value as they become individual elements demanding attention separate from the written text.

Images appear to be used frequently in multimodal texts (see p. 23) in all the other textbooks in this study, supporting the reading process by giving the pupils the same content through two channels. In *Targets*, however, there is a tendency to use informative images that give the pupils additional knowledge. This tendency may also be reflected in the low number of visible faces in the images, in addition to the high number of images which depict landscapes or more abstract motifs. These images can be described as objective and informative and they do not rely on emotion or try to establish any connection with the reader (see p. 25-26). For strong pupils, using images in this way has the potential to provide them with more content and, consequently, give them a more in-depth understanding of a topic. According to Mayer (see p. 23), some content is better explained using images and some using words, and when the learner realises the connection between the two, a deeper understanding of the material will occur. The issue, however, is that a classroom will very

rarely consist of pupils with the same reading proficiency, and there is a risk that the readers who claim that they never read in their spare time (see p. 14), will struggle when reading longer texts at school without the support of images mid-text. Both examples of longer texts (Figure 16 and Figure 17) show how the text is typically separated from any connecting images.

7.6 General Studies: *Experience*

The use of images in *Experience* comes out as relatively average with regard to most of the categories analysed in this study. This is particularly the case with the following categories: the distribution of images in different contexts in the textbook (Figure 3), type of image (Figure 5), motifs (Figure 6), and captioned images (Table 2).

Experience stands out with regard to one category only: the distance between the viewer and the participant in the image (Figure 7). It has the second highest number of close shot images (40 images, 21%) and these images occur more frequently than medium shot images (34 images, 18%), a tendency only seen in *Skills* and *Experience* (Figure 8). The majority of these images are small photographs, and these small ones in particular are images which make eye contact with the viewer. These features can be seen in the images below, where each text is accompanied by a close-up of a person, all of which establish eye contact with the viewer (Figure 18)

When looking at the group of textbooks aimed at general studies collectively, *Experience* has the highest absolute number of images with one or more faces depicted (128 images, 66%). In addition, among the general study textbooks, it is the one with the highest number of images with eye contact (39 images, 20%).

Figure 18: Example of close shot images (*Experience*, p. 172-173)



The results of the analysis of the images in *Experience* could indicate a textbook which reaches out to a wide range of learners in all three reading stages. *Experience* uses images in all sections of the book. The percentages of the images in the different reading stages are also quite naturally in proportion with how one could expect to spend time on each stage, with the pre-reading stage being the shortest phase (7% of the images), during reading the longest (43% of the images), and finally, the post-reading stage (29% of the images).

When compared to the vocational textbooks in this study, the general study textbooks analysed so far have shown to be adapted more towards the stronger readers. With higher proportions of diagrams and fewer images which interact with the pupils, it is safe to say that the focus is more on the informative and objective use of images. Regarding this, the findings in *Experience* differ from the other general study textbooks. With the highest number of images depicting a face (128 images, 66%), in addition to having the highest number of images which directly addresses the viewer (39 images, 20%), *Experience* could be said to have a relatively strong use of interaction, quite often demanding the pupils to enter into some sort of imaginary relation with the participant in the image. As these images are typically taken as close shots, a more personal involvement and a stronger connection between the two is expected to take form (see p. 26). This, in return, could lead to the pupils becoming more engaged with the content in the book.

7.7 Undifferentiated: *Gateways*

Gateways has the lowest average number of images per page (0.57) of all the books included in the study (Table 1). While the majority of these images are small (65 images, 40%), *Gateways* has the highest number (46 images) of large images of the studied textbooks as well as the highest percentage of them (29%) (Figure 2). Like in *Access*, the large images are mainly placed in connection with a longer text, and usually have a human motif (Figure 3). Although 32 of the 46 images have at least one visible face, only eight of them (of a total of 25 images with eye contact) seek eye contact with the viewer (Table 3) The typical use of large images in *Gateways* is exemplified in Figure 19, where we see a still of Romeo and Juliet kissing, the image being placed mid-text.

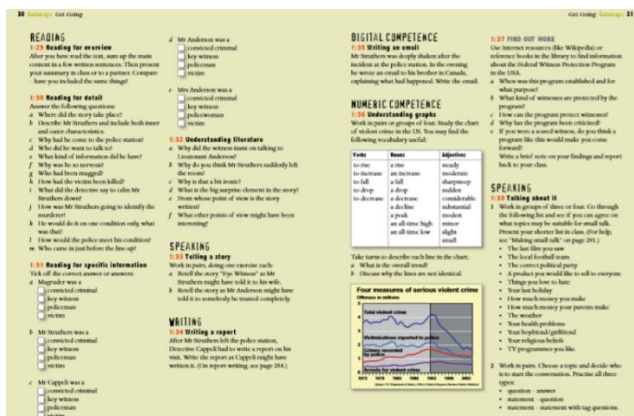
A large proportion (103 images, 64%) of all images in *Gateways* are placed in connection with a longer text (Figure 3). Having very few images in the pre-read section is a tendency found in all the books aimed at general study programmes (*Access*, *Targets*, and *Experience*) and this is also the case in *Gateways* (seven images, 4%). Like in *Access*, these are mainly used as introductions to a new chapter, and rarely in a pre-reading activity for a specific text or topic.

The low number of images in the activity section in *Gateways* is in contrast with all the other textbooks. To compare, *Skills* with the highest number has 134 images (37%) in this section, whereas *Gateways* has 16 (10%) (Figure 3). As shown with the diagram in Figure 20, a majority of the images placed in the activity section are small (10 images), and they often have a caption (11 images). The double-page in Figure 20 is a typical page of post-reading activities in *Gateways*, which very often consist of no images, or very few images in relation to number of tasks.

Figure 19: Example of a typical use of a large image (*Gateways*, p. 111)



Figure 20: A typical double page with post-reading activities (*Gateways*, p. 30-31)



Using large images in combination with longer texts is a benefit for many pupils. The size increases the salience of the images and could potentially help weaker readers to visualise what they are reading (see p. 27). Improving the understanding of the text during reading may encourage the pupils to continue reading and increase their endurance when reading longer texts, the most common issue among low ability pupils who are categorised as weak readers in the PISA study (see p. 13-14). Familiarising the topic in the text by illustrating terms and concepts could be the motivational factor making the text accessible, and thus providing the pupils with the required and sought-after practice with reading longer texts.

Illustrating unknown words and topics is also in line with Vygotsky's claim that the learning material needs to be within the zone where learning happens (see p. 20). Consider for example the text in Figure 19 about Romeo and Juliet by Shakespeare. In order to build bridges between the old text and the young teenagers reading the text, there is an image from the most current screen version of the play. As a result, the image works to build bridges between the written word and the learners, bringing the text in towards the most logical current knowledge the pupils have about the topic. As a consequence, the image may provide pupils with a deeper understanding of the subject, as it provides them with a link to contemporary use of Shakespeare. For others, who may have seen the film, the image could be a helpful clue of what the text is about, improving the overall accessibility of the text (see p. 16-17).

The images in connection with longer texts appear to have several useful functions in *Gateways*. The total number of images in *Gateways* is very low, yet it has the highest number of images placed in connection with longer texts. Conversely, there are very few images in other sections of the book. Similar to the other general study textbooks, *Gateways* does not seem to use images in the pre-reading stage in order to prepare the learners for the text which follows.

Moreover, with only 16 images (10%) in the post-reading stage, *Gateways* stands out as having the lowest numbers and no other textbook relate to these numbers. Images are rarely used here, and this is also demonstrated in Figure 20, a page clearly showing a vast amount of written tasks provided to increase a learner's overall comprehension of a text (see p. 18). Consequently, *Gateways* seems to rely strongly on the linguistic intelligence of learners in the post-reading stage.

7.8 Summary and Discussion

The findings in this study indicate differences, as well as similarities, in the use of images between the different study programmes. Additionally, there is much individual variation between the textbooks. Although similarities between the individual textbooks can be found, each textbook comes across as having a particular pattern in the use of images, and the role of images varies greatly from book to book.

Of the vocational books, *Tracks* and *Skills* use images much more extensively than *Workshop* does. *Tracks* uses images frequently, in all stages of the reading process, and the choice of images, for instance drawings, suggests that they are especially helpful for the weaker learners and readers. The use of drawings is a feature found in all three vocational textbooks. There is, however, a clear lack of images which could potentially be more beneficial for high-knowledge learners, such as the use of diagrams, in all three textbooks. *Skills* and *Tracks* have both an extensive use of close-ups and images which establish eye contact, potentially beneficial in order to connect the pupils emotionally with the content. This is not the case in *Workshop*. *Workshop* has very few images per page, they rarely interact with the pupils and they are often small.

Skills stands out from all the other studied textbooks in that it has very few images in combination with longer texts. This could perhaps make the reading process more challenging for the weaker readers, but it may also be that the heavy use of images before and after reading the text helps maximise the learning outcome from the reading process as a whole.

Of the general study textbooks, *Access* and *Targets* appear to address high-knowledge learners, whereas the image use in *Experience* has the potential to be helpful for pupils of all reading abilities. *Access* has images which may be very helpful during reading and post-reading, but there are no images in the pre-reading stage. As proposed by Grabe (see p. 16-17), using images is not the only way of activating background knowledge and preparing the pupils for the following text. However, variation is often suggested as a favourable approach when trying to reach the diverse group of pupils in the classroom. Pupils of different abilities and different learning styles have different needs and, according to Gardner (see p. 18-19), using images instead of verbal text could be more beneficial for some pupils. As argued in the section on reading strategies (see p. 16-17), the pre-reading stage is considered very important in order to fully maximise the learning outcome of the text in question, and it is highly beneficial for many pupils to include this stage in the reading process. The argument for using an image is that it could be addressed on its own and is much more salient than for example a small text above the title giving clues about the longer text. These written prompts are also easily overlooked unless they are pointed out and explicitly addressed by a teacher. Arguably, using images at this reading stage could potentially be very effective.

The images in *Access* are large and prominent on the page, and, as in *Targets*, they tend to have informative functions rather than the emotive functions found in the close shots in *Experience*. However, the images in *Access* are often with human motifs, in contrast with the

impersonal images found in *Targets*. As claimed by Kress & van Leeuwen (see p. 25), human motifs may potentially lead to pupils identifying with the participant and, as a result, connect with the content in a more personal way. This may be the case even if the long-distance images are mainly offering information.

The use of objective and informative images in *Targets* indicates a textbook aimed at high-knowledge learners. The images are often small and placed in the margin, without demanding attention from the reader. In addition, the choice of motif (landscape and city views) and the type of image (diagrams) indicate a strong focus on giving the pupils an extra challenge when decoding them.

Experience could potentially meet the needs of pupils of different abilities with its use of images. In contrast with *Skills* and *Tracks* which appear to be addressing mainly the weaker readers, and *Access* and *Targets* mainly addressing the stronger readers, *Experience* appears to be able to do both. The images are of all sizes and placed in all sections of the book. In addition, they frequently interact with the learner, making sure the pupils are connected emotionally with the content.

The images in the undifferentiated textbook, *Gateways*, have one strong role, and that is supporting the learner in the *during reading* stage. As with *Access*, the use of images in connection with longer texts in *Gateways* could be very beneficial for the learners. At the same time, while the lack of images in the pre-reading sections of the textbook was also found in *Access*, *Gateways* stood out as the only textbook with a very low number of images in the post-reading stage. The activity sections are not short or limited, as seen in Figure 20, but the textbook seems to have a strong focus on written tasks, without the use of images. Gardner (see p. 18-19) suggests that learners who are less able to use written language as a means to remember information could benefit from using images more often. It could therefore be argued that the post-reading sections in *Gateways* are perhaps of more help in the learning process for learners with a strong linguistic intelligence.

To summarise, *Tracks* and *Skills*, both vocational textbooks, appear to cater for weaker pupils in particular with their use of images. By contrast, the image use of *Access* and *Targets*, both general study textbooks, seem to be better suited for high-knowledge learners. One could pose the question whether this difference reflects the average grade intake for the two study programmes. The grade averages among the pupils who apply for vocational studies are lower than for general studies. Yet, these are only averages and do not apply to every pupil

attending the respective study programme. There may be very weak readers in a general study classroom just as there may be very strong readers choosing a vocational path.

The other possible explanation for the different uses of images could be that the textbooks are preparing the pupils for the next step in their education, and that the different career paths are taken into consideration when producing the textbooks. The practice of reading texts with very little visual support in *Targets* may prove beneficial for the pupils who will later find themselves reading heavy theoretical literature in higher education. In fact, the curriculum communicates very clearly that learning should be adapted to the different study programmes (see p. 7-8) At the same time, the competence aims, which are identical for both programmes, include reading and interpreting mathematical information. In addition, reading as a basic skill is explained as including visual texts, like graphs and other illustrations. One could therefore argue that, in order to fulfil all the criteria set by the government, a varied use of images is desirable: with regard to the categories here defined, such varied use seems to be found particularly in *Experience*.

8 Relating the Findings to Theories of Learning and Multimodality

8.1 Images as Pedagogical Tools in the Reading Process

The PISA study suggests that 10% of Norwegian readers are highly proficient readers (see p. 13). As a result, the majority of the EFL learners in upper secondary schools in Norway are categorised as having the potential to become better readers. It follows, then, that pupils need guidance in order to fully maximise the learning outcome when reading a text. One of the areas of interest in this study is the role of images in the application of reading strategies in the three different reading stages: pre-reading, during reading and post-reading (see p. 16). This is linked to research question 3) How does the image use in the different textbooks relate to theories of reading and of learning?

There are many reasons why using an image may be a good choice for a pre-reading activity. First of all, an image is a fairly quick and effective way of getting a pupil's attention. In addition, the pupils may automatically start predicting the topic of the text, even without the teacher specifically introducing a pre-reading task or directing attention to an image, as an image is a naturally salient element on a page and thus difficult to ignore. Furthermore, using an image at this stage may be especially useful for weaker readers, as an image may be easier to decode than a written text. Besides, if the text deals with an unknown topic containing unfamiliar words, images may be used in advance to demonstrate the topic which follows. This is a common strategy used to prepare the learner for a specific text, by allowing them to become familiar with specific content and/or language used in the text.

The findings of this study show that textbooks aimed at vocational study pupils have more images in the pre-read sections than textbooks aimed at general study pupils. As the study only considers the use of images it is not possible to comment on other pre-reading strategies which the books may encourage. The images are used to introduce whole chapters as well as longer texts. Because an image may encourage the learner to want to read, it is especially beneficial for weaker learners who lack experience with reading texts and who may struggle with getting started with a longer text. An image is also accessible to more pupils than other pre-reading activities and may be what is needed for a learner in order to grasp the topic in the following text. Ultimately, an image may be used by a teacher to connect the

unknown text with the pupil's background knowledge on the topic and thus adjusting the level of difficulty when meeting the text in question. Making sure that the learning material has the right level of difficulty is, according to Vygotsky (see p. 20), important in order for learning to occur.

Skills and *Tracks* use images frequently to prepare the readers for a longer text. As the average grade intakes for vocational studies are lower than for general studies, using images at this stage in these books is arguably more important than in the books aimed at general study pupils, as the expectations for the vocational school pupils' reading skills would be lower. For example, in Figure 21, which shows an image placed in the pre-read section in *Skills*, there are four images of young people wearing different religious headwear. Pupils may recognise one or more of these depicted items and may even identify with the people represented. The images act as a way of activating the background knowledge that each pupil has of religion and religious garments, and they may already start predicting what the text is about. If the teacher uses the images actively, for instance by initiating a discussion around what is portrayed, the knowledge and vocabulary needed in order to be better prepared for the text in question may be provided in advance for the pupils who have no previous knowledge around the particular topic. This is known as scaffolding, and according to Vygotsky, being guided by a 'More Knowledgeable Other' is an effective way of placing a pupil in the zone where the best cognitive development happens.

Another feature in Figure 21, is that the images are all close-up photographs of young people. Two of the represented participants are looking directly at the viewer, making them *demand* images (see p. 25). Collectively, these features give the images an emotive appeal, sometimes used strategically as a way of attaching pupils emotionally to the knowledge. Kress & van Leeuwen (see p. 26) also claim that the educational system tends to move from 'demand' images to 'offer' images when higher levels of education are reached. This claim is interesting considering that *Skills* is a textbook aimed at vocational study programmes, with pupils who often tend to be viewed as weaker readers, perhaps because they have chosen the path to a manual trade where skills other than reading are more sought after.

Figure 21: Pre-read task (Skills, p. 84-85)



The next stage in the reading process, *during* reading, is when the main text is read and understood (see p. 17). Because the text is not necessarily read in a linear way, any elements of interest may be attended by surface reading the text. Images are usually salient elements, especially if they are of a considerable size, and will easily get the reader's attention. These can be used as clues to what the text is about if they represent the content of the text. Unknown topics or specific words may also be illustrated in order to support the reader in comprehending specific vocabulary in the text. Moreover, as some images may be read much faster than words, images could function as the necessary clues which ensure a steady read of the text without the need to stop and check out the meaning of important words. However, this would require images which are easily decoded. Guessing is part of the reading process and for weaker readers it may prove useful to have images illustrating what the text is trying to convey. The PISA survey suggests that lack of endurance when reading longer texts may be a possible reason for why some pupils end up on a critical reading score (see p. 13). Using images could possibly function to encourage the reader to continue reading, as visualising the content could have the potential to enable and improve reading comprehension.

Two very different examples of the role of images mid-text have can be found in Figure 13 and Figure 22. Figure 13 shows an image from *Access* in connection with a longer text about rugby. Three main points are highlighted in the text about how rugby differs from soccer, the more famous sport. The image visualises two of these three aspects, namely the shape of the ball and the acceptance of tackling a person, and not only the ball. The image reflects accurately what is stated in the text and could confirm a reader's possible initial predictions about the topic. On the other hand, the image could work to adjust the reader's

own visualisation of the topic, if the reader had misunderstood the text and mixed up the sport with American Football, a close relative to rugby where the players wear helmets and body protection. The body size in the image indicates an impersonal involvement between the reader and the participant rather than trying to establish a connection between the two, making it an objective and informative image.

Figure 22 shows an example of image use that may not be directly helpful when reading a text. The text is about a Polish-American catering worker who starts exchanging letters with a Polish teacher. The story is a first-person narrative, written from the point of view of the female worker. The image does not represent much of what the text is about apart from the Polish teacher being male. On the following page he is described as wearing a brown suit with padded shoulders, and a red tie wider than normal with green squiggles on it. As a reader, one may start questioning who the image represents, as it is not clearly stated. Additionally, if the text comes across as challenging to the reader, the image does not offer support to the information given in the text and may discourage the reader in the reading process.

Figure 22: Image in the *during reading* stage (*Targets*, p. 103)



The last stage in the reading process is the *post-reading* stage (see p. 18). All the textbooks had more images in this section compared to in the pre-read section (see Figure 3), but there is a considerable difference in how they were used. *Skills* had the highest number of images in this section, but as illustrated in Figure 23, they are sometimes images in the margin

representing the topic dealt with, but without being directly referred to or used in a post-reading task. Being separated by a margin may indicate, according to Kress & van Leeuwen, that the images lack significance (see p. 27). The disconnection between the activities and the images leaves it up to the pupil to give them attention or not. This does not mean these images are all insignificant, however. If they represent the topic in the text, a visual clue may give the pupil the necessary prompt to remember the content from the text, or it may give the pupil more in-depth knowledge about certain aspects of the topic presented to them in the text. As seen in Figure 23, the image on the left is accompanied with a caption containing a recount of Kevin Rudd's pardon to the Aborigines in 2008. This is further developing the content in the previous text, adding more in-depth knowledge about the topic.

Some image types are on the whole more accessible than others, especially drawings which are considered to be more easily decoded than, for example, diagrams (see p. 25). As a consequence, drawings should be able to address both weak and strong learners and may be the reason why the findings show that some vocational study textbooks tend to have a higher number of drawings than general study textbooks. Using both verbal and visual content simultaneously could also be a strategy to make sure the content is correctly understood (see p. 23). Figure 24 shows a dual-coded task in *Workshop* where drawings are used in combination with words in a task to illustrate harmful ingredients in a cigarette on which pupils are told to do research. Presenting the material using both forms is supported by Mayer (see p. 23) and his view that images can help a learner build bridges between the written word and the image and, as a result, give the pupils a better understanding of the material.

The use of more challenging images in the activity section can be seen in Figure 25, where pupils are asked to read and interpret diagrams. Decoding a diagram may take time and is thus used as a strategy to encourage pupils to reflect and discuss the topic they have just read about. In this particular case, the main text was a factual text about Native Americans. In the example below, the pupils are asked to further look into where the Native Americans live in the U.S. and also the development of their population over time. The lack of captions explaining what the chart and table represent further complicates the reading of the tables. This particular use of images would prove more valuable for high-knowledge learners with a strong logical-mathematical intelligence (see p. 18-19).

Figure 23: Passive use of images in the activity section (*Skills*, p. 386-387)

Read and understand

9.53 Finish the sentences using information found in the text.

- When Molly woke up, she was ...
- Aboriginal children were taken away from ...
- The authorities wanted the children to ...
- Molly went to ...
- The children were not allowed to ...
- When the girls ran away from the camp, they ...
- They had to hide ...
- In the system, the practice ...
- By then, most ...
- After a long time, the Aboriginal Australians finally ...

9.54 Answer the following questions in full sentences.

- Who is the main character of the novel *Follow the Rabbit-Proof Fence*?
- Explain what a rabbit-proof fence is.
- Why were Aboriginal children taken away from their parents?
- What happened to children who didn't obey the rules in the settlements?
- What is National Sorry Day?

Speak

9.55 Do you know if there are other groups of people (ethnic or indigenous) who have been treated in a similar way as the Australian Aboriginals? Who are they? What have they experienced?

Practice

9.56 A proverb is a saying, often expressing popular wisdom. Below you will find proverbs of different indigenous peoples.

- Read the proverbs.
- Translate them into Norwegian.
- In your own words, explain what the proverbs mean.

The land is permanent, man disappears. (Atsugi)

We will be known forever by the tracks we leave. (Ná Daxicxi)

It is better to have less thunder in the mouth and more lightning in the hand. (Má Assuwi)

Don't judge a man until you have walked two moons in his moccasins. (Má)

May your charity increase as much as your wealth. (Inuit)

Those who lose dreaming are lost. (Armenian Aborigine)

Write

9.57 Fill in missing words in the following text.

talent – realized – headlines – athlete – honour – Aboriginal – track – dream – competing – represent

Cathy Freeman was an Australian ... She came from a poor family in Queensland. When she was five years old, she took part in her school's Sports Day. That was the first time she ... how much she liked to run. It didn't take long before she started ... and winning races. However, it took a lot of hard work, ... and determination to become really good. In 1997, Cathy Freeman became the first Aboriginal ... to her country in the Olympics. When she won the Commonwealth Games, she ran around the ... with both the Australian and the Aboriginal flag, and this made the ... At the Sydney Olympics in 2000, she was given the ... of lighting the Olympic flame. When she later won the 400-meters final, it was a childhood ... that became reality.

9.58 Write one paragraph on one of the following topics. Search on line for reliable information. Remember to state where you found the information.

- The Aboriginal flag
- Aboriginal art (or an artist)
- The Dreamtime
- The Rabbit-Proof Fence

9.59 Write a text in which you discuss how indigenous peoples have been treated in the past. Use examples from texts you have read in this chapter to support your statements. Look at 'Writing a Historical Speech Text' on pages 218 – 219 for advice.

Explore

9.60 Director Baz Luhrmann's film *Australia* (2008) deals with, among other topics, the relationship between European settlers raising farms in Australia and their Aboriginal workers. It shows some aspects of Aboriginal culture and how they were looked upon and treated by the white settlers. Watch the opening scenes of the film, which are told by the Aboriginal boy Nullah.

- Who is King George?
- What is he and Nullah doing?
- Why does King George tell Nullah to 'hide under water'?
- How does Nullah get back to the farm?
- Back at the farm, why does Nullah have to 'hide' in the water tower?


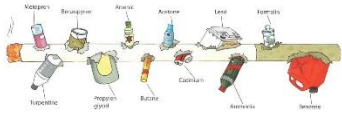


Figure 24: Dual-coded task (*Workshop*, p. 180)

Further study

7.27 Study the drawing carefully. Make a list of what makes up a cigarette, and explain why the ingredients may be harmful. Where do you normally find these ingredients? Write it up as a fact file.

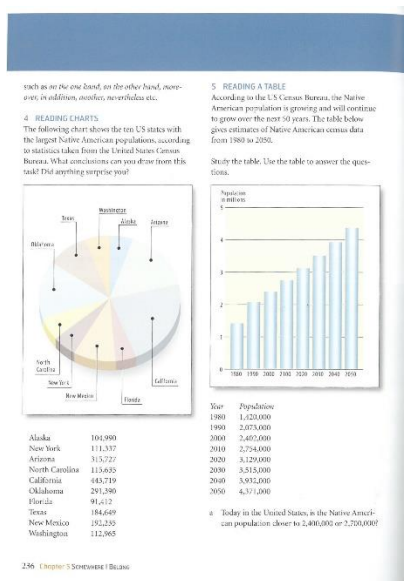


7.28 How does smoking affect your health? Find information in textbooks and on reliable websites. Write a fact file.

7.29 Use at least two different sources to find out what happens to your body when you quit smoking, and how long it takes for your body to recuperate. Write a fact file.

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Figure 25: The use of diagrams in the activity section (*Access*, p. 236)



8.2 Multimodal Texts

According to Mayer (see p. 23), using images in addition to words will increase the learning outcome. The present findings show that all textbooks use images more or less frequently, ranging from 0.58 images per page (*Experience*) to 1.01 image per page (*Skills*). Apart from *Skills*, all textbooks have the majority of the images placed in connection with a longer text. However, as Mayer explains, for images to be helpful in the reading process, they need to be meaningful and correspond well to the text in question. In addition, low-knowledge learners benefit more from multimodal texts than high-knowledge learners. Accordingly, it may be worth looking more closely at the use of images in connection with longer texts in the present material.

There are two explanations for why it is better to use two processing channels (see p. 23): 1) presenting material twice doubles the input and consequently makes the content easier to understand and retain, and 2) the two codes are not equivalent, but they complement each other, thus resulting in a more accurate understanding of the content. Reading in a foreign language particularly may be challenging when it comes to creating meaning from an unknown text. It could therefore be very helpful with images providing the same information as the written words, especially since visualising the content is an important part in the process of comprehending a text (see p. 17) Low-knowledge learners may not be able to visualise the written content themselves and the support of the ‘right’ images could potentially

help them construct meaning. ‘Racing for glory’ (Figure 26) is a text about athletics and the story of three Olympic Gold medal winners. The image illustrates very clearly the concept of athletics, competition, and what type of ‘racing’ the text is about. Arguably, these are the most crucial terms in order to facilitate reading comprehension in this particular text. The two images of the rugby players in Access (Figure 13) are also good examples of this particular function images may have when they are integrated with a longer text.

Figure 26: Racing for glory (*Experience*, p. 143)

Chapter 2 | INTERNATIONAL EXPERIENCE

PRE-READING
The Olympic Games
 a What do you know about the Olympic Games, for instance how often they are held and their origin?
 b Write down the names of as many Olympic events you can think of.
 c Do you know the names of any Olympic champions and the events they won?

Racing for glory

Jesse Owens, Cathy Freeman and Usain Bolt are had an exceptional talent and still to succeed. Each a force of nature by winning Olympic Gold medals in disparate athletics events. Here are their stories.

Jesse Owens (Berlin 1936)
 Jesse Owens' achievement in the 1936 Olympic Games in Berlin is considered as one of the greatest in the history of the Games. He won four gold medals in the same Games – in the 100 and 200 metres, long jump and 4 x 100 metres relay.

Mayer (see p. 23-24) suggests that high-knowledge learners do not get the same effect from multimodal texts that weaker learners do, as they are able to visualise the content regardless of images and/or badly designed texts and thus better retain the material. It could be that Mayer's second argument, that images are not equivalent to text but complement each other, explains why stronger readers would still benefit from the use of images. Using the two codes together, images and words, may give the pupils more than what the text could do on its own. The image of an African family on their way to fetch water (Figure 27) is a good example of when it may prove difficult for a Norwegian pupil to visualise written content. Irrespective of how well the text describes water shortage in Africa, the image has the potential to give the pupils a better understanding of the situation. Not only does the image visualise a vastness in landscape unknown to most Norwegian teenagers, it also very strongly communicates to what

extent there is a lack of water. This is done both with the dry ground which takes up the majority of the space in the image, and with the number of large pots the family is carrying.

Describing the steps of how to give first aid (Figure 28) is another example of material which is potentially best explained using images. The text can explain much, but in order to ensure full comprehension of how to give first aid, it could be argued that images are best suited to demonstrate clearly what to do and how to do some of the stages in that process.

Figure 27: Water shortage in Africa (*Workshop*, p. 160)



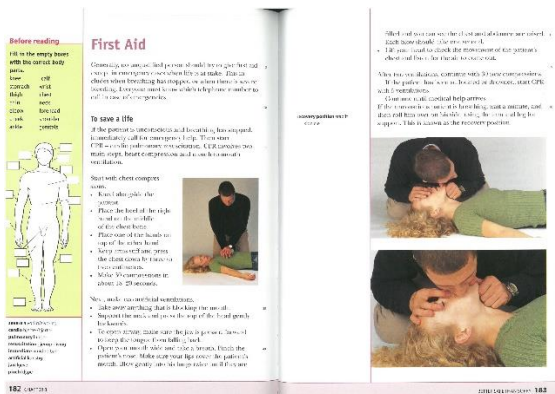
hospital beds worldwide, all the time. Sometimes industrial waste is pumped directly into the rivers. So are untreated sewage and other pollutants. The sad thing is that this may be the only source of water for people living in the area.

Poverty and lack of water are often two sides of the same problem. When you spend half your waking hours fetching water, it is not going to give you much time or energy to deal with other important things in your life. Water shortage often causes hunger as well. With enough water, people could grow more food where they live.

Using less water in farming has been successful in some places, for example by building better irrigation ditches. Another possibility is water rationing. In some areas of South Africa a family of four gets 50 litres of water a day for free. If they use more, they must pay for it. But bigger families don't get more, so if you are a family of eight, you still have to manage on those same 50 litres.

Desalination is another approach. There is no shortage of sea water, and by extracting the salt and minerals, you get fresh water. But then of course, you get a mountain of salt to deal with later. Still, in some areas of the Middle East this is a very important source of water for the population.

Figure 28: First Aid (*Workshop*, p. 182-183)



Before reading

Fill in the empty boxes with the correct body part.

ear eye nose mouth throat neck chest back hand arm shoulder leg

First Aid

Check for an unconscious person should never give food and water to an unconscious person because they may choke. First aid often saves lives by stopping the damage, so always have a well-learned first aid course and use it when you need to.

To save a life

If the person is unconscious and lying on their back, lay them on a hard surface and call an ambulance. If you are alone, you must stay with the person and do first aid until help arrives.

Start with chest compressions

- Kneel on the floor.
- Place the heel of the right hand on the middle of the chest bone.
- Place your other hand on top of the right hand.
- Push down hard and fast. The chest should rise up and fall down.
- Make 30 compressions at about 120 per minute.

Now, make an artificial windpipe.

- Tilt the person's head far back.
- Support the neck with the edge of the hand placed on the floor.
- Lift the chin.
- Push your fingers into the person's mouth and pull it open.
- Push your fingers into the person's mouth and pull it open.
- Push your fingers into the person's mouth and pull it open.

Heimlich maneuver

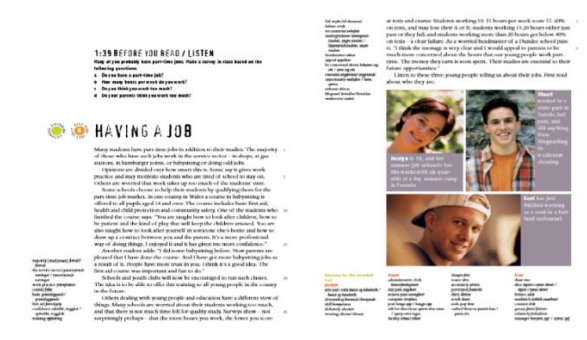
Stand behind the person and wrap your arms around their waist. Make a fist with your right hand. Place the thumb side of your fist against the person's abdomen, about 4 cm above the belly button. If the person is sitting or standing, you can stand in front of them and wrap your arms around their waist.

8.3 The Interactive Function of the Images

The findings in this study show a clear majority of photographs among the images in all the textbooks, ranging from 56% (*Tracks*) to 74% (*Access*). These images could be claimed to represent the most realistic representations of the world as we know it. Furthermore, the more realistic the images, the easier the decoding process (see p. 25) In addition, the majority of the images in all textbooks have a human motif. The findings also show that there is at least one face depicted in more than half of all images. Collectively, these findings suggest that the large majority of images in the studied textbooks are easily accessible images which the pupil can identify with and connect to the real world.

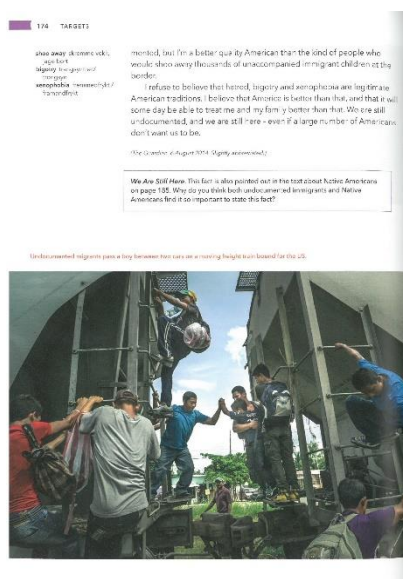
Images often try to establish contact with the viewer when they are used in combination with a text dealing with a topic the pupils can relate to on a personal level. In the example below (Figure 29), three teenagers are depicted in connection with a text discussing the pros and cons of having a job in addition to studying. Several factors indicate that these three images interact with the viewer on a close personal level. According to Kress & van Leeuwen (see p. 26), the social distance can be determined by examining the body size in the image. A close shot, seen in the example below, addresses the viewer on the closest level, indicating a personal involvement. Another indicator of the level of interaction between the participant and the viewer is eye contact. The participants in all three images in this example look directly at the viewer, making them ‘demand’ images. The participants in the images ‘demand’ a certain attention and a potential relation between the two is established. As a result, the pupil could be connected emotionally to the topic.

Figure 29: Having a job (*Gateways*, p. 32-33)



Eye contact between the participant and the viewer was established in only a small proportion of the images, with percentages ranging from 14% (*Workshop*) to 20% (*Skills and Experience*). Images offering information at a more objective and impersonal level were therefore more common. Similarly, all the textbooks had a much higher number of images where the participant was depicted in a long shot than ones representing a close shot. In an educational setting, it perhaps makes sense to have a large majority of images which offer information without involving too much emotion. This view is also supported by Kress & van Leeuwen (see p. 26), who suggest that there is a tendency to move away from demand images as the pupils get older and more knowledgeable. The school textbooks introduce topics and content often unknown to the pupils, and the images are often seen displaying and illustrating factual knowledge, without engaging emotionally with the pupils. The main function of the realistic photographs of people in natural settings is often to offer information. This can be seen in the image of undocumented immigrants passing between two wagons of a train (Figure 30), where the corresponding caption explains the depicted situation. Yet, this objective and impersonal knowledge is still, to some extent, made personal by having a human motif. The same function can also be seen in the image demonstrating water shortage in Africa (Figure 27).

Figure 30: Undocumented immigrants (*Targets*, p. 174)



8.4 Summary

In this chapter, the image use in the studied textbooks has been related to three particular aspects of learning: the different stages of the reading process, the use of multimodality to improve learning and the interactive and communicative functions of the images. The finding that images are used frequently in the pre-reading sections in vocational textbooks shows that these textbooks are especially beneficial for low-knowledge learners. Images are more accessible for weaker readers and using images to activate prior knowledge about a topic and connect that knowledge to the current text means that these pupils in particular will be better prepared for the text in questions. The general studies textbooks, on the other hand, offer less visual support to the pupils in this reading stage, giving evidence that these textbooks are better suited for stronger readers and pupils with a high linguistic intelligence.

As for the *during* reading stage, images could potentially be very valuable in connection with text. The crucial variable here is whether or not the image reflects the content of the text. This stage in the reading process is when the pupil will confirm or readjust the understanding of the written words, and an image representing and correctly illustrating the content of the text is critical. The study discovered the use of some images which very clearly demonstrated what the text conveyed, such as the rugby images (Figure 13) and the athletics image (Figure 26). However, potentially confusing images which do not accurately represent the content in the text were also discovered (Figure 22). Mayer's research implies that stronger readers do not get affected by the use of images when reading longer texts. Using images in connection with text is therefore more important to weaker readers and could affect their reading process to a higher degree than stronger readers. These findings in the textbooks indicate a general need for more research devoted to the use of images in connection with foreign language texts.

The post-reading stage contained images with several functions. Images were used quite frequently in all the textbooks in the post-reading stage. Some images were placed in this section but not used explicitly in the activities. These images range from repeating the content of the text in question to giving the pupils more in-depth knowledge about the topic. Repetition is useful in order to remind the readers about the text, whereas elaborating on the topic would be especially worthwhile for stronger readers who are cognitively able to further work on the topic. As for the images used in connection with the activities provided, there was much variation both within the individual book and between the different textbooks. In

particular, the decoding process was found to range from very easy, with for instance drawings to combine with new terms, to particularly demanding abstract images, such as diagrams. The findings provide evidence that general studies textbooks generally use images which are more challenging and, consequently, more useful for stronger learners. In contrast, the vocational textbooks provided weaker learners who are in need of more time spent on understanding the content of the text benefit more often with images which are easily accessible, such as drawings. The implication of these findings is that, while the study programmes are likely to consist of learners of all abilities, the textbooks appear to cater more strongly for either low-knowledge or high-knowledge learners.

The interactive function of the images was also investigated more closely. The general finding is that the textbooks rely heavily on images with which the pupils can recognise and identify, in line with Kress and van Leeuwen's theory that images have the potential to attract the viewers' attention and engage them to a certain extent. This is evident in the use of human motifs and the large majority of photographs. There was also a general impression of a consistent use of highly realistic images representing situations and settings which are easy to identify with. The represented participants were predominantly photographed from a long distance and these findings were explored with a few examples of how these images were used in different contexts. The analysis showed that images are often charged with meaning, and do, to a large extent, offer objective information in the same way one could expect from the written texts (see Figure 27, Figure 28, Figure 30).

The objective, impersonal information offered in long-shots was contrasted by the use of close-shots. These images often appear in contexts where the pupils are already likely to have some personal experience and possibly enough prior knowledge to understand the content presented in the text. These contexts do not demand as much information, but rather profit from the use of images with a different function. The open, inviting faces seen in, for instance, Figure 18 are good examples of how images are used to attract a reader's attention and create an interest in the participants.

9 Conclusion

The present study has explored the function and use of images in EFL textbooks used in upper secondary schools in Norway. The findings in the individual textbooks were also compared in order to identify differences in their use of images. The analysis was carried out with the aim to provide answers to the following research questions:

- 1) How do the different textbooks differ in their use of images?
- 2) Is there a significant difference in the use of images between textbooks aimed at vocational studies and those aimed at general studies?
- 3) How does the image use in the different textbooks relate to theories of reading and of learning?
- 4) How do the different textbooks take into account the needs of different learners in their use of images?

The textbooks differ greatly in their use of images (research question 1), with two textbooks in particular standing out with very different results than the others. *Targets*, a general studies textbook, appears to be catering for stronger pupils in particular, with a large proportion of impersonal, objective images, very few drawings, a high number of diagrams and many captioned images. These findings indicate images which are difficult to decode, with their main purpose being offering information. *Skills*, a vocational textbook, offers weaker pupils much visual support, with many human motifs taken as close-ups, and very few images which are challenging to decode, such as diagrams. The large proportion of images in the pre-read sections of this book is also very valuable for weaker readers.

As for the findings related to the second research question, the most striking difference is in the number of images, which is substantially higher in vocational textbooks. Vocational textbooks provide pupils with visual support more often than general studies textbooks, and this is especially clear in the frequent use of images in pre-read sections of the textbooks. In general, the images are more suited for weaker readers in vocational books, with a large majority of drawings and other easily accessible images, while general studies textbooks provide the readers with more objective and informative images, such as diagrams.

The third line of enquiry addressed the question how the use of images might relate to theories of reading and of learning (research question 3). Although the study showed many pedagogical functions of the images in the reading process, such as supporting the stages in

the reading process, the results varied between the individual textbooks. Some textbooks focussed more on the visual in the pre-reading stage while others did not offer any visual support here. The same result was seen in the use of images in connection with longer texts, with some having a strong focus on integrating images with text and others placing images mainly in the margins. It was suggested that these differences cater to pupils of different abilities, with weaker readers potentially having more of an advantage from the use images in all the stages of the reading process.

The last question concerned the extent to which the studied textbooks take into account the needs of the different learners in their use of images. These needs may relate both to a learner's language ability and to the needs of their future career path. An initial assumption was that the vocational studies textbooks were targeting pupils with low motivation levels and weaker reading abilities, based on the average grade intake for the study programmes, but also the fact that these are practical minded pupils. This assumption was confirmed in the study. In the opposite end, we find general studies textbooks, most notably *Targets*, which cater for pupils who read well and who aim to continue with higher education with more theoretically aimed studies.

The textbooks, accordingly, clearly take into account the broad expectation of different needs in different student groups. It could, of course, be worth questioning whether the classrooms in reality consist of pupils who fit into this description. Most likely, pupils of all abilities are found in every class. The consequences of too strongly adapted teaching materials could be that the stronger readers attending vocational studies do not maximise their learning potential, and that weaker readers in general study programmes are unable to fully comprehend and retain the information from the main text.

The overall results, however, indicate that Norwegian textbooks use images frequently and that the images have many pedagogical functions, catering to both weaker and stronger learners of English. These functions appear to vary between the textbooks, suggesting that images play different roles from one book to another in the pupils' reading and learning processes.

The findings of this study suggest that there is a need for further research in the field of visual representations in EFL textbooks in Norway. More specifically, future research should be looking into the text-image relation with more focus on the content of the image and its implications in the reading process. The analysis of the images in this study gave rise to some

questions regarding which images have the most potential to support the learners their reading process. Although some images were examined with more detail, it would be fruitful to explore this aspect more closely. Furthermore, as this study only dealt with the textbooks, it would be of interest to collect material on the pupils' experience of the use of images in textbooks. A qualitative study examining the effects of images in connection with text could support the producers in their work of how and when to use images.

To sum up, the study of the visual aspect of textbooks is an interesting field, with much potential. This study has only scratched the surface of many aspects which could be investigated when it comes to the significance of using images when learning a foreign language. August 2020 marks the start of a new core curriculum, Fagfornyelsen, which will lead to all the publishing companies releasing new textbooks. It would be highly interesting to explore to what extent the use of images in the new textbooks might reflect a changing visual culture as well as a change in curriculum, and to what extent the roles and functions of the images may have changed in relation to the findings in the present study.

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Illustrations

Figure 1: ‘Zone of Proximal Development’.

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