



Western Norway  
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# MASTER'S THESIS

An Investigation into 10<sup>th</sup> Grade EFL  
Textbook Tasks and to What Extent They  
Promote Critical and Meaningful  
Learning

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I confirm that the work is self-prepared and that references/source references to all sources used in the work are provided, cf. Regulation relating to academic studies and examinations at the Western Norway University of Applied Sciences (HVL), § 10.

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## Abstract

This thesis presents an analysis of three English as a Foreign Language (EFL) 10<sup>th</sup> grade textbooks and to what extent their tasks related to sustainable development promote critical and meaningful learning. The study has also analyzed what percentage of textbook tasks achieve Bloom's taxonomy's higher levels of cognitive processes that lead to critical and meaningful learning, as well as to what extent these tasks help pupils to achieve the aims of a critical literacy approach, namely taking action and promoting social justice. The investigation is motivated by the increasing importance of sustainable development education as well as the strong position textbooks and tasks hold in EFL teaching and learning. The current study has also tried to shed light on the need for an explicit awareness of knowledge taxonomy. In addition to this, the thesis has tried to convey the need to include a critical literacy aspect to education.

The analyzed EFL textbooks, *New Flight 3*, *Crossroads 10A*, and *Enter 10*, are currently in use in 10<sup>th</sup> grade in Norway and designed to accommodate the curricula for the subject of English in grade 10. With the aim of investigating to what extent textbook tasks related to sustainable development promote critical and meaningful learning, Bloom's taxonomy and critical literacy are used as analyzing tools, as well as theoretical background. The methodology applied to conduct the study is a mixed methods content analysis, where the quantitative research provides exact answers regarding the ratio of tasks, while the qualitative method provides in-depth analysis of the tasks.

The findings reveal that *Crossroads 10A* and *Enter 10* contain a relatively similar number of tasks that promote critical and meaningful learning, whereas the analysis indicates that *New Flight 3* does not promote critical and meaningful learning to the same extent as the other two textbooks. Regarding a critical literacy aspect, the analyses reveal that only three tasks found in *Crossroads 10A* and *Enter 10* help pupils, or have the potential of helping pupils, to achieve the goals of taking action and promoting social justice. According to the analysis, *New Flight 3* does not contain any tasks which focus on this aspect of critical literacy. However, central to the discussion has been that regardless the quality of textbooks and other learning materials, critical and meaningful learning primarily rests in teachers' knowledge, skills and awareness of approaches that promote critical and meaningful learning.

## Abstract in Norwegian

Denne oppgåva presenterer ein analyse av tre engelskbøker på 10.trinn og spør i kva grad oppgåvene i lærebøkene, knytt til bærekraftig utvikling, bidreg til å fremje kritisk og meiningsfull læring. I oppgåva har forskaren analysert kva prosent av oppgåvene i lærebøkene som oppnår dei høgaste nivåa av kognitive prosessar i *Bloom's taxonomy* som fører til kritisk og meiningsfull læring. Forskaren analyserer i kva grad desse oppgåvene bidreg til at elevane oppnår måla til *critical literacy*-metoden, nemleg å handle og å fremje sosial rettferd. Undersøkinga er motivert av det høgaktuelle temaet bærekraftig utvikling og den sterke posisjonen lærebøker har i engelskundervisinga. Forskaren peikar òg på behovet for eit eksplisitt fokus på kunnskapstaksonomi, samt å inkludere *critical literacy*-metoden i utdanning på alle nivå.

Lærebøkene som oppgåva analyserer, *New Flight 3*, *Crossroads 10A* og *Enter 10*, er i bruk på 10.trinn i norsk skule og er laga for å imøtekoma læreplanen i engelsk for 10.trinn. *Bloom's taxonomy* og *critical literacy* er brukt både som teorigrunnlag og analyseverktøy for å undersøke i kva grad oppgåvene i bøkene knytt til bærekraftig utvikling bidreg til å fremje kritisk og meiningsfull læring. Ein "mixed methods" innhaldsanalyse er brukt for å gjennomføre studien der den kvantitative undersøkinga gir nøyaktig svar knytt til ratioen av oppgåver, medan den kvalitative undersøkinga gir inngåande analyse av oppgåvene.

Funna viser at *Crossroads 10A* og *Enter 10* inneheld ei jamn fordeling av oppgåver som fremjar kritisk og meiningsfull læring. Analysen indikerer at *New Flight 3* ikkje fremjar kritisk og meiningsfull læring i like stor grad som dei andre to lærebøkene. Når det gjeld *critical literacy* viser analysen at berre tre oppgåver frå *Crossroads 10A* og *Enter 10* bidreg, eller har potensiale, til å hjelpe elevane med å oppnå målet om å handle og å fremje sosial rettferd. Ifølgje analysen inneheld ikkje *New Flight 3* oppgåver som fokuserer på dette aspektet av *critical literacy*. Likevel, eit sentralt fokus i diskusjonen er at uansett kva kvalitet lærebøkene og anna læringsmateriale har, så er det først og fremst læraren sitt kunnskaps-, ferdigheits-, og medvitsnivå som avgjer i kva grad kritisk og meiningsfull læring vert fremja.

## List of Abbreviations

EDS	Education for Sustainable Development
EFL	English as a Foreign Language
LK06/13	The Knowledge Promotion Reform 2006/13
L97	The Norwegian national curriculum previous to LK06
SDGs	Sustainable Development Goals
VG1	Year 11 in the Norwegian school system

## List of Contents

<i>Acknowledgements</i> .....	<i>i</i>
<i>Abstract</i> .....	<i>ii</i>
<i>Abstract in Norwegian</i> .....	<i>iii</i>
<i>List of Abbreviations</i> .....	<i>iv</i>
<b>1. Introduction</b> .....	<b>1</b>
<b>1.2 Bloom’s Taxonomy</b> .....	<b>2</b>
<b>1.3 Critical Literacy</b> .....	<b>3</b>
<b>1.4 The Role of the Teacher</b> .....	<b>4</b>
<b>1.5 The Relevance of the Study</b> .....	<b>5</b>
<b>1.6 Research Methods</b> .....	<b>6</b>
<b>1.7 Organization of the Thesis</b> .....	<b>6</b>
<b>2. Theoretical Background</b> .....	<b>7</b>
<b>2.1 The Knowledge Promotion 2006/13 and the New Curriculum</b> .....	<b>7</b>
2.1.1 The English Subject .....	9
2.1.2 The 2020 Curriculum.....	10
<b>2.2 The School of the Future and Sustainable Development Goals</b> .....	<b>10</b>
<b>2.3 Textbooks</b> .....	<b>12</b>
2.3.1 Textbook Tasks: Their Power and Influence on Learners.....	13
<b>2.4 Rote Learning Versus Meaningful Learning</b> .....	<b>14</b>
<b>2.5 Bloom’s Taxonomy</b> .....	<b>16</b>
<b>2.6 The Taxonomy Table</b> .....	<b>17</b>
2.6.1 The Cognitive Process Dimension .....	19
<b>2.7 The Framework for Basic Skills</b> .....	<b>25</b>
<b>2.8 Literacy and Meaningful Learning</b> .....	<b>25</b>
2.8.1 Multiple Literacies and Semiotic Domains .....	26
<b>2.9 Critical Literacy</b> .....	<b>27</b>
2.9.1 Challenges and Possibilities in Implementing a Critical Literacy Approach .....	30
<b>Chapter 3: Materials and Methods</b> .....	<b>32</b>
<b>3.1 Materials</b> .....	<b>32</b>
3.1.1 Selecting Textbooks .....	32
3.1.2 Selection of Chapters.....	33
<b>3.2 Methods</b> .....	<b>34</b>
3.2.1 Mixed Methods Content Analysis .....	34
<b>3.3 Carrying Out the Investigation</b> .....	<b>35</b>

3.4	Reliability and Validity .....	39
3.5	Ethics.....	39
3.6	Possible Limitations.....	39
<b>4.</b>	<b>Findings and Discussion.....</b>	<b>41</b>
4.1	General Findings.....	42
4.1.1	Lower-Level Cognitive Skills .....	43
4.1.2	Higher-Level Cognitive Skills.....	47
4.2	The Textbooks' Own Categorization of Tasks.....	53
4.3	General Discussion.....	54
4.3.1	Global, National, Local, and Personal Action .....	55
4.3.2	Facilitating Critical and Meaningful Learning .....	57
4.3	Procedures When Choosing Textbooks and Other Learning Materials .....	58
<b>5.</b>	<b>Conclusion .....</b>	<b>60</b>
5.1	Main Findings .....	60
5.2	Teaching Implications .....	61
5.3	Possible Limitations.....	62
5.4	Future Research.....	62
	<i>References.....</i>	<i>63</i>
	<i>Appendix 1:.....</i>	<i>69</i>
	<i>Types of Tasks in New Flight 3 (pp. 119-147).....</i>	<i>69</i>
	<i>Appendix 2:.....</i>	<i>74</i>
	<i>Types of Tasks in Crossroads 10A (pp. 119-147).....</i>	<i>74</i>
	<i>Appendix 3:.....</i>	<i>85</i>
	<i>Types of Tasks in Enter 10 (pp. 182-215).....</i>	<i>85</i>
	<i>Appendix 4:.....</i>	<i>104</i>
	<i>List of Verbs and Verb Phrases Found in Textbook Tasks Related to Sustainable Development .....</i>	<i>104</i>
	<i>Appendix 5:.....</i>	<i>106</i>
	<i>The Cognitive Process Dimension (Anderson et al., 2001, pp. 67-68).....</i>	<i>106</i>

## 1. Introduction

Students come to understand knowledge as a set of facts to be learned rather than as a personal investment in understanding and transforming their world. (Vasquez, Tate & Harste, 2013, p. 19)

When I first read this quote, it made me think back to years of schooling and what the instruction focused on. The knowledge and skills that I possess from years spent in classrooms, were gained from the experiences that touched me in some way. The abilities that I use to solve problems and understand new concepts are the consequence of meaningful learning. As a teacher, I intend to provide my pupils with the knowledge, skills, values and attitudes that are needed to thrive in a complex world. Learners must get the opportunity to understand knowledge as a personal investment in understanding and transforming their world (cf. Vasquez et al., 2013). English as a school subject is, according to the Norwegian Directorate for Education and Training [Udir] (2013, p. 1), “both a tool and a way of gaining knowledge and personal insight”.

All Norwegian children go through obligatory elementary school. School is an arena in which everyone participates, regardless of social background, gender, ethnicity, etc. Hence, schools have a great potential for educating and influencing. Pupils arrive in school with a wide range of experiences that influence their meaning-making process. By acknowledging this, teachers should center the classroom discussion around pupils’ voices and concerns (Beck, 2005, p. 394) in order to promote meaningful learning.

The strong position textbooks and tasks hold in English as a foreign language education in Norway influenced the choice of subject matter for this thesis. The researcher has sought out to investigate EFL textbooks tasks related to sustainable development and to what extent they promote critical and meaningful learning. The relevant topics of sustainable development and climate change are undeniable as they are the crisis of future generations. Thus, enabling pupils to learn about these issues and find solutions must be a priority in education. Are schools teaching facts or personal investments in the world? Schools have a great responsibility and a great privilege to encourage action in relation to the climate crisis. Recently, there seems to have been a slight shift in education in regards to sustainable development: people are starting to care and act. Greta Thunberg, a Swedish teenage activist,

has become a role model for worldwide student activism. She is known for having initiated the *School Strike for Climate* movement last year when she started to strike school and protest outside the Swedish parliament, which attracted global media coverage. Since then, pupils all over world have joined in the striking and protesting for climate change. Thunberg represents what every school should want to see in their pupils: passion and action. However, the *School Strike for Climate* has sparked heated debate across the world, with some praising the pupils for caring about a crucial cause, while others deem it irresponsible. Nonetheless, as a teacher I want to give my pupils the opportunity to act, both in and outside of school, so that they will not find it necessary to skip school to protest for something they feel is missing from the classroom.

The aim of this study is to investigate: **To what extent do a selection of 10<sup>th</sup> grade textbook tasks related to sustainable development promote critical and meaning learning?** With this question follows two subordinate research questions: A: **What percentage of textbook tasks achieve Bloom's taxonomy's higher levels of cognitive processes that lead to critical and meaningful learning?** and B: **To what extent do these tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice?**

The research will be carried out by investigating parts of three EFL textbooks which are produced in Norway and designed to fit the curricula of the Knowledge Promotion Reform 2006/13. Bloom's taxonomy and critical literacy will be used as tools in the analyses. These terms will in the following sections be described briefly, before they will be more thoroughly explained in the theory section.

## 1.2 Bloom's Taxonomy

Developed in 1956 by Benjamin Bloom and his collaborators, *Bloom's Taxonomy* is a framework for categorizing educational goals. The framework is intended to help teachers teach and pupils learn. The taxonomy can, for example, be used to design curricula, to create assessments, or as this study will apply it, to evaluate tasks. The original framework consisted of six major categories: knowledge, comprehension, application, analysis, synthesis, and evaluation. A revision of Bloom's Taxonomy titled, *A Taxonomy for Teaching, Learning, and Assessment* (Anderson et al., 2001), uses verbs instead of nouns to label its categories: remember, understand, apply, analyze, evaluate and create. These are the categories that will

be applied in the current study. Throughout the thesis, the terms *Bloom's taxonomy* and *the Cognitive Process Dimension* will be used interchangeably. Anderson et al. (2001) table of the Cognitive Process Dimension, which explains the major types and subtypes in detail, is included as Appendix 5 (p. 106).

### 1.3 Critical Literacy

The practice of critical literacy developed out of the social justice pedagogy of Brazilian educator and theorist Paulo Freire in the late 1960s. In general, literacy means the ability to read and write. However, critical literacy acknowledges that traditional literacy can only take pupils so far and aims to do something further: “The ability to do critical literacy gives us potent ways of reading, seeing and acting in the world”, according to Janks, Dixon, Ferreira, Granville, and Newfield (2014, p. 1). It involves an awareness of language and power, and it asks critical questions concerning whose interests are served: Who benefits, and who is disadvantaged? Who is included and excluded? Lewison, Flint and Van Sluys (2002) have created four dimensions of critical literacy: disrupting the commonplace, interrogating multiple viewpoints, focusing on sociopolitical issues, and taking action and promoting social justice. These dimensions will be further discussed in the theory chapter.

In relation to the research questions, it is highly relevant to discuss the teacher's role, as “[l]earning how to use and adapt textbooks is [...] an important part of a teacher's professional knowledge” (Richards, 2001, p. 1). Teachers should be critically literate in order to make conscious decisions about the teaching materials they present to their pupils. Thus, critical literacy can be used as a tool for teachers to choose and evaluate textbooks and other teaching materials. The claim that it is ultimately dependent on how the teacher decides to use the textbooks will be made throughout the thesis. Is the teacher going to be a transmitter of knowledge or a transmitter of awareness who helps pupils become actors rather than spectators (Freire, 2000) in the world? Teachers are not necessarily aware of the fact that the choices they make in the classroom are based on a combination of personal and theoretical knowledge and experience (Vasquez et al., 2013, p. 23). Although it could be interesting to investigate *teacher cognition*, what teachers know, believe and think (Borg, 2003), this will not be an explicit focus in this thesis.

## 1.4 The Role of the Teacher

As a teacher, one has a great responsibility and a great privilege. Teachers can have an enormous impact on their pupils, both positively and negatively, and with this comes responsibility. Conscious and unconscious choices are made constantly as the teacher tries to decide how to make each day educational and meaningful to their pupils. The tremendous task of educating future generations can seem intimidating, as the end goal is to make the pupils knowledgeable, active participants, tolerant, reflected, emphatic and democratic global co-citizens. The laws and regulations that govern the Norwegian school system can seem overwhelming to teachers, and at times unrealistic. This is where Bloom's taxonomy and a critical literacy approach can provide useful tools. Anderson et al. (2001) promote Bloom's taxonomy as a tool to deal with challenges concerning objectives:

What can teachers do when confronted with what they believe to be an exceedingly large number of vague objectives? To deal with the vast number of objectives, they need to organize them in some way. To deal with the problem of vagueness, they need to make the objectives more precise. In a nutshell then, these teachers need an organizing framework that increases precision and, most important, promotes understanding. (p. 4)

Having a knowledge taxonomy available, and being aware of the various levels of cognitive processes applied in teaching and learning, can prove useful to both educators and pupils. During my years studying to be a teacher, there has not been an explicit focus on knowledge taxonomy, which arguably should be a focus in the teacher education program. This thesis seeks to address that gap by offering an explicit focus of knowledge taxonomy that can be helpful in connection to both theory and practice.

Learning materials can be of various quality, but how these materials are applied in the classroom is ultimately dependent on the individual teacher. The potential that learning materials have is determined in the hands of the teachers and learners. Hence, materials can be of a decent quality and still not be used efficiently in the classroom if the teachers do not have the prerequisite knowledge, skills and awareness. The opposite is also true: the materials might be of a poor quality, yet used efficiently by the teacher by adding to the materials and providing additional materials.

In our contemporary world, today's generation has to be adaptable and have a wide range of skills. It is not enough being able to reach the lower cognitive processes of Bloom's taxonomy: to *remember*, *understand* and *apply*. One also has to be able to *analyze*, *evaluate* and last, but not least, to *create* (higher-level thinking skills). Thus, how to promote meaningful learning, as opposed to rote learning (cf. section 2.4), will be discussed throughout the thesis.

Critical literacy can be an eye-opening approach and provide tools that can help guide teachers through the many challenges of connecting classroom knowledge to real-world action. The approach promotes an awareness of the relationship between language and power and it acknowledges that no text is neutral (cf. Freire, 2000; Vasquez et al., 2013; Janks et al., 2014). It can help us to see the everyday through new lenses, and question what we previously took for granted. Vasquez et al. (2013, p. 20) claim that “[t]eachers who actively engage in critical literacies are more likely to have pupils who are more reflexive, consciously engaged, and pupils who take on alternate ways of being, as well as take responsibility for inquiring into issues of importance to them.” Throughout this thesis, the researcher will promote the need for teachers at all levels to apply a critical literacy approach.

### 1.5 The Relevance of the Study

Since plans for a new curriculum are underway, it might be questionable to do an analysis of the current textbooks as they will soon be outdated. However, the researcher believes that a content analysis of this kind might become useful in the production of new learning materials. The relevant topics of sustainable development and climate change are undeniable as they are the crisis of future generations. Thus, enabling pupils to learn about these issues and find solutions must be a priority in education. Hopefully, the current study can also help textbook producers, educators and learners become more aware of the need for a knowledge taxonomy and a critical literacy approach.

Research shows that the textbook plays a major role in Norwegian EFL instruction (see section 2.3). Textbook tasks have been investigated before: Larsen (2017) investigated explicit vocabulary exercises in year 10 EFL textbooks, while Knudsen (2016) studied how textbooks tasks in EFL in VG1 potentially can promote the development of ICC (intercultural communicative competence). Lund (2006) researched questions of culture and context in English language textbooks for her PhD dissertation, focusing on EFL textbooks for lower

secondary in relation to L97. Nygaard (2014) investigated how textbooks in international English (an elective subject in the second year of the program for general studies in upper secondary school) invite pupils to expand their intercultural perspectives through tasks related to texts about multiculturalism. Brown (2016) researched visual representations of indigenous cultures in EFL textbooks. The current research contributes to this field by focusing on a selection of 10<sup>th</sup> grade textbook tasks in relation to sustainable development while applying Bloom's taxonomy and critical literacy as analyzing tools.

### 1.6 Research Methods

In order to conduct the study, both quantitative and qualitative research methods are employed. The quantitative research provides exact answers regarding the ratio of tasks, while the qualitative method provides in-depth analysis of the tasks. The material for the study consists of a selection of one chapter related to sustainable development from the three different textbooks *New Flight 3* (2007), *Crossroads 10A* (2014), and *Enter 10* (2017), which are written and published in Norway and designed according to the curricula of the 2006/13 Knowledge Promotion Reform.

### 1.7 Organization of the Thesis

The thesis has been divided into five chapters, including references and appendices. In the first chapter, an introduction to the thesis and the topic is given. Chapter two is centered on the theoretical foundation which supports my research. Here one finds an overview of the laws and regulations that govern the Norwegian school system, an explanation of sustainable development and its relevance to the current study, an investigation into EFL textbooks and tasks, insights into what promotes critical and meaningful learning, and finally, a thorough elaboration of the analytical tools used in the study, namely, Bloom's taxonomy and critical literacy. The third chapter displays the materials and methods that have been employed, and the different steps which have been taken in order for it to be completed. Chapter four presents and discusses the quantitative and qualitative findings from the analyses. Finally, chapter five concludes the thesis, and suggests further research.

## 2. Theoretical Background

This section constitutes the theoretical framework which is needed to answer the research questions. The focus of the current study is on promoting critical and meaningful learning, and to what extent a selection of 10<sup>th</sup> grade EFL textbook tasks related to sustainable development achieve these aims, by analyzing the tasks in relation to Bloom's taxonomy and critical literacy. The first part of the present study aims to give insight into the laws and regulations that govern the Norwegian school system, including LK06, as it is essential in the context of this study because the curriculum creates the base for how EFL is taught. The new curriculum, which is to be applied from 2020, will also be discussed. Next, an investigation into the Department of Education's 2015 NOU report, as well as the Sustainable Development Goals, will be provided. In subchapter 2.3 an investigation into the history of textbooks and their importance to the teaching of English as a foreign language (EFL) in Norway will be provided followed by a discussion on textbook tasks and their power and influence on learners in section 2.3.1. Next, section 2.4 provides insight into what promotes critical and meaningful learning. The second part of the theoretical background chapter constitutes subchapters 2.4, 2.5 and 2.6 which presents Bloom's taxonomy, the Taxonomy Table, and the Cognitive Process Dimension. These are the frameworks used to answer the first two research questions. In the last part of the chapter, the Framework for Basic Skills, including literacy, will be elaborated on before finally connecting this to critical literacy, the chosen approach for answering the third research question.

### 2.1 The Knowledge Promotion 2006/13 and the New Curriculum

The Knowledge Promotion Reform (LK06) was introduced in all Norwegian primary and secondary schools from 2006. It comprises the following elements: The Core Curriculum, The Quality Framework, Distribution of teaching hours per subject in primary and secondary education, and Subject curricula. The Core Curriculum is a national governing document describing the fundamental values, cultural elements and learning objectives of primary and secondary education. It is conveyed in Section 1-2 of the Educational Act (Udir, 2016). The Quality Framework applies to all subjects in every year of primary and secondary education, and it outlines and elaborates on the provisions of the Education Act and its associated regulations, including the Core Curriculum. It is designed to help clarify school owners' responsibility for providing education in line with laws and regulations (Udir, 2016). Finally,

subject curricula contain descriptions of objectives and main subject areas, definitions of core skills, attainment targets and regulations on final assessments (Udir, 2016).

The overall goal of the 2006 school reform was to “help all pupils to develop fundamental skills that will enable them to participate actively in our society of knowledge” (Norwegian Ministry of Education and Research, 2006, p. 3). This is where Bloom’s taxonomy and the Cognitive Process Dimension (cf. Anderson et al., 2001) can become useful, as will be elaborated on in subchapter 2.6.1. One of LK06’s major renewals involved the inclusion of five basic skills where all teachers are responsible for enabling the learners to develop the ability to express themselves orally, the ability to read, the ability to do arithmetic, the ability to express themselves in writing, and the ability to make use of information and communication technology (see section 2.7). The renewed version of LK06, which was implemented in 2013, aimed to clarify the basic skills in the curriculum.

Since the current study analyzes EFL 10<sup>th</sup> grade textbook tasks related to sustainable development and questions to what extent they promote critical and meaningful learning, the researcher looked for aims related to this in LK06. Sustainable development is closely related to matters of democracy and co-citizenship, which is why these will also be mentioned in the current study. According to the World Commission on Environment and Development (n.d.), sustainable development is defined as “[h]umanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs”. According to the NOU 2015:8 (2015:8) report, “sustainable development means that we need to act and think locally, nationally, and globally”.

In 2002, the Committee of Ministers of the Council of Europe, representing over 40 Member States, recommended that European Governments “make education for democratic citizenship a priority objective of educational policymaking and reforms” (Council of Europe, 2002, p. 2). This was clearly made a priority when LK06 was developed as the Core Curriculum focuses on sustainable development, responsibility, human equality and equal rights, democratic ideals, and international co-responsibility. These matters are all crucial factors to the current study. According to the Core Curriculum, “[t]he interplay between economy, ecology and technology must make unique demands, scientific and ethical, on our age, if we are to ensure sustainable development” and therefore education must “provide a broad

awareness of the interconnections in nature and about the interplay between humans and their habitat” (Udir, n.d., pp. 37-38). Since the Core Curriculum sets out the overall objectives of education and contains the valuable, cultural and knowledge base for primary and lower secondary education, its aims are intended to be included in all subjects. The Educational Act states that “[t]he pupils and apprentices shall learn to think critically and act ethically and with environmental awareness” and that they “shall have joint responsibility and the right to participate” (Ministry of Education and Research, 2007). These resonate well with the aims of critical literacy and subordinate research question B which questions to what extent the 10<sup>th</sup> grade textbook tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice.

### 2.1.1 The English Subject

The Purpose section of the English subject syllabus highlights the importance of developing a general language proficiency, communicative competence, and cultural insight (Udir, 2013, p. 1). English as a school subject is, according to Udir (2013, p. 1), “both a tool and a way of gaining knowledge and personal insight”. These are all important parts of the English subject. However, sustainable development, which is a focus of the current study, is not mentioned in the Purpose section. Democracy and co-citizenship on the other hand, are briefly mentioned at the end, stating that “language and cultural competence promote the general education perspective and strengthen democratic involvement and co-citizenship.” (Udir, 2013, p. 1). Since the focus of the current study is textbook tasks related to sustainable development, which is also closely related to democracy and co-citizenship, the researcher sought out competence aims related to this in the English subject syllabus. However, when diving a little further into the English subject syllabus, specifically looking into the competence aims after year 10, it was found that aims related to this are not present. The English subject curriculum is divided into three main areas: “language learning”, “communication” and “language, culture and society”. It would be expected for aims related to sustainable development to fall under the latter category, but this is not the case. Nevertheless, both the Core Curriculum and the Educational Act cover aims related to democratic citizenship and sustainable development, as stated above. However, one could argue that it is not sufficient to only include objectives related to democratic education in the core curriculum, as teachers are likely to be most familiar with the subject syllabuses and competence aims therein.

### 2.1.2 The 2020 Curriculum

The new curriculum, which is to be applied from 2020, aims to make changes that allow for more in-depth learning and a more practical approach in many subjects (Udir, 2018). The Norwegian Ministry of Education has already decided on three core elements which are to be the most essential elements of every subject, namely *democracy and co-citizenship*, *sustainable development*, and *public health and wellbeing*. For this reason, the researcher has decided to focus on tasks related to sustainable development so that the findings of this study will continue to be relevant to the new curriculum. The relevant topics of sustainable development and climate change are undeniable as they are the crisis of future generations. Thus, enabling pupils to learn about these issues and find solutions must be a priority in education.

### 2.2 The School of the Future and Sustainable Development Goals

In the Department of Education's 2015 report *The School of the Future (Fremtidens skole)*, the subjects in primary and secondary education training were assessed in terms of the requirements for competences in future working life and society. The report provides knowledge and proposes choices that society should make when it comes to competences of the future and the renewal of subjects. It claims that the school subjects need to be renewed to satisfy future competence demands in working life and society (NOU 2015: 8, 2015, p. 8). As the current study focuses in particular on sustainable development and democratic citizenship, these are the matters that will be highlighted from the report. Another important resource highlighting the relevance of focusing on sustainable development is the 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015 as it "provides a shared blueprint for peace and prosperity for people and the planet, now and into the future" (UN, n.d.). At its heart are the 17 Sustainable Development Goals (SDGs), which are summarized as:

an urgent call for action by all countries – developed and developing – in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. (UN, n.d.)

Target 4.7 of the 2030 Agenda for Sustainable development specifically highlights how important it is for all learners to "acquire the knowledge and skills needed to

promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, [...] (“Sustainable Development Goal 4 and its targets”, n.d.). Education for Sustainable Development (EDS) is about “enabling learners to address present and future global challenges constructively and creatively and to create more sustainable and resilient societies” (“Education for Sustainable Development”, n.d.). According to “Education for Sustainable Development” (n.d.), learners can take informed decisions and responsible actions and become agents of change in their schools, communities and societies by acquiring the values, attitudes, skills and knowledge that are needed to contribute to sustainable development. UNESCO’s websites provide resources for teaching and learning for a sustainable future.

According to The School of the Future report, “[k]nowledge about society and the surrounding world will contribute to personal development, critical reflection and an informed well-functioning democracy” (NOU 2015: 8, 2015, p. 22). Furthermore, the report stresses the need for learners to develop democratic competence, which is defined as: “being able to live together and deal with challenges together. Common challenges such as climate change and the conflict level in the world reveal the need for social responsibility and cooperation on common solutions on a global scale.” (NOU 2015: 8, 2015, p. 32). However, knowledge about sustainable development is not enough. When it comes to climate change and conflict, the report urges learners to find solutions and educators to promote social responsibility: “Common challenges, such as climate change and the conflict level in the world impact society locally, regionally and globally, and require solutions that must be found together where one of the aims is to promote social responsibility” (NOU 2015: 8, 2015, p. 21). The aims of the NOU report resonate with both Bloom’s taxonomy, which focuses on the cognitive processes needed to achieve critical and meaningful learning, and critical literacy, which focuses on taking action and promoting social justice. This will be elaborated on further in sections 2.5, 2.6 and 2.9.

The School of the Future report clearly gives extensive objectives for the Norwegian school in the future with its focus on knowledge, skills and action, all needed to achieve sustainable development. It becomes clear that the creators of the new 2020 curriculum are taking the NOU report as well as SDG’s urgent call for action into consideration (cf. section 2.1). Throughout this thesis, claims will be made that implementing Bloom’s taxonomy and a critical literacy approach related to didactic questions and implications can potentially provide

educators and learners with tools that may contribute to realizing the aims of the NOU report and the SDG's, as well as promoting critical and meaningful learning.

### 2.3 Textbooks

Meaningful and critical learning in the classroom require both teacher skills and appropriate materials. The power of the textbook in the EFL classroom is evident as Richards (2001, p. 1) states that the textbook serves “as the basis for much of the language input learners receive and the language practice that occurs in the classroom”. Reports show that textbooks are an important part of teaching EFL in Norway. Hopmann, Afsar, Bachmann, and Sivesind (2004) conducted a study on how the national curriculum of 1997 was used in schools on a daily basis and found that the textbook has considerable influence on the users of the book. Further, Hopmann's et al. (2004) study reveals that the EFL teachers used the textbooks more often than the teachers of almost all the other subjects, except the natural science teachers. The EFL teachers also indicated that, in comparison to teachers of other subjects, they to a small degree apply all parts of the curriculum in their lessons. Since the Knowledge Promotion (LK06) was introduced in 2006, EFL teachers have been given more freedom to use language-learning methods of choice. That includes texts from other books, texts found on the internet, short movies and so forth. Teacher autonomy is also an important aspect of the current study, which will be discussed further in subchapter 4.3. However, textbooks still play a crucial part in EFL classrooms, even more than ten years since LK06 was introduced. Juuhl, Hontvedt and Skjelbred's (2010) report on educational resources after LK06 indicates that the textbook is still the most central tool in Norwegian classrooms. A more recent report by Gilje et al. (2016), which studies how educational resources are chosen and used in four school subjects (English, Mathematics, Natural Science, and Social studies) at three different levels in primary and secondary education in Norway, also confirms previous findings. In regard to the English subject, the researchers looked at three cases covering 5<sup>th</sup> and 8<sup>th</sup> grade and VG1. The report shows that the textbook is still a very important factor for primary school EFL teachers (Gilje et al., 2016, p. 51). 70 % of the EFL teachers teaching grade 5 to 10 answered that they primarily use paper-based textbooks, compared to less than 40 % of the EFL teachers in upper secondary school (Gilje et al., 2016, p. 52). They also found that the teachers in all the three cases offered the learners something in addition to the textbook tasks, such as different online resources (Gilje et al., 2016, p. 48).

The results presented by the reports (Hopmann et al., 2004, Juuhl et al., 2010; Gilje et al., 2016) show that textbooks indeed are a powerful tool in planning lessons and teaching EFL. Richards (2011, p. 2) warns that textbooks can deskill teachers if they use them as the primary source of their teaching. The teachers' role can then become reduced to that of a technician whose main function is to present materials prepared by others. It becomes apparent by the reports (Hopmann et al., 2004, Juuhl et al., 2010; Gilje et al., 2016) that teachers leave quite a lot of their professional maneuver to that of authors, editors and other producers of textbooks. This only confirms how crucial it is that the textbooks are of a high quality. The use of textbooks has both advantages and disadvantages, depending on how they are used and the context for their use (Richards, 2001, p. 1). If textbooks are of a decent quality, they can provide structure and a systematically planned and developed syllabus. This is efficient as it saves teachers' time. They can also provide a variety of learning resources such as workbooks, comprehensive teaching guides, etc. (Richards, 2011, p. 1).

Since the focus of the current study is analyzing textbook tasks, a closer look at the power and influence textbook tasks have on learners is needed.

### 2.3.1 Textbook Tasks: Their Power and Influence on Learners

Tasks play a central role in current language acquisition and didactics. English as a foreign language teaching (EFLT) is no exception. The Common European Framework of Reference for Languages (CEFR) (2001, p. 10) defines a task as "any purposeful action considered by an individual as necessary in order to achieve a given result in the context of a problem to be solved, an obligation to fulfil or an objective to be achieved". A task analysis can provide useful insight into the productiveness of tasks in relation to pupils' acquisition of sustainable development knowledge and skills. This is what the researcher aims to investigate further.

Skjelbred (2009, p. 280) argues that the person setting the tasks has a lot of power regarding what the pupils perceive as important and less important knowledge in the subject. Furthermore, she discusses the possibility that tasks may contribute to highlight the subject's or topic's knowledge taxonomy which then controls the pupils' understanding of both what knowledge is important and what they should notice, and how the text should be read. This is supported by Vasquez et al. (2013, p. 19) who state that "[s]tudents come to understand knowledge as a set of facts to be learned rather than as a personal investment in understanding and transforming their world". Anderson et al. (2001, pp. 238-239) also claim that teachers

make choices about the types of knowledge they judge to be most important. Skjelbred (2003, p. 64) substantiates this by claiming that the textbooks reveal what is valid knowledge at all times and accepted values in the society. Thus, we can say that the tasks provide useful indicators about what is most important, and what the reader should focus on (Skjelbred, 2009, p. 180). Teachers should be made aware of this so that they can make conscious choices and also make the learners aware of what the current learning objectives are.

Skjelbred's (2009, p. 277) study on reading and tasks in 5<sup>th</sup> and 8<sup>th</sup> grade textbooks, focuses mainly on natural science textbook tasks and connects this to what type of comprehensive reading skills are being measured by PISA (The Program for International Pupil Assessment). Her results show that the main emphasis was on the pupils to collect information in the texts, and to a lesser extent to interpret and to reflect. Questions which require meta-reflection in regard to one's own reading skills and to the text being read were found to be almost absent. These results are noteworthy because they show that the emphasis is on the lower levels of Bloom's taxonomy (cf. Anderson et al., 2001). Although Skjelbred's (2009) study focuses on tasks in natural science textbooks and cannot be presumed to apply to EFL textbook tasks, it suggests that questioning tasks in relation to Bloom's taxonomy and critical literacy might be applicable for more than just the English subject.

Since textbooks play such a crucial part of EFL teaching in Norway (see section 2.3), teachers need to be able to critically evaluate the use and potential of these. Digital resources are also becoming increasingly more utilized in schools, which only highlights the teachers' need for tools to adopt a critical interpretation of teaching materials. This is where Bloom's taxonomy and a critical literacy approach can provide valuable opportunities in promoting critical and meaningful learning, which is the aim of the current study.

#### 2.4 Rote Learning Versus Meaningful Learning

What is worth learning and who gets to make decisions regarding this? The most important players in implementing a curriculum reform are the educational staff at the schools, who through the law and regulations are obliged to plan the teaching according to the goals and contents of the current curriculum. However, the current curriculum (LK06) allows for a great extent of freedom of method. Hopmann et al. (2004, p. 41) claim that the teachers are the ones to decide what the curriculum does and does not do as they have their own understanding of how to implement the curriculum.

Anderson et al. (2001, p. 64) describe rote learning as possessing relevant knowledge, but not being able to transfer that knowledge to a new situation: the learner has attended to relevant information, but s/he has not understood it and therefore cannot use it. In meaningful learning, however, the learner not only possesses relevant knowledge, but is also able to use that knowledge to solve problems and to understand new concepts. Meaningful learning provides learners with the knowledge and cognitive processes they need for successful problem solving (Anderson et al., 2001, p. 65), such as that required in sustainable development education. As stated in Anderson et al. (2001, p. 63), two of the most important educational goals are to promote retention and to promote transfer, which when it occurs, indicates meaningful learning. Mayer and Wittrock (1996, as cited in Anderson et al., 2001, p. 63) define *retention* as the ability to remember material at some later time in much the same way as it was presented during instruction, while *transfer* is defined as the ability to use what was learned to solve new problems, to answer new questions, or to facilitate learning new subject matter. *Retention* focuses on the past, and requires that pupils remember what they have learned, whereas *transfer* emphasizes the future, and requires pupils not only to remember but also to make sense of and be able to use what they have learned (Anderson et al., 2001, p. 63). When the goal of instruction is to promote *transfer*, assessment tasks should, according to Anderson et al. (2001, p. 91), tap cognitive processes that go beyond remembering. Anderson et al. (2001, p. 91) stress that although assessment tasks that tap *recalling* and *recognizing* (*remember*) have a place in assessment, these tasks can, and often should, be supplemented with tasks that tap the full range of cognitive processes required for transfer of learning.

Research has shown that many pupils do not make the important connections between and among the facts they are learning in classrooms and the larger systems of ideas reflected in an expert's knowledge of a discipline (Anderson et al., 2001; Gee, 2007). According to Gee (2007, p. 16), children are regularly given reading tests that ask general, factual, and dictionarylike questions about various texts with no regard for the fact that these practices fall into different semiotic domains (see section 2.8.1 for an explanation of the term *semiotic domain*). He recognizes the need for learners to be able to decode texts and be able to answer factual questions (cf. retention), but points out that if this is all the pupil can do then s/he will fail to be able to read well and appropriately in contexts associated with specific types of texts and specific types of social practices. This is supported by Anderson et al. (2001, p. 42), who claim that pupils often do not learn to transfer or apply the facts and ideas they learn in

classrooms to understanding their experiences in the everyday world. For the learning to become *active* three things must be involved: experiencing (seeing, feeling, and operating on) the world in new ways, forming new affiliations by gaining the potential to join social groups in different domains, and preparation for future learning and problem solving in the current domain and in related domains (Gee, 2007, p. 23). However, Gee (2007, p. 23) distinguished between active learning and critical learning and claims that one additional feature is needed to also achieve the latter: the pupil needs to learn not only how to understand and produce meanings in a particular semiotic domain, but also how to think about that domain at a meta level as a complex system of interrelated parts. The learner also needs to learn how to innovate and produce meaning in the domain (cf. *create*) (Gee, 2007, p. 23).

## 2.5 Bloom's Taxonomy

*The Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain*, familiarly known as *Bloom's taxonomy*, was published in 1956 by Benjamin Bloom with collaborators Max Englehart, Edward Furst, Walter Hill, and David Krathwohl. The framework was created as a means of facilitating the exchange of test items among faculty at various universities in order to create banks of items, each measuring the same educational objective (Krathwohl, 2002, p. 212). The process of conceiving the Taxonomy lasted from 1948 until the book was published in 1956. During this time the authors shared their work with professional colleagues, graduate pupils, test developers, and educational practitioners whose comments and critiques were carefully considered, and many new ideas were incorporated into subsequent revisions of the draft (Seaman, 2011, p. 30). Thus, according to Seaman (2011, p. 31), there can be no argument that the work was not published without first securing widespread comments, criticism, and suggestions from many professional educators. The first major attempt to empirically test the validity of the taxonomy took place in the mid-1960s. This in-depth study (Kropp & Stoker, 1966), which looked at the responses that test questions were intended to evoke, came to the conclusion that the data supported the hierarchal structure of the taxonomy. This use of the taxonomy to classify items seems to be in line with the original intent of the creators of the *Handbook* which is to aid in the description of pupil behavior, in this case the responses to test questions (Seaman, 2011, p. 33). Paul (1993, as cited in Seaman, 2011, p. 35), on the other hand, questions the taxonomy's use by stating that it is too neutral and that teachers use it without questioning it. However, it has proved difficult to find critics of the taxonomy. A reason for this might be that it has proven to be so useful over time.

The original Taxonomy consisted of six major categories (*Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation*) with each of these, except *Application*, broken into subcategories. They were ordered from simple to complex and from concrete to abstract. It was assumed that each simpler category was a prerequisite to mastery of the next more complex one (Krathwohl, 2002, pp. 212-213). Krathwohl (2002, p. 213) explains that the original Taxonomy has been most frequently used to classify curricular objectives and test items in order to show the breadth, or lack thereof, of the objectives and items across the spectrum of categories. Almost always, these analyses have shown a heavy emphasis on objectives requiring only recognition or recall of information objectives that belong in the *Knowledge* category (Krathwohl, 2002, p. 213). However, the objectives that involve the understanding and use of knowledge, those that belong in the categories of *Comprehension* to *Synthesis*, are the ones usually considered the most important to education (Krathwohl, 2002, p. 213). Therefore, such analyses have repeatedly provided a basis for moving curricula and tests toward objectives that would be classified in the more complex categories.

## 2.6 The Taxonomy Table

*A Taxonomy for Learning, Teaching, and Assessing* (Anderson et al., 2001), the revision of the original *Handbook*, was created by a group of eight scholars. Their goals were to “refocus educators’ attention to the value of the original Handbook”, and “incorporate new knowledge and thought into the framework” (Anderson et al., 2001, pp. xxi-xxii). One change that stands out in this revision is a change in terminology. The categories, originally in noun form (knowledge, comprehension, application etc.), were rewritten in verb form (remember, understand, apply, etc.). Objectives that describe intended learning outcomes as the result of instruction are usually framed in terms of a) some subject matter content (i.e., noun or noun phrase) and b) a description of what is to be done with or to that content (i.e., verb or verb phrase) (Krathwohl, 2002, p. 213). The most notable change in the revised taxonomy is the move from one dimension to two dimensions: *The Knowledge Dimension* (noun-aspect) and the *Cognitive Process Dimension* (verb aspect), whereas in the original Taxonomy the *Knowledge* category embodied both noun and verb aspects (Krathwohl, 2002, p. 213).

The Taxonomy Table is represented in a two-dimensional table which contains carefully delineated and defined categories of knowledge and cognitive processes (see Table 1). It is

based on cognitive and constructivist learning perspectives which emphasize what learners **know** (knowledge) and **how they think** (cognitive processes) about what they know as they actively engage in meaningful learning (Anderson et al., 2001, p. 38). Anderson et al. (2001, p. 27) claim that it should be possible to place any educational objective that has a cognitive emphasis in one or more cells of the table. Nonetheless, Krathwohl (2002, p. 217) claims that the table also can be used to classify the learning activities used to achieve the objectives, which is convenient as the analysis of textbook tasks is the main concern of the current study. The Taxonomy Table is a comprehensible model and is most suitable when looking at learning objectives, and the Cognitive Process Dimension in particular is useful for looking at textbook tasks because it provides verbs or verb phrases which give clues to the desired cognitive process.

Table 1: The Taxonomy Table (Anderson et al., 2001)

THE KNOWLEDGE DIMENSION	THE COGNITIVE PROCESS DIMENSION					
	1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
A. FACTUAL KNOWLEDGE						
B. CONCEPTUAL KNOWLEDGE						
C. PROCEDURAL KNOWLEDGE						
D. META-COGNITIVE KNOWLEDGE						

According to Anderson (1995, as cited in Anderson et al., 2001, p. 238), evidence indicates that educators should use different instructional strategies for teaching different types of knowledge. The School of the Future report (NOU 2015:8, 2015) states:

The complexity of society, and the duties and challenges pupils will encounter, means that pupils must learn to use knowledge and skills in different ways. As knowledge is continuously renewed, pupils must be able to develop and refine what they learn in the subjects later in life. Learning the scientific methods of the subjects, the ways of thinking, concepts and principles may give pupils competence which will be relevant

over time, and provide tools for understanding how specialised knowledge changes.  
(p. 22)

To be able to help pupils achieve a great variety of knowledge and skills, which is necessary to function in our complex society, the Taxonomy Table can be useful as it permits educators to become aware of and determine which types of objectives are emphasized and which are omitted. “The panorama of possibilities presented by the Taxonomy Table causes one to look at blank areas and reflect on missed teaching opportunities”, according to Krathwohl (2002, p. 217). This can potentially contribute to an awareness of what educators choose to focus on in instruction and assessment. According to the authors, the Taxonomy Table “is best seen as aiding the necessary transition from curriculum to instruction” and it can help to organize “the complexities of the curriculum once it has been decided upon so that teaching is more likely to be successful and assessment is more likely to be appropriate and useful” (Anderson et al., 2001, p. 241).

### 2.6.1 The Cognitive Process Dimension

This section will focus on giving insight into the *Cognitive Process Dimension* of the Taxonomy Table, from *remember* to *create*. In the revised taxonomy, knowledge is at the basis of the six cognitive processes (see Table 1). In the following, the cognitive processes within each of the six categories, will be discussed in detail. It should be noted that the elaboration of the Cognitive Process Dimension has been modified in order to make it applicable to the analysis of textbook tasks. Definitions found in the graphic interpretation of Bloom’s taxonomy (Armstrong, n.d., see Figure 1), as well as a few examples found in the textbook tasks that are being analyzed, are included in this section. Anderson et al.’s (2001) table on the Cognitive Process Dimension can be found in Appendix 5 (p. 106).

# Bloom's Taxonomy

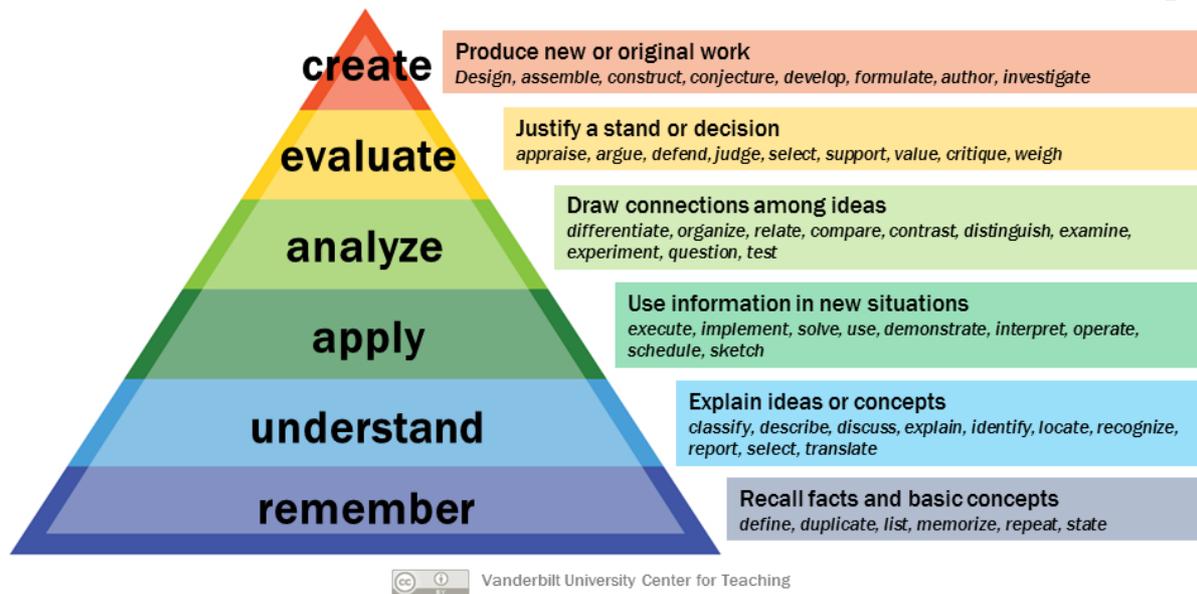


Figure 1: Armstrong's (n.d.) interpretation of Bloom's taxonomy

## Remember

Remembering involves retrieving relevant knowledge from long-term memory (Anderson et al., 2001, p. 66) or to recall facts and basic concepts (Armstrong, n.d.). The relevant process category is *remember* when the objective of instruction is to promote retention of the presented material in much the same form as it was taught, such as when learners are asked to repeat the elements of a text. For example, a post-reading task may ask a pupil for information that can be found and copied directly from the text. If the task asks the learner to explain something using their own words, then the task would be categorized as *understand* rather than *remember*. Other verbs associated with *remember* are: to define, list, memorize, repeat etc. (see Figure 1 and Appendix 4 and 5).

To assess learning in the simplest process category, the learners are given a recognition or recall task under very similar conditions to those in which they learned the material. Little, if any, extension beyond those conditions is expected (Anderson et al., 2001, p. 66). According to Anderson et al. (2001, p. 66), the category of *remember* is essential for meaningful learning and problem solving as *remembering* knowledge is used in more complex tasks. For example, when a pupil is to master writing an essay, knowledge of the correct spelling of common English words appropriate to a given grade level is necessary (Anderson et al., 2001, p. 66).

When teachers focus solely on rote learning, teaching and assessing focus solely on remembering elements or fragments of knowledge, often in isolation from their context. When teachers focus on meaningful learning, on the other hand, remembering knowledge is integrated within the larger task of constructing new knowledge or solving new problems (Anderson et al., 2001, p. 68).

### *Understand*

When the primary goal of instruction is to promote retention, the focus is on the objectives that emphasize *remember*, but when the goal of instruction is to promote transfer, the focus shifts to the other five cognitive processes, *understand* through *create* (Anderson et al., 2001, p. 70). According to Anderson et al. (2001, p. 70), *understand* is arguably the largest category of transfer-based educational objectives emphasized in schools and colleges. Anderson et al. (2001, p. 70) further explain that learners are said to *understand* when they are able to construct meaning from instructional messages (oral, written, and graphic communications), regardless of how they are presented to pupils (e.g. during lectures, in books). Armstrong (n.d.) interprets the category of *understand* as being able to “explain ideas or concepts”. Learners understand when they build connections between the new knowledge to be gained and their prior knowledge, where the incoming knowledge is integrated with existing schemas and cognitive frameworks (Anderson et al., 2001, p. 70). Cognitive processes in the category of *understand* include interpreting, discussing, classifying, finding, comparing, explaining etc. (see Table 2, Figure 1, and Appendix 4 and 5). For example, a post-reading task may ask a pupil to look at the text and “find words” connected to a particular theme, such as “the environment”. This is an example of a task categorized as *understand*, as the task uses the verb “find” which gives a clue to the desired cognitive process.

### *Apply*

The third category involves using procedures to perform exercises to solve problems (Anderson et al., 2001, p. 77) or to use information in new situations (Armstrong, n.d). Anderson et al. (2001, p. 77) describe an exercise as a task for which the learner already knows the proper procedure to use, whereas a problem is a task for which the learner initially does not know what procedure to use, so the learner must locate a procedure to solve the problem. According to Anderson et al. (2001, p. 77), the *apply* category consists of two cognitive processes: *executing*, when the task is an exercise (familiar), and *implementing*,

when the task is a problem (unfamiliar). Other verbs associated with *apply* are: to execute, solve, use, make, etc. (see Figure 1 and Appendix 4 and 5). For example, a textbook task might ask a learner to “use the information” provided to supply answers to a new problem, such as Task 9 (p. 187) in *Enter 10*, which asks the learner to “Use the information in the illustration to estimate how much water is used to make an average Norwegian pupil’s school packed lunch.” Here the verbs “use” and “make” provide clues that the desired cognitive process is *apply*. This task can be said to be a problem as the learner must locate a procedure to solve the problem (cf. Anderson et al., 2001, p. 77).

### *Analyze*

As stated in Anderson et al. (2001, p. 79), *analyze* involves “breaking material into its constituent parts and determining how the parts are related to one another and to an overall structure”. Armstrong (n.d.) describes *analyze* as drawing connections among ideas, which is a similar, yet more simple way to define the category. The latter definition might be more accessible when analyzing textbook tasks. It also makes it easier to distinguish between the categorizes of *understand* and *analyze* as tasks categorized as either of the two might be similar in terms of the verb or verb phrases used to give clues to the desired cognitive process. This will be discussed further in section 3.3 and 4.1. Anderson et al. (2001, p. 79) explain that although learning to *analyze* may be viewed as an end in itself, it is probably more defensible from an educational standpoint to consider this category as an extension of *understanding* or as a prelude to *evaluating* or *creating*.

When “learning to analyze” is an objective, educators may wish for their pupils to develop the ability to distinguish fact from opinion (or reality from fantasy), connect conclusions with supporting statements, distinguish relevant from extraneous material, determine how ideas are related to one another, distinguish dominant from subordinate ideas, and the like (Anderson et al., 2001, pp. 79-80). Verbs associated with the category of *analyze* are: to discuss, relate, compare, examine, explain, etc. (see Table 2, Figure 1 and Appendix 4 and 5). An example of *analyze* can be found in *New Flight 3* where Task 6 (p. 128) asks the learner: “What do you think the world will look like in about 100 years from now?” This task presumably wants the learner to connect his/her contemporary world, more specifically elements related to sustainable development, to what the world might look like in 100 years from now, which indicates that the learner is asked to draw connections among ideas (see Figure 1 and Appendix 4).

### *Evaluate*

*Evaluate* is defined by Anderson et al. (2001, p. 83) as making judgments based on criteria and standards, where the criteria most often used are quality, effectiveness, efficiency, and consistency. Armstrong (n.d.) interprets *evaluate* as being able to “justify a stand or decision”. Verbs associated with this category are: to persuade, argue, support, defend, weigh etc. (see Figure 1 and Appendix 4). For example, Task 8 (p. 142) in *Crossroads 10A* presents the quote “Poverty is immortal” before the learner is asked to “Brainstorm some key words to support or refute this statement.” (see Appendix 2, p. 80). The verbs “support” and “refute” give clues that the learner is expected to justify their stand using key words, namely, to use their cognitive process of *evaluate*.

### *Create*

As stated in Anderson et al. (2001, p. 84), *Create* involves putting elements together to form a coherent or functional whole. Armstrong (n.d.) interprets *create* as producing new or original work. It is important to note, however, that many objectives in the *create* category do not rely on originality or uniqueness, but rather involve creating in the sense of producing a synthesis of information or materials to form a new whole, as in writing, painting, sculpting, building, and so on (Anderson et al., 2001, p. 85). Verbs associated with *create* are: to construct, design, develop, plan etc. (see Table 2, Figure 1, Appendix 4 and Appendix 5).

The importance of *create* is emphasized in NOU 2015:8 (2015, p. 22):

It is of great value socially, culturally and financially that school [sic] contribute to developing pupils’ competence in being exploring and creative. Society has a great need for innovation, research and competence to deal with complex duties and challenges. Thus the pupils need to learn creativity, innovation, critical thinking and problem-solving.

An example of a task demanding the learner to *create* is found in Task 37 (p. 201) in *Enter 10* (see Appendix 3, p. 94): “Plan a campaign for keeping water clean. Decide how to present the campaign – for example, a full-page advert for a magazine, a brochure to hand out to local people, or a social media text.” Here, the learners are asked to plan, develop, construct and design a campaign.

Although the cognitive processes have been described individually, they are likely to be used in coordination with one another to facilitate meaningful learning (Anderson et al., 2001, p. 89). Most authentic academic tasks require the coordinated use of several cognitive processes. To be able to answer the above task from *Enter 10*, the learner might engage in: *recalling* (to retrieve relevant information that may be included in the campaign), *planning* (to decide what to include in the campaign and how to present it), *producing* (to create the brochure, and *critiquing* (to make sure the product meets the standard or criteria) (example inspired by Anderson et al., 2001, p. 89).

The promotion of both *retention* (the ability to remember material at some later time in much the same way as it was presented during instruction), which is closely related to the ability to *remember*, and *transfer* (the ability to use what was learned to solve new problems), which is related to the other cognitive processes: *understand* through *create*, are essential in order to facilitate meaningful learning (cf. section 2.4). For the learning to become critical, the pupil not only has to learn how to understand and produce meanings in a particular semiotic domain, but also how to think about that domain at a meta-level as a complex system of interrelated parts as well as learning how to innovate and produce meaning in the domain (cf. section 2.4). Thus, all parts of Bloom's taxonomy are needed in order to promote critical and meaningful learning.

Scholars generally agree that the top three levels of Bloom's taxonomy represent higher order thinking skills. Thus, based on Bloom's theory, one way to check the level of a task is to ask these two questions:

1. What does the task ask of the pupils: recalling, showing understanding and applying (lower levels) or analyzing and evaluating to create new or original work (higher levels)?
2. Will pupils be expected to answer with specific, known answers (lower levels), or will they be asked to generate original thoughts (higher levels)?

In the following subchapters The Framework for Basic Skills will be discussed in relation to Bloom's taxonomy and critical literacy, followed by an elaboration of the term *literacy* in relation to the curriculum. Next, multiliteracies and semiotic domains will be explained, before lastly, an elaboration of the term *critical literacy*.

## 2.7 The Framework for Basic Skills

The Framework for Basic Skills is a document by the Norwegian Ministry of Education defining the five basic skills, namely *oral skills, reading, writing, digital skills* and *numeracy* (see section 2.1). These skills are basic in the sense that they are fundamental to learning in all subjects as well as a prerequisite for the pupils to show their competence and qualifications (Udir, 2012, p. 5). For these basic skills grids have been developed to describe their progression through levels where the cells of each grid formulate what is required at the different levels (Udir, 2012, p. 5). In reading as a basic skill, the subcategories consist of *understand, find, interpret* and *reflect and assess*, where the latter means “relating independently to texts, from commenting on text content to relating critically to a text and substantiate one’s own opinions, analyses or evaluation” (Udir, 2012, pp. 8-9). In writing as a basic skill, the subcategories consist of *plan, construct, communicate* and *reflect and assess* (Udir, 2012, p. 11). This shows that the Framework for Basic Skills is similar to Bloom’s taxonomy in its structure and in its use of verbs related to desired cognitive processes. The framework also includes elements of critical literacy which is evident in the definition of *reflect and assess* in relation to reading as a basic skill.

In the following, literacy as it relates to meaningful learning will be discussed in relation to the curriculum, before an elaboration of the term *critical literacy* in section 2.9.

## 2.8 Literacy and Meaningful Learning

At first glance, *literacy* would seem to be a term familiar and understood by everyone. However, *literacy* as a concept has proven to be both complex and dynamic, continuing to be interpreted and defined in a multiplicity of ways (UNESCO, 2006, p. 147). To be able to comprehend the concept of *critical literacy*, which will be one of the current study’s concerns, an introduction to the term *literacy* is required. Considering the scope of the current study, it will only be possible to scratch the surface of the substantial field of literacy research.

In the traditional sense, definitions of *literacy* focus solely on the ability to read and write print text, but these definitions are no longer sufficient for the modern world (OECD, 2000; UNESCO, 2005; Edelsky, 2012; Cambridge Assessment, 2013; Gee, 2017). “Literacy” (n.d.) stresses that literacy is now understood beyond its conventional concept as a set of reading, writing and counting skills, as a “means of identification, understanding, interpretation, creation, and communication in an increasingly digital, text-mediated, information-rich and

fast-changing world”. This has a clear link to Bloom’s taxonomy, which is evident in the verbs used: to understand, interpret, create, communicate. OECD’s report *Literacy in the Information Age* (2002, p. x) also defines literacy as a particular capacity and mode of behavior: “the ability to understand and employ printed information in daily activities, at home, at work and in the community – to achieve one’s goals, and to develop one’s knowledge and potential.” According to The Literacy Association (n.d.), “literacy is increasingly seen as being intimately connected to citizenship, democratic process, equity, equality, and social justice.” Therefore, definitions of literacy in the twenty-first century should include not only the traditional view, but also new forms such as media literacy, social literacy, critical literacy, etc.

The School of the Future report claims that “[i]f citizens are to find their way in a complex society and make informed choices in their lives, they will need the ability to make critical assessments and be good at problem-solving” (NOU 2015:8, 2015, p. 22). To accommodate the comprehensive goals of education, learners and educators could make use of Bloom’s taxonomy as well as critical literacy. As Vasquez et al. (2013, p. 64) emphasize: “To see ‘comprehension’ as the goal of our literacy program is no longer good enough. We need to create a critically literate citizenry, and critically literate citizens need to be able to unpack the underlying systems of meaning that operate in a text.”

### 2.8.1 Multiple Literacies and Semiotic Domains

In 1994, a group of ten researchers, educators and visionaries met in New London to develop a new literacy pedagogy. The “New London Group” (NLG), as they were called, coined the term *multiliteracies* to argue that the “multiplicity of communications [sic] channels and increasing cultural and linguistic diversity in the world today call for a much broader view of literacy than portrayed by traditional language-based approaches” (Cazden et al., 1996, p. 60). Literacy is multiple as there are different ways to read different types of text. For example, the legal literacy needed for reading law books is not the same as the literacy needed for reading physics texts or superhero comic books (Gee, 2007, p. 14). The use of multiliteracies approaches to pedagogy will, according to Cazden et al. (1996, p. 60), enable learners to achieve the authors’ twin goals for literacy learning: “creating access to the evolving language of work, power, and community, and fostering the critical engagement necessary for them to design their social futures and achieve success through fulfilling employment”.

James Paul Gee, a member of the NLG, continues to research the field of multiple literacies. He questions what it really means to be “literate” and distinguishes between knowing the “literal” meaning of a text and reading beyond the literal meaning of the text (Gee, 2007, p. 16). Further, Gee (2007, p. 16) claims that if all one can do is the former, then one cannot “really” read. To understand what he means by this, he introduces the term “semiotic domains”, which is “any set of practices that recruits one or more modalities (e.g. oral or written language, images, equations, symbols, sounds, gestures, graphs, artifacts, etc.) to communicate distinctive types of meanings” (Gee, 2007, p. 18). Examples of this can be rap music, cellular biology, midwifery, etc. Each of these domains has its own rules and requirements. According to Gee (2007, p. 17) there are limitations to thinking about literacy first and foremost in terms of print. Print literacy is not enough. People need to be literate in a great variety of different semiotic domains in our modern, global, high-tech, and science-driven world (Gee, 2007, p. 19). Gee (2007, p. 14) further argues that when we think about reading and writing, we have to think beyond print. Reading and writing in any domain are not just ways of decoding print, they are also part of social practices. Gee (2007, p. 14) claims that “[l]iteracy in any domain is actually not worth much if one knows nothing about the social practices of which that literacy is but a part”. He also raises an interesting issue by claiming that in school, learners are often expected to read texts with little or no knowledge about any social practices within which those texts are used.

It is fruitful to link Gee’s ideas to both Bloom’s taxonomy and critical literacy because both Gee (2007) and Anderson et al. (2001) call for educators to promote varied teaching and learning where they introduce learners to different sorts of social practices and semiotic domains, as well as including all parts of the taxonomy and applying a critical literacy approach. Gee (2007) argues that in order for pupils to master a variety of knowledge and cognitive processes (cf. Bloom’s taxonomy), and to take action and promote social justice (cf. critical literacy), schools have to rethink their limited ways of thinking about literacy as first and foremost a print medium, and focus instead on multiple “literacies” and “semiotic domains”.

## 2.9 Critical Literacy

In this section, the point will be made that including a critical literacy approach to education can contribute to achieving meaningful learning. Critical literacy and critical pedagogy largely unite through the work and theory of Paulo Freire, who developed adult literacy

programs in rural communities across Brazil in the 1960s (Beck, 2005). Freire (2000) believed in a dialogical and problem-solving education, where the teacher and pupil become jointly responsible for a process in which all grow, as opposed to what he termed the *banking concept of education*, in which pupils are viewed as empty accounts to be filled by teachers. Critical literacy has since developed into an approach to learning practiced worldwide.

One of the key tenets of critical literacy is that no text is ever neutral (Vasquez et al. 2013; Janks et al., 2014). This means that all texts are socially construed and thus all texts can be investigated for their ideological positioning. According to Janks (2013, p. 227) critical literacy is essentially about “enabling young people to *read* both the word and the world in relation to power, identity, difference and access to knowledge, skills, tools and resources”. A critical approach recognizes that words are not innocent and that texts are not neutral, they work to position us (Janks, 2013; Janks et al., 2014). As Gee (2007, p. 14) emphasizes: “we never just read or write; rather, we always read or write *something in some way*”. Critical literacy has been called “a pedagogy of hope” as it is based in the belief of our ability to transform the conditions in which we find ourselves (Janks et al., 2014). This aspect of action is crucial when dealing with sustainable development (cf. section 2.2). A critical literacy approach is not only needed in EFL teaching and learning but should be included in all school subjects so that it becomes incorporated into life-long learning.

On the basis of reviewing a range of definitions that appeared in the literature over the last 30 years, Lewison et al. (2002) conceived four interrelated dimensions of critical literacy: **disrupting the commonplace, interrogating multiple viewpoints, focusing on sociopolitical issues, and taking action and promoting social justice**. The first three dimensions will be explained generally, whereas the latter dimension will be elaborated on more thoroughly as that will be a part of subordinate research questions B: To what extent do the textbook tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice? However, it should be emphasized again that the four dimensions are interrelated, which means that none stand alone.

**Disrupting the commonplace** involves seeing the everyday through new lenses by “using language and other sign systems to recognize implicit modes of perception and to consider new frames from which to understand experience” (Lewison et al., 2002, p. 383). Teachers are traditionally perceived as transmitters of knowledge and curricula, but if they develop the

language of critique (Shannon, 1995, as cited in Lewison et al., 2002), the potential arises to develop an activist perspective toward their roles and responsibilities as educators (Lewison et al., 2002, p. 283). Vasquez et al. (2013, p. 53) stress that this dimension is not easy or natural as it requires pupils to become aware of prior assumptions that are taken for granted. Teachers should therefore ask pupils questions such as: How does this text position you as a reader? Who is advantaged and disadvantaged by the position on offer? (Vasquez et al., 2013; Janks et al., 2014).

**Interrogating multiple viewpoints** involves imagining standing in the shoes of others; “to understand experience and texts from our own perspectives and the viewpoints of others and to consider these various perspectives concurrently” (Lewison et al., 2002, p. 383). In selecting materials for learners, Vasquez et al. (2013, p. 74) advise seeking out engagements that give access to those who have been silenced or marginalized. Lewison et al. (2002, p. 383) claim that “[t]he ‘testing and right answer’ heritage of schooling stands in direct opposition to examining conflicting perspectives – a process that usually does not produce neat and tidy conclusions”. Vasquez et al. (2013, p. 74) seem to also share this view: “[w]ithout a doubt, multiple perspectives complicate what we know and thus complicate curriculum”.

**In focusing on sociopolitical issues**, an attempt is made to step outside of the personal to interrogate how sociopolitical systems and power relationships shape perceptions, responses, and actions (Lewison et al., 2002, p. 383). Taking a critical perspective requires a conscious awareness of language and power. Lewison et al. (2002, p. 383) explain that “[t]eaching is not a neutral form of social practice, yet often it takes place with no attention given to how sociopolitical systems, power relationships, and language are intertwined and inseparable from our teaching”. Lankshear & McLaren (1993, as cited in Vasquez et al., 2013, p. 13) argue that teachers need to adopt a critical perspective that challenges the legitimacy of unequal power relationships, questions existing hierarchies, and re-examines social structures that keep power in the hands of few.

**Taking action and promoting social justice** is often perceived as *the* definition of critical literacy, yet Lewison et al. (2002, pp. 383- 384) argue that “one cannot take informed action against oppression or promote social justice without expanded understandings and perspectives gained from the other three dimensions”. Subordinate research question B of the

current study involves this dimension and questions to what extent the 10<sup>th</sup> grade EFL textbook tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice. This dimension involves attempting to move the school curriculum to the community to make it more relevant to the lives of the pupils we teach (Vasquez et al., 2013, p. 15). Freire (2000) calls for teachers to encourage pupils to be actors rather than spectators in the world and stresses the importance of reflection followed by the kind of action that can transform the world. Agency is strengthened when pupils compose their own narratives, counter-narratives, letters, essays, reports, poems, commercials, posters, plays (Vasquez, 2005, as cited in Vasquez et al., 2013, p. 17) and web pages to promote social change (Vasquez et al., 2013). This can be linked to *create*, the highest-ranking skill of the Cognitive Process Dimension (see section 2.6.1). According to Behrman (2006, p. 495), taking social action allows pupils to recognize literacy as a sociocultural process and to engage in literacy as a tool for social change.

### 2.9.1 Challenges and Possibilities in Implementing a Critical Literacy Approach

Behrman (2006) asks how critical literacy affects classroom-based educational decisions, and what teaching strategies are consistent with a critical literacy orientation. He examined a number of articles published between 1999 and 2003 that present lessons or units to support critical literacy at the upper primary or secondary levels. Behrman (2006, pp. 490-491) claims that the answers to his questions are complicated as “critical literacy is usually described as a theory with implications for practice rather than a distinctive instructional methodology”, and that translating the theory into practice demands innovative and local solutions. Beck (2005, p. 394) states that critical literacy teachers center the classroom discussion around pupils’ voices and concerns, by acknowledging that pupils arrive in school with a wide range of experiences that influence their meaning-making process, and these teachers believe that reflecting on how experiences shape their interpretations is the first step toward critical awareness. In order to facilitate this reflection, the teachers need to establish a supportive environment in which pupils can participate in thoughtful exchanges with one another that will lead them to new and richer understandings of first personal, and later, social issues (Beck, 2005, p. 394).

Despite the promise of a more democratic society through critical literacy, a number of challenges arise for pupils and teachers in implementing a critical literacy approach. Beck (2005, p. 394) highlights that “because the classroom is not removed from the power struggles

and inequalities that pervade our social lives beyond the school, the pupil-centered discussions so necessary to encouraging critical literacy may themselves contain patterns of domination and victimization”. For example, some pupils may be more articulate or more persuasive than others for reasons related to age, gender, race, class, or ethnicity (Shor, 1999).

Teachers also face difficulties in implementing a critical literacy approach in the classroom, partly because of the absence of a single, widely accepted definition of the term, or a fixed model for bringing critical literacy to pedagogical practice (Beck, 2005, p. 395). In a study of critical literacy in the classrooms of new and novice teachers, Lewison et al. (2002, p. 390) reported that “initial efforts toward implementing a critical literacy curriculum are often shadowed by hesitations and uncertainties of what critical literacy looks like in the classroom”. Although each teacher in their study indicated a commitment to teaching critical literacy, the majority of them failed to fully implement all four dimensions identified by the authors as fundamental to critical literacy (see pp. 22-23). In particular, both new and novice teachers neglected to promote social justice. Teachers in the study indicated that they would benefit from the opportunity to communicate regularly with other critical literacy teachers, as the support would facilitate the ability to meet the challenges of implementing a critical literacy approach (Lewison et al., 2002). Despite these challenges, the ability to do critical literacy is still needed as it provides learner with “potent ways of reading, seeing and acting in the world” (Janks et al., 2014, p. 1). The approach can still be applicable in classrooms by applying innovative and local solutions (cf. Behrman, 2006).

Although presumably there are still many challenges related to the application of the approach, books like Janks et al.’s *Doing Critical Literacy* (2014) which contains a guide for teachers with texts and activities, can help. Another useful tool is Vasquez et al. (2013), which presents theoretical foundations and pedagogical resources for pre-service and in-service contexts in regard to critical literacy. Additional ideas for how to bring critical literacy to the classroom can be found in Borsheim & Petrone (2006), Janks (2014), Habegger-Conti (2015), and Rogers et al. (2016).

## Chapter 3: Materials and Methods

This chapter begins by presenting the materials of the study in subchapter 3.1, followed by how and why the present study employs a combination of quantitative and qualitative research methods in subchapter 3.2. Subchapter 3.3 provides information regarding the different steps and considerations that were made while analyzing the materials. In subchapter 3.4 the reliability and validity of the present study are discussed, followed by an explanation of ethical concerns related to the study in subchapter 3.5, and finally, possible limitations are discussed in subchapter 3.6.

### 3.1 Materials

This thesis investigates to what extent a selection of 10<sup>th</sup> grade EFL textbook tasks related to sustainable development promotes critical and meaningful learning? Therefore, the basis of this study is a selection of tasks connected to chapters about sustainability. The tasks are selected from three different textbooks, currently in use in 10<sup>th</sup> grade in Norway and designed to accommodate the curricula for the subject of English in grade 10. The scope of the present study did not allow time for an analysis of other resources linked to the textbooks, such as workbooks and online tasks.

#### 3.1.1 Selecting Textbooks

Convenience sampling was applied when the three textbooks were chosen: *New Flight 3* (Bromseth & Wigdahl, 2007) published by Cappelen Damm, *Crossroads 10A* (Heger & Wroldsen, 2014) published by Fagbokforlaget, and *Enter 10* (Diskin & Winsvold, 2017) published by Gyldendal. A conscious choice to focus on 10<sup>th</sup> grade textbook was made as the texts are more advanced at this stage compared to the lower stages. Also, the learners can be expected to have reached a level of linguistic, cognitive and emotional development that would allow for abstract reflection on questions related to sustainable development.

Since the textbooks are published by influential publishing companies, one can assume that their products are widely used in a Norwegian educational context. *Crossroads 10A* was first published in 2006, but its revised version was released in 2014 to accommodate the requirements of the 2013 revised version of the LK06 curriculum. The current study uses this revised version. *New Flight 3* has not released a revised version of their 2007 publication and is consequently based on LK06. *Enter 10* on the other hand, was published in 2017, after the

revised 2013 version of the curriculum, and thus accommodates the most recent update to the current curriculum.

### 3.1.2 Selection of Chapters

As an analysis of all the tasks in the textbooks would have been too comprehensive for this study, a selection was made to focus on a limited section of the textbooks based on theme. The common theme of sustainable development was found in all three textbooks, and its goals were determined to fit well with both critical literacy and Bloom's taxonomy as well as the core elements of the new curriculum. One chapter from each textbook focusing on sustainable development was found: *A wonderful world – for how long?* (pp. 119-142) in *New Flight 3*, *The Blue Planet* (pp. 119-147) in *Crossroads 10A*, and *Precious Drops* (pp. 182-215) in *Enter 10*. This resulted in a total of 239 textbook tasks. Choices also had to be made regarding if the tasks were to be categorized as one or several tasks. Choosing to focus on tasks related to sustainable development allowed the researcher to make implications for how new textbooks can be developed to promote critical and meaningful learning.

As mentioned in section 2.1, a new curriculum is currently being developed. It will be valid from the fall of 2020. The new curriculum aims to make changes that allow for more in-depth learning and a more practical approach in many subjects. The Norwegian Ministry of Education has already decided on three core elements, which are to be the most essential elements of every subject, namely *democracy and citizenship*, *sustainable development*, and *public health and wellbeing*. These are all topics of importance for social development. The textbook chapters related to sustainable development were chosen because these topics are relevant to the current curriculum, but even more so for the new 2020 curriculum. Thus, this thesis will focus on the first two of these core elements and analyze chapters which focus on sustainable development. However, it should be noted that the textbooks being analyzed were created to fit the current curriculum and the extent to which they happen to incorporate aims from the new curriculum naturally varies. LK06 also focuses on themes related to the first two essential elements, though primarily in the core curriculum (cf. section 2.1). As the current curriculum LK06 does not contain objectives about sustainable development in its subject curriculum, this will not be considered in the analysis.

## 3.2 Methods

After limiting the choice of materials to work with, a choice of research methods was made that best suited the objectives of this thesis. The main research question asks: **To what extent do a selection of 10<sup>th</sup> grade EFL textbooks related to sustainable development promote critical and meaningful learning?** In order to answer subordinate research question A: **What percentage of textbook tasks achieve Bloom’s taxonomy’s higher levels of cognitive processes that lead to critical and meaningful learning?** a quantitative content analysis was conducted. The second subordinate research question asks: **To what extent do these tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice?** A qualitative content analysis was conducted to answer this research question. In the following subchapters the methodological contemplations made in connection with the present investigation will be presented.

### 3.2.1 Mixed Methods Content Analysis

To be able to analyze textbook tasks related to sustainable development, a mixed methods content analysis was chosen. Mixed methods will be explained in relation to the present study, followed by an elaboration of why content analysis was chosen and how it will contribute to answering the research question.

Creswell (2015, p. 2) defines mixed methods as an approach “in which the investigator gathers both quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations on the combined strengths of both sets of data to understand research problems”. Strengths of conducting mixed methods are, according to Johnson & Onwuegbuzie (2004, p. 21), that it can “add insights and understanding that might be missed when only a single method is used” as well as producing “more complete knowledge necessary to inform theory and practice”. This is evident in the execution of the present study. However, it should be noted that using mixed methods is only beneficial when the researcher has adequate knowledge and skills in both the quantitative and the qualitative field (Johnson & Onwuegbuzie, 2004; Creswell, 2015).

According to Pingel (2010, p. 66), both quantitative and qualitative methods should be used when working with interpreting textbooks, as each approach provides answers to different questions. For this reason, a mixed methods approach to content analysis was chosen.

Content analysis is, as defined by Krippendorff (2013, p. 24), “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use”. The texts in the present study are textbook tasks related to sustainable development in the context of education. The quantitative part of the current content analysis is the selection of tasks related to sustainable development in addition to the illustration of how often each of the task types occur in each textbook. Qualitative or interpretive approaches to content analysis require a close reading of relatively small amounts of textual matter (Krippendorff, 2013, p. 23). This can be said to be true of the current study which contains a total of 239 textbook tasks which may be said to constitute small chunks of text. Krippendorff (2013, p. 23) states that qualitative approaches also require that “[t]he analysts acknowledge working within hermeneutic circles in which their own socially or culturally conditioned understanding constitutively participate”. What this means for the current study is that the analysis has been interpreted in the hermeneutic circle of education by asking: “What would a teacher do with this task in her/his class?” and “What would a teacher expect the terms in the tasks (e.g. explain, discuss, define, analyze) to mean?”

### 3.3 Carrying Out the Investigation

In order to answer the research question, the textbook tasks had to be divided into categories. A focus on post-reading tasks was chosen as only one textbook contained pre- and while-reading tasks. Each task was then categorized in relation to the Cognitive Process Dimension (Anderson et al., 2001) as well as Armstrong’s (n.d.) graphic interpretation of Bloom’s taxonomy:

- Remember
- Understand
- Apply
- Analyze
- Evaluate
- Create

# Bloom's Taxonomy

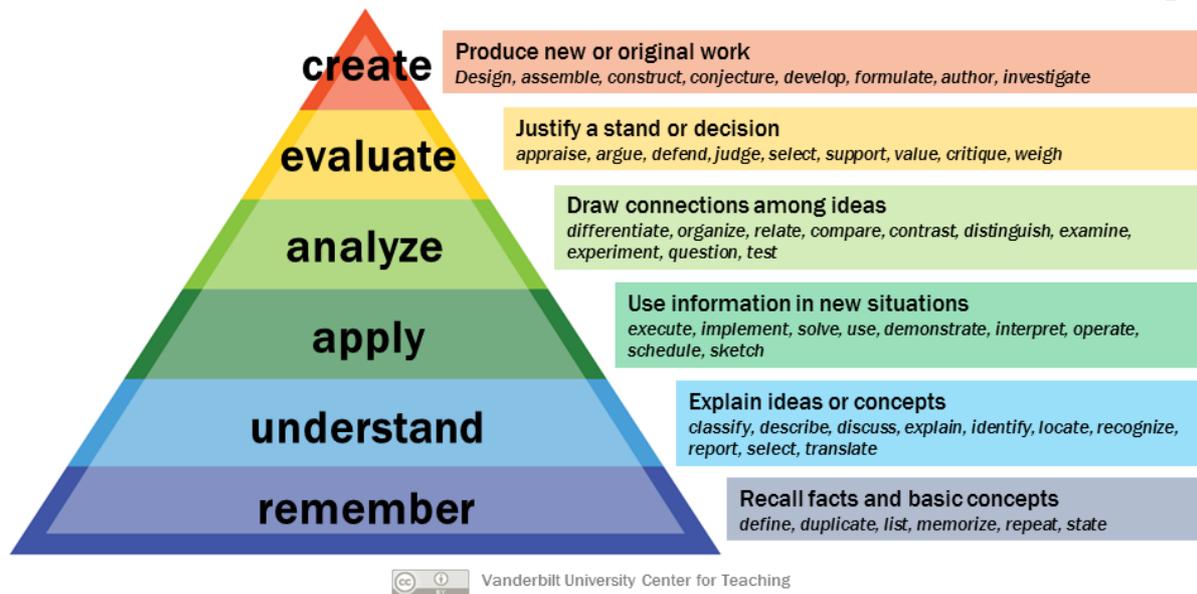


Figure 1: Armstrong's (n.d.) interpretation of Bloom's taxonomy

In order to identify which category it belonged to, each task was interpreted and analyzed according to content analysis. To conduct a systematic approach to this categorization, the Cognitive Process Dimension (Anderson et al., 2001), as well as Armstrong's (n.d.) graphic interpretation of Bloom's taxonomy were applied as tools. The learning objectives of each individual task were unknown to the researcher and demanded interpretation. The decision to only focus on the Cognitive Process Dimension (see section 2.6) was made as it has proved to be most efficient since the textbook tasks only provide us with verbs or verb phrases which give clues to the desired cognitive process. However, the verbs or verb phrases used could also be misleading regarding what the task was actually asking the learner to do, which required a critical interpretation by the researcher. Consequently, a list of verbs and verb phrases found in the actual textbook tasks, based on the researcher's interpretation of the tools, was added as an appendix to strengthen the validity and replicability of the study (see Appendix 4, p. 104). This will be discussed further in the Findings and Discussing chapter. In the following, a few examples from the analysis will provide an overview of how the analysis was conducted.

In one example from *New Flight 3* (see task WW2, p. 128), the task asks the learner to "explain" a list of words connected to the text (see Appendix 1, p. 70). The verb "explain"

falls into the categories of both *understand* and *analyze*, depending on what cognitive processes the task is requiring. However, the researcher determined that WW2 actually asks learners to “define”, not “explain”, a list of words after reading a text, which requires the learner to *recall* something from the text. This resulted in the task being categorized as *remember*. *Crossroads 10A* also uses the verb “explain” when the task is actually asking the learner to “define”. This is evident in Task 8 (p. 127), which asks the learner to “explain” a list of words (see Appendix 2, p. 76). This task was also ultimately found to fall under the category of *remember*. Another example which shows the analyzing process is Task 44c in *Enter 10* on page 203 (see Appendix 3, p. 95). The task asks: “How do you think people may use the sea in the future?”, where the phrase “what/why/how do you think” could belong to both categories of *understand* and *analyze*, according to the researcher. This required the researcher to question whether the main objective of the task was to **explain ideas or concepts** (*understand*) or **draw connections among ideas** (*analyze*). Task 44c was interpreted as asking the learner to do the latter, namely, to *analyze*.

In the analysis it was necessary to ask certain questions in order to categorize the textbook tasks, and Anderson et al.’s (2001) table had to be slightly modified for it to accommodate the analysis of textbook tasks. Armstrong’s (n.d.) graphic interpretation of Bloom’s taxonomy thus became useful. When analyzing the tasks, the following questions were considered in order to accurately place the tasks into the categories: Is the task asking the pupil to:

- recall facts and basic concepts from a text? → remember
- explain ideas or concepts, or construct meaning from a text? → understand
- carry out or use information from a text in a given situation? → apply
- draw connections among ideas? → analyze
- justify a stand or decision? → evaluate
- put elements together to form a coherent or functional whole, or to create new or original work? → create

In addition to answering the questions above, the researcher also tried to keep the form of the task separate from the cognitive processes involved in gaining knowledge about sustainable development. For example, some tasks ask pupils to write a letter, but in this letter they are only being asked to discuss and explain something related to the environment. The task is thus categorized as *understand* rather than *create*, because the pupils are not being asked to put together new knowledge on the environment.

Next a quantitative inquiry was conducted to illustrate how often each of the task types occur in each textbook. This approach can be considered quantitative because it results in a collection of measurable data: the number of tasks in the material chosen from each textbook, and how much of each task-type is represented in the material.

Each task was carefully analyzed and categorized on the basis of focusing on the cognitive process dimensions of *remember, understand, apply, analyze, evaluate, or create* (Anderson et al., 2001, see Appendix 5, p. 106), as explained above. Anderson et al. 's (2001) categories as well as Armstrong's (n.d.) graphic interpretation of Bloom's taxonomy (see Figure 1) were used as analyzing tools. The researcher had to interpret the tools used to make them fit into analyzing textbook tasks related to sustainable development. This resulted in a list of verbs and verb phrases found in the textbooks that correspond to the analyzing tools (see Appendix 4, p. 104). When the tasks had been analyzed, a quantification was conducted, where the different types of tasks were divided into tables showing the quantity of tasks related to the different cognitive processes (see Appendix 5, p. 106). Regarding research question B, which focuses on a critical literacy aspect, the researcher looked at tasks which ask learners to do something at the global, national, local or personal level to change their way of living related to sustainable development. An example of this is Task 7e (p. 187) in *Enter 10* which asks the learner: "How can you personally save water?" This task focuses on the local and personal aspect of sustainable development and it helps pupils, or has the potential of helping pupils, achieve the goals of a critical literacy approach, namely taking action and promoting social justice.

As the quantitative research provides exact answers regarding the ratio of tasks and the qualitative method provides in-depth analysis of the tasks, the mix of methods provides sufficient answers to the main research question which is: **To what extent do a selection of 10<sup>th</sup> grade EFL textbook tasks related to sustainable development promote critical and meaningful learning?** as well as subordinate research question A: **What percentage of textbook tasks achieve Bloom's taxonomy's higher levels of cognitive processes that lead to critical and meaningful learning?** and subordinate research question B: **To what extent do these tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice?**

In the following, the reliability and validity of the study will be discussed.

### 3.4 Reliability and Validity

Both the quantitative and the qualitative methods and data included in this thesis have been studied in detail several times to ensure an accurate analysis based on a deep understanding of the material, and in order to avoid errors in the statistical data. To strengthen the validity and reliability of the study, a list of verbs and verb phrases found in the actual textbook tasks is included as an appendix (see p. 105), which allows the reader to study the list in comparison to Anderson et al.'s (2001) table (see Appendix 5, p. 106) and Armstrong's illustration (see Figure 1), and to understand how the researcher has modified and interpreted the categorizes. However, it should be taken into consideration that the research is conducted on a subjective basis and that the researcher has been working alone. The reliability would have been strengthened had it been based on the opinions of several researchers.

### 3.5 Ethics

No personal information was gathered when conducting the current study and NSD approval was therefore not required. There was also no need for anonymity as the study only analyzes textbook tasks.

It should also be noted that comparisons between the selected textbooks have been made only in order to identify the different choices that can be made when it comes to selecting, presenting and encouraging work with the textbook materials. It has not been the researcher's concern to evaluate the different textbooks or to indicate that one textbook is to be favored over another, but rather to aid teachers and teacher training students in choosing and using textbooks in a critical way. Thus, the findings of this research should not be used to determine the efficacy of any one textbook. It has also not been the researcher's intent to affect the popularity of textbooks or cause harm to the publisher's revenue.

### 3.6 Possible Limitations

Although textbooks are widely used (see section 2.3), there is no guarantee that teachers use textbooks exactly like the authors intended. An analysis of EFL textbook tasks might therefore not be representative of what actually happens in the classroom. To be able to analyze the textbooks in use, classroom observations would be needed. Interviewing teachers and students could also contribute to such findings. However, the current study has the

potential of contributing to a more enhanced critical awareness of the use of textbook tasks and their intended learning outcomes.

By only choosing three EFL 10<sup>th</sup> grade textbooks, other textbooks from other publishers had to be eliminated. If other textbooks were chosen, the findings would have looked different. Likewise, sustainable development is only one of many focus areas in the textbooks. It is, however, possible to use the Cognitive Process Dimension (Anderson et al., 2001) and Armstrong's (n.d.) illustration in an analysis of a range of topics, which may encourage others to employ them as tools in further research. Other resources that teachers might use in the classroom, such as workbooks and online resources, have not been considered as it goes beyond the scope of the current study. However, within the scope of the selection and in connection with the research question and subordinate research questions, the study has been thoroughly and accurately conducted.

## 4. Findings and Discussion

The previous chapters have presented the theoretical background to the study as well as the materials and methods which have been employed throughout the investigation. This chapter presents the quantitative and qualitative findings from the analyses of the three 10<sup>th</sup> grade EFL textbooks. The current study aims to identify to what extent a selection of 10<sup>th</sup> grade textbook tasks related to sustainable development promote critical and meaningful learning. To facilitate meaningful learning, the promotion of both *retention* (the ability to remember material at some later time in much the same way as it was presented during instruction) and *transfer* (the ability to use what was learned to solve new problems), are essential. For the learning to become active, the pupils not only have to learn how to understand and produce meanings in a particular semiotic domain, they also have to be given the opportunity to experience and solve problems in various domains. Next, for the learning to become critical, pupils must also learn how to think about domains at a meta-level as a complex system of interrelated parts as well as learning how to innovate and produce meaning in the domain (cf. critical literacy). The top three levels of Bloom's taxonomy (higher-level cognitive skills) involve the critical aspect.

The aim of the analysis is to answer the main research question: **To what extent do a selection of 10<sup>th</sup> grade EFL textbook tasks related to sustainable development promote critical and meaning learning?** With this follows two subordinate research questions: A: **What percentage of textbook tasks achieve Bloom's taxonomy's higher levels of cognitive processes that lead to critical and meaningful learning?** and B: **To what extent do these tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice?**

As mentioned in section 3.2.1 and 3.3, the findings come from quantitative and qualitative analyses. Each type of task, together with examples from each of the three 10<sup>th</sup> grade EFL textbooks, is discussed in relation to the Cognitive Process Dimension (Anderson et al., 2001) and Armstrong's (n.d.) graphic interpretation of Bloom's taxonomy which comprises the six cognitive processes: *remember*, *understand*, *apply*, *analyze*, *evaluate*, and *create*.

THE COGNITIVE PROCESS DIMENSION	TEXTBOOKS		
	New Flight 3	Crossroads 10A	Enter 10
REMEMBER	<b>43.3%</b> (13)	<b>23.4%</b> (18)	<b>4.5%</b> (6)
UNDERSTAND	<b>36.6%</b> (11)	<b>22%</b> (17)	<b>52.3%</b> (69)
APPLY	<b>0%</b> (0)	<b>10.4%</b> (8)	<b>10.6%</b> (14)
ANALYZE	<b>13.3%</b> (4)	<b>15.6%</b> (12)	<b>10%</b> (13)
EVALUATE	<b>6.7%</b> (2)	<b>14.3%</b> (11)	<b>12.1%</b> (16)
CREATE	<b>0%</b> (0)	<b>14.3%</b> (11)	<b>10.6%</b> (14)
Total of tasks	100% (30)	100% (77)	100% (132)

Table 2: Representations of tasks that correspond to The Cognitive Process Dimension (Anderson et al., 2001), Armstrong’s (n.d.) interpretation of Bloom’s Taxonomy, and Appendix 4.

#### 4.1 General Findings

Before the findings are discussed in detail, some general findings will be presented. The analyses reveal that the textbooks to a varying degree contain tasks related to sustainable development which promote critical and meaningful learning. Table 2 shows that both *Crossroads 10A* and *Enter 10* contain a relatively similar number of tasks that promote Bloom’s three higher levels of cognitive processes, which constitute levels of critical thinking. *Crossroads 10A* has the highest percentage of tasks ranging from *analyze* through *create* (nearly half), whereas around 30% of the tasks in *Enter 10* fall into these categories.

However, it can be said that some tasks in both textbooks achieve Bloom's higher levels of cognitive processes that lead to critical and meaningful learning. *New Flight 3* does not contain any tasks related to the cognitive processes of *apply* and *create*, according to the analysis, and moreover, 80% of the tasks analyzed fall under the bottom two categories of the taxonomy (*remember* and *understand*). Because *apply* and *create* are two essential cognitive processes needed to achieve transfer as well as critical and meaningful learning, it is concerning that none of the tasks in *New Flight 3* fulfill the requirements of being categorized as either *apply* or *create*.

Regarding subordinate research question B, the analyses reveal that only three tasks from *Crossroads 10A* and *Enter 10* help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice. Of the tasks that were interpreted to involve this aspect, Task 7d and 7e (p. 187) from *Enter 10* (see Appendix 3, p. 86) and Task 5c (p. 135) in *Crossroads 10A* (see Appendix 2, p. 78) in the *create* category, the researcher argues that these tasks should include a more explicit focus on taking action and promoting social justice and makes suggestions on how to achieve this. This is discussed in subsection 4.1.2 and 4.3.

However, textbook tasks are only one element of EFL teaching and learning. Arguably the most crucial factor in promoting critical and meaningful learning is the EFL teacher (cf. section 1.4). The scope of the current study has not allowed for research into the use of the EFL textbooks and can thus only make implications of the textbooks' intended use and learning outcomes. When analyzing the textbook tasks, the researcher has tried to disclose the intended learning outcome.

#### 4.1.1 Lower-Level Cognitive Skills

Although the lower-level cognitive skills (*remember*, *understand*, and *apply*) are essential parts of promoting retention (*remember*) and transfer (*understand* through *create*), a lot of the tasks related to these categories seem to make pupils spectators rather than actors (section 2.9). These tasks ask the learners to simply read and answer general and factual questions with little regard for the fact that the textbook texts fall into different semiotic domains (cf. section 2.4 and 2.8.1). In the following, the findings related to the lower-level cognitive skills will be discussed, before moving on to the higher-level cognitive skills (*analyze*, *evaluate*, and *create*) in subsection 4.1.2.

## Remember

As can be seen in Table 2, *New Flight 3* contains by far the most tasks which emphasize the cognitive process of *remember* with almost half the tasks in the chapter (13 of 30 tasks) falling into this category. In comparison, roughly one quarter of the tasks from *Crossroads 10A* emphasize *remember*, and less than 5% of the tasks in *Enter 10* are related to this category. It becomes evident that *New Flight 3* puts the greatest emphasis on the ability to retrieve relevant knowledge from the text and to recall facts and basic concepts (cf. section 2.6.1 and 3.3). Tasks emphasize *remember* when the objective is to promote retention (see section 2.4), such as when learners are asked to repeat the elements of a text. To be able to identify tasks emphasizing remembering knowledge, the researcher had to determine whether the learners are being asked to recall or rewrite facts that can be copied directly from the text as opposed to the learners being asked to explain or connect ideas based on the knowledge they gained from the text (*understand*). Textbook tasks emphasizing *remember* might give clues to the desired cognitive process by using verbs such as: to list, outline, and define. An example of this can be found in *Enter 10* (Task 13a, p. 189), which asks the learner to “List the reasons the author gives for a global water crisis.” Another example can be found in *Crossroads 10A* (Task 1, p. 135), which asks the learner to “Outline some of the consequences of global warming.” However, most of the tasks identified as emphasizing *remember* do not contain verbs which give clues to the desired cognitive process. Instead, most of these tasks use “what...” or “how...”, such as “How do a minority of scientists explain global warming?” (Task 3, p. 128 in *New Flight 3*) and “What is the greenhouse effect?” (Task 3, p. 135 in *Crossroads 10A*). When analyzing tasks similar to these, a list of questions became particularly useful (cf. section 3.3). Thus, to be able to categorize these tasks, the researcher had to question whether a task demands the learner to recall facts and basic concepts from the text. If so, it indicates that the task belongs in the *remember* category. In both of the examples above, the answers can be found and copied directly from the texts. The types of tasks found in the *remember* category do not require any type of personal investment or involvement in issues related to sustainable development, but they might help pupils become aware of basic facts related to sustainable development.

When answering textbook tasks, the ideal is to first read the text thoroughly and then respond to the tasks based on memory and reflection. However, learners could seemingly skim the text and copy the answers found in the text. Most of the tasks identified as belonging to *remember* in the three textbooks make this technique possible. There are however a few tasks in this

category asking the learners questions where the answers cannot be found in the text. In the following, a few examples of this will be provided: Question 3 on page 132 in *New Flight 3* asks: “Can you think of other simple things ordinary people do?” (to preserve the environment). Here the learner is asked to use memory and list examples. Question 5 (p. 123) in *Crossroads 10A* demands the learner to “Tell a classmate about the most beautiful place you have ever been”, where the learner is asked to recall a place from memory rather than to explain the idea of it. Question 6 on page 131 in *Crossroad 10A* instructs the learners to:

Work in a small group. Each group member picks one of the following animals: *lion, leopard, rhino, wolf, bear, reindeer, dolphin, seal*. Write down everything you know about the animal you have chosen and make a brief presentation on it to a group of classmates.

In this task, the learners are asked to recall and list everything they know about a certain animal.

When using textbooks that put a great emphasis on the cognitive process of *remember*, such as *New Flight 3*, teachers must to be particularly mindful of avoiding a focus solely on rote learning or remembering elements of knowledge which often occur in isolation from their context (cf. section 2.4 and 2.6.1). When remembering knowledge is integrated within the larger task of constructing new knowledge or solving new problems, meaningful learning occurs. This should be the goal of learning. As stated by Anderson et al. (2001), the category of *remember* is essential for meaningful learning as this type of knowledge is used in more complex tasks. Thus, promoting *retention* as well as *transfer* indicates meaningful learning (cf. section 2.4).

### **Understand**

As can be seen in Table 2, more than half of *Enter 10*'s tasks (52.3%) emphasize the cognitive process dimension of *understand*, compared to just over a third of tasks in *New Flight 3* and about one quarter of the tasks from *Crossroads 10A*. Of all three textbooks, *Enter 10* clearly puts the greatest emphasis on the ability to explain ideas or concepts. The categories of *understand* through *create* promote transfer (cf. section 2.4 and 2.6.1). Anderson et al.'s (2001, p. 70) comment that *understand* is arguably the largest category of transfer-based educational objectives emphasized in schools clearly corresponds well with the results from *Enter 10*. The analysis also reveals that most of the *Enter 10* tasks categorized as

*understand* are those that the textbook categorizes as “Reading to understand”, “Vocabulary”, “Digital skills”, “Pronunciation”, “Synonyms” and “Linking words” (see Appendix 3). Most of these categories are related to developing language acquisition. However, quite a few of the tasks categorized by the textbook as “Analysis”, are actually categorized by the researcher as falling under the category of *understand*. Some of the tasks categorized as “Discussion” by the textbook were also found to be categorized as *understand*. This makes sense as the verb to discuss falls under both categories of *understand* and *analyze*. The textbooks’ categorization of tasks is further discussed in section 4.2.

Task 5a (p. 185) in *Enter 10* asks the learner to “Choose one of the goals [the United Nations Sustainable Development Goals] and make a short presentation about it.” This task demands the learner to explain a concept. Task 20d (p. 195) asks “What does Vera learn from Ulysses?”, which requires the learner to have understood and interpreted the information in the text, as the information needed to answer this task cannot be copied directly from the text. Task 2 (p. 128) in *New Flight 3* asks the learner to “Explain what the Greenhouse Effect is.” Here, the learner is asked to explain the concept of the greenhouse effect, which categorizes the task as *understand*. Another task categorized as asking for the ability to *understand* is Task WW Q1 (p. 132) which demands the learner to “Look in text C and find words connected with the *environment* and *energy saving*”, in which the verb “to find” gives clues to the desired cognitive process. The task also asks the learner to classify words, which is another indicator that it belongs to the category of *understand*. Here, as with the tasks asking pupils to *remember*, the tasks will help with an awareness of issues related to sustainable development, but do not involve making pupils “[...] agents of change in their schools, communities and societies [...]” (“Education for Sustainable Development”, n.d.).

### **Apply**

The analysis reveals that *New Flight 3* does not contain any tasks categorized as the cognitive process dimension of *apply*, while 10% of tasks in *Crossroads 10A* and *Enter 10* emphasize the ability to use information in new situations or to use procedures to perform exercises to solve problem (see Appendix 5, p. 106). An example of this is Task 8 in *Crossroads 10A* (p. 131), which asks, “What is life like in the deep blue sea? Write a couple of paragraphs seen from a killer whale’s point of view.” The learner is asked to *apply* information in new ways by using what they learned in the text and then applying it to the whale’s point of view. Another example found in *Crossroads 10A* (Task 7, p. 144) demands the learner to “Search

the Internet for information about a few extinct birds and animals. Make a poster presentation of your findings. It should include one drawing of each animal in addition to written information.” Again, the task requires the learner to carry out or use information in a given situation. The verb “to make” is also an indicator that the desired cognitive process is *apply* (see Appendix 4, p. 104). Many of the tasks categorized as *apply* in *Enter 10* ask learners to “act out” a situation, such as Task 30 (p. 197): “Act out a discussion between the Standing Rock Sioux Tribe and the Army Corps of Engineers about the pipeline” and Task 31: “Tariq meets President Obama at the final stop of the Relay Race. Act out the conversation.” The learners are asked to use the information from the texts and *apply* it to new situations, namely to “act out” (see Appendix 4, p. 104), equivalent to “execute” and “demonstrate” (see Figure 1). In *Crossroads 10A*, the tasks categorized as *apply* generally ask the learners to make a presentation or to calculate. An example of the latter is Task 13 (p. 142) which requires the pupil to “Study the life expectancy tables on page 138” before answering “How much longer (%) is a female child in Norway expected to live than in Lesotho?” However, “act out” is different than “active learning” because it lacks a real-world correspondence such as working for social justice.

In the following, the higher-level cognitive skills will be presented.

#### 4.1.2 Higher-Level Cognitive Skills

The lower-level thinking skills help learners achieve awareness in regards to sustainable development. However, they are lacking the aspect of creating agents of change. Scholars recognize the need for retention (cf. section 2.4), but this knowledge has to be accompanied by the higher-level cognitive skills (*analyze, evaluate, and create*), which are crucial in promoting transfer as well as critical and meaningful learning. Learners should get the opportunity to engage in different semiotic domains (cf. section 2.8.1), such as the semiotic domain of sustainable development, in order to transfer the facts and ideas they learn in classrooms to understanding their experiences in the everyday world (cf. section 2.4). How can teachers help pupils become literate in the semiotic domain of sustainable development? Learning materials which focus on sustainable development should demand that learners be actors. Thus, it is not sufficient to only provide pupils with learning activities which promote rote learning, but rather to include all aspect of Bloom’s taxonomy leading to *transfer* and meaningful learning (see section 2.4) as well as adopting a critical literacy approach. As Vasquez et al. (2013, p. 64) emphasize: “To see ‘comprehension’ as the goal of our literacy

program is no longer good enough.” If the learners are to become critically literate citizens, they must be able to “read between and behind the lines” (Vasquez et al., 2013, p. 64), which the lower level thinking skills (*remember*, *understand*, and *apply*) alone arguably do not fulfill. Vasquez et al. (2013, p. 20) stress that “[i]t is not enough to treat critical literacy as a topic of conversation; we have to go out and do something as well.”

In the following, the results from the textbook analyses related to the higher order thinking skills that constitutes critical learning, will be presented.

### **Analyze**

The results of the analyses show that roughly 14% of tasks in *Crossroads 10A* belong to the category of *analyze*, followed by about 13% in *New Flight 3*, and 10% in *Enter 10*. Task 5b in *Crossroads 10A* (p. 127) instructs the learners to discuss the following question in a group: “How would it affect you if the tiger were to go extinct?” The researcher determined this task as asking the learners to draw connections among ideas (*analyze*), namely, to consider in what way they would be affected if the tiger were to go extinct. A similar task is found in *Crossroads 10A* (Task 2, p. 143): “‘What does it matter if a wild animal goes extinct. After all, it is just an animal.’ Discuss this statement in a group.” As the verb *discuss* has been determined to belong to three categories, namely, *understand*, *analyze* and *evaluate* (see section 3.3 and Appendix 4), the researcher had to ask certain questions in order to accurately categorize the tasks (see section 3.3). Task 5 (p. 123) in *New Flight 3* asks “If you were to wish or pray for something to make life on Earth better, what would it be?”. This is a challenging task to categorize as it does not give clues to the desired cognitive process in terms of verbs. The task asks the learner to reflect, which is not a verb used in Bloom’s taxonomy. However, the task can be said to ask the learner to draw connections among ideas, which can encourage a discussion on what would make life on earth better and why. Even so, the task does not ask “why”, a question which can encourage pupils to reflect, analyze and evaluate. This means that Task 5 might be answered in a simpler form without the learner having to explain his or her answer. On the other hand, this task gives the teacher a unique opportunity to elicit an engaged classroom discussion. The task would be more easily categorized if something related to “why” was added as well. A teacher could, however, choose to expand the task to probe the “why” aspect as well.

Task 5a (p. 135) in *Crossroads 10A* asks the learner(s) to discuss “Why is it important to stop global warming?”. The use of “why” is an indicator that it belongs to either *understand*, *analyze* or *evaluate* (see Appendix 4, p. 104). Task 5a was interpreted as asking the learner: to explain, discuss, and examine (see Figure 1 and Appendix 4), namely, to draw connections among ideas. This task is followed by another task (Task 5b, p. 135) that asks the learner to *analyze*: “What will the Earth be like in 50 years if global warming continues?” Task 4a (p. 142) in *Crossroads 10A* also asks: “Would you be willing to spend less money on yourself to be able to give some money to starving people in developing countries? If not, why not? But if so: What would you sacrifice in order to reduce your own consumption?”. Asking about spending money in the pupils’ everyday encourages learners to think on a local and personal level about global issues. This task asks learners to relate and empathize with starving people, before discussing and examining what they would be willing to give up in order to help others. Thus, Task 4a demands that the learner *analyze*. However, this task is also an example of a task where the teacher can point out issues of power, which is an important aspect of critical literacy. Task 4a can be said to involve a power imbalance as it positions the pupils as “us”, the wealthy and privileged, and the “starving people in developing countries” as the *other*. In this task, the teacher could help make pupils aware that there are also starving people in their own country and then encourage the pupils to come up with local solutions to that issue.

*Enter 10* contains a section which focuses on water footprints. The following activities (Task 7a and 7b, p. 187) ask: “Why is it important to protect our fresh water supplies?” and “Which daily activities require the most water? Why do you think it is so?”. The use of “why” in both of these tasks indicates that they might belong to the *analyze* category. They were both categorized as *analyze* because the tasks demanded that learners draw connections among ideas. These tasks also have the potential to include an action aspect where the learners might be asked to indicate and investigate how much water their families use in a day, week, month, or year, followed by a plan on how to reduce their water footprint, depending on the scope of project. The tasks could then involve both the highest order cognitive process dimension, *create* (to investigate and plan), as well as a critical literacy aspect, namely taking action and promoting social justice (see section 2.9).

The tasks categorized as *analyze* can be said to generally encourage pupils to make the important connections between what they are learning in the classroom to understanding their

experiences in the everyday world better (cf. section 2.4). According to Udir (n.d., p. 14), “[T]he aim of education is to train pupils in both synthesis and analysis – to develop both imagination and skepticism so that experience can be translated into insight”. To promote the aspect of transfer as well as critical and meaningful learning even more, the teacher has a great opportunity to supplement these textbook tasks with materials or approaches that make the tasks more relevant to the lives of learners. This will be discussed further in section 4.3 and 4.4.

## **Evaluate**

Being able to justify a stand or decision is emphasized in about 14% of tasks in *Crossroads 10A*, followed by 12% of tasks in *Enter 10*, and in less than 7% of tasks in *New Flight 3* (see Table 2). These tasks often contain verbs such as: to persuade, argue and convince (see Figure 1, and Appendix 4). An example of this can be found in *New Flight 3* (Task 5, p. 132): “Are you going to have a car? Why (not)? How are you going to use it?”, which instructs the learners to argue and justify their stand related to owning and using a car. This task asks about issues related to sustainable development at a local and personal level, as many pupils will likely have a car in their family and might own a car in the future. By asking “why” it encourages critical reflection regarding something that is relevant to the pupils’ lives. Another task in the same textbook (Task 6, p. 140) asks: “Is nuclear war a real threat now? Are nuclear weapons necessary to preserve peace on Earth?” where the learner has to weigh or appraise whether this is the case. This is a challenging task which requires in-depth knowledge related to nuclear weapons. Task 28 (p. 197) in *Enter 10* instructs the learner to “Choose topic [sic], purpose and audience and write a persuasive letter about a matter that concerns you deeply. Use this letter to the Obamas as a model for your writing. Include suitable linking words in your text.” In this task, the learner is asked to write a persuasive letter, which indicates that the desired cognitive process is *evaluate*. Another task in *Enter 10*, Task 44b (p. 203), asks the learner to *evaluate*: “Do you think that there are any problems about [sic] the way that we use the ocean at the moment? Why, or why not?” The questions “why, or why not” indicates that the learner is asked to argue and justify a stand or decision (see Appendix 4, p. 104). Task 10A (p. 127) in *Crossroads 10A* presents the learners with a scenario:

You are an environmentalist working for the protection of a wild animal. Tonight you are attending a meeting in a local community where most of the farmers have suffered livestock losses. They blame the wild animals in the vicinity and want something to be

done about the problem. You must try to get the following message through: We need to find a solution to this problem that is beneficial to humans and animals alike.

Here the learners are asked to argue for or defend a solution, which requires them to apply the cognitive process of *evaluate*. Task 4 (p. 135) in *Crossroads 10A* states that “Planes emit a lot of carbon dioxide”, before asking the learners: “When you go on holiday abroad, would you be willing to travel by train instead? Discuss in a group.” The verb “to discuss” is used, which indicates that the task might belong to the categories of *understand*, *analyze* or *evaluate* (see Appendix 4, p. 104). However, the researcher interpreted that the verb implies that the learners are expected to argue and justify their stand. In this task, the learners are asked to evaluate in terms of sustainable development. They are asked to consider travelling by train instead of plane as trains are a more sustainable travel option. This is a task which is most likely very relevant to the pupils, as many are used to travelling both by train and plane. Thus, it is a task which can contribute to critical reflection regarding the pupils’ personal travel habits.

### **Create**

Regarding the highest order cognitive process dimension, the analyses reveal that about 14% of tasks in *Crossroads 10A* emphasize the ability to *create*, compared with just over 10% in *Enter 10*. However, *New Flight 3* does not contain any tasks related to sustainable development that can be categorized as *create*, according to the analysis. This finding is concerning, as the need for innovation and creativity is clearly stated in the School of the Future report (see section 2.6.2). It is also a prerequisite for transfer as well as critical and meaningful learning (see section 2.4). The cognitive process dimension of *create* is crucial in order to come up with solutions related to sustainable development. In order for a task to be categorized as belonging to the cognitive process of *create*, it has to involve putting elements together to form a coherent or functional whole (see Appendix 5, p. 106) or to produce new or original work (see Figure 1).

Task 11 (p. 187) in *Enter 10* provides the learner with a scenario:

You have been hired by the United Nations to devise a campaign to get people to reduce their water footprint. Your campaign should include: a slogan, pictures, tips and factual information giving reasons for the need to reduce their water footprint. You can present using digital media.

This task requires the learner to *create* knowledge related to sustainable development. The following task (Task 12, p. 187) also focuses on water footprint and instructs the learner to “Find a personal water footprint calculator online. Calculate your footprint and present your findings to a group of pupils.” The verbs to find, calculate, and present are used, which belong to different cognitive process categories and may appear confusing in the analysis (see Appendix 4, p. 104). Again, asking certain questions in order to categorize the task became useful (see section 3.3). However, in this task, the learner has to investigate something on their own and present their findings in a new way, which leads the learner to create new knowledge about sustainable development. Task 6 (p. 142) in *Crossroads 10A* presents the learners with a scenario: “You are a group of three experts who are working on a plan to put an end to poverty”, before instructing them to “Brainstorm some ideas, then decide on an agenda you believe will help poor countries overcome obstacles to prosperity.” This task requires the pupils to investigate and plan; thus, they are producing new or original work. Task 2 (p. 142) also requires the learner to be creative and innovative: “Today’s cars emit high level of CO<sub>2</sub>. We need to look for alternative types of fuel and design new types of engines. Do you have any good suggestions? Share your ideas with some classmates.”

A few of the tasks in *Enter 10* that are categorized as *create* do not ask the learner to create something related to sustainable development. An example of this is Task 51b (p. 207) which asks, “What do you think has happened to Maas Conrad?”, followed by the instruction “Although you do not know very much about Lloyd and his grandfather, collect what you know and then develop a plot in groups.” Another example of this is Task 54 (p. 207), which asks the learner to “Write two different endings to the story about Lloyd and his grandfather.” A similar task is found on page 213 (Task 66), which asks the learner to “Write a different ending to this short story where Cameron actually arranges a meeting between the two Venusians and the president.” These tasks do not require the learners to put together new knowledge on the environment, but rather to put elements together to form a coherent or functional whole related to the presented stories. Teachers must therefore pay attention not only to the verb used in the tasks, but what the task actually asks learners to do.

In the category of *create*, involving critical reflection and action related to the pupils’ personal lives is crucial as the Educational Act states that pupils “shall learn to think critically and act ethically and with environmental awareness” as well as having “joint responsibility

and the right to participate” (Ministry of Education and Research, 2007). Task 7d and 7e (p. 187) in *Enter 10* ask the learner, “How can you personally save water?” and “What can a country or the global population do to save water?” which require the learner to *create* and come up with solutions related to saving water. These tasks do not contain verbs which give clues to the desired cognitive process. Instead the researcher had to ask what the task is asking the pupil to do (cf. section 3.3). Thus, Task 7b and 7e require the learner to put elements together to produce new or original work. A similar task can be found in *Crossroads 10A* (Task 5c, p. 135), which is asking the learners to discuss issues related to global warming: “How can you, personally, contribute to stopping it?” These presented tasks are similar in the way that they help pupils, or have the potential of helping pupils, achieve the goals of a critical literacy approach, namely taking action and promoting social justice (subordinate research question B). To be in line with this approach, the researcher has looked at tasks which ask learners to do something at the global, national, local or personal level to change their way of living related to sustainable development. This can also be a tool for teachers when looking at tasks. Task 7d asks about pupils personally, where they have to be participants as opposed to being passive. It also involves local change, which will be discussed further in section 4.3. However, for this task to fully meet the goals of a critical literacy approach, it should involve a more explicit critical literacy aspect. What this means is that the task is only asking what the pupils *can* do personally, not necessarily asking them to actually take action. For such tasks to involve an action aspect more explicitly, they could ask learners to plan and carry out a project. This is again dependent on the teacher’s knowledge, skills and awareness.

Regarding subordinate research question B, the analyses reveal that the tasks in the above paragraph, Task 7d and 7e (p. 187) from *Enter 10*, and Task 5c (p. 135) in *Crossroads 10A*, help pupils or have the potential of helping pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice. The researcher argues that these tasks should include a more explicit focus on taking action and promoting social justice and makes suggestions on how to achieve this. More explicit suggestions can be found in subsection 4.3.1.

#### 4.2 The Textbooks’ Own Categorization of Tasks

*New Flight 3* has classified its tasks using two categories, namely “LET’S TALK” and “WORK WITH WORDS”. *Crossroads 10A* has used the categorizations “Did you get it?”,

“Oral task (pair work or group work)”, “Written and oral task (pair work or group work)”, “Written task”, and finally “Role Play”. These categorizations seem in part to be inspired by the Framework for Basic Skills (cf. section 2.7), although a focus on reading skills, digital skills and numeracy skills seems to be missing. *Enter 10* has categorized its tasks using verbs that can be found in Bloom’s taxonomy (see Appendix 3). However, the researcher found that some of these categorizations were not consistent with the analysis. Nonetheless, categorizing tasks like *Enter 10* can be a convenient contribution to developing awareness related to the desired cognitive processes when working with tasks, but arguably only if the textbooks follow the same taxonomy and are consistent when categorizing their tasks. Thus, Bloom’s taxonomy can be useful when developing new learning materials connected to the new curricula.

### 4.3 General Discussion

In this section, the discussion of the findings will be further elaborated on. The findings reveal that the analyzed textbooks do a decent job of promoting knowledge. However, the analyses show that the textbooks do not promote action to a sufficient extent to promote critical and meaningful learning (cf. critical literacy). Without action, there will be no change, and this is where schools must contribute. The full range of cognitive processes accompanied by a critical literacy approach are needed when it comes to sustainable development and the future of the globe. For the learning to become meaningful, the learning materials have to promote both retention and transfer (cf. Bloom’s taxonomy). For the learning to become active and critical, pupils have to be given the opportunity to experience and solve problems in various domains (cf. critical literacy). Therefore, the current study has discussed ways to make teachers and pupils more aware of the lower and higher levels of cognitive processes. It has also introduced ways to incorporate a critical literacy approach to teaching and learning.

Efficient application of the learning materials, whether that material is of a decent quality or demands improvements, is ultimately dependent on the teachers’ knowledge, skills and awareness. However, the current study indicates that the analyzed textbook tasks have the potential of promoting knowledge and attitudes related to sustainable development.

Nonetheless, the tasks also need to emphasize the urgent need for action related to sustainable development (cf. section 2.2). As Vasquez et al. (2013) clarify:

More than often students are asked to read, write, and discuss about critical literacy with the primary intent of helping students grow a knowledge base. Missing are opportunities for going out into the world and shifting the balance of power and changing inequitable situations [...]. (p. 38)

Thus, pupils need knowledge and attitudes, as well as skills and action, in order to create solutions and promote Education for Sustainable Development (cf. section 2.2). Janks et al. (2014, p. 151) claims that we must have knowledge in order to make a contribution as it will enable us to make decisions about what we can do. This emphasizes the need for both Bloom's taxonomy and critical literacy. When dealing with a serious matter such as sustainable development and global warming, pupils need to understand the severity. However, just as important, they need hope and tools in order to contribute and act. Thus, "[B]y acquiring the values, attitudes, skills and knowledge that are needed to contribute to sustainable development, learners can take informed decisions and responsible actions and become agents of change in their schools, communities and societies" ("Education for Sustainable Development", n.d). According to Janks (2010, as cited in Vasquez et al., 2013, p. 38), critical literacy teachers help pupils to pose problems and to act. It is the action piece that is often missing from classrooms. In order to promote an action aspect, the pupils need to be participants rather than consumers in education (Vasquez et al., 2013, p. 19). Nonetheless, the knowledge that Bloom's taxonomy provides is not sufficient when dealing with such issues. Thus, a critical literacy approach can provide learners with the aspect of action.

#### 4.3.1 Global, National, Local, and Personal Action

The tasks in the three textbooks demonstrate a tendency to focus on sustainable development mostly on a global scale, which is a considerable part of understanding the concept. However, pupils should also be presented with the opportunity to learn about sustainable development nationally, locally, and personally, which may encourage action as it might feel more relatable and manageable. According to the Educational Act, "[t]he pupils and apprentices shall learn to think critically and act ethically and with environmental awareness" and they "shall have joint responsibility and the right to participate" (Ministry of Education and Research, 2007). This is supported by Vasquez et al. (2013), who claim that the dimension of critical literacy which focuses on taking action and promoting social justice involves attempting to move the school curriculum to the community to make it more relevant to the pupils. This could help encourage pupils to be actors rather than spectators. It could also strengthen pupils' sense of

agency (see section 2.9). A way to accommodate this dimension is for the textbook to provide a text presenting examples of national or local collective action that have made a difference to people's lives or to the environment (cf. Janks et al., 2014, p. 147). Pupils could then be given a task to find other similar examples, followed by a project where they could work in groups to investigate a matter that concerns them, followed by planning and carrying out their project locally. This would also include the ability to *create* (Bloom's taxonomy). A classroom activity of this sort could reach the aim of a critical literacy approach, namely taking action and promoting social justice.

It would be interesting to investigate how pupils answer the question: "If you were to wish or pray for something to make life on Earth better, what would it be?" (Task 5 in *New Flight 3*, p. 123), in regards to whether their answers pertain to global, national or local issues. Given that a low number of textbook tasks encourage local action, one can assume that learners are likely to think of starving people in developing countries instead of focusing on what could be done to improve social issues locally. In a task like Task 5 above, the teacher has an opportunity to help pupils shift the focus from global to local issues related to sustainable development. A few tasks which focus on social action on a local and personal scale can be found in *Enter 10* and *Crossroads 10A*. Task 7d (p. 187) in *Enter 10*: "How can you personally save water?" and Task 5 (p. 135) in *Crossroads 10A*: "How can you personally contribute to stopping it [global warming]?" focus on local change and more specifically personal change as they encourage pupils to act. Task 7e (p. 187) in *Enter 10*, on the other hand, focuses on sustainable development on a national and global scale: "What can a country or the global population do to save water?". These tasks treat water as a local and personal issue in which pupils have to contribute personally to reduce their water footprints, as opposed to linking the water crisis to developing countries which may create a power imbalance of "us" versus "them", the *other* (as discussed in section 4.1.2).

As mentioned in the theory section, there might be some challenges to implementing a critical literacy aspect in the classroom. It is more time consuming and requires teachers to come up with their own projects rather than just relying on given activities in the textbooks; it requires teacher training in a critical literacy approach, or at least training in how to develop activities that promote critical and meaningful learning. Beck (2005, p. 394) points out that critical literacy teachers acknowledge that pupils arrive in school with a wide range of experiences that influence their meaning-making process by centering the classroom discussion around

pupils' voices and concerns. Hence, the teacher should include pupils' concerns regarding sustainable development in classroom discussions. Critical literacy teachers believe that reflecting on how experiences shape their pupils' interpretations is the first step toward critical awareness. In order to facilitate this reflection, Beck (2005, p. 394) claims that teachers need to establish a supportive environment in which pupils can participate in thoughtful exchanges with one another that will lead them to new and richer understanding of first personal, and later, social issues. In order to establish a supportive environment that facilitates learning, the teacher should be aware of the power balance among pupils as the classroom is not removed from the power struggles and inequalities that pervade our social lives beyond the school (cf. section 2.9).

#### 4.3.2 Facilitating Critical and Meaningful Learning

One aim of teaching should be to facilitate critical and meaningful learning with a balance of lower- and higher-level learning situations. This will help pupils to develop a solid background of content and skills as well as the analytical and evaluative tools to apply them. Creative projects are a way to engage learners at higher levels, and this can be incorporated with the critical literacy aspect of taking action and promoting social justice. Questions related to the balance of power in the world should also be incorporated in this. Teachers can help pupils become aware of issues of power by asking them questions such as: How does this text position you as a reader? Who is advantaged and disadvantaged by the position on offer? (see section 2.9).

When teachers are giving tasks to pupils, they can ask the following questions based on Bloom's taxonomy related to lower- and higher-level thinking skills:

1. What does the task ask of the pupils: recalling, showing understanding and applying (lower levels) or analyzing and evaluating to create new or original work (higher levels)?
2. Will pupils be expected to answer with specific, known answers (lower levels), or will they be asked to generate original thoughts (higher levels)?

To also include a critical literacy approach, teachers can ask themselves how the activity could be developed to involve the four interrelated dimensions of critical literacy (as discussed in section 2.9): disrupting the commonplace, interrogating multiple viewpoints,

focusing on sociopolitical issue, and lastly taking action and promoting social justice, which has been the dimension of focus in the current study.

#### 4.3 Procedures When Choosing Textbooks and Other Learning Materials

Since textbooks apparently play such a crucial factor in Norwegian EFL classrooms (cf. section 2.3), its texts and following tasks have a unique opportunity to provide pupils with values, attitudes, skills and knowledge that are needed to “expand the individual’s capacity to perceive and to participate, to experience, to empathize and to excel” (LK06, 2006/13, p. 5). However, Richards (2011, p. 2) warns that textbooks can deskill teachers if they use them as the primary source of their teaching (see section 2.3). Thus, teachers need to be able to critically evaluate the use and potential of textbooks and other learning materials. Both Bloom’s taxonomy and critical literacy can be applied as tools in this process. Teachers should also offer other learning materials to their pupils. Suggestions of teaching materials that contain a critical literacy aspect can be found in section 2.9. Teaching materials that focus on sustainable development can be found on UNESCO’s websites.

Learning activities are intended to help pupils achieve aims. The textbooks and its tasks reveal what is valid knowledge and accepted values in the society, and teachers make choices regarding this (Anderson et al., 2001; Skjelbred, 2003). Thus, a critical evaluation of learning activities can make both learners and teachers aware of what a task is conveying regarding the subject’s or topic’s knowledge taxonomy (cf. section 2.3.1).

An analysis done by Gilje et al. (2016, p. 18) shows that the learning materials are generally chosen by the teams of teachers at a particular school. Thus, procedures for choosing and evaluating learning materials should be an explicit focus in the teacher education program. Since the current curriculum (LK06) was introduced, EFL teachers have been given more freedom to choose language learning materials as they see fit, which provides a stronger sense of teacher autonomy. With this comes a great opportunity to choose learning materials of a decent quality which help to promote the aims in the curriculum and subject syllabuses. Therefore, when choosing textbooks, Wen-Cheng (2011, p. 95) claims that the “use of an evaluation procedure or checklist can lead to a more systematic and thorough examination of potential textbooks and to enhanced outcomes for learners, instructors, and administrators.” Juuhl et al. (2010, p. 10) list some criteria for when choosing which textbook to buy: whether the textbooks help to reach the goals in the national curriculum, and whether texts are

understandable and motivating for a wide range of students. The latter is an almost impossible demand, as the users of the textbooks may only have their age in common, while differing greatly when it comes to literacy, their ability to interpret the content, their interests, etc. (Juuhl et al., 2010, p. 10). Other concerns regarding textbooks are that they may contain inauthentic language, they may not reflect pupils' needs, and they may distort content by presenting an idealized view of the world or fail to represent real issues (Richards, 2011, p. 2). Brown (2016) found this to be true when she researched visual representations of indigenous cultures in EFL textbooks. Her findings show that "the images that are presented as representing indigenous cultures in the EFL textbooks to a large extent enforce cultural stereotyping" (Brown, 2016, p. 93), and in fact work against curriculum aims related to global citizenship and intercultural communication.

With all this in mind, informed judgments about textbooks and teaching materials need to be made. Evaluation can only be done by considering something in relation to its purpose, therefore one must consider the following issues when evaluating textbooks and other materials: the role of the textbook in a program, the teachers in the program and the learners in the program (Richards, 2011, pp. 2-3).

## 5. Conclusion

This final chapter of the thesis revisits the research questions, theoretical background and methods upon which it has been based, as well as concluding the findings from the research. Teaching implications are discussed in section 5.2, followed by possible limitations in 5.3. Lastly, the implications of this study are explored in relation to further research.

### 5.1 Main Findings

The aim of the present thesis has been to investigate **To what extent a selection of 10<sup>th</sup> grade EFL textbook tasks related to sustainable development promote critical and meaningful learning?** with subordinate questions A: **What percentage of textbook tasks achieve Bloom's taxonomy's higher levels of cognitive processes that lead to critical and meaningful learning?** and B: **To what extent do these tasks help pupils to achieve the goals of a critical literacy approach, namely taking action and promoting social justice?**

The investigation was motivated by the increasing importance of sustainable development education as well as the strong position textbooks and tasks hold in EFL teaching and learning. The current study has also tried to shed light on the need for an explicit awareness of knowledge taxonomy. In addition to this, the thesis has aimed to convey the importance of including a critical literacy approach in EFL education. The research has been conducted through a mixed methods content analysis. The present subchapter will sum up the findings from the research questions.

The researcher has analyzed 30 tasks in *New Flight 3*, 77 tasks in *Crossroads 10A*, and 132 tasks in *Enter 10* related to sustainable development. The findings from the quantitative and qualitative analyses revealed that both *Crossroad 10A* and *Enter 10* contain a relatively similar number of tasks that promote critical and meaningful learning related to sustainable development. *New Flight 3* however, does not contain any tasks related to the cognitive processes of *apply* and *create*, at least on the topic of sustainable development. *Apply* and *create* are two essential cognitive processes needed to achieve transfer as well as critical and meaningful learning. Thus, the analysis indicates that *New Flight 3* does not promote critical and meaningful learning to the same extent as the other two textbooks. Regarding a critical literacy approach, the analyses revealed that only two tasks from *Enter 10* and one task from *Crossroads 10A* help pupils achieve, or have the potential of helping pupils to achieve, the goals of taking action and promoting social justice. *New Flight 3* does not contain any tasks

which focus on the critical literacy aspect of taking action and promoting social justice, according to the analysis. Of the tasks in *Crossroads 10A* and *Enter 10* that were interpreted to involve this aspect, the researcher has argued for and made suggestions for how these tasks can include a more explicit focus on taking action and promoting social justice.

Central to this discussion has been that regardless of the quality of textbooks and other learning materials, critical and meaningful learning primarily rests in teachers' knowledge, skills and awareness of approaches that promote critical and meaningful learning. What this indicates is that teachers should be made aware of procedures for when choosing learning materials. These procedures can also contribute to a critical evaluation of the chosen learning materials as some teachers might start working at schools where the textbooks have already been chosen. The evaluation of learning materials in regard to helping pupils acquire the aims in the curricula should be a focus of teacher education programs. The researcher has argued that implementing Bloom's taxonomy and critical literacy in relation to didactic questions and implications can provide educators and learners with tools which may contribute to realizing the many aims of education. It is the researcher's hope that textbook authors and publishers will also take the findings of this investigation into consideration when designing textbook tasks in the future.

It should be noted, again, that the current study has not intended to show that certain textbooks are better than others, but rather that any teacher wishing to help their pupils invest personally in understanding and transforming their world will need classroom tools in addition to the textbooks.

## 5.2 Teaching Implications

The results from the analysis have revealed that teachers should also offer other learning materials to their pupils in order to enable the learners to address present and future global challenges constructively and creatively. In order to solve problems related to sustainable development, pupils need to be given the opportunity for higher-level thinking, especially the ability to create new solutions. Teaching and learning must not only focus on global issues and solutions in relation to sustainable development, but also recognize the need to highlight national, local, and personal issues and solutions. School should be a place where pupils are encouraged to be active participants, which is a crucial aspect to sustainable development education. Encouraging pupils to contribute to sustainable development also promotes the

development of the third core element, namely *public health and wellbeing*, as education also provides a basis for participation in society (Norwegian Directorate of Health, 2017). The Norwegian Directorate of Health (2017) claims that school should offer a school environment where pupils are able to participate, express themselves, and experience mastery.

### 5.3 Possible Limitations

One possible limitation to the present research is that it has not investigated how teachers and learners actually use the textbook and tasks. Although some tasks may be designed to promote critical and meaningful learning, whether or not this actually occurs in the classroom depends on several other factors, such as the teacher. Clearer insights into this factor would have required a study of classroom practices and teacher cognition, what teachers know, believe and think (Borg, 2003), which fell outside of the timeframe and scope of this study. Additionally, the present study only analyzed a selection of tasks from the textbooks, and did not investigate other learning materials connected to the textbooks.

### 5.4 Future Research

It has been the aim of the researcher to inspire and motivate other scholars to continue researching the topics of sustainable development in textbook tasks as well as the use of Bloom's taxonomy and critical literacy in teaching and learning. It would be beneficial to investigate how tasks are carried out by pupils in the classroom as well as teacher cognition, and whether the implications suggested in the current study matches what actually happens in the EFL classroom. Beck (2005, p. 395) claims that teachers face difficulties in implementing a critical literacy approach in the classroom due to the absence of a fixed model. Although works have been published with suggestions regarding how critical literacy can be implemented in teaching (cf. Vasquez et al., 2013 and Janks et al., 2014), there is still need for further research in this field, such as the development of a toolkit for both teachers and learners on how to apply a critical literacy approach. This could be done in a master's thesis or a PhD project. Action research in relation to Bloom's taxonomy and/or critical literacy is another idea which could be carried out in schools, as it involves improving current practices. The use of technology in relation to critical literacy could also be an interesting research field. In addition, there is a great need for further research regarding sustainable development education in the EFL classroom. The current study has also tried to make implications regarding how future textbooks can be designed in order to accommodate the core element related to sustainable development in the new 2020 curriculum.

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## Appendix 1:

### Types of Tasks in *New Flight 3* (pp. 119-147)

#### p. 123

##### LET'S TALK!

1. What was God's mistake, in Rosemary's opinion?

Remember

2. What bad things have people done to the Earth?

Remember

3. Why have people behaved in this way?

Understand

4. What is the main point of Rosemary's prayer?

Understand

5. If you were to wish or pray for something to make life on Earth better, what would it be?

Analyze

##### WORK WITH WORDS

1. Look in text A and find as many words as possible connected with *nature* and *wildlife*.

Understand

2. What is the opposite of

a) innocent

b) thick

c) ignorant

d) filthy

e) noisy

f) perfect

Understand

Number of tasks: 7

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q2	Q3, Q4, WW Q1, WW Q2		Q5		

**p. 128**

LET'S TALK!

1. What is the main cause of global warming?

Remember

2. Explain what the Greenhouse Effect is.

Understand

3. How do a minority of scientists explain global warming?

Remember

4. What kind of effects may global warming have on

- a) the sea level
- b) the weather
- c) animal and plant life

Remember

5. What was the aim of the Kyoto Protocol?

Remember

6. What do you think the world will look like about 100 years from now?

Analyze

WORK WITH WORDS

1. Look in text B and find words connected with *climate* and *weather*.

Understand

2. Explain these words in English:

- a) a greenhouse
- b) glacier
- c) a precipitation
- d) a hurricane
- e) an ecosystem
- f) extinct

Remember

Number of tasks: 8

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q3, Q4, Q5, WW Q2	Q2, WW Q1		Q6		

**p. 132**

LET'S TALK!

1. Mention some of the things these young people and their families do to help preserve the environment.

**Remember**

2. Which of these young people do the most sensible things, in your opinion?

**Understand**

3. Can you think of other simple things ordinary people do?

**Remember**

4. How about yourself? What do you and your family do to create a better environment?

**Analyze**

5. Are you going to have a car? Why (not)? How are you going to use it?

**Evaluate**

WORK WITH WORDS

1. Look in text C and find words connected with the *environment* and *energy saving*.

**Understand**

2. Find a word in text C that means:

- a) a person who doesn't eat meat
- b) a big farm where animals always stay indoors
- c) a car that uses both electricity and petrol or diesel
- d) fluid sprayed on plants to kill harmful insects
- e) an instrument to regulate temperature
- f) clothes that have been used by someone else

**Understand**

Number of tasks: 7

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q3	Q2, WW Q1, WW Q2		Q4	Q5	

**p. 140**

LET'S TALK!

1. Describe what happens to you if you get “radiation sickness”.

**Remember**

2. What does Peter suggest that Mary should do if she gets sick while he is away?

**Remember**

3. How does Mary react to this decision?

**Remember**

4. What kind of impression do you get of Peter and Mary from this excerpt?

**Understand**

5. What do you think you would do if you knew you were going to die from nuclear radiation in a couple of months?

**Analyze**

6. Is nuclear was a real threat now? Are nuclear weapons necessary to preserve peace on Earth?

**Evaluate**

WORK WITH WORDS

1. Explain these words in English:

- a) submarine
- b) dummy
- c) a spare
- d) a counter
- e) hostility
- f) a nuisance

**Remember**

2. Look in text D and find as many adverbs ending in -ly as possible, for example *awkwardly*.

**Understand**

Number of tasks: 8

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q2, Q3, WW Q1	Q4, WW Q2		Q5	Q6	

## Appendix 2:

### Types of Tasks in *Crossroads 10A* (pp. 119-147)

#### p. 123

##### **Did you get it?**

1. Why are the oceans important to us?

Remember

2. Why are the rainforests important to us?

Remember

3. Where is the Antarctic?

Remember

##### **Oral task (pair work or group work)**

4. Which of the environments you have read about do you find most interesting? Tell a classmate. Give reasons.

Understand

5. Tell a classmate about the most beautiful place you have ever been.

Remember

6. Tell a classmate which of the pictures on pages 120-123 you liked best and why.

Understand

##### **Written and oral task (pair work or group work)**

7. Write the names of five well-known places on Earth on a sheet of paper. Give the sheet to a classmate who will add three suitable adjectives to describe each place.

Remember

8. Browse the Internet for a survey of rainforests in different parts of the world. Choose one of them. Look for information on typical species of plants, birds and animals there. Prepare an oral presentation to a small group of the whole class. Include a map and pictures. Use a presentation tool such as PowerPoint.

Understand

### Written task

- Write a story of an imaginary trip to one of the landscapes in the pictures on page 120-123.

Create

Number of tasks: 9

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q2, Q3, Q5, Q7	Q4, Q6, Q8				Q9

p. 127

### Did you get it?

- What do the tiger, the elephant and the rhino have in common?

Remember

- What does the Indian government do to protect the tiger?

Remember

- Which organization does Dr Sharpa work for?

Remember

- Why is it important to protect the forests?

Remember

### Oral task (pair work or group work)

- Discuss the following questions in a group:

- Why is it important to protect wildlife?

Analyze

- How would it affect you if the tiger were to go extinct?

Analyze

- Which wild animals do you find most fascinating?

Understand

### Written and oral task (pair work or group work)

- You are a multimillionaire who wants to save the tiger. You decide to put in a prominent advertisement in the world's largest newspapers with the aim of publicizing

the negative consequences of purchasing tiger products. Write the advertisement and read it to some classmates.

### Understand

#### Written task

7. Find the current exchange rates on the Internet. Then do the following calculations:
  - a) How many kroner is 1,000 rupees?
  - b) How many rupees are 4,000 dollars?

### Apply

8. Explain the following words in simple English: *conserve, government, strengthen, reduce, population*

### Remember

9. Choose an African or Asian feline. Browse the Internet for information on this animal. Write a few paragraphs presenting facts on population, habitat and prey. Ask your teacher for comments.

### Remember

#### Role play

10. A) You are an environmentalist working for the protection of a wild animal. Tonight you are attending a meeting in a local community where most of the farmers have suffered livestock losses. They blame the wild animals in the vicinity and want something to be done about the problem. You must try to get the following message through: We need to find a solution to this problem that is beneficial to humans and animals alike.

### Evaluate

B) You are a farmer. An increasing number of your livestock is [sic] being killed or wounded by predators. You think these animals ought to be shot on sight as they are affecting your source of income and inflicting considerable suffering on your livestock.

### Evaluate

Number of tasks: 13

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q2, Q3, Q4, Q9	Q5c, Q8, Q6	Q7	Q5a, Q5b	Q10A, Q10B	

p. 131

**Did you get it?**

1. What kind of animal is the killer whale?

Remember

2. How do killer whales communicate with each other?

Remember

3. In what way are humans a threat to killer whales?

Remember

**Oral task (pair work or group work)**

4. Many people find dolphins cute and interesting. Why is that? Discuss in a small group.

Understand

5. One day you would like to go on a safari and watch your favourite animal at close range. Which animal is it? Tell a classmate about a fascination for a particular animal and why going on a safari would be a thrill.

Understand

**Written and oral task (pair work or group work)**

6. Work in a small group. Each group member picks one of the following animals: *lion*, *leopard*, *rhino*, *wolf*, *bear*, *reindeer*, *dolphin*, *seal*. Write down everything you know about the animal you have chosen and make a brief presentation on it to a group of classmates.

Remember

**Written task**

7. Which word is it? Fill in the missing letters.

a) -r-a

b) -py -opp--g

- c) w--le
- d) b-oa-cu-u--t--n
- e) -re---or

**Understand**

8. What is life like in the deep blue sea? Write a couple of paragraphs seen from a killer whale's point of view.

**Apply**

Number of tasks: 8

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q2, Q3, Q6	Q4, Q5, Q7	Q8			

**p. 135**

**Did you get it?**

1. Outline some of the consequences of global warming.

**Remember**

2. Explain the term "cyclic variation".

**Understand**

3. What is the greenhouse effect?

**Remember**

**Oral task (pair work or group work)**

4. Planes emit a lot of carbon dioxide. When you go on holiday abroad, would you be willing to travel by train instead? Discuss in a group.

**Evaluate**

5. Discuss:

- a) Why is it important to stop global warming?

**Analyze**

- b) What will the Earth be like in 50 years if global warming continues?

**Analyze**

- c) How can you, personally, contribute to stopping it?

**Create**

**Written and oral task (pair work or group work)**

- List seven environmental factors that, in your view, are among the most threatening to the Earth. Present them to a classmate.

Understand

**Written task**

- You are tired of all the people who commute to work by car when they could have taken public transport or, alternatively, driven together with a colleague. You are going to protest against this by standing on the roadside holding a large poster. Make the poster.

Evaluate

- The world we live in is under threat in many ways. Write a newspaper article in which you reflect upon the current state of the globe.

Evaluate

**Role play**

- A) You are a car fanatic. You have five of them in your garage. Some of your cars are far from environmentally friendly, but who cares? One day you run into a group of environmentalists who don't share your views. You get involved in a discussion with them and it turns out you have something to learn.

Evaluate

- B) You are a group of environmentalists who meet a car fanatic. He or she is an absolute environmental disaster zone! You get involved in a discussion about protecting the environment. You should try to make him or her realize the consequences of driving cars that pollute the environment.

Evaluate

Number of tasks: 12

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q1, Q3	Q2		Q5a, Q5b, Q6	Q4, Q7, Q8, Q9A, Q9B	Q5c

**p. 142**

**Did you get it?**

1. In what way is the world divided?

Analyze

2. What are the main reasons for diseases and early deaths in developing countries?

Remember

3. How long is a newborn girl in Lesotho expected to live?

Understand

**Oral task (pair work or group work)**

4. Would you be willing to spend less money on yourself to be able to give some money to starving people in developing countries? If not, why not? But if so:
  - a) What would you sacrifice in order to reduce your own consumption?

Analyze

- b) Why would you do it?

Evaluate

5. In your view, what should rich countries do to support developing countries? Tell a group of classmates what you think.

Evaluate

6. You are a group of three experts who are working on a plan to put an end to poverty. Brainstorm some ideas, then decide on an agenda you believe will help poor countries overcome obstacles to prosperity.

Create

**Written and oral task (pair work or group work)**

7. Have you ever felt dizzy because you haven't eaten or drunk enough during the day? This is a normal state for many people in poor countries. How do you think this affects their daily lives? Write down some points, then discuss.

Understand

8. "Poverty is immoral." Brainstorm some key words to support or refute this statement.

Evaluate

9. You are a doctor who has just returned home from a poor country where millions of people are starving because of a terrible drought. You are going to tell your story on national television. Prepare a statement and read it to some classmates.

Understand

10. Ask your classmates how much meat they consume daily. Present your findings as a diagram.

Create

11. Study the literacy rates on page 139 and the life expectancy and child mortality rates on page 138.

a) Is there anything you find particularly interesting or unexpected about the figures?

Analyze

b) Do you see any connection between the information in the various tables?

Analyze

Write down some key words before discussing this in small groups.

**Written task**

12. A pen pal from a developing country asks you to explain what it is like to live in a rich country. Write a reply.

Understand

13. Study the life expectancy tables on page 138. How much longer (%) is a female child in Norway expected to live than in Lesotho?

Apply

14. Study the child mortality tables on page 138. How much higher (%) is the child mortality rate in Afghanistan than in Sweden?

Apply

Number of tasks: 17

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q2	Q3, Q7, Q9, Q12	Q13, Q14	Q1, Q4a, Q6, Q11a, Q11b	Q4b, Q5, Q8,	Q6, Q10

TASK BANK

**Oral task (pair work or group work)**

1. “Peace and love are much more important than a lot of money.” Discuss this statement.  
*Analyze*
2. “What does it matter if a wild animal goes extinct. After all, it is just an animal.” Discuss this statement in a group.  
*Analyze*
3. Today’s cars emit high level of CO<sub>2</sub>. We need to look for alternative types of fuel and design new types of engines. Do you have any good suggestions? Share your ideas with some classmates.  
*Create*
4. In which situations do you regularly use reading skills? Tell a classmate.  
*Remember*

**Written and oral task (pair work or group work)**

5. Poaching of wild animals takes place because of the high value placed on their body parts. Some of these animals are endangered and could go extinct e.g. the mountain gorilla and the African elephant. Write down ten adjectives or nouns characterizing people who are in this business. Compare lists with a classmate.  
*Understand*
6. Write a poem depicting some of the Earth’s beauty. Read it to a classmate.  
*Create*

**Written task**

7. Write a couple of pages in the diary of an environmentalist trying to stop the poaching of an endangered animal.  
*Evaluate*
8. Walking down the street this morning you were handed a pamphlet by an environmental activist. What was in that pamphlet? Write it down.  
*Create*

Number of tasks: 8

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q4	Q5		Q1, Q2	Q7	Q3, Q6, Q8

**p. 144**

### DIG INTO IT

1. The child mortality rate in Lesotho is lower than in countries with approximately the same life expectancy. Dig into this. Present your findings as a short talk. Say what you personally believe is a plausible explanation.

Create

2. The table on page 139 shows that Lesotho is the only country in which the literacy rate is higher for women than for men. Browse the Internet for an explanation. Write a short account for what you find.

Understand

3. There are several quotations by astronauts in this chapter. Make an oral presentation on one of the astronauts.

Create

4. Use a presentation tool to present a species of endangered animal. Record your comments before presenting them.

Understand

5. What do you know about the life of a dolphin or a sperm whale? Research this topic and make an oral presentation. You may use a presentation tool, but only to show pictures.

Create

6. Browse the Internet for information on the changes in global emissions of CO<sub>2</sub> in the past 20 years or so. Present your findings as a diagram.

Apply

7. Search the Internet for information about a few extinct birds and animals. Make a poster presentation of your findings. It should include one drawing of each animal in addition to written information.

Apply

8. What is the average income per capita in some developed and developing countries?  
Dig into this topic and present your findings as a bar chart.

Create

9. Take a look at the box on page 141. Browse the website of the UN for information on one of the organizations in the UN system. Make a presentation of it using a presentation tool. Record your comments in advance so that you can be seated among the audience during most of the presentation, except for the introduction.

Apply

10. Make a presentation on your favourite wild animal. Include information on its habitat and sources of food. You should also include photographs and a map, as well as a diagram that shows its population size from approximately 1990 to 2013.

Apply

Number of tasks: 10

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
	Q2, Q4	Q6, Q7, Q9, Q10			Q1, Q3, Q5, Q8

## Appendix 3:

### Types of Tasks in *Enter 10* (pp. 182-215)

p. 185

1. **Reading to understand.** Which of these keywords would you use to sum up the message in the text for someone who has not read it? Give reasons for your answer.

- water supply
- finite resource
- up to you
- fresh water
- protect our water
- water contamination
- sustainable development

Understand

2. **Vocabulary.** Linnea received a tip from a classmate to include more linking words in her text before publishing it. Suggest where and how she could include linking words.

Understand

3. **Vocabulary.** Match the columns.

rain	frozen water droplets
snowflakes	a layer of droplets near the surface of the earth
cloudy	frozen water
humidity	droplets falling from the sky
fog	moisture in the air
ice	little or no sunshine

Understand

4. **Writing.** *Live sustainably, act responsibly.* Write a persuasive text or a creative text, such as a poem or a rap, with the title which will be performed at “the global sustainability day” in your area.

Create

5. **Digital skills.** Find out more about the United Nations Sustainable Development Goals.

- a) Choose one of the goals and make a short presentation about it.

Understand

- b) Make a poster or brochure with basic information about all the goals.

Understand

- c) Write an article explaining the role of the goals.

Understand

6. **Digital skills.** Find a newspaper article about water in Norwegian. Translate one paragraph into English using at least two different online translators.

- a) Which of the translations is the most accurate?

Understand

- b) Make changes in the most accurate translation so it is as idiomatic as possible.

Apply

Number of tasks: 9

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
	Q1, Q2, Q3, Q5a, Q5b, Q5c, Q6a	Q6b			Q4

p. 187

7. **Reading to understand.**

- a) Why is it important to protect our fresh water supplies?

Analyze

- b) Which daily activities require the most water? Why do you think this is so?

Analyze

- c) What is a water footprint? Write a definition in your own words.

Understand

- d) How can you personally save water?

Create

- e) What can a country or the global population do to save water?

Create

8. **Listening.**

- a) Listen to Taylor talking about water footprints. Note down:
- the difference between visible and virtual water.
  - some numbers about water use.

Understand

- b) Work with a classmate to construct a paragraph about your water footprint based on your notes.

Evaluate

9. **Numbers.** Use the information in the illustration to estimate how much water is used to make an average Norwegian pupil's school packed lunch?

Apply

10. **Numbers.** Choose one of the products illustrated on this page and find out why it takes so much water to produce it. Present your findings to a classmate.

Create

11. **Speaking.** You have been hired by the United Nations to devise a campaign to get people to reduce their water footprint. Your campaign should include: a slogan, pictures, tips and factual information giving reasons for the need to reduce their water footprint. You can present using digital media.

Create

12. **Digital skills.** Find a personal water footprint calculator online. Calculate your footprint and present your findings to a group of pupils.

Create

Number of tasks: 11

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
	Q7c, Q8a	Q9,	Q7a, Q7b	Q8b	Q7d, Q7e, Q10, Q11, Q12

**13. Reading to understand.**

- a) List the reasons the author gives for a global water crisis.

Remember

- b) Why do you think people continue to use more water even when there is a shortage?

Analyze

**14. Vocabulary.** Explain these words and expressions from the text so that a younger pupil will understand them.

- a) water scarcity
- b) water supply
- c) drought
- d) desert

Understand

**15. Synonyms.** Find synonyms in the text for the following words and expressions.

- a) becoming smaller
- b) shortage
- c) destructive
- d) lately

Understand

**16. Analysis.** Is the planet running dry?

- a) Find examples of the journalist's use of dramatic language to sell the article.

Understand

- b) The article contains information from several sources. Make the list of sources.

Remember

- c) In which way do you think the use of sources in this article is reliable?

Evaluate

**17. Digital skills.**

- a) Find a map showing the Nile running through Ethiopia and Egypt.

Understand

- b) Find a map that shows the vegetation type in these two countries.

Understand

- c) Why do you think there was an international dispute about plans to dam the river Nile in Ethiopia?

Analyze

18. **Discussion.** Can you think of any places in the world where a lack of water might cause a conflict?

- a) Search the Internet to find two reliable sources about this.

Understand

- b) Discuss your findings with a classmate.

Understand

19. **Pronunciation.** -ough- is pronounced in many different ways.

- a) Use an online dictionary to find out how to pronounce: *rough, cough, though, through, thought, drought*

Understand

- b) Find at least one word that rhymes with each of the words in **a)**, for example *rough, buff, enough*.

Understand

- c) Write a poem about how to pronounce the words in **a)**. For example, *say it rough, like in buff*

Apply

Number of tasks: 15

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q13a, Q16b	Q14, Q15, Q16a, Q17a, Q17b, Q18a, Q18b, Q19a, Q19b	Q19c	Q13b, Q17c	Q16c	

p. 195

20. **Reading to understand.**

- a) What has happened to the water? Make a list.

Remember

- b) Why are Vera and Will in such a difficult situation when they are with Nasri?

Understand

- c) Why do you think that Vera dreams of the river?

Understand

- d) What does Vera learn from Ulysses?

Understand

21. **Vocabulary.** One of your classmates thinks that this text is difficult because of some of the expressions that are used. They have picked out these expressions for you to explain to them.

- a) even the fittest could barely survive
- b) oblivious to the danger
- c) cradled in my lap
- d) did the dirty work
- e) like a gathering storm

Understand

22. **Discussion.** Work in groups and discuss these sentences from the text.

- a) “We do what we have to do. This is war.”
- b) “Humans had finally made the world to suit their purposes.”
- c) “Why didn’t anyone stop it?”

Understand

23. **Discussion.** This story examines the same idea as the article “The Next Global Crisis?”.

- a) List ideas you find in both texts.

Remember

- b) In your opinion, is a factual or a fictional text a more effective way of examining this idea? Explain why.

Understand

- c) Do you believe that there will be major conflicts over water in the future? Explain your answer.

Analyze

24. **Vocabulary.**

- a) Match these words from the text with the correct explanation.

disappeared	cut off
stole	saw
amputated	moved in circles

witnessed	led through a narrow opening
wasted	led through a tube
spiraled	used up
funneled	went out of sight
piped	took without asking

Understand

- b) Explain why you think the author chose these words instead of the more common synonyms.

Understand

- c) Two of these words are spelled according to the rules of American English. Which?

Understand

25. **Synonyms.** Use the online thesaurus to find other ways to say

*afraid – embarrassed – angry – happy – confused – surprised*

Understand

26. **Synonyms.** Make your own list of interesting words. Find three synonyms for each of these words using an online dictionary.

*say – walk – big – small – beautiful – ugly*

Understand

Number of tasks: 14

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q20a, Q23a	Q20b, Q20c, Q20d, Q21, Q22, Q23b, Q24a, Q24b, Q24c, Q25, Q26		Q23c		

p. 197

27. **Reading to understand.** Read the letter closely in order to find examples of the following.

- a) What is the purpose of this letter?

Understand

- b) What is effective about the way this letter begins and ends?

Analyze

- c) Is this letter personal, official or both?

Understand

- d) Find examples of formal language.

Understand

- e) Evaluate whether the message is clear. Is the author able to get her message through?

Evaluate

- f) Is this a good example of a persuasive text? Give reasons for your answer.

Evaluate

**28. Writing.**

- a) Choose topic, purpose and audience and write a persuasive letter about a matter that concerns you deeply. Use this letter to the Obamas as a model for your writing. Include suitable linking words in your text.

Evaluate

- b) Ask a classmate to read your letter and give you three things to work on in order to improve your letter.

Evaluate

**29. Digital skills.** Find sources of information about these issues and present your findings in class.

- a) Has the Dakota Access Pipeline been built?

Understand

- b) What happened on August 6, 2016? Did president Obama support the children?

Understand

**30. Speaking.** Act out a discussion between the Standing Rock Sioux Tribe and the Army Corps of Engineers about the pipeline.

Apply

**31. Speaking.** Tariq meets President Obama at the final stop of the Relay Race. Act out the conversation.

Apply

32. **Speaking.** *Rezpect* is a combination of “rez”, slang for *reservation*, and “respect”.

Why do you think the organization chose to spell the name in this way?

Analyze

33. **Vocabulary.** Practice the pronunciation of these words. Use an online dictionary to help you.

*petition, signature, thrive, during, potential*

Apply

Number of tasks: 14

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
	Q27a, Q27c, Q27d, Q29a, Q29b	Q30, Q31, Q33	Q27b, Q32	Q27e, Q27f, Q28a, Q28b	

p. 201

34. **Reading to understand.** Who could have said:

- My product relies on waste materials so it is cheap to produce.
- My product will make a big difference to girls in the area.
- My product provides energy as well as clean water.
- My product is useful for people in remote places as it does not require electricity.

Understand

35. **Linking words.** Linking words are often used to show the reader how your ideas fit together so they are more likely to be persuaded by your argument. Which of the linking words below would you use to

- a) connect ideas
- b) show reason
- c) show time
- d) sum up
- e) contrast ideas

*besides, on the other hand, since, while, on the whole, in other words, eventually, because, despite, in spite of, also, moreover, as a result, however, to conclude*

### Understand

36. **Vocabulary.** Write definitions of these words from the text. The definitions will be used in a dictionary for primary school children.

*water purification, bacteria, electricity, experimental*

### Understand

37. **Writing.** Plan a campaign for keeping water clean. Decide how to present the campaign – for example, a full-page advert for a magazine, a brochure to hand out to local people, or a social media text.

### Create

38. **Writing.** Use these notes and write a paragraph. You can use the texts on page 198 and 200 as model texts. Include suitable linking words.

*Prakiti, 16, from Delhi, India:*

- *Read that 70% of water in Delhi is not clean*
- *Raised money for a water purification system*
- *Raised money from selling cakes*
- *Asked local companies for money*
- *Paid for a water purification system for a school.*
- *Appoints water ambassadors at the school. They teach people how to keep the water clean.*

### Apply

39. **Writing.** Use the information on page 198-200 to write an article about young people who have invented devices to purify water. Include suitable linking words in your text.

### Apply

40. **Speaking.** You are the representative for one of the products on page 198-200 and have to convince either an aid organization or the local authority in a country that it is a good idea to use your product. Give a persuasive speech about the product for the main committee.

Structure:

- introduction
- main reason 1, 2 and 3
- facts and examples
- conclusion

Evaluate

41. **Writing.** Your company has bought the rights to one of these devices and you need to invent a catchy name and a slogan. Find a name and create a slogan for the device you have chosen.

Create

Number of tasks: 8

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
	Q34, Q35, Q36	Q38, Q39		Q40	Q37, Q41

p. 203

42. **Speaking.** Imagine that you and your family live in this seascraper. Talk about your everyday life with a classmate who doesn't live there.

Create

43. **Speaking.** You are an architect and have been asked to speak at a conference about population growth. Use this picture to persuade the audience that building in the ocean is a good solution for housing the growing world population. You can choose between making a speech, a digital presentation or a podcast.

Evaluate

44. **Speaking.** Most of the world's water is seawater.

a) What do people use the sea and seawater for at the moment?

Remember

b) Do you think that there are any problems about the way that we use the ocean at the moment? Why, or why not?

Evaluate

c) How do you think people may use the sea in the future?

Analyze

45. **Writing.** Write a factual or creative text based on the picture. Your text should be either positive or negative towards seascrapers. Include suitable linking words.

Evaluate

46. **Writing.** Write an advert for an apartment that is for sale in the seascaper. You should find all the positive things about the apartment in order to persuade people to buy it.

Evaluate

47. **Digital skills.** Find examples of buildings and constructions that have been built underwater. Make a digital collage of pictures and information.

Understand

48. **Vocabulary.** Make a list of at least ten words that describe this picture. Find antonyms and synonyms for as many of these words as possible.

Understand

Number of tasks: 9

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Q44a	Q47, Q48		Q44c	Q43, Q44b, Q45, Q46	Q42

p. 207

49. **Reading to understand.**

a) Why is the boy sitting on the harbor wall?

Understand

b) Why didn't Lloyd's grandfather fish inshore anymore?

Understand

50. **Analysis.** Write a short character description. What kind of person do you think Maas Conrad, the boy's grandfather, is? Use examples from the text to support your ideas.

Analyze

51. **Speaking.**

a) What do you think has happened to Maas Conrad? Although you do not know very much about Lloyd and his grandfather, collect what you know and then develop a plot in groups.

Create

b) Compare your story to another group's.

Understand

52. **Synonyms.** Find words in the text that mean the same as

- a) shelter
- b) covering
- c) dived
- d) waves behind a boat
- e) very wet
- f) broken into small pieces

Understand

53. **Digital skills.** Find recordings of Jamaican English on the internet. Listen to them and discuss why they can be difficult to understand.

Understand

54. **Writing.** Write two different endings to the story about Lloyd and his grandfather.

Create

55. **Discussion.** In many ways Lloyd's grandfather was forward thinking as he saw the consequences of human action on the environment. Find examples in the text and discuss the ways in which the fishermen are fishing unsustainably.

Understand

56. **Vocabulary.**

- a) Translate these expressions about water and the sea word for word into Norwegian.

*lost at sea, I'm all at sea, a fish out of water, have a whale of a time, plain sailing*

Understand

- b) Use the internet to find out what the expressions actually mean.

Understand

- c) Compare the literal translations into Norwegian with the idiomatic meaning.

Understand

- d) Make the sentence for each of the expressions in which you use them in their idiomatic meaning.

Apply

57. **Analysis.** The title of this chapter is *Precious Drops*. Discuss whether this story fits this title using this strategy.

- a) Rush write individually for one minute.

Understand

- b) Compare your notes with those of a classmate.

Understand

- c) Discuss whether the story fits the title in class.

Analyze

58. **Vocabulary.** Explain the difference between the words *sewage* and *sewerage*.

Understand

59. **Vocabulary.** Compare the Jamaican English dialogue in the text to the standard English version in the *Did you know?*-box. Make a list of words and expressions.

Understand

60. **Vocabulary.** Select the odd one out.

- a) lobster – Queen conch – parrotfish – seabird
- b) sewage – shelter – garbage – waste
- c) cot – line – pot – net
- d) chlorine – sewage – swirl – burial fluids

Understand

Number of tasks: 19

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
	Q49a, Q49b, Q51b, Q52, Q53, Q55, Q56a, Q56b, Q56c, Q57a, Q57b, Q58, Q59, Q60	Q56d	Q50, Q57c		Q51a, Q54

p. 213

61. **Reading to understand.** Write an explanation of these words which is understandable for ten-year-old readers.

- a) foreigners
- b) Venus
- c) space
- d) extraterrestrials

Understand

62. **Analysis.** Discuss these questions using examples from the short story.

- a) What do you think is the theme in this short story?

Understand

- b) The sheriff is occupied with his own life and not what is going on around him.

To what extent do you think this is true of people today?

Analyze

- c) What is the contrast between Cameron and his visitors? What effect does this contrast have on the readers of the story?

Understand

- d) This story was first published in 1956, just before the space age took off. Is it possible to tell from the text that it was written before the space age started?

Analyze

63. **Analysis.** Find examples of these characteristics of a short story in the text.

- a) few characters
- b) few details about the characters
- c) a limited period of time
- d) clues to help the reader guess what happens next
- e) a twist in the plot

Understand

64. **Speaking.** Act out the scene between the two Venusians and Cameron and his deputy from memory only.

Apply

65. **Speaking.** Discuss these questions in groups.

- a) This short story is called *The Watery Place*. What is the connection to water?

Analyze

- b) Is this a suitable text for this chapter? Why, or why not?

Evaluate

66. **Writing.** Write a different ending to this short story where Cameron actually arranges a meeting between the two Venusians and the president.

Create

67. **Listening.** Listen to your classmate reading this short story. Take turns reading and listening. While you listen carefully, draw a quick sketch of the sheriff, the aliens and the flying saucer.

Apply

68. **Vocabulary.** Do these words have any similarities with their Norwegian translation?

*exhaust, rustled, column, shirt collar*

Understand

69. **Synonyms.** Find words or phrases in the short story that are synonyms for these expressions.

*stop working, go to bed, say it quickly, lose one's temper*

Understand

70. **Linking words.** Why do you think you will find more linking words in a factual text than a fictional text like this short story? Discuss in groups.

Understand

71. **Adjective or adverb?** Complete the following sentences.

- a) I will get the space ship \_\_\_\_\_. (*ready/readily*)
- b) The alien is too \_\_\_\_\_ a person to refuse. (*polite/politely*)
- c) Cameron will have to think \_\_\_\_\_. (*quick/quickly*)

Understand

Number of tasks: 15

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
	Q61, Q62a, Q62c, Q63, Q68, Q69, Q70, Q71	Q64, Q67	Q62b, Q62d, Q65a	Q65b	Q66

**Chapter activities** (p. 214-215)

**Sum up**

72. **Learning strategies.**

- a) Scan the chapter for titles and sub-headings. Write down the most important ones.

Understand

- b) Give a summary of the chapter using your own list of titles and sub-headings.

Understand

- c) Ask a classmate to tell you what was good about your summary.

### Evaluate

73. **Speaking.** Which of the proverbs and expression would you say are suitable for an organization that works for sustainable water worldwide? Give reasons why.

- a) better late than never
- b) great things have small beginnings
- c) much talk, little work
- d) well begun is half done
- e) birds of a feather flock together
- f) let sleeping dogs lie
- g) first come, first served

### Understand

74. **Speaking.** Two of the people from this chapter meet to discuss the topic of water. Have their conversation with a classmate.

### Apply

75. **Vocabulary.** Explain what each of the topic words means.

*resource, scarcity, precious, sustainable, finite amount, fresh water, salt water, water footprint, responsibility, water supply*

### Understand

76. **Linking words.** In which text types are you likely to find most linking words. Explain.

### Understand

77. **Writing.** Flash fiction is a brief story that doesn't exceed 150 words. Write flash fiction using the topic words of this chapter.

### Apply

78. **Writing.** Choose one of the texts from this chapter.

- a) Write a one-paragraph summary of the text.

### Understand

- b) Choose a picture to illustrate your paragraph.

### Understand

- c) Explain why you chose this text.

### Understand

## Self-assessment

### Prepare for an oral presentation

- This is how I collect information: \_\_\_\_\_

- This is how I write notes on what to say: \_\_\_\_\_
- This is how I revise and edit my presentation: \_\_\_\_\_
- This is how I practice giving the presentation: \_\_\_\_\_
- This is how I plan to get the audience's attention: \_\_\_\_\_

**Remember**

**Move on – Speaking** (p. 215)

79. **Presentation.** Your topic is “Water – get involved”. Make six flash cards for an oral presentation.

- Each flash card should contain six key words
- The first flash card is your introduction.
- The last flash card is meant to sum up.
- Evaluate your sources.

**Apply**

80. **Conversation.** Work in groups to talk about the chapter you have just read. One pupil in each group is an observer to the conversation. Their job is to note examples of the following:

- ability to maintain the conversation
- interesting arguments
- ability to give reasons
- ability to use what others say to continue speaking

**Evaluate**

81. **Sales pitch.** Create a sales pitch to sell this chapter. Why should teenagers read about this topic?

**Evaluate**

**Move on – Writing**

82. **Formal letter.** You are worried about an environmental matter in your community.

- Write a formal letter to the local authority explaining what the problem is and how you would like them to fix it.
- Include information from reliable sources.

### Create

83. **Persuasive text.** Write a persuasive text, convincing world leaders that the world will face a water crisis if we do not take action. Plan your text by using this structure:

- Introduction
- Argument 1
- Argument 2
- Argument 3
- Conclusion

### Evaluate

84. **Eyewitness account.** Write an eyewitness account of one of the situations you have read about in this chapter. Include details from what you have read and add other details. Choose a suitable title.

### Create

Number of tasks: 17

THE COGNITIVE PROCESS DIMENSION					
1. REMEMBER	2. UNDERSTAND	3. APPLY	4. ANALYZE	5. EVALUATE	6. CREATE
Self- assessment	Q72a, Q72b, Q73, Q75, Q76, Q78a, Q78b, Q78c	Q74, Q77, Q79		Q72c, Q80, Q81, Q83	Q82, Q84

## Appendix 4:

### List of Verbs and Verb Phrases Found in Textbook Tasks Related to Sustainable Development

List of verbs and verb phrases found in *New Flight 3*, *Crossroads 10A*, and *Enter 10* that correspond to the Cognitive Process Dimension (Anderson et al., 2001) and Armstrong's (n.d.) graphic interpretation of Bloom's Taxonomy:

#### **Remember**

- What...
- List
- Outline
- Define

#### **Understand**

- Why/what/how do you think...
- Discuss
- Explain
- Find (locate)
- Compare
- In your opinion
- Give reasons
- Fill in
- Illustrate
- Choose/select
- Summarize
- Translate

#### **Apply**

- Use
- Have (carry out)
- Make

- Act out
- Practice
- Present

### **Analyze**

- What/why/how do you think...
- Discuss
- Compare
- Explain

### **Evaluate**

- Why/why not...
- In which way...
- Persuade
- Argue
- Discuss
- Convince
- Give reasons

### **Create**

- Collect
- Develop
- Find out
- Plan
- Invent
- Create
- Research

## Appendix 5:

### The Cognitive Process Dimension (Anderson et al., 2001, pp. 67-68)

<b>CATEGORIES &amp; COGNITIVE PROCESSES</b>	<b>ALTERNATIVE NAMES</b>	<b>DEFINITIONS AND EXAMPLES</b>
<b>1. REMEMBER</b> – Retrieve relevant knowledge from long-term memory		
<b>1.1 Recognizing</b>	Identifying	Locating knowledge in long-term memory that is consistent with presented material (e.g., Recognize the dates of important events in U.S. history)
<b>1.2 Recalling</b>	Retrieving	Retrieving relevant knowledge from long-term memory (e.g., Recall the dates of important events in U.S. history)
<b>2. UNDERSTAND</b> – Construct meaning from instructional messages, including oral, written, and graphic communication		
<b>2.1 Interpreting</b>	Clarifying, paraphrasing, representing, translating	Changing from one form of representation (e.g., numerical) to another (e.g., verbal) (e.g., Paraphrase important speeches and documents)
<b>2.2 Exemplifying</b>	Illustrating, instantiating	Finding a specific example or illustration of a concept or principle (e.g., Give examples of various artistic painting styles)
<b>2.3 Classifying</b>	Categorizing, subsuming	Determining that something belongs to a category (e.g., concept or principle) (e.g., Classify observed or described cases of mental disorders)
<b>2.4 Summarizing</b>	Abstracting, generalizing	Abstracting a general theme or major point(s). (e.g., Write a short summary of the events portrayed on a videotape)
<b>2.5 Interfering</b>	Concluding, extrapolating, interpolating, predicting	Drawing a logical conclusion from presented information (e.g., In learning a foreign language, infer grammatical principles from examples)

<b>2.6 Comparing</b>	Contrasting, mapping, matching	Detecting correspondences between two ideas, objects and the like (e.g., Compare historical events to contemporary situations)
<b>2.7 Explaining</b>	Constructing models	Constructing a cause-and-effect model of a system (e.g., Explain the causes of important 18 <sup>th</sup> -century events in France)
<b>3. APPLY – Carry out or use a procedure in a given situation</b>		
<b>3.1 Executing</b>	Carrying out	Applying a procedure to a familiar task (e.g., Divide one whole number by another whole number, both with multiple digits)
<b>3.2 Implementing</b>	Using	Applying a procedure to an unfamiliar task (e.g., Use Newton’s second Law in situations in which it is appropriate)
<b>4. ANALYZE – Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose</b>		
<b>4.1 Differentiating</b>	Discriminating, distinguishing, focusing, selecting	Distinguishing relevant from irrelevant parts or important from unimportant parts of presented material (e.g., Distinguish between relevant and irrelevant numbers in a mathematical word problem)
<b>4.2 Organizing</b>	Finding coherence, integrating, outlining, parsing, structuring	Determining how elements fit or function within a structure (e.g., Structure evidence in a historical description into evidence for and against a particular historical explanation)
<b>4.3 Attributing</b>	Deconstructing	Determine a point of view, bias, values, or intent underlying presented material (e.g., Determine the point of view of the author of an essay in terms of his or her political perspective)
<b>5. EVALUATE – Make judgements based on criteria and standards</b>		
<b>5.1 Checking</b>	Coordinating, detecting, monitoring, testing	Detecting inconsistencies or fallacies within a process or product; determine whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented (e.g., Determine

<b>5.2 Critiquing</b>	Judging	if a scientist's conclusions follow from observed data) Detecting inconsistencies between a product and external criteria, determining whether a product has external consistency; detecting the appropriateness of a procedure for a given problem (e.g., Judge which of two methods is the best way to solve a given problem)
<b>6. CREATE</b> - Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure		
<b>6.1 Generating</b>	Hypothesizing	Coming up with alternative hypotheses based on Criteria (e.g., Generate hypotheses to account for an Observed phenomenon)
<b>6.2 Planning</b>	Designing	Devising a procedure for accomplishing some task (e.g., Plan a research paper on a given historical topic)
<b>6.3 Producing</b>	Constructing	Inventing a product (e.g. Build habitats for a specific purpose)