Towards Critical Thinking Skills in Higher Education

Towards Critical Thinking Skills in Higher Education

The Case of English Courses at Swedish Universities

Evelina Johansson

UNIVERSITY OF GOTHENBURG

Doctoral dissertation in English, University of Gothenburg, 2023-09-22

ISBN 978-91-8069-349-3 (printed)
ISBN 978-91-8069-350-9 (pdf)

Cover: Johanna Hillgren
Print: Stema Specialtryck AB, Borås, 2023
Picture: bernie_photo

Trycksak
3041 0234

Distribution:
Department of Languages and Literatures,
University of Gothenburg
Box 200, SE-405 30 Göteborg

Abstract

Title: Towards Critical Thinking in Higher Education – The Case of English Courses at Swedish Universities
Author: Evelina Johansson
Language: English
Keywords: Critical thinking, higher-order thinking, English as a foreign language (EFL), higher education, teachers' perceptions, vocabulary size, L2 proficiency, constructive alignment, assessment tasks, learning outcomes

I denna avhandling undersöks *higher-order thinking skills* (HOTS) och kritiskt tänkande i engelskkurser på svenska universitet. Bakgrunden till att undersöka detta ämne går att finna i policydokument som pekar på att studenters utveckling av dessa färdigheter är ett mål i både svensk och internationell högre utbildning. Tidigare forskning visar att det verkar finns en koppling mellan kritiskt tänkande och andraspråksfärdigheter. Sammantaget pekar detta på en potentiell betydelse av HOTS och kritiskt tänkande i engelskkurser. Tidigare forskning från andra länder tyder dock på att studenter inom högre utbildning inte utvecklar HOTS och kritiskt tänkande i tillfredsställande grad. Därför syftar denna studie till att undersöka studenters möjligheter till och faktiska utveckling av HOTS och kritiskt tänkande i fortsättningskurser i engelska vid svenska universitet.

Detta ämne har undersökts i tre delstudier. Den första delstudien har sin utgångspunkt i teorin om konstruktiv länkning och analyserade bedömningsuppgifter och lärandemål i fortsättningskurser i engelska. För att kategorisera bedömningsuppgifter och lärandemål användes den reviderade versionen av Blooms taxonomi. Den andra delstudien undersökte engelsklärares syn på och erfarenheter av kritiskt tänkande och HOTS, och bedömning av dessa. Intervjuer och en enkät användes för att samla in data. Data från både den första och den andra delstudien analyserades i både lingvistik- och litteraturmoduler. Slutligen undersökte avhandlingens tredje delstudie studenternas utveckling av både kritiskt tänkande och färdigheter i engelska som ett främmande språk. Kritiskt tänkande mättes genom *California Critical Thinking Skills Test* och språkfärdigheter mättes genom ett ordförrådstest.

Resultaten visar att kritiskt tänkande och HOTS återfanns i både lärandemål och bedömningsuppgifter i de undersöka kurserna. Det fanns dock en högre frekvens av HOTS-lärandemål och bedömningsuppgifter i litteraturmoduler än i lingvistikmoduler. Medan få skillnader mellan litteratur- och lingvistiklärares syn på och erfarenheter av HOTS och kritiskt tänkande upptäcktes, talades det ofta om litteratur som mer lämpat för att utveckla dessa färdigheter. I linje med

tidigare forskning om HOTS och kritiskt tänkande uttryckte lärarna ingen enhetlig förståelse av detta begrepp. Vidare verkade lärare vara medvetna om vikten av att utveckla studenternas HOTS och kritiskt tänkande. Att inkludera dessa färdigheter i bedömningsuppgifter kom dock inte utan utmaningar, såsom tidsbrist.

Vidare visar resultaten att studenterna varken utvecklade kritiskt tänkande eller färdigheter i engelska mätt med ordförrådstestet. Det fanns inte heller någon korrelation mellan studenternas förmåga att tänka kritiskt och deras nivå av språkfärdighet i engelska. Dessa resultat diskuteras i relation till den korta tid studien pågick samt studenternas redan höga nivåer av kritiskt tänkande och engelska.

To my family

Contents

List of figures

List of tables

Abbreviations

HOTS	Higher-order thinking skills
LOTS	Lower-order thinking skills
CT	Critical thinking
L1	First language
L2	Second language
EFL	English as a foreign language
CCTST	California Critical Thinking Skills Test
VST	Vocabulary Size Test
VLT	Vocabulary Levels Test
OECD	Organization for Economic Co-operation and Development
APA	American Psychological Association
CLIL	Content and Language Integrated Learning
EMI	English Medium Instruction
HEC	Higher education credits
CLA	Collegiate Learning Assessment
MCQ	Multiple-choice question
TESOL	Teaching English to Speakers of Other Languages
CEFR	Common European Framework of Reference for Languages

Acknowledgements

The completion of this thesis would not have been possible without the help and support of several people. First, I would like to express my wholehearted gratitude to my main supervisor, Professor Christina Lindqvist, University of Gothenburg, for her professional guidance and encouragement throughout my years as a PhD student. It is difficult to put into words how much I have benefited and learnt from you about second language learning and about how to conduct research. Your unfailingly positive attitude has truly helped me to complete this thesis. I would also like to express my gratitude to my two assistant supervisors, Pia Köhlmyr, retired Senior Lecturer at the University of Gothenburg, and Christine Fredriksson, Senior Lecturer at the University of Gothenburg, for invaluable feedback on my drafts. A special thanks to Christine Fredriksson for her minute reading of the final drafts and for her comments.

I would also like to extend my gratitude to my colleagues at the Department of Languages and Literatures. Special thanks to my fellow doctoral students, the staff of the English section and the participants in the language learning and teaching seminars.

Thereafter, I would like to thank the external examiner at my mock viva, Professor Una Cunningham, Stockholm University, and the committee members Professor Anna Forné, University of Gothenburg and Monika Mondor, Senior Lecturer at the University of Gothenburg. The feedback and comments at the mock viva helped me to improve the thesis.

I must extend sincere thanks to those students and teachers who have participated in the present study. Without your help, this study could not have been conducted. A special thanks to those teachers who participated in the interviews. It was very interesting and a great learning experience for me to learn about your thoughts of and experiences with critical thinking. During the process of data collection, I was fortunate to receive assistance from Professor Tom Cobb, Université du Québec à Montréal. Thank you for helping me with the VST.

I would also like to thank Johanna Hillgren, Communications Officer at the Faculty of Humanities, University of Gothenburg, for designing the thesis cover.

For contributions of funding for attending conferences and for completing this thesis, I wish to thank The IDO Foundation for Language Research in Memory of Hellmut Röhnisch, Selma Anderson Scholarship, Otto and Charlotte Mannheimer's Foundation, The Lars Hierta Memorial Foundation,

The Karl Langenskiölds Memorial Foundation and The Gustaf Stern Foundation.

Finally, I would like to thank my family. To my parents, Marie Johansson and Sören Johansson, thank you for always being there for me, and to my brother and sister, for love and support. To my dear husband, Nouri Elhshani, thank you for your support during these years and for instilling courage in me when needed. Finally, to my children, Abdal-Rahman, Abd-Allah, Abdal-Karim and Lina, this was all for you. Being your mother is my greatest achievement.

Chapter 1: Introduction

The present thesis sets out to explore higher-order thinking skills and critical thinking in English intermediate courses, i.e., second semester courses, at Swedish universities. Developing higher-order thinking skills and critical thinking is an important goal of higher education. The Swedish Government expects universities in Sweden to facilitate the development of these skills, according to section eight in the Swedish Higher Education Act (1992, p. 1434):

> First cycle courses and study programs shall develop:
> the ability of students to make independent and critical assessments,
> the ability of students to identify, formulate and solve problems autonomously,
> and
> the preparedness of students to deal with changes in working life. (Swedish Higher Education Act, 1992, p. 1434)

The development of thinking skills in Swedish higher education is further stressed in an official report by the Swedish Government which, in a discussion about the role of higher education in providing competence for future needs, states that: "the importance of higher education in providing general knowledge such as analytical skills, critical thinking, ability to work independently, etc. cannot therefore be emphasized enough"[1] (SOU, 2019:6, p. 239). Moreover, the ability to think critically and to use higher-order thinking skills are mentioned as learning outcomes in the Qualification Descriptor for Bachelor's degrees in the Swedish Higher Education Ordinance (2022); see appendix 1. The English intermediate course investigated in the present thesis is not part of a specific program, but is a freestanding first-cycle course which can be taken as part of a Bachelor's degree. Some of the outcomes in the Qualification Descriptor of Bachelor's degrees (Swedish Higher Education Ordinance, 2022) are related to the ability to think critically, such as: "demonstrate the ability to search for, gather, evaluate and critically interpret the relevant information for a formulated problem and also discuss phenomena, issues and situations critically", "demonstrate the ability to identify, formulate and solve problems autonomously" and "demonstrate the

[1] Author's translation

ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues". Based on this descriptor, it is evident that students' development of higher-order thinking skills and critical thinking is a goal in Swedish higher education.

The development of critical thinking and higher-order thinking as a main goal in higher education is also mentioned in policy documents from international organizations. An example of this is The Dublin Descriptors (see National Qualifications Authority of Ireland, n.a.) from the Bologna Ordinance. In an agreement between the participating countries in the Bologna Ordinance, a number of descriptors for the three cycles of higher education were decided upon. The first cycle, which concerns the Bachelor's level, includes qualifications such as "have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study" and "have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues". Similarly, the recent OECD report *Does Higher Education Teach Students to Think Critically?* (Van Damme & Zahner, 2022) testifies to the importance of these skills in higher education. Moreover, the wide acknowledgement of the significance of higher-order thinking and critical thinking has led to claims that facilitating students' development of these skills is an important, if not the most important, goal of higher education (Arum & Roksa, 2011; Glen, 1995; Liu et al., 2014).

The three concepts *lower-order thinking skills (LOTS)*, *higher-order thinking skills (HOTS)* and *critical thinking* are central in this thesis. They are discussed in more detail in section 3.1; however, a short presentation of the concepts is needed in this introduction. The division between higher-order thinking skills and lower-order thinking skills is commonly based on the revised Bloom's Taxonomy (Anderson & Krathwohl, 2001), where the three highest levels, Analyze, Evaluate and Create, are considered HOTS, and the three lower levels, Remember, Understand and Apply, are considered LOTS. The clear division between HOTS and LOTS, as well as the clearly defined skills in the revised Bloom's Taxonomy, makes it practical to use in both categorization and analysis.

Critical thinking, on the other hand, has several definitions and is a bit more complex to define. To the best of my knowledge, no consensus definition of what critical thinking constitutes exists. Perhaps the most commonly cited definition is the APA Delphi Consensus definition:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and

> inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. CT [critical thinking[2]] is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society. (Facione, 1990, p. 3)

Although quite extensive, this definition is mainly based on the notion of critical thinking as a set of cognitive skill and dispositions. However, others, such as Barnett (2015), perceive critical thinking as also including action. Besides the discussion of how critical thinking is to be defined, there are also differences of opinion regarding the nature of critical thinking as either a generic skill (Davies, 2013) or a discipline-specific skill (Moore, 2011b). Critical thinking is discussed in more detail in section 3.1. While an important skill in higher education, the various definitions and views of critical thinking raise questions about how this concept is understood by teachers who have been given the task of facilitating students' development of critical thinking. Moreover, it is possible that the understanding of critical thinking among teachers varies, which in turn can affect how it is taught.

As is evident from the Swedish Higher Education Act (1992, p. 1434) and the Qualification Descriptor of Bachelor's degrees (Swedish Higher Education Ordinance, 2022) discussed above, the development of HOTS and critical thinking is a goal in both freestanding first-cycle courses and full degree programs in Swedish higher education. Considering the importance placed on thinking skills in higher education, it is reasonable to expect that students participating in higher education in Sweden develop these skills to a certain degree. Nevertheless, to the best of my knowledge, little is known about

[2] Author's clarification

Swedish higher education students' development of HOTS and critical thinking, either in general or in English courses specifically. Among the few studies is Cananau (2021), who investigates the presence of thinking skills in learning outcomes in English literature courses at Swedish universities, as described in more detail in section 4.2.3.

However, previous research from other countries indicates that students do not always develop HOTS and critical thinking to a satisfactory degree through their participation in higher education. For example, Arum and Roksa (2011) conducted a study on American college students' development of critical thinking, which is described in more detail in section 4.1.1. It was found that the average critical thinking gain was 0.18 standard deviations and that 45 percent of the participants did not show any statistically significant gains in critical thinking after two years of studies. Moreover, in a recent OECD report (Van Damme & Zahner, 2022), higher education students' development of critical thinking was investigated in six countries (see section 4.1.1). According to this study, students improved their critical thinking skills. However, the improvement was quite small. Based on these results, the authors conclude that "given the importance that most higher education programmes attach to promoting critical thinking skills, the learning gain is smaller than could be expected" (Van Damme & Zahner, 2022, p. 259). The small improvement of critical thinking detected by both Arum and Roksa (2011) and Van Damme and Zahner (2022) raises questions as to whether the goals concerning HOTS and critical thinking in higher education are being met.

As discussed above, several policy documents mention students' development of HOTS and critical thinking as an aim in the Swedish higher education system. At a course level, these goals are frequently reflected in the syllabi. According to the Higher Education Ordinance (1993, p. 100), all courses at Swedish universities must have a course syllabus and, among other things, the syllabus must indicate the course objectives. The idea of learning outcomes in both general policy documents in higher education and in course syllabi is influenced by the theory of constructive alignment (Biggs, 2014). According to this theory, learning outcomes should be defined before teaching occurs and teachers should design assessment to promote the intended learning outcomes. Hence, the teacher has an important role in ensuring the alignment between assessment tasks and learning outcomes. Constructive alignment is based on the idea of backwash effects. Biggs and Tang (2011, p. 198) explain that "backwash can work positively by encouraging appropriate learning when the assessment is aligned to what students should be learning". The theory is supported by empirical evidence (such as the study by Leber et al., 2018, discussed in more detail in section 3.2). To conclude, according to the theory of constructive alignment, it seems likely that students' development of critical

thinking may benefit from assessment tasks which target these skills and from an alignment between assessment tasks and learning outcomes.

The motivation for exploring HOTS and critical thinking in intermediate English courses is based on previous research which indicates that HOTS and critical thinking are important in second language (L2) learning; there seems to be a correlation between thinking skills, such as HOTS and critical thinking, and certain L2 skills (Hashemi & Zabihi, 2012; Heidari, 2020; Kamali & Fahim, 2011; Soodmand Afshar et al., 2017). This relationship is outlined in more detail in section 4.2.2. EFL proficiency is measured in terms of vocabulary size in this thesis. Previous studies suggest that vocabulary size is a reliable indicator of students' levels of L2 proficiency (Milton & Alexiou, 2009; Miralpeix & Muñoz, 2018), as is discussed in more detail in section 5.4.3. As such, vocabulary size was considered an effective measure of students' general English as a foreign language (EFL) proficiency. Although several studies investigate the correlation between critical thinking and EFL proficiency, none of those studies have been conducted with Swedish university students, which is the group which the present study seeks to investigate.

The subject of English in Swedish universities consists of modules in both linguistics and literature. The majority of studies within the field of thinking skills in EFL learning have so far focused on courses primarily intended to develop EFL proficiency, with the exception of Cananau's (2021) study, which concerns critical thinking in English literature courses, as mentioned above. These studies do not often include content knowledge such as linguistics or literature. Thus, the present study is novel in that it not only investigates thinking skills in EFL learning, but also looks into potential differences between how thinking skills are included in linguistics and literature and how they are assessed. This topic is interesting as there are differences of opinion about the nature of critical thinking as either a generic skill or as a subject specific skill (Davies, 2006; Moore, 2011a).

With this as a point of departure, this thesis will explore students' opportunities for the development of thinking skills in English courses at Swedish universities. This is conducted through three studies. The first of these investigates the presence of HOTS and critical thinking in learning outcomes and assessment tasks in English intermediate courses. Secondly, based on the wide plethora of definitions and understandings of HOTS and critical thinking, the present study seeks to investigate how teachers working in the courses mentioned understand these concepts. Finally, students' development of critical thinking in relation to their development of EFL proficiency is investigated. The three parts of this study, covering different aspects of thinking skills in English courses, require different theoretical perspectives. Moreover, L2

learning and teaching is characterized by being an interdisciplinary field based within both linguistics and education. The present thesis investigates thinking skills in EFL learning, which further adds to the interdisciplinary nature of the study. This is reflected in the theoretical framework of the present thesis, which includes thinking skills and constructive alignment.

1.1 Aim and research questions

Against the background presented in the introduction above, the overall aim of the present thesis is to explore students' opportunities to develop thinking skills in intermediate English courses in Swedish universities. Furthermore, the aim is also to investigate whether students develop critical thinking and HOTS in such courses. The present thesis is driven by four research questions, which will be presented here.

As a first step in the study of thinking skills in English courses at Swedish universities, assessment tasks and learning outcomes are investigated. The purpose of this is to gain understanding of whether and how critical thinking and HOTS are present in these courses. Learning outcomes are seen as vital indicators of what teachers focus on in the given courses, while assessment tasks indicate what students learn. Hence, the first research question is as follows:

> **Research question 1:** In terms of learning outcomes and assessment tasks, to what extent do English courses at Swedish universities focus on critical thinking and HOTS?

The results will provide an overview of whether and how English courses at Swedish universities focus on critical thinking and HOTS. There is, however, a need to understand more fully the intentions behind those activities that either support or do not support critical thinking development in English courses. Thus, the present thesis also aims to investigate teachers' perspectives on HOTS and critical thinking. This investigation is divided into two parts: a questionnaire and an interview study with English teachers at Swedish universities. The questionnaire and the interviews aim to provide knowledge about how teachers in English courses understand critical thinking and HOTS, and whether and how they facilitate students' development of critical thinking and HOTS through assessment tasks. This part of the project is directed by the following research question:

> **Research question 2:** What are English teachers at Swedish universities' perceptions of HOTS, critical thinking and the assessment of these in English courses?

The subject of English is traditionally divided into linguistic and literature modules, a division that is taken into consideration in the present thesis. The theoretical argument behind investigating this topic, based on the division between these two disciplines, stems from the discussion about critical thinking being either a generic skill or a discipline-specific skill (Moore, 2011). The presentation of the analysis of assessment tasks and learning outcomes related to critical thinking highlights similarities and differences between these two disciplines. Similarly, the investigation of teachers' perspectives and experiences of critical thinking and assessment of critical thinking is also understood in terms of the similarities and differences between linguistics and literature. While the subject of English is regularly treated as a single subject, there are possible differences between these two sub-disciplines. The exploration of this subject seems important, as it might further advance the discussion about the nature of critical thinking as either a subject-specific or a generic skill. Hence, the third research question is:

> **Research question 3:** What similarities and differences between linguistics and literature pertaining to critical thinking and HOTS can be detected in English courses?

The three above-mentioned research questions focus to a large extent on the content of English courses and on teachers' views and experiences of critical thinking and HOTS. To more fully understand whether teachers' activities aimed at promoting HOTS and critical thinking in these courses are successful, students' development of such skills needs to be investigated. The aim of this is partly also to deepen our understanding of the relationship between EFL learning and the development of critical thinking skills. As discussed in section 1, the development of critical thinking is mentioned as a goal in Swedish higher education in general. However, fairly little is known about the effect the development of critical thinking can have on students' EFL learning. As English courses at Swedish universities partly aim to develop students' English proficiency, it seems interesting to understand whether there is a relationship between critical thinking and EFL learning. Consequently, the fourth and last research question is as follows:

Research question 4: What kind of relationship can be detected between the development of critical thinking and L2 proficiency among Swedish EFL students?

1.2 Disposition

The structure of the thesis is described in this section. After the introduction in chapter one, chapter two aims to situate and discuss the topic of English in Sweden and in the Swedish higher educational system. In chapter three, the theoretical background upon which the present thesis is based is discussed. This includes the concepts of LOTS, HOTS and critical thinking, as well as constructive alignment. Following that, chapter four includes a review and discussion of previous research on HOTS and critical thinking, both in higher education in general and in English courses. This section reviews previous studies concerning whether and how critical thinking is assessed and developed in higher education. Moreover, the section also looks into the topic both from an L2 learning perspective and from the point of view that English is a content course. Chapter five describes the methodology of the present study. Methods, materials and analytical procedures are outlined in this chapter. Following that, chapter six presents the results of the study. In chapter seven, these results are discussed in relation to each other and in the light of previous research and the theoretical framework. Following that, chapter eight covers general conclusions, pedagogical implications, suggestions for further research and a discussion about the limitations of the present thesis.

Chapter 2: Context

This chapter situates the thesis in its educational context. The aim is to provide an understanding of English in Sweden. The first section (2.1) covers the status of English in Sweden and in Swedish education. As the thesis concerns English courses at Swedish universities, section 2.2 includes an extended discussion of English as an academic subject in Swedish universities. This discussion focuses on the content of English subject courses at Swedish universities and on how these should be defined.

2.1 English in Sweden and in Swedish education

The status of the English language in Sweden is debated. Questions have been raised regarding whether English should be treated as a second or foreign language due to its frequent use (Broughton et al., 2003; Forsberg et al., 2019; Sundqvist, 2009). The special status of the language is also evident in the Swedish educational system. Swedish school children, as is discussed in more detail below, are taught English from school years 1-3 and English teaching continues throughout compulsory school and upper secondary school. Moreover, there is a high level of exposure to English in Sweden through TV, movies, advertisements, etc. (Sylvén, 2022). It is likely that this has resulted in Swedes being comparatively proficient in English. The high level of English proficiency is proven in the Education First English Proficiency Index, where Sweden is ranked at number eight internationally and placed within the "Very high proficiency" group (Education First, 2021). At the time Swedish students begin their journey through higher education, they often already have relatively high levels of English proficiency. Moreover, university courses and programs at Swedish universities are frequently taught in English. This section includes a discussion of the role and status of the English language in Sweden and in the Swedish educational system.

One way of understanding the status and role of English in Sweden is through Kachru's (1976) three circles, which are based on the historical spread of English (Kachru et al., 2009). The model divides countries into the following categories: the Inner Circle, the Outer Circle and the Expanding Circle. The Inner Circle includes the countries in which English took its original shape and where it is spoken as an L1, such as the US, UK and Australia. The Outer Circle consists of countries that were part of the imperial expansion, in which English is not the native language but is used as a lingua franca between language groups. Examples of Outer Circle countries are India, Nigeria and Malaysia. The last circle, the Expanding Circle, includes countries which have

no historical ties to English and in which it has no official role, but where it is used in international communication. As a consequence of the growing popularity of English, most countries not included in the first two circles are included in the Expanding Circle. According to this model, Sweden is part of the Expanding Circle.

Even though English has no official role in Sweden, it still has a special status. English, together with Swedish and mathematics, are traditionally considered core subjects in the Swedish school system. Swedish school children begin learning English in years 1-3 and receive 480 hours of English teaching during compulsory schooling (years 1-9) (Skolverket, 2022b). English continues to be an important subject in upper secondary school; however, here there is more variation in teaching hours between programs (Skolverket, 2022c). Consequently, Swedes are well placed in their opportunities to develop English language proficiency.

As in several other European countries, English has become increasingly common in higher education in Sweden. English is used as a medium of instruction in many courses and programs. A recent report by Malmström and Pecorari (2022) illustrates the increasing use of English as a language of instruction in Swedish higher education. In 2007, 13 percent of all degree programs in higher education in Sweden were taught in English. This had gone up to 28 percent in 2020. The authors describe the increase as mainly being due to a growing number of second-cycle programs in English. Regarding first-cycle programs, there is still a frequent use of Swedish. In 2006, 99 percent of all first-cycle programs were given in Swedish. This had decreased to 96 percent in 2020. Moreover, English has also become more commonly used as a language of instruction in Swedish university courses. In 2010, 19 percent of all courses were given in English. Ten years later, in 2020, 30 percent were given in English. Similar to programs, English was more common in second-cycle courses than in first-cycle courses. The increased use of English in Swedish higher education has contributed to debates about domain loss, diglossia and linguistic imperialism (Kuteeva, 2014). While further discussion about the consequences of the high level of use of English in Swedish higher education is interesting and needed, it is not within the scope of the present thesis. It is sufficient to conclude that English is increasingly used as the medium of instruction in Swedish higher education.

The high English proficiency level together with the high level of exposure to English in Sweden has led to a debate as to whether English should be considered a foreign or a second language. English as a foreign language (EFL) is traditionally distinguished from English as a second language (ESL). According to Gass and Selinker (2008, p. 7), foreign language learning is the "learning of a nonnative language in the environment of one's native language",

while the learning of a second language refers to "the learning of a nonnative language in the environment in which that language is spoken". Hence, foreign language learning traditionally takes place in a classroom, while second language learning does not necessarily do so. Although the distinction between EFL and ESL seems rather obvious, the reality is not always as clear cut. A number of factors which blur the distinction between EFL and ESL have been mentioned, among them being:

> The presence or absence of language instruction (in the case of ESL), the number of years of instruction, the focus of language lessons (focus on form and/or communication), the use of the target language for some or all the non-language subjects (for EFL), the quality of teacher talk, the type and amount of exposure to the target language outside the classroom, in particular access to English-speaking media and in the case of EFL learners, the amount of time spent in a country where English is spoken. (Gilquin & Granger, 2011, p. 57)

Therefore, rather than talking about a clear distinction between EFL and ESL, it seems more appropriate to refer to these as being on a continuum.

Considering the relatively high level of English language proficiency in Sweden, some question whether English language teaching in Sweden should be viewed as EFL or ESL learning. Broughton et al. (2003) point to the fact that official policies in Sweden contribute to the good command of English among Swedes, which also makes the use of English more similar to ESL than EFL. In line with this, Forsberg, Mohr and Jansen (2019, p. 33) mention that "due to the increased societal use of English (for example in media), speakers in Scandinavia in particular exhibit proficiencies comparable to those of ESL speakers". While the discussion in this section does not aim to arrive at a conclusion as to whether or not English in Sweden is to be considered in terms of EFL or ESL, it serves to highlight the fact that Swedish students are comparatively proficient in English.

2.2 English as an academic subject in Sweden

The following section includes a discussion about the subject of English in higher education in Sweden. In order to understand it, syllabi from English courses are analyzed and discussed in relation to previous research and terms such as English Medium Instruction (EMI), Content and Language Integrated Learning (CLIL) and EFL. This discussion is important in order to understand

the context of the present thesis as it is based on English intermediate courses in Swedish universities.

Before discussing the English subject, a short description of the higher educational system in which the English subject is placed is needed. The academic year in Sweden is divided into two semesters, each 20 weeks long. A full-time semester of studies is equivalent of 30 higher education credits (hec.). The English subject can be studied in a program, but also as freestanding courses. These courses have different names at different universities, such as English 1, 2 and 3, or English A, B and C, or English 1-30, 31-60, 61-90. They are built upon the idea of progression within the subject where completion of one course is a pre-requisite in order to enroll in the next course and can be combined into a degree. In the present thesis, second semester English courses are analyzed. The second semester English subject course is referred to as the intermediate English course in this thesis. This does not, however, reflect the students' levels of language proficiency, but the placement of the course between the first and the third course at first-cycle level.

The English subject is traditionally divided between linguistics and literature. In an investigation of the English studies curriculum at the University of Copenhagen in Denmark, Hultgren (2016, p. 120) explains that "English studies in Denmark represents a typical continental European undergraduate programme in this subject with a tripartite structure of literature, language and culture". A similar tripartite structure is present in English courses given at Swedish universities; however, culture is often part of the literature curriculum. As the present thesis investigates intermediate English courses, as described above, the focus of our discussion is on syllabi from those courses. Table 1 includes an outline of the English intermediate courses given at Swedish universities during the spring and fall semesters 2022, where the syllabus was available in English. A total of 12 English intermediate courses are included in the table. The majority (7) of these courses contain four modules of 7.5 hec. Moreover, a strict and equal division between linguistics and literature is found in nine of the 12 courses. The remaining courses all contain both linguistics and literature modules in addition to a degree project. Language proficiency in English intermediate courses is discussed later in this section. Thus, modules focusing on developing language proficiency are italicized.

Table 1: English intermediate courses, 2022

University	Course name	Modules
Dalarna University (2022)	English II	The history of British and American literature and ideas 15 hec
		Introduction to English linguistics 15 hec
University of Gothenburg (2021)	English, Intermediate Course	English Linguistics 7.5 hec
		Academic Writing and Speaking in English 7.5 hec
		English Literary Studies 7.5 hec
		English Cultural Studies 7.5 hec
University of Gävle (2019)	English (31-60)	Survey course in American literature 7.5 hec
		Survey course in British literature 7.5 hec
		Literary text translation 3.5 hec
		Survey course in linguistics 7.5 hec
		Topics in linguistics 4 hec
Karlstad University (2019)	English B	*Academic writing in English 7.5 hec*
		English linguistics II: Language development and language learning 7.5 hec
		English literature before 1800 7.5 hec
		English literature after 1800 7.5 hec
Linneaus University (2022)	English 2	English linguistics 10 hec
		English literature 10 hec
		Theme course 5 hec
		Independent project 5 hec
Lund University (2019)	English, level 2	*English grammar 7.5 hec*
		English literary history 7.5 hec
		Linguistic analysis 7.5 hec

		Literary analysis 7.5 hec
Malmö University (2022)	English II	Culture, narrative and representation 7.5 hec Introduction to the theory of literature 7.5 hec Semantics 7.5 hec *Academic writing and rhetoric 7.5 hec*
Mid Sweden University (2020)	English BA (B)	English literatures in the transatlantic world 7.5 hec Language survey 7.5 hec English literatures in a global perspective 7.5 hec English B research paper 7.5 hec
Stockholm University (2018)	English II	Linguistics 2A 7.5 hec Linguistics 2B 7.5 hec Literary cultures 1340-1832 7.5 hec Literary cultures 1832-the present 7.5 hec
Södertörn University (2022)	English B	Linguistic methods 6 hec Historical survey course of British Literature 6 hec Language and power 9 hec Postcolonial literature and culture 9 hec/Historical survey course of American literature 9 hec/Multiethnic American literature and culture 9 hec/English literature and capitalism 9 hec
Umeå University (2021)	English B	*Writing proficiency 7.5 hec* Linguistics 7.5 hec English literature 7.5 hec Individual project 7.5 hec

University West (2019a, 2019b)	English 31-60	English intermediate level: Literary history and intertextuality 15 hec English intermediate level: Language structure and language variation 15 hec

A question which needs to be asked and discussed in relation to English courses at Swedish universities is if these intend to develop students' language proficiency. This is interesting as part of the aim of the present thesis is to investigate the relationship between development of critical thinking and EFL proficiency. Hence, an assumption made in this study is that development of EFL proficiency is an intended learning outcome in English intermediate courses. As discussed above, Swedish students have a relatively high level of English language proficiency and some claim that English is closer to ESL than EFL in Sweden (Forsberg et al., 2019; Sundqvist, 2009). Still, it is difficult to neglect the fact that these courses are given in non-Anglophone universities. In order to properly understand the role of the English subject at Swedish universities, a closer investigation of the syllabi of these courses is needed. The syllabi are here examined in the light of previous research and in comparison to how the subject is taught internationally.

In a discussion about the English curriculum, English (2012, p. 116) points to the language and literature division as a "major zone of variability among the world's English departments". Based on English's (2012) discussion, it is understood that the English subject differs between countries and even between universities within the same country. At some universities, a degree in English implies solely the study of literature; while other universities offer programs combined of subjects such as literature, linguistics, culture studies and creative writing. Hultgren (2016), as mentioned above, describes a tripartite structure in the English subject consisting of literature, language and culture as typical continental European. Similarly, English (2012) points to certain generalizations in European universities, despite the varieties within the English subject. These generalizations will be returned to when discussing the content of English subject courses in more detail. To summarize, it can be concluded that there are international as well as national differences with regards to the English subject, but there is also a European tradition consisting of literature, linguistics and culture studies.

Based on the English intermediate course syllabi there seems to be an agreement among Swedish universities in how the subject is divided between linguistics and literature. Culture is also part of some of the modules, but far

from every course includes a culture module. English (2012, p. 145-146) explains with regards to culture in the English subject that "while many European English studies departments continue to highlight national 'culture' or 'civilization' as part of their curricular remit, it rarely amounts to much in the way of actual credit hours". The study of culture seems to be more an element in literature modules than a subject studied in its own. Moreover, the majority of the courses contain equal, or near to equal, proportions of linguistics and literature modules. This implies that studies in both linguistics and literature are required to attain a Bachelor's degree in English from a Swedish university.

The high focus on linguistics and literature in English intermediate courses at Swedish universities does not rule out the development of English language proficiency as a goal. Returning to English's (2012) discussion about generalizations in the English curriculum at European universities, he mentions language training as one of those standard components. English (2012) explains that:

> Language training is a ubiquitous requirement, averaging about 100 hours per year (3-4 hours per week, or 6-8 "ECTS" credits) for the first 2 years of study, with a minimum of at least 25 hours a year even at the top universities in countries where English skills are generally strong. (English, 2012, pp. 141-142)

This would imply that first-cycle degree programs in English at Swedish universities include a certain yearly minimum of language training. However, relatively few of the 12 English intermediate courses in table 1 (see italicized modules) contain modules specifically focusing on language training.

While few modules are specifically aimed at language training, a closer look into course syllabi is needed in order to understand if development of students' language proficiency is part of the English intermediate course. The purpose of this discussion is to see if there are mentions of language learning and development of language proficiency as intended learning outcomes. A syllabus for a course at a Swedish university contains a section about learning outcomes. This section is divided into three sub-sections: knowledge and understanding, competence and skills, and judgement and approach. Under the sub-section *competence and skills*, several statements found in the English syllabi can be interpreted to support the notion that these courses partially aim at developing students' English language proficiency. Table 2 presents intended learning outcomes related to language learning in these syllabi. In several of the syllabi, part of the intended learning outcomes is the ability to express oneself in correct English either in writing and/or speech.

Table 2: Language learning outcomes in English intermediate course syllabi

University	Aims and outcomes related to language learning
Dalarna University	Demonstrate that they are proficient users of English by the appropriate use of vocabulary and grammar in the different ways of communicating within the course
University of Gothenburg	Communicate in an idiomatic, grammatically and argumentatively correct way in speech and writing in English
University of Gävle	Express oneself in varied and linguistically correct English
Karlstad University	Plan and produce logically and carefully structured and stylistically effective scholarly texts in English Produce well structured texts of literary analysis in Standard English and with correct source use
Linnaeus University	Express themselves using appropriate language in both speech and writing within subject areas relevant for the respective modules
Lund University	Discuss advanced fiction and non-fiction texts in English using appropriate vocabulary Express themselves in writing in correct English Use a very extensive general English word and phrase vocabulary and a basic academic English word and phrase vocabulary, partly receptively and partly productively
Malmö University	Demonstrates confidence in their abilities to communicate effectively in written contexts for a variety of purposes and to diverse audiences
Mid Sweden University	Show a more developed ability to understand, produce and critically evaluate spoken and written English of different levels and style
Stockholm University	In speech and in writing, express themselves appropriately in good academic English Demonstrate a good ability to understand texts written in English

Södertörn University	Write academic essays about works of British literature from a historical perspective in correct, academic English Write linguistic essays in English with a substantial degree of linguistic precision Write academic essays in English with linguistic precision and the correct use of genre convention Write academic essays in English with linguistic precision and the correct use of genre conventions
Umeå University	Demonstrate developed and in-depth oral as well as written language skills
University West	None

In a discussion about the English subject curriculum at the University of Copenhagen, Denmark, Hultgren (2016, 127) mentions that "for both literature and language, the programme has the dual objective of developing students' conceptual understanding of these topics as well as their practical skills in analysing literature and speaking and writing in English". This seems to be equally true for English courses given at Swedish universities. Students are expected to learn content knowledge in literature and linguistics, while at the same time develop English proficiency. Concerning this, the website of the English level 2 course given at Lund University clarifies this dual objective neatly:

> You learn more about English linguistics and literature, but you also improve your spoken and written English. Your vocabulary gets even larger, just like your English proficiency in general. Taking English: Level 2 is a natural step for anyone who wants to be really good at English and who also is interested in learning more about the English language and about literature in English. (Lund University, 2022)

This leaves little room for doubts about if English language courses at Swedish universities aim at developing students' language proficiency.

Related to this discussion is a study by Dodou (2020) in which she investigates English literature curricula from Swedish universities. The author mentions that "most curricula (17/21 at undergraduate level and 8/13 at MA level), linked language skills to the study of literature" (Dodou, 2020, p. 282). Some of the syllabi in the study explicitly mention the training of language

skills, while in most syllabi language proficiency goals were interweaved with content knowledge. Although language proficiency is mentioned in most syllabi, Dodou (2020, p. 282) states that it "remains unclear to what extent such goals had more than a gatekeeper function, by emphasizing that student work needed to demonstrate a high standard of English usage". Thus, the author concludes, development of language proficiency is not a primary goal of English literature courses. It is important to keep in mind that Dodou's (2020) study only investigate the topic based on English literature syllabi, and does not concern linguistics.

English courses at Swedish universities are described above as containing a tripartite division between literature, linguistics and culture. However, another tripartite division is suggested by Schröter (2016). In a discussion about English subject courses at a Swedish university, it was mentioned that:

> A traditional tripartite division of the university's English courses and course modules still applies to a considerable extent, with each being classifiable as focusing on proficiency, literature or linguistics, respectively, though increased proficiency is, of course, a collateral learning objective for the last two types as well. This is not only because more than 95% of the students are non-native speakers of English, but also because advanced communication skills, especially with regard to academic writing, are a focus of all courses. (Schröter, 2016, p. 219)

A similar division between proficiency, linguistics and cultural aspects, including literature, is made by Granger, Dupont, Meunier, Neats and Paquot (2020). The tripartite structure described by Schröter (2016) gives further support to the argument that development of language proficiency is a partial goal of English courses at Swedish universities. The discussion on whether or not English language courses at Swedish universities aim to develop students' language proficiency raises questions about how these courses should be classified. Three potential terms are suggested: English Medium Instruction (EMI), Content and Language Integrated Learning (CLIL) and EFL (English as a Foreign Language).

EMI is defined as "the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language of the majority of the population is not English" (Macaro et al., 2017, p. 37). Furthermore, Pecorari and Malmström (2018, p. 499) identify the following four characteristics of EMI:

"1. English is the language used for instructional purposes.

2. English is not itself the subject being taught.

3. Language development is not a primary intended outcome.

4. For most participants in the setting, English is a second language (L2)".

The first of these characteristics is in accordance with English courses, as English is used for instructional purposes. Regarding the second characteristic, we find that both Macaro et al. (2017) and Pecorari and Malmström (2018) exempt English subject courses from EMI. Based on this, it seems fairly obvious that EMI is not applicable to English courses. However, this depends on how one perceives the aim of these courses. If one understands the primary aim of English courses as being the teaching of content knowledge about literature and linguistics, then this conclusion can be questioned. Moreover, this discussion is relevant to Pecorari and Malmström's (2018) third characteristic of EMI, which states that language development is not a primary intended outcome. This does not entirely accord with the notion that language learning is part of the tripartite structure of these courses, as suggested above. Even though the development of students' language proficiency is not given the same space as content knowledge in English course syllabi, it is difficult to argue that it is not an intended learning outcome. Finally, the fourth characteristic of EMI mentioned by Pecorari and Malmström (2018) probably fits well with English courses at Swedish universities as these are given in a country where English is not the L1. To conclude, the strong focus on the development of English language proficiency in English courses at Swedish universities makes it somewhat difficult to categorize them within the term EMI.

The second term related to language learning is CLIL (Content and Language Integrated Learning). In CLIL there is a dual focus on content and language learning (Morton, 2016). Marsh (2002, p. 58) defines CLIL as "a generic umbrella term which would encompass any activity in which a foreign language is used as a tool in the learning of a non-language subject in which both the language and the subject have a joint curricular role". The assumption behind CLIL is that "L2 learning is enhanced when used as the medium of instruction for academic subject content" (Olsson & Sylvén, 2015, p. 80). Thus, it is rather similar to EMI in that both approaches use an additional language to teach content. However, Morton (2016, p. 254) explains that the difference between the two approaches lies in the fact that "EMI refers solely to the teaching of content through the medium of English, without implying that there is any 'dual focus' on content and language". While both content knowledge and development of language proficiency are intended learning outcomes in English subject courses at Swedish universities, it is not clear

whether these are contained within the term CLIL, as Marsh (2002) exempts language subjects from the definition of CLIL.

While both EMI and CLIL are interesting terms to discuss in relation to English courses at Swedish universities, they seem to indicate other learning situations, as discussed above. The last potential term for defining English courses at Swedish universities is EFL. Gass and Selinker (2008, p. 7) define foreign language learning as the "learning of a nonnative language in the environment of one's native language". Schröter (2016) claims that 95 percent of the students in English subject courses at Swedish universities are non-native speakers of English; hence, the definition provided by Gass and Selinker (2008) seems to apply to these courses. The courses are also, obviously, given in the environment of the students' native language. It should, however, be noted that not all students in English courses at Swedish universities have Swedish as their L1. The student group is often diverse in terms of language backgrounds. ESL is an alternative term for these courses. However, in ESL, language learning takes place in an environment of the target language. To conclude, EFL seems to be a more accurate term for English subject courses at Swedish universities, based on Gass and Selinker's (2008) definitions of the two terms.

Moreover, defining English subject courses as EFL courses is in line with previous studies within the field. In studies about English courses at Swedish universities, the term EFL is frequently used either in reference to the course or to the learners. Among these studies are Kapranov (2017), Larsson (2012), Lu and Luk (2014), Sauro and Sundmark (2016) and Tapper (2005). Referring to the courses or the learners in terms of EFL indicates that university teachers and researchers working with these courses consider this to be an appropriate term. Furthermore, both Tapper (2005) and Larsson's (2012) studies are based on the International Corpus of Learner English (ICLE) (Granger et al., 2020), which further supports the EFL definition of these courses. The ICLE includes essays written by EFL students from different countries, among them Sweden. Granger et al. (2020, p. 4) mention that the requirements on learners for inclusion in the ICLE are: "young adults (university undergraduates); advanced proficiency level; learners of English as a Foreign Language (EFL) rather than a Second Language (ESL)". Pertaining to the Swedish section of the ICLE, the essays are written by Swedish first-cycle students in their third or fourth year of studies from Lund University and the University of Gothenburg studying English. The ICLE is relevant to the present discussion as it classifies Swedish students taking an English university course as EFL learners.

To conclude, syllabi from intermediate English courses at Swedish universities mention both written and spoken language proficiency as course

aims and intended learning outcomes. This implies that the development of language proficiency is a partial aim of these courses. However, partial does not mean that it is less important than content knowledge, only that it is given less space in the syllabi compared to content knowledge. It is possible that this is a consequence of the relatively high English language proficiency in Sweden. As mentioned above, questions have been raised regarding whether English should be treated as a second or foreign language in Sweden based on the high level of proficiency and high level of exposure to the language (Broughton et al., 2003; Sundqvist, 2009). Still, one cannot deny the fact that the development of language proficiency is among the course aims of intermediate English courses and that these courses are given in a country where English is not the L1. Therefore, the conclusion drawn from this discussion is that English courses at Swedish universities are contained within the term EFL learning. Other possible terms, such as EMI and CLIL, are considered above. While these are interesting and perhaps also possible to apply to English courses at Swedish universities, they seem to imply other learning situations, as is discussed above. Thus, the courses investigated in this thesis will be referred to as English courses and the teachers as English teachers. However, as the students are learners of a foreign language, they will be referred to as EFL students.

2.3 Summary

In this chapter, the context of the present thesis was discussed. Section 2.1 came to the conclusion that English is taught from an early age in Sweden and that Swedish students have a relatively high level of English proficiency. The distinction between EFL and ESL in relation to English in Sweden was also discussed in this section. Furthermore, section 2.2 considered English as an academic subject at Swedish universities. As the present thesis seeks to investigate critical thinking and HOTS in intermediate English courses, it was considered important to outline these courses in terms of intended learning outcomes and content. Moreover, students' development of English proficiency is investigated in this study. Hence, understanding whether the development of these skills is part of the aim of intermediate English courses is interesting when discussing the results. The discussion in section 2.2 led to the conclusion that both content knowledge and development of English proficiency were aims in these courses.

Chapter 3: Theoretical background

In this chapter, the theoretical background on which the present thesis is based is presented. Section 3.1 discusses the concepts higher- and lower-order thinking and critical thinking. This section includes discussions about thinking skills (3.1.1), definitions of critical thinking (3.1.2), approaches to critical thinking (3.1.3), critical thinking as a generic or discipline specific skill (3.1.4), explicit and implicit teaching of critical thinking (3.1.5) and thinking skills and content knowledge (3.1.6). In section 3.2, constructive alignment is described.

3.1. Thinking skills

The purpose of this section is to provide definitions of and discuss the terms *critical thinking*, *higher-order thinking skills (HOTS)* and *lower-order thinking skills (LOTS)*. Understanding what these entail is essential in order to further investigate thinking skills in English courses. Critical thinking and HOTS are closely related terms and are often treated as equivalents in this thesis. There are, however, some differences in terms of definitions. Part of the aim of this section is to discuss how critical thinking and HOTS relate to each other. The revised version of Bloom's Taxonomy (Anderson & Krathwohl, 2001), which defines HOTS, is used in order to categorize and analyze assessment tasks and learning outcomes. Critical thinking, which is probably a more well-known and familiar concept than HOTS, is used in interviews with teachers and in testing students' thinking skills. The use of both HOTS and critical thinking is discussed in more detail in this section.

The outline of this section is as follows: section 3.1.1 describes and discusses HOTS, LOTS and the revised version of Bloom's Taxonomy. In section 3.1.2, definitions of critical thinking are surveyed. Section 3.1.3 consists of a review of the literature on approaches to critical thinking. Section 3.1.4 surveys previous research regarding the two conflicting views of critical thinking as either a discipline-specific or a generic skill. This is followed in section 3.1.5 by a review of literature about explicit and implicit teaching of critical thinking, which are concepts closely related to the discussion of critical thinking as a generic or a discipline-specific skill. Following that, in section 3.1.6, thinking skills are discussed in relation to content knowledge. Finally, section 3.1.7 provides an explanation of how critical thinking is understood in the present thesis.

3.1.1 Higher- and lower-order thinking skills

In the present thesis, the concepts of LOTS and HOTS are used in analysis of assessment tasks and learning outcomes in intermediate English courses at Swedish universities (see section 6.1). While there are different definitions of what constitute LOTS and HOTS, the most well-known of these is based on Bloom's Taxonomy. This section will discuss Bloom's Taxonomy and the revised version of Bloom's Taxonomy in more detail. The aim of this is to provide an understanding of both HOTS and LOTS, and the revised Bloom's Taxonomy. As this thesis primarily uses the revised version of Bloom's Taxonomy to identify LOTS and HOTS, this version is given precedence over the original taxonomy.

The *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 1: Cognitive Domain* (Bloom, 1956), more commonly known as Bloom's Taxonomy, was published in 1956. It was produced as a collective effort by a team of cognitive psychologists led by the American educational psychologist Benjamin Bloom; therefore, the taxonomy is often referred to as *Bloom's Taxonomy*. Ever since, the taxonomy has been widely used in measuring and classifying educational objectives.

In brief, the taxonomy consists of six categories in the cognitive domain: *Knowledge, Comprehension, Application, Analysis, Synthesis* and *Evaluation* (Krathwohl, 2002) which are arranged hierarchically in the order mentioned. Table 3 presents a more comprehensive description of each level in Bloom's Taxonomy.

Table 3: Bloom's Taxonomy

1.	Knowledge	"The recall of specific and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting" (Bloom, 1956, p. 201)
2.	Comprehension	"A type of understanding or apprehension such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications" (Bloom, 1956, p. 202)
3.	Application	"The use of abstractions in particular and concrete situations" (Bloom, 1956, p. 205)
4.	Analysis	"The breakdown of a communication into its constituent elements or parts such that the

		relative hierarchy of ideas is made clear and/or the relations between the ideas expressed are made explicit" (Bloom, 1956, p. 205)
5.	Synthesis	"The putting together of elements and parts so as to form a whole" (Bloom, 1956, p. 206)
6.	Evaluation	"Judgement about the value of material and methods for given purposes" (Bloom, 1956, p. 207)

Since the development of Bloom's Taxonomy, it has been revised several times (Marzano & Kendall, 2007). Perhaps the most well-known and accepted revision is that of Anderson and Krathwohl (2001). Almost 40 years after the advent of Bloom's Taxonomy, they perceived a need to "incorporate new knowledge and thought into the framework", which resulted in the revision mentioned (Anderson et al., 2014, p. XXII). The purpose of the revision was also to re-write it into more common language.

The revised version of Bloom's Taxonomy separates the Cognitive process dimension and the Knowledge dimension, and with this it "separates the objects of cognition from the processes" (Irvine, 2017, p. 3). Table 4 shows the revised Bloom's Taxonomy with thinking levels, sub-levels and definitions of these. The Knowledge dimension consists of *Factual, Conceptual, Procedural* and *Metacognitive Knowledge*. These four different knowledge dimensions can be found in all six Cognitive process dimensions, depending on how a learning outcome or assessment task is designed. Although important, the Knowledge dimension is not part of the present thesis. The reason for not including the Knowledge dimension in the analysis of assessment tasks and learning outcomes is that the aim of this thesis was to investigate thinking skills. Thus, investigating the type of knowledge was not considered within the scope of the present thesis.

While the Cognitive process dimension still consists of six categories, a few important changes have been made within the framework. Among the main changes, as can be seen when comparing table 3 and table 4, are the renaming of three categories and the changing of the position of two categories (Krathwohl, 2002). The category *Knowledge* is renamed as *Remember, Comprehension* as *Understand* and *Synthesis* as *Create*. In the revised version of Bloom's Taxonomy, the categories *Evaluate* and *Create* (*Synthesis* in the original taxonomy) have changed places so that *Create* is the highest level.

Table 4: The revised Bloom's Taxonomy[3]

Level	Definition
Remember	**Retrieve relevant knowledge from long-term memory**
Recognizing	Locating knowledge in long-term memory that is consistent with presented material
Recalling	Retrieving relevant knowledge from long-term memory when given a prompt to do so
Understand	**Construct meaning from instructional messages, including oral, written, and graphic communication**
Interpreting	Changing from one form of presentation to another
Exemplifying	Finding a specific example or illustration of a concept or principle
Classifying	Determining that something belongs to a category
Summarizing	Abstracting a general theme or major point
Inferring	Drawing a logical conclusion from presented information
Comparing	Detecting correspondences between two ideas, objects, and the like
Explaining	Constructing a cause-and-effect model of a system

[3] Based on Anderson et al. (2014)

Apply	**Carry out or use a procedure in a given situation**
Executing	Applying a procedure to a familiar task
Implementing	Applying a procedure to an unfamiliar task
Analyze	**Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose**
Differentiating	Distinguishing relevant from irrelevant parts or important from unimportant parts of presented material
Organizing	Determining how elements fit or function within a structure
Attributing	Determine a point of view, bias, values, or intent underlying presented material
Evaluate	**Make judgements based on criteria and standards**
Checking	Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented
Critiquing	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
Create	**Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure**

Generating	Coming up with alternative hypotheses based on criteria
Planning	Devising a procedure for accomplishing some task
Producing	Inventing a product

Anderson and Krathwohl's revised Cognitive process dimensions include the categories *Remember, Understand, Apply, Analyze, Evaluate* and *Create* (Anderson et al., 2014). According to the revised taxonomy, these categories are all associated with two or more specific cognitive processes written in gerund. The cognitive processes related to Remember are *Recognizing* and *Recalling*; those related to Understand are *Interpreting, Exemplifying, Classifying, Summarizing, Inferring, Comparing* and *Explaining*; those related to Apply are *Executing* and *Implementing*; those related to Analyze are *Differentiating, Organizing* and *Attributing*; those related to Evaluate are *Checking* and *Critiquing*; and finally those related to Create are *Generating, Planning* and *Producing*. The change from nouns to verbs in the revised Bloom's Taxonomy was made "to fit the way they are used in objectives" (Krathwohl, 2002, p. 214), that is, learning objectives. The six major cognitive categories are assumed to be arranged in a continuum of cognitive complexity where Remember is the least cognitively complex category and Create the most complex category. However, in comparison with the original Bloom's Taxonomy, "the requirement of a strict hierarchy has been relaxed to allow the categories to overlap one another" (Krathwohl, 2002, p. 215).

The revised taxonomy was partially developed with the intention of assisting educators to consider the possibilities within education. As discussed in chapter 1, developing students' thinking skills is considered a main goal in education. Identifying these thinking skills aids educators in this process. The taxonomy is frequently used in defining HOTS (Afflerbach et al., 2011; Leighton, 2011; Schraw & Robinson, 2011) and in identifying and defining questions which target higher- and lower-order thinking skills (Irvine, 2017). Consequently, the categories within the cognitive process dimension are organized from lower-order thinking skills to higher-order thinking skills, with Remember being the lowest level of thinking skill and Create the highest (Churches, 2008).

The categories Remember, Understand and Apply are often considered LOTS, and the categories Analyze, Evaluate and Create are considered HOTS. There are, however, some differences of opinion. For example, Irvine (2017) mentions that it would be somewhat simplistic to apply the same higher- and

lower-order thinking division to the revised version of Bloom's Taxonomy, as the definition of Apply in this taxonomy belongs to HOTS. The author argues that the definition of Apply, that is, "applying a procedure to an unfamiliar task", places it at the same thinking levels as the sublevels of Analyze, Evaluate and Create (Irvine, 2017, p. 7). The thinking skill Apply is perhaps the skill that most disagree about. While several scholars consider it to be a LOTS, there are also those who categorize it as a HOTS (Bissell & Lemons, 2006). Other approaches to the thinking skill Apply have been to understand it either as falling into both categories (Thompson, 2008) or as an intermediate level between these (Jensen et al., 2014). In this thesis, Apply is, in accordance with the majority view, considered a lower-order thinking skill.

Although the revised taxonomy contributed to the further development of Bloom's Taxonomy, it has not been left uncriticized. A lot of the criticism which the revised taxonomy has received is similar to that of the original Bloom's Taxonomy. For example, it has been criticized for the hierarchical structures which "use degrees of difficulty as the basis of the difference between levels of the taxonomy" (Marzano & Kendall, 2007, p. 10). The hierarchical structure of the taxonomy is accused of lacking support from research, of not giving a correct representation of students' learning and of simplifying the nature of thinking (Marzano & Kendall, 2007; Nguyễn & Nguyễn, 2017). These are legitimate reasons for criticizing both the revised taxonomy and the original taxonomy. As discussed previously, thinking skills are inherently complex to define. This contributes to differences of opinion regarding how valid these taxonomies are in categorizing thinking skills.

In defense of the revised taxonomy, Krathwohl (2002, p. 215) mentions that the hierarchical order of the cognitive categories "probably would be supported as well as was the original Taxonomy in terms of empirical evidence". Partially in order to prove this, Jensen et al. (2014) sought to investigate the impact quizzes and unit exams have on cognitive aspects of students' learning in two sections of an introductory biology course. One section received assessment items written at the Remember level and the other section were given more cognitively complex items. At the end of the course, both sections received an identical final exam consisting of both HOTS and LOTS items. Jensen et al. (2014, p. 317) explain that "students who routinely took quizzes and unit exams requiring HOTS not only showed deeper conceptual understanding by higher scores on high-level questions, but also showed greater retention of facts, as evidenced by higher scores in low-level questions". The study mentioned is in line with and supports the hierarchical assumptions of both the original and the revised taxonomy. Hence, it is the belief of this author that there is sufficient evidence to support the use of the revised taxonomy in defining HOTS and LOTS.

3.1.2 Defining critical thinking

Another term closely related to HOTS is critical thinking. The concept of critical thinking works as a theoretical framework and is present in this thesis in the investigation of EFL students' critical thinking skills and English teachers' views on these skills. Thus, understanding critical thinking is essential to fully grasp the content of this thesis.

Critical thinking has been a focus in education for a long time; a movement interested in implementing it in education began in the 1980s. While considered important in higher education, defining critical thinking has proven to be far from easy (Davies, 2015). Similar to HOTS, several definitions of critical thinking have been proposed. Table 5 presents some of the more established definitions of critical thinking.

Table 5: Definitions of critical thinking

Reference	Definition
Dewey, 1933, p. 9	"Active, persistent, careful consideration of a belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends"
Ennis, 1987, p. 46	"Reasonable, reflective thinking that is focused on deciding what to believe or do"
Lipman, 1988, p. 146	"Skillful, responsible thinking that facilitates good judgment because it (1) relies upon criteria, (2) is self-correcting, and (3) is sensitive to context"
Siegel, 1988, p. 25	"The educational cognate of rationality"
Mertes, 1991, p. 24	"A conscious and deliberate process which is used to interpret or evaluate information and experiences with a set of reflective attitudes and abilities that guide thoughtful beliefs and actions"

As appears from the table, many of these definitions of critical thinking are rather broad and similar to each other. They all emphasize a certain way of thinking which is characterized by words such as *conscious*, *deliberate*, *responsible*, *reflective*, *careful* or *rational*. At the same time, the definitions are quite abstract and vague, which can probably be explained by the complex nature of critical

thinking. Moreover, the many definitions have contributed to claims of it being both under- and over-analyzed (Davies, 2015).

The wide variety of definitions led to an effort by the American Philosophical Association (APA) in 1990 to define critical thinking; this definition was produced by 46 experts within the field and is known as the APA Delphi Consensus definition. This was previously cited in chapter 1. It is perhaps the closest there is to a consensus definition of critical thinking:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. CT [critical thinking[4]] is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life. While not synonymous with good thinking, CT is a pervasive and self-rectifying human phenomenon. The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. Thus, educating good critical thinkers means working toward this ideal. It combines developing CT skills with nurturing those dispositions which consistently yield useful insights and which are the basis of a rational and democratic society. (Facione, 1990, p. 3)

Comparing the APA Delphi Consensus definition of critical thinking with those in table 5, it is obvious that the former is more extensive, both in length and content. It provides information about what critical thinking is and about what characterizes a critical thinker. At the same time, the APA Delphi Consensus definition is broad in its content. This signalizes that critical thinking is not just one way of thinking; rather, it is context-bound and dependent on both the situation and the critical thinker. While an important contribution to the field of critical thinking, the APA Delphi Consensus definition has also received criticism. Davies (2015), for example, points out that the definition is of little practical assistance to those working in higher

[4] Author's clarification

education. Moreover, there are many approaches to critical thinking, and the APA Delphi Consensus definition mirrors one or two of those approaches without taking the other approaches into consideration. This is discussed further in the following section.

3.1.3 Approaches to critical thinking

The definitions and models of thinking skills discussed above, such as Bloom's Taxonomy and the APA Delphi Consensus definition, are mainly based on an understanding of critical thinking as a set of cognitive skills. However, this is not the only way of understanding critical thinking. Moreover, critical thinking has so far mainly been treated as a philosophical concept, which is not entirely the same as understanding it as a skill to be taught in education. This section reviews different approaches to critical thinking in education. These approaches were used in the analysis of English teachers' views on critical thinking investigated through a number of interviews; see section 6.2.2. The purpose of this analysis was to bring further clarity to how English teachers understand critical thinking and how they teach it.

Four approaches to critical thinking in education are discussed in this section. These are (1) the skills-and-judgement approach, (2) the skills-plus-dispositions approach, (3) the skills-plus-dispositions-plus-actions approach and (4) critical pedagogy (Davies & Barnett, 2015). The skills-and-judgement approach, also known as the cognitive-argumentative skills approach to critical thinking, understands critical thinking as a set of cognitive skills. These include argumentative skills and reflective skills such as interpretation, analysis, inference, explanation, evaluation, metacognition and self-regulation (Davies & Barnett, 2015). Davies (2015, p. 49) describes critical thinking according to this approach as "a skill, which can be learned, involving the intellectual activity of identifying, analyzing and evaluating arguments and propositions". These analytical and evaluative skills are important at an individual level for students graduating from higher education, as it prepares them for their professional life. Moreover, critical thinking is understood as reflective thinking according to this approach. This is very much in line with how it is defined by Ennis (1987, p. 46): "Reasonable, reflective thinking that is focused on deciding what to believe or do". With its focus on cognitive dimensions and judgment, the APA Delphi Consensus definition of critical thinking discussed in section 3.1.2 is encompassed within the skills-and-judgement approach as well, as is the revised Bloom's taxonomy. Related to this, Davies (2015, p. 53) describes Bloom's taxonomy as "a forerunner of a cognitive approach to critical thinking".

As a set of cognitive skills, HOTS, which has already been discussed in section 3.1.1, is related to the first approach to critical thinking. The terms HOTS and critical thinking are often used interchangeably. Lewis and Smith (1993, p. 134) understand critical thinking as having three primary meanings: problem solving, evaluation and judgment, and a combination of evaluation and problem solving. The focus on evaluation and problem solving is likewise found in the above-mentioned definitions of HOTS. Furthermore, several definitions of HOTS also mention critical thinking skills (Schraw & Robinson, 2011). There are several different ways of understanding the relationship between HOTS and critical thinking, as expressed in this quote:

> Some researchers and scholars use the terms 'critical thinking' and 'higher order thinking' interchangeably, while others define 'critical thinking' as a form of higher order thinking. Some use the terms 'critical thinking' and 'problem solving' interchangeably; yet for others, critical thinking is a form of problem solving. (King et al., 2011, p. 7)

Critical thinking consists of attributes such as analysis and evaluation (Facione, 1998), which overlap with the definition of HOTS. Others understand HOTS as an umbrella term which is wider than critical thinking in its scope (Davies, 2015). Accordingly, critical thinking is included in HOTS but it is also narrower.

The second approach to critical thinking is the skills-plus-dispositions approach (Davies, 2015). According to this approach, the ability to think critically should not be confused with a disposition towards critical thinking. Davies (2015, p. 55) explains that "dispositions are not arguments or judgments, but *affective* states. They include critical thinking *attitudes* and a sense of *psychological readiness* of the human being to be critical". Having a critical thinking disposition is considered crucial, as the disposition is a prerequisite for an individual to use their critical thinking skills. Davies (2015) lists a number of critical thinking dispositions based on earlier theories on critical thinking, which include: respect for alternative viewpoints (Facione, 1990), inquisitiveness (Facione, 1990), open-mindedness (Ennis, 1985; Facione, 1990), fair-mindedness (Facione, 1990), a desire to be well-informed (Ennis, 1985; Facione, 1990), tentativeness, skepticism, tolerance of ambiguity and appreciation of individual differences (Halonen, 1995), seeing both sides of an issue (Willingham, 2007), and intellectual humility, intellectual courage, integrity, empathy and perseverance (Paul, 1993). To this list, Cananau (2021) adds a few other dispositions such as the desire to seek reasons (Ennis, 1985; Facione, 1990), flexibility and willingness to reconsider (Facione, 1990).

In discussions about critical thinking in higher education, it has been argued that the mere possession of critical thinking skills and dispositions is not enough. Rather, these must come with actions (Davies, 2015). This is where the two remaining approaches to critical thinking come in. The first of these is the skills-plus-dispositions-plus-actions approach (Davies, 2015), which is also referred to as criticality (Burbules & Berk, 1999). Davies and Barnett (2015, p. 16) mention that "the term criticality attempts to inject a perspective that widens critical thinking to incorporate not only argument and judgement and reflection but also the individual's wider identity and participation in the world". Moreover, reflecting on and questioning one's own assumptions are traits of criticality. Regarding this, Burbules and Berk (1999, p. 61) state that "one important aspect of criticality is an ability to reflect on one's own views and assumptions as themselves features of a particular cultural and historical formation". The social dimension of criticality makes it suitable for development through conversations with others. In contrast to the first two approaches, criticality necessitates action by the critical thinker. These actions are driven by a moral and ethical dimension in criticality. As such, it is perceived as something deeper than a skill. Criticality is more of a trait which signifies who we are, and not merely our ability to think critically.

The fourth approach to critical thinking is critical pedagogy, also known as the skills-plus-dispositions-plus-actions-plus-social-relations approach (Davies, 2015). Davies and Barnett (2015, p. 19) define it as "the use of higher education to overcome and unlearn the social conditions that restrict and limit human freedom". Similar to criticality, critical pedagogy understands actions as vital to critical thinking. However, critical pedagogy focuses more on social institutions than individuals' actions driven by critical thinking. Giroux (2011, p. 4) describes critical pedagogy as being grounded in "critique as a mode of analysis that interrogates texts, institutions, social relations, and ideologies as part of the script of official power". Hence, there is a large focus on critiquing for the sake of questioning dominant power structures. Similarly, Burbules and Berk (1999, p. 50) point out the role of education in this:

> It is an effort to work within educational institutions and other media to raise questions about inequalities of power, about the false myths of opportunity and merit for many students, and about the way belief systems become internalized to the point where individuals and groups abandon the very aspiration to question or change their lot in life. (Burbules & Berk, 1999, p. 50)

As such, higher education is important in providing students with political agency. This stands in strong contrast to the cognitive approaches to critical thinking where the main purpose of higher education is to facilitate students' development of such skills in an attempt to strengthen their emancipation. Thus, critical pedagogy aims for a more political understanding of critical thinking.

The approaches mentioned here are not the only aspect in which there are different opinions about critical thinking. One of these concerns critical thinking as a generic skill or a discipline-specific skill. To fully understand what critical thinking entails and how it is developed in higher education, understanding this distinction is necessary. The following section, 3.1.4, is a review of previous research on critical thinking as either a generic or a discipline-specific skill.

3.1.4 Critical thinking as a generic or a discipline-specific skill

As mentioned above, there is disagreement on whether critical thinking skills should be viewed as generic or discipline-specific skills (Moore, 2011). The topic is relevant as the present study seeks to investigate critical thinking in the two sub-disciplines of linguistics and literature. This is conducted through an analysis of assessment tasks and learning outcomes (section 6.1) as well as through an investigation of teachers' perceptions (section 6.2). It is possible that differences, if any, between linguistics and literature can be explained by different views on what critical thinking constitutes in these sub-disciplines; hence the importance of this subject for the present thesis.

In early discussions on this topic, Ennis (1989) and McPeck (1981) stood on opposite sides of this disagreement. While Ennis (1989) argued for a generalist view on critical thinking, McPeck (1981) is considered a specifist in this regard. Davies (2013, p. 530) explains, regarding this division, that "the generalists do not hold that there are no discipline-specific differences in *application* of arguments or in the *language* used to describe academic debates. They hold that the *skill* is generic in nature". The specifists, on the other hand, argue that thinking is always about something and thus thinking skills cannot be generic (McPeck, 1981).

The generalist view on critical thinking has contributed to an increasing number of general critical thinking courses in universities. These are often conducted as stand-alone courses, in line with the belief that critical thinking is a generic skill. While more will be said about the pedagogical implications the different views of critical thinking have contributed to in section 3.1.5, it is

important to understand already at this point that the two different views are based on more than a philosophical disagreement.

Moore (2004, 2011a, 2011b), who has argued for a specifist view of critical thinking, conducted a study based on interviews with academics from three different disciplines: history, philosophy and literary/cultural studies (2011a). While the study found that most academics had reflected upon the definition of critical thinking, differences between the disciplines in how they viewed critical thinking were obvious. The conclusion that Moore (2011a) draws from this study is that the non-transferability of critical thinking from one discipline to another leads to doubts about how generic critical thinking is. However, Moore's (2004, 2011a, 2011b) understanding of critical thinking has not been left uncriticized. Davies (2013), among others, does not agree with Moore's line of reasoning and argues that the different lexical definitions of critical thinking given by the academics in Moore's (2011) study do not automatically lead to theoretical conclusions. The generalists are aware of the different definitions of critical thinking within different disciplines; however, this does not imply that critical thinking is discipline-specific.

A third suggested approach to understanding critical thinking is the infusion approach. In Davies' (2006) critique of Moore's argumentation against critical thinking being seen in a generalist way, the infusion approach is mentioned as an alternative. It is argued that "the former (i.e. the generalist[5]) is important because it outlines the principles of good reasoning simpliciter (what constitutes sound reasoning patterns, invalid references, and so on). The latter (i.e. the specifist[6]) is important because it outlines how the general principles are used and deployed in the service of 'academic tribes'" (Davies, 2006, p. 191). Critical thinking consists of many different types of skills, such as inference, deduction, induction etc., and it is likely that some of these are more subject-independent than others (Johnson, 2010).

The views on critical thinking as either generic or discipline-specific have some important pedagogical implications. The generalist view on critical thinking implies that thinking skills are teachable independently of the discipline and that these skills can be taught as separate courses in higher education (Davies, 2013). Those who view critical thinking as discipline-specific argue for critical thinking being taught together with the subject in question. The question about how to best teach critical thinking, explicitly or implicitly, is discussed in more detail in the following section.

[5] Author's clarification
[6] Author's clarification

3.1.5 Explicit and implicit teaching of critical thinking

The views of critical thinking as either a general or a discipline-specific skill have contributed to questions on how critical thinking should be taught. Based on the distinction mentioned, two main approaches to teaching critical thinking have emerged: explicit and implicit teaching approaches. Moreover, part of the rationale behind the present thesis stems from the vast literature, which indicates an agreement about the importance of critical thinking in higher education, while at the same time there is no agreement on the best approach to teaching critical thinking. El Soufi and See (2019) conducted a systematic review of studies in order to establish the causal impact of explicit critical thinking teaching among English language learners in higher education. The authors describe how "dissent among educators lies in whether critical thinking is a generic set of skills that can transfer across domains and that can be taught independent of subject or whether it is domain-specific (…) and should be taught explicitly" (El Soufi & See, 2019, p. 141).

El Soufi and See's (2019) review included 36 studies and the most common teaching approaches were general teaching of critical thinking, using literary and narrative texts, and assessment techniques. None of these 36 studies were found to be of good or even medium quality according to the quality assessment tool *Sieve* (Gorard, 2014). Due to the insufficient quality of the studies in the review, the authors found it difficult to decide on the most effective teaching approach. However, regarding general instruction in critical thinking, it was described as "potentially promising as it has been examined by a bigger number of studies than other approaches and all the higher quality studies reported positive effects" (El Soufi & See, 2019, p. 145). These instructions were: training students to define arguments, to evaluate reliability of sources, to identify fallacies and assumptions, to use inductive and deductive logic, to synthesize information and to make inferences. While general instruction proved to be the most promising, further research based on more robust research designs is needed to ascertain its effectiveness in teaching critical thinking in EFL courses (El Soufi & See, 2019). Little or no evidence of effectiveness could be ascribed to the other critical thinking teaching approaches investigated in the review, including debates, assessment and feedback, literary and narrative texts, brainstorming, scaffolding, collaborative writing and journal writing.

Due to the lack of high-quality studies within the field, the authors describe this research area as "rather premature" (El Soufi & See, 2019, p. 151). Despite these defects, El Soufi and See make two general recommendations regarding teaching critical thinking in EFL courses. The first of these pertains to the time given to the critical thinking intervention. Because of the complexity of critical

thinking, a minimum of one semester for interventions is recommended. The second suggestion concerns providing adequate training to teachers participating in critical thinking interventions. Teachers need to have both internalized critical thinking skills themselves and be trained in how to teach these skills. While the study mentioned does not, unfortunately, bring clarity to the question of the most effective critical thinking teaching approach in EFL courses, it provides an explanation as to why relatively little is known about this area. General critical thinking instruction is described as the most promising teaching approach, which gives support to a generalist view on critical thinking.

Marin and Halpern (2011) point to the same distinction between teaching critical thinking together with content matter or through explicit instruction. The authors describe how "the utility of the imbedded approach is clear, especially within a particular discipline; however, the transference of critical thinking procedures from one discipline to another, and to everyday situations, is questionable" (Marin & Halpern, 2011, p. 2). Hence, the aim of their study was to compare implicit and explicit methods of critical thinking instruction in a high school program. They sought to examine the effects of each method on students' ability to transfer critical thinking. The students were divided into three groups: one that received explicit critical thinking instruction through a web-based critical thinking workshop, one that received implicit critical thinking instruction in an introduction to psychology workshop, and a third control group. Critical thinking was measured through the Halpern Critical Thinking Assessment (Halpern, 2010). This is an open-ended test aimed at measuring critical thinking based on skills such as "(a) argument recognition and evaluation, (b) problems with confusing correlation and causation, (c) the putative consequences of various practices, (d) problems with vague definitions, (e) strategies for taking tests, (f) problems of inferences from a small sample, (g) identifying unwarranted assumptions and hasty generalizations, (h) identifying instances of regression to the mean, and questions requiring some understanding of probability" (Hatcher, 2013, p. 19). Among the three groups, the students who received explicit critical thinking instruction showed gains on the Halpern Critical Thinking Assessment which were significantly higher compared with the implicit instruction group. Therefore, this study indicates that explicit instruction of critical thinking is more beneficial.

An argument against the direct teaching of critical thinking is in its devaluing of knowledge. Johnson (2010, p. 27) suggests that "appropriate, detailed, subject-specific knowledge renders thinking skills redundant". Hence, knowledge within a discipline, much in line with the specifists' views on critical thinking, is considered enough for students to be able to think critically within that discipline. Siegel (2010, p. 77), in a reply to Johnson (2010), mentions that

"advocates of critical thinking do not in general reject subject matter content knowledge; rather, they see skills and knowledge as working together in the development and exercise of the relevant skills and abilities". The reluctance to understand critical thinking as a general skill could possibly be traced back to traditional ways of teaching critical thinking (Davies, 2007). Davies (2007) describes how the methods used to teach critical thinking have, at least in many Australian universities, now changed to a method in which the students are being taught how to identify and evaluate arguments in discipline-specific contexts.

Moreover, in discussions on previous research into graduate attributes, which include critical thinking, and different understandings of these attributes, it has been suggested that these differences are partially based on discipline knowledge. For example, Green, Hammer and Star (2009, p. 21) explain that "as subject specialists, academic staff often develop an intuitive, if not visceral, grasp of the way graduate attributes might manifest themselves within their own discipline". Each discipline has its own way of conceptualizing and valuing critical thinking, which also spills over into the specifist-generalist discussion. It is likely that critical thinking is not perceived in the same way in, for example, the humanities as in other disciplines. These differences in how academics understand critical thinking will also contribute to different approaches to how they are taught and assessed.

3.1.6 Thinking skills and content knowledge

Related to the discussion of critical thinking as either a generic or a discipline-specific skill is the relationship between content knowledge and critical thinking. In this section, this relationship is discussed. Understanding the relationship between content knowledge and critical thinking is important as it gives a rationale for investigating both LOTS and HOTS in assessment tasks and learning outcomes; see section 6.1. While the development of critical thinking and HOTS is singled out as an important goal in higher education, as discussed in chapter 1, this section suggests that content knowledge and LOTS are not to be neglected. Moreover, the discussion could also be interpreted as a clarification of how HOTS and LOTS relate to each other, as LOTS focuses on the learning of content knowledge.

If critical thinking is a generic skill, then content knowledge is perhaps of less interest. However, if critical thinking is discipline-specific, then content knowledge probably has a greater role. Willingham (2019) discusses three ways in which content knowledge aids critical thinking. The first of these is that content knowledge may be helpful as "complex critical thinking may entail multiple simpler solutions from memory that can be 'snapped together' when

solving complex problems" (Willingham, 2019, p. 9). Thus, being familiar with the task which one is faced with can facilitate the execution of it as it can be solved in several familiar steps based on previous knowledge. Furthermore, Willingham's (2019) second way in which knowledge may aid critical thinking is based on the notion of the working memory. The working memory is where thinking takes place. It is limited in space and can only handle a certain number of items simultaneously. Willingham (2019, p. 10) mentions that with knowledge comes "the ability to clump multiple entities into a single, meaningful unit". Hence, content knowledge can effectively save working memory space, which in turn can be used for the execution of critical thinking. Finally, content knowledge may also facilitate critical thinking by easing the task of using thinking strategies. Students are often trained in certain thinking strategies together with content knowledge, which they may have stored in their memory. Consequently, content knowledge may enhance the deployment of critical thinking strategies.

Moreover, the relationship between content knowledge and higher-order thinking is discussed in detail by the teacher Christodoulou (2014). Christodoulou's (2014) book has been discussed in the UK to quite an extent as it argues that learning facts and content knowledge has been neglected in preference for higher cognitive tasks. The book also makes interesting claims about the relationship between content knowledge and higher-order thinking. For example, Christodoulou (2014, p. 21) mentions that "factual knowledge is not in opposition to creativity, problem-solving and analysis, or indeed meaning and understanding. Factual knowledge is closely related with these important skills. It allows these skills to happen".

Christodoulou (2014) refers to Willingham (2009) to support the arguments she makes in her book. Willingham (2009) clarified his stance on the relationship between content knowledge and critical thinking as follows:

> Data from the last thirty years lead to a conclusion that is not scientifically challengeable: thinking well requires knowing facts, and that's true not just because you need something to think about. The very processes that teachers care about most – critical thinking processes such as reasoning and problem solving – are intimately intertwined with factual knowledge that is stored in long-term memory (not just found in the environment). (Willingham, 2009, pp. 21-22)

This section has briefly discussed and outlined the relationship between content knowledge and critical thinking. The purpose of this discussion was to give support for the development of LOTS as well as HOTS. Even though the

development of critical thinking and HOTS is described as a major goal in higher education, as explained in chapter 1, content knowledge and the learning of facts should not be neglected. Rather, this section provides evidence about human cognition which indicates that LOTS is important for the development of HOTS and critical thinking.

3.1.7 Critical thinking in the present study

It is evident from this section that critical thinking and higher-order thinking are challenging concepts which both teachers and scholars disagree about. They are terms inherently difficult to define; hence, there are no established consensus definitions of them. The present thesis relies on the revised Bloom's Taxonomy (Anderson & Krathwohl, 2001) in defining LOTS and HOTS.

Regarding critical thinking, all four approaches mentioned in section 3.1.3 are present in this thesis, albeit in different ways. Students' critical thinking skills are measured by the CCTST, which is based on the APA Delphi Consensus definition (see section 5.4.2). As such, it takes a skills-and-judgment approach to critical thinking. While criticized for neglecting the social aspects of critical thinking and the action dimension, this approach is valuable in that it provides a foundation for measuring critical thinking skills, as in the CCTST. To the best of my knowledge, there are no or very few tests which measure critical thinking as understood by the skills-plus-disposition-plus-actions approach or in critical pedagogy. It is worth pointing out here that there is a difference between critical thinking as a philosophical idea and in education. The various definitions of critical thinking mentioned in section 3.1.2 aim to explain critical thinking as a philosophical idea, while the approaches to critical thinking discussed in section 3.1.3 are methods or models for approaching the teaching of critical thinking. Moreover, the CCTST is well-used and is the closest thing to a standardized test of critical thinking that exists. Hence, there are several benefits of using the CCTST, such as the possibility of comparing the results of this study with those of other studies.

Furthermore, the analysis of assessment tasks and learning outcomes in this thesis is driven by the skills-and-judgment approach as it is based on the revised Bloom's Taxonomy. This was primarily chosen for practical reasons as the division between thinking skills and between HOTS and LOTS makes it easy to understand and use. The rationale for using the revised Bloom's Taxonomy in the analysis of assessment tasks and learning outcomes also stems partly from its recognition in higher education. Considering its popularity, it is likely that teachers in higher education have been educated in Bloom's Taxonomy and are aware of how these skills can be implemented in assessment tasks and learning outcomes. Thus, it seemed possible that the action verbs

from the revised Bloom's Taxonomy could be detected in learning outcomes and assessment tasks, and that these might have been placed there with the intention of furthering students' thinking skills. Moreover, it was considered important to be able to compare students' levels of critical thinking and the presence of critical thinking in assessment tasks and learning outcomes. Therefore, using the same approach to critical thinking, that is, the skills-and-judgment approach, was necessary. While it is probably possible to analyze assessment tasks and learning outcomes using the other approaches to critical thinking, such an analysis would provide very little explanation of students' critical thinking skills. Moreover, since the assessment of critical thinking in English courses at Swedish universities is a relatively unexplored area, it was considered beneficial to take a more traditional skills-and-judgement approach to this set of skills.

While the questionnaire mainly focused on the skills in the revised Bloom's Taxonomy (Anderson & Krathwohl, 2001), all four approaches to critical thinking were used in the analysis of the interviews with English teachers. The questionnaire revealed relatively little about how teachers understood critical thinking; hence, it was considered important to gain a fuller picture of teachers' perspectives on critical thinking. The purpose of the interviews was partly to investigate how English teachers at Swedish universities understand critical thinking in relation to the courses they teach and how they work to develop students' critical thinking skills. Thus, all approaches to critical thinking were used in the analysis of the interview data.

Table 6 illustrates which definition or understanding of thinking skills the different parts of this research project use. The analysis of assessment tasks and learning outcomes is based on the revised Bloom's Taxonomy. Similarly, the questionnaire focuses on the skills in the revised Bloom's Taxonomy. However, the interviews were intended to gain deeper data on teachers' views and perceptions of thinking skills in English courses; consequently, both the revised Bloom's Taxonomy and the four approaches to critical thinking in education are used in analyzing the data. Finally, the California Critical Thinking Skills Test (CCTST), which aims to test students' critical thinking skills, relies on the APA Delphi Consensus definition. According to the revised Bloom's Taxonomy, higher-order thinking skills consist of the skills Analyze, Evaluate and Create. These overlap with some of the skills in the CCTST, which include the following: analysis, inference, evaluation, induction and deduction. While the relationship between HOTS and critical thinking is previously discussed in section 3.1.3, this comparison of the revised Bloom's Taxonomy and the CCTST further illustrates the closeness of these concepts.

Table 6: Thinking skills in the research project

Research project part	Tool	Skills or views
Assessment tasks and learning outcomes	The revised Bloom's Taxonomy	Remember, Understand, Apply, Analyze, Evaluate and Create
Questionnaire	The revised Bloom's Taxonomy	Remember, Understand, Apply, Analyze, Evaluate and Create
Interviews	The revised Bloom's Taxonomy	Remember, Understand, Apply, Analyze, Evaluate and Create
	The four approaches to critical thinking	Skills-and-judgment, Skills-plus-dispositions, Skills-plus-dispositions-plus-actions and Critical pedagogy
California Critical Thinking Skills Test	The APA Delphi Consensus definition	Analysis, Inference, Evaluation, Induction and Deduction

Furthermore, the literature on critical thinking is divided into generalist and specifist views, which further adds to the complexity of the concept. It is this author's wish for the present thesis to make a contribution, albeit small, to the discussion of critical thinking as either a general skill or a discipline-specific skill. The investigation of this topic is conducted through a comparison of differences in HOTS assessment and learning outcomes and teachers' views on critical thinking in linguistics and literature modules. Hence, the data is approached with an open mind to both approaches to critical thinking.

The investigation of HOTS assessment and learning outcomes referred to above is based on the idea that what is assessed in a course is directed by the learning outcomes in that course. Thus, if teachers design learning outcomes which target HOTS and critical thinking, this should ideally be reflected in assessment tasks. This theoretical framework is often referred to as constructive alignment. In section 3.2, constructive alignment is described in more detail.

3.2 Constructive alignment

In the following section, constructive alignment is discussed. This theory is used to understand the relationship between HOTS assessment tasks and learning outcomes in the present thesis. The theory also provides a rationale for understanding learning outcomes as important in facilitating students' development of critical thinking skills and HOTS. Constructive alignment is "an outcomes-based approach to teaching in which the learning outcomes that students are intended to achieve are defined before teaching takes place" (Biggs, 2014, p. 5). It has been described as "one of the most influential ideas in higher education" (Houghton, 2004, p. 27). Hence, the application of this theory is more or less expected in higher education. Before entering into a deeper discussion of constructive alignment and how it is related to the present thesis, there is a need to understand its theoretical background. Constructive alignment has its roots in the theory of constructivism, which is explained in more detail here.

While the ideas behind constructivism can be traced as far back as to Plato, it was Piaget who came up with the actual term (Loughlin et al., 2021). The theory is based on the idea that human beings construct their knowledge and understanding of the world through active engagement (Säljö, 2015). Thus, according to constructivist theory, teacher-led learning is not the optimal method. Rather, constructivism argues that learning to be student-led or student-focused. Moreover, the goals of learning, according to constructivism, are cognitive development and deep understanding (Twomey Fosnot & Stewart Perry, 2005), which are aspects of learning that are investigated in the present study. The focus on cognitive development stands in contrast to the positivist tradition, where the goal of learning is the learning of facts and an understanding of how the world works. Constructivists do not see learning as something linear; rather, it is understood as a complex and non-linear process. In this process, the learner is an active participant engaging in activities which promote learning and cognitive development.

During the first part of the 19th century, at the same time as the constructivist theory was developed, quality teaching became a topic of discussion (Loughlin et al., 2021). In this process, defining education was considered the first step in quality teaching. This was, however, a vacuum "regularly filled directly, or indirectly, with political ideology, bureaucracy and institutional pragmatism" (Loughlin et al., 2021, p. 121). Based on the theory of constructivism, ideas began to take shape about the importance of engaging students in learning activities that result in the intended learning outcomes. Biggs (2014), who is considered the founder of constructive alignment, saw the importance of aligning learning outcomes, learning activities and assessment

tasks. This alignment was based on constructivist ideas concerning student activities and engagement. Loughlin et al. (2021, p. 122) explain that Biggs "highlights the importance of constructivism in informing instructional design decisions at every stage of the process, and the centrality of learning-activities in the creation of meaning for students".

Biggs and Tang (2011) partially assign the increased popularity of constructive alignment in recent years to the Bologna Process. According to the Bologna Process, learning outcomes at Bachelor's, Master's and Doctoral levels need to be defined by all member countries. Even though there was no specific mention of constructive alignment in the Bologna Process at first, the high focus on learning outcomes is often understood as indicating constructive alignment. Constructive alignment is, however, explicitly mentioned in documents from 2015 and onwards (Loughlin et al., 2021). A total of 48 countries have joined the Bologna Accord and with so many members, it is unavoidable that the implementation of learning outcomes varies. In Sweden, the process of implementing learning outcomes began in 2006 and took about a year (Loughlin et al., 2021). However, it has been suggested that this rapid development of learning outcomes has led to insufficient implementation. Loughlin et al. (2021, p. 123) explain that "without sufficient time to adapt content and assessment practices, the LOs [learning outcomes[7]] produced largely represented the existing learning objectives, and were poorly aligned to the outcomes achieved".

In constructive alignment, a lot of attention is placed on forming assessment tasks which focus on intended learning outcomes. Related to this, the present thesis seeks to investigate assessment tasks and learning outcomes targeting HOTS in English courses at Swedish universities. The backwash effect is described as being important in aligning assessment tasks with learning outcomes. Ultimately, students will learn what they believe the assessment tasks will assess them on (Biggs & Tang, 2011). Hence, forming assessment tasks which focus on the intended learning outcomes as well as on graduate outcomes is essential. Biggs and Tang (2011, p. 198) explain that the backwash effect is often perceived as something negative, which encourages surface learning, but "backwash can work positively by encouraging appropriate learning when the assessment is aligned to what students should be learning". Assessment tasks can, if well-designed and aligned, encourage the development and learning of graduate outcomes such as critical thinking and prevent surface learning among students.

In a study by Leber et al. (2018), the effect of assessment on students' learning strategies and outcomes was investigated. Their study is interesting and

[7] Author's clarification

relevant to the subject of the present study as it highlights how students adapt their learning based on the assessment tasks given, as well as detailing the importance of constructive alignment for students' learning. Before describing the study in more detail, the SOLO taxonomy used as an instrument for categorizing learning goals needs to be explained. This was developed by Biggs and Tang (2007) and includes five levels of complexity:

1. Prestructural: "no available understanding"
2. Unistructural: "acquiring individual pieces of correct and relevant information"
3. Multistructural: "accumulating more information, resulting in a quantitative increase in knowledge".
4. Relational: "relate the individual pieces of information to each other and detect structures and interrelationships".
5. Extended Abstract: "generalize and apply their knowledge to new areas", "learners are able to reflect on critical issues and formulate their own ideas". (Leber et al., 2018, p. 163).

Leber et al.'s study is theoretically influenced by Biggs and Tang's (2007) ideas about constructive alignment and the principle of minimal effort. The authors describe how, according to this principle:

> Students decide at which degree of complexity they can stop learning without sacrificing significant rewards. Thus, in a poorly aligned learning situation in which teaching goals focus on understanding (on the relational and extended abstract level), but the assessment method primarily asks for factual knowledge (uni- and multistructural level), learners are likely to reduce their efforts to attain higher levels of the taxonomy. (Leber et al., 2018, p. 163)

Based on this theory, Leber et al. (2018) sought to compare the backwash effect in an aligned and a misaligned learning setting. Both learning settings had the same goals aimed at understanding, but the assessment differed. In the aligned learning setting, an essay exam requiring deeper understanding was used as assessment, while in the misaligned learning setting, a fact-oriented multiple-choice test aimed at recalling information was used. A total of 81 first-cycle educational science students from a German university participated. These students took a course on learning and cognition which was given two times during the same semester. Testing occurred in the second session of the course. The teacher presented the same teaching goals and a didactic lesson plan to both groups. However, one group was informed that in a week's time they

would be given an essay exam and the other group was informed about the multiple-choice test. After five weeks, both groups were given the same final learning outcomes test with four questions from the session. Two of these questions concerned declarative knowledge on the uni- and multistructural levels and two included procedural and transfer knowledge found on the relational and the extended abstract levels on SOLO. Moreover, students' learning strategies were investigated through written qualitative questions and categorized from less to more complex, and into rehearsal, organization and elaboration strategies.

The study by Leber et al. (2018) found that there was a statistically significant difference between the two groups in the use of learning strategies. Students participating in the alignment course used more elaboration strategies than the other group. Regarding this, the authors describe how "this was in line with our expectation that preparing for the essay exam would lead to a more frequent use of learning strategies fostering deeper understanding" (Leber et al., 2018, pp. 171-172). Moreover, the study also found a statistically significant overall effect pertaining to students' performance on the final learning outcomes test. Students in the alignment group performed higher in the field of functioning knowledge, but the groups had similar results for declarative knowledge. To conclude, the study by Leber et al. (2018) indicates that students adapt learning strategies based on the expected assessment and that learning environments with an alignment between intended learning outcomes and assessment tasks are beneficial for students' development of deeper understanding. Hence, there appear to be positive effects for students' learning from constructively aligning learning outcomes and assessment tasks. Based on the study by Leber at al. (2018), the alignment between assessment tasks and learning outcomes seems important for students' learning, which is a topic the present study seeks to investigate in English courses at Swedish universities.

Learning outcomes are primarily found in course syllabi and these often include a verb. The verb in the intended learning outcomes works as a link between teaching activities and assessment tasks in a course (Biggs, 2014). However, learning outcomes differ in the level of verbs. In the present thesis, the revised Bloom's Taxonomy, which is discussed in section 3.1.1, is used to analyze and understand learning outcomes and assessment tasks. Biggs (2014, p. 9) explains that the level of the learning outcomes affects the type of assessment tasks given to students, and that the "higher order ILOs [intended learning outcomes[8]] require open ended tasks, allowing for unintended outcomes". Therefore, considerations should be made regarding the type of assessment task given to students in order to achieve the learning of higher-

[8] Author's clarification

order thinking skills. Alignment, as such, occurs between learning outcomes and assessment tasks and, if successfully designed, these assessment tasks will facilitate students' learning.

While the theory of constructive alignment is both well-established and well-used in universities today, its implementation does not come without challenges. Biggs (2014) points out finances and academic staff workload as being among the main challenges. Academics often already have a heavy workload. Some estimate this at 50 hours per week, not including research activities (Biggs, 2014). Hence, finding time for the development of quality teaching is difficult. The type of teaching called for by constructive alignment gives precedence to feedback and quality based summative assessment. Both of these demand time. Thus, ensuring that academic staff are not overburdened with work may facilitate the implementation of constructive alignment in university courses.

Another challenge pointed out by Biggs (2014) is a resistance to change among some teachers. Imposing a certain teaching approach or theory, in this case constructive alignment, can make teachers feel that they do not own their teaching anymore. Teaching at university level has traditionally been teacher-centered, often with teacher-led seminars or lectures. As mentioned above, constructive alignment is based on the ideas of constructivism, which promotes learner-centered activities. Biggs (2014, p. 15) mentions that the change from teacher-centered to learner-centered teaching "comes about from exposure to different views of teaching and more importantly from teachers finding out for themselves that the student-centered approach is more effective, particularly for higher order learning".

Moreover, another complaint raised against constructive alignment is "that the precision of intended LOs proscribes creativity and unanticipated LOs" (Loughlin et al., 2021, p. 129). Critics claim that the high focus on intended learning outcomes contributes to a lack of creativity among both teachers and learners. Furthermore, the current use of learning outcomes is criticized for not fulfilling its purpose (Hussey & Smith, 2003). It is claimed that learning outcomes are often followed too rigidly, which contradicts efficient learning. Hussey and Smith (2003, p. 359) mention that "the current concern with pre-specification is based on a simplistic and, therefore, inadequate conceptualization of curriculum and a view of development that is framed in predominantly unilinear and cognitive terms". Consequently, Hussey and Smith (2003) argue for a more flexible use of learning outcomes, as some of these are not intended but emergent. These emergent learning outcomes arise in learning situations that are less controlled. Thus, the acknowledgement of such emergent learning outcomes is to a large degree dependent upon teachers' willingness, experience and expertise.

Moreover, experience is important as it is assumed that an experienced teacher is able to predict learning situations and hence to avoid or facilitate them. Hussey and Smith (2003) identify the closeness between intended learning outcomes and emergent learning outcomes as a predictor of the latter. They explain that "it is reasonable to assume that the closer emergent outcomes are to what was intended, the greater the probability of identifying them in advance and the less of a dilemma they pose in terms of decision-making for the teacher" (Hussey & Smith, 2003, p. 364). Moreover, the criticism of learning outcomes as they are commonly used is that teachers are expected to set up a number of specific, transparent and measurable learning outcomes. These learning outcomes are described as irrelevant and unachievable (Hussey & Smith, 2003). Suggestions have been made about forming learning outcomes which are broader and more flexible.

The criticism of learning outcomes is valid and should be taken into consideration in forming course syllabi and teaching activities. This is also acknowledged among proponents of constructive alignment. As mentioned above, Biggs (2014) recognizes the need for assessment tasks which allow for unintended outcomes. This could be interpreted as indicating that constructive alignment does not call for the end of creativity. Rather, Biggs (2014, p. 9) explicitly mentions that "higher order ILOs [intended learning outcomes[9]] require open ended tasks, allowing for unintended outcomes". Moreover, the correct use of learning outcomes is based on the notion that teachers are given academic freedom in formulating and interpreting such outcomes (Erikson & Erikson, 2018). Erikson and Erikson (2018, p. 2300) describe how "the teachers must also willingly assume the academic responsibility inherent in this freedom and engage in collegial discussions about the meaning of learning outcomes and issues such as critical thinking". It seems that without both freedom and responsibility, the use of learning outcomes does not fill the purpose for which they are intended.

This section has discussed the theory of constructive alignment and how it is related to learning outcomes in higher education. In the present thesis, constructive alignment as a theory is used in the discussion of the analysis of HOTS assessment tasks and learning outcomes. Furthermore, the purpose of investigating HOTS assessment and learning outcomes in English courses is to find out whether and how these courses provide opportunities for the development of students' HOTS and critical thinking.

[9] Author's clarification

3.3 Summary

Section 3 has introduced and discussed the theoretical framework of this thesis. This framework consists of two parts: thinking skills (section 3.1) and constructive alignment (section 3.2). The different theories reflect the interdisciplinary nature of this research topic. The research field of L2 learning and teaching is rooted in both linguistics and education. Furthermore, this particular thesis investigates thinking skills in EFL learning and teaching. Thus, the theoretical framework covers several different aspects, all of which are relevant to the thesis. Thinking skills as a theory is used to understand these concepts in order to analyze assessment tasks, learning outcomes, teachers' views and experiences with HOTS and critical thinking and students' development of critical thinking skills. Moreover, constructive alignment serves as a theoretical framework for the investigation of HOTS assessment tasks and learning outcomes in intermediate English courses. Before describing the actual study in more detail, section 4 offers a review and discussion of previous research relevant to the present thesis.

Chapter 4: Previous research

The aim of this section is to present and discuss previous research which is relevant to the present study. The literature discussed here concerns two main themes: HOTS and critical thinking in higher education (section 4.1) and HOTS and critical thinking in English and EFL courses (section 4.2).

4.1 HOTS and critical thinking in higher education

The following section includes a review and discussion of research on HOTS and critical thinking in higher education. A special focus is placed on possibilities of developing HOTS and critical thinking through assessment, and the teachers' role in developing these tasks. Section 4.1.1 presents research about the development of critical thinking in higher education. Section 4.1.2 discusses critical thinking and HOTS as intended learning outcomes. This is followed in section 4.1.3 by a review of research on the assessment of HOTS and critical thinking in higher education. Finally, section 4.1.4 summarizes the entire section 4.1.

4.1.1 The development of critical thinking in higher education

The ability to think critically is imperative in an increasingly complex world. Skills such as analysis and evaluation are needed to handle the large amount of information we are dealing with on a daily basis. Likewise, many jobs today demand their employees master these skills, as well as creativity. Many point to the role of higher education in developing students' critical thinking skills (Arum & Roksa, 2011; Ghanizadeh, 2016; Glen, 1995). Related to this, Arum and Roksa (2011, p. 35) mention that "teaching students to think critically and communicate effectively are espoused as the principal goals of higher education". On the same topic, Glen (1995, p. 170) states that there is "almost universal agreement that one of the defining characteristics of higher education is that any programme of studies worthy of the name of higher education should offer the student significant opportunities to develop her critical abilities". Besides the obvious academic benefits that come with being a critical thinker, employability has frequently been mentioned as being among the advantages of teaching and learning critical thinking in higher education (Lorencová et al., 2019).

Due to the importance of critical thinking in higher education, this topic has been investigated in previous studies. For example, Arum and Roksa (2011) carried out a longitudinal study aimed at measuring college students' learning, coursework, social background and experiences of campus life. Relevant to our discussion on critical thinking in higher education is that students' critical thinking was assessed through the Collegiate Learning Assessment (CLA) (Klein et al., 2007), which is an open-ended standardized test aimed at examining the contribution of higher education to students' learning at the beginning of their first year of college and at the end of their second year. The study included 2,322 students from various colleges in the US. Over two years of college studies, the students had, on average, improved their critical thinking skills by 0.18 standard deviations. Similar studies demonstrate that the improvement during the 1990s was 0.50, and 1.0 during the 1980s (Arum & Roksa, 2011). Hence, Arum and Roksa's more recent study showed smaller gains in critical thinking. Additionally, 45 percent of the students in Arum and Roksa's (2011) study showed no statistically significant improvements in critical thinking. The same study reported a slightly higher improvement in critical thinking over four years, with gains of 0.47 standard deviations. Still, this was deemed insufficient. The conclusion drawn from the study mentioned is that the students did not develop high levels of critical thinking during their college years. The authors conclude that academics' "commitment to these skills appears more a matter of principle than practice" (Arum & Roksa, 2011, p. 35).

Inspired by Arum and Roksa's (2011) study, Huber and Kuncel (2016) sought to further investigate students' development of critical thinking in higher education. In this meta-analytic study of average gains of critical thinking in higher education, Huber and Kuncel (2016) used four moderator variables: time frame, study design, sample and year of publication. The overall effect of higher education on critical thinking was estimated in Huber and Kuncel's (2016) study to 0.59 standard deviations, which is higher than the results in Arum and Roksa's (2011) study. However, the study by Huber and Kuncel's (2016, p. 454) also confirms Arum and Roksa's (2011) results in that "more recent studies provided significantly smaller effect sizes than older studies".

While the results of Arum and Roksa's (2011) study are far from optimistic regarding students' development of critical thinking skills in higher education, possible reasons for the decreasing focus on critical thinking should also be taken into consideration. Although more research is needed to establish these underlying reasons, Huber and Kuncel (2016) mention the possibility of an underlying, missing variable that changes over time. Publication year could then act as a "proxy" for this missing variable (Huber & Kuncel, 2016, p. 456). Consequently, it is possible that there is an explanation for results revealing

smaller improvements in critical thinking; however, this has not yet been established. Students' improved critical thinking skills are mentioned as another possible reason for the smaller increase in students' development of critical thinking skills. High existing levels of critical thinking will naturally lead to reduced scores in overall gain. As pointed out by Huber and Kuncel (2016), these are only speculations which need to be further investigated.

Moreover, students' development of critical thinking in higher education was investigated in a recent OECD report (Van Damme & Zahner, 2022). In contrast with other studies on critical thinking in higher education, Van Damme and Zahner's (2020) report includes students from more than one country. A total of 120,915 students from Chile (2,955), Finland (2,300), Italy (6,589), Mexico (8,590), UK (2241) and the US (98,240) participated in the study. These students came from different disciplines, such as the humanities or arts, social sciences, business, sciences and engineering, agriculture and health and welfare. Similar to Arum and Roksa's (2011) study, the study used a version of the CLA (Collegiate Learning Assessment) (Klein et al., 2007). The CLA+ used in Van Damme and Zahner's (2020) study includes both a performance task, similar to the CLA, and a set of multiple-choice questions. The CLA+ was translated and adapted for use in the different countries. Between the years 2015-2020, entering students and exiting students' critical thinking skills were measured through the CLA+. Scores were divided into five levels of mastery: emerging, developing, proficient, accomplished and advanced. The results of this study show that entering students on average performed at the developing level and exiting students performed at the proficient level. Hence, there was a small, but significant, difference. There was, however, quite a large distribution within the student group. A total of 21 percent performed at the lowest level, emerging, while 15 percent performed at two of the highest levels, accomplished and advanced. The authors conclude that while it was promising to see that the students developed critical thinking, the development was small and the distribution considerable, taking into consideration the importance placed on critical thinking in higher education. Based on this, the authors suggest that higher education institutions need to upscale their efforts. While this study is interesting in that it investigates students' development of critical thinking in six countries, a note of caution is in order regarding the population. Of the 120,915 students taking part in the study, 98,240 students came from the US. Thus, it is quite difficult to claim that the results are entirely representative. This is also a fact that the authors discuss in the study.

The studies presented here raise questions about whether and how critical thinking is taught in higher education. One of the aims of the present thesis is to investigate this topic in English courses at Swedish universities through an

analysis of assessment tasks and learning outcomes. The following section, 4.1.2, surveys previous research on critical thinking and HOTS as intended learning outcomes in higher education in general.

4.1.2 HOTS and critical thinking in learning outcomes

This section will review previous research on HOTS and critical thinking in learning outcomes. Being a general goal in higher education, as established in chapter 1, critical thinking skills are frequently mentioned in course syllabi. A presupposition behind the present study is that one of the goals of English courses is students' development of critical thinking and HOTS. In accordance with the theory of constructive alignment described in section 3.2, intended learning outcomes set the standard for what teachers teach and what students ultimately learn.

Learning outcomes are constructed with an action verb indicating the level of thinking or engagement intended. This verb stands in relation to the subject matter (Erikson & Erikson, 2018). Early in students' education, the action verbs often focus on lower-order thinking skills such as describe or explain, and will progress to higher-order thinking skills such as analyze and evaluate. These learning outcomes should be constructively aligned with learning activities and assessment tasks. While many learning outcomes concern the ability to think critically, such as the ability to analyze and evaluate, critical thinking is inherently difficult to capture and not all skills can be explicitly mentioned in learning outcomes. Erikson and Erikson (2018) identify two concerns related to this: what cannot be expressed as learning outcomes and what cannot be assessed. It seems reasonable to assume that critical thinking, taking its complex nature into consideration, cannot always be assessed or expressed in form of learning outcomes. In a study by Schoepp (2017), the non-measurability of learning outcomes was detected as the main problem with these. Many learning outcomes contain verbs considered non-operational or abstract, such as "appreciate, understand, develop, recognize, consider, reflect, review, observe, and realize" (Schoepp, 2017, p. 624). The un-measurability of these verbs contributes to difficulties for teachers in using the learning outcomes.

Furthermore, another concern with critical thinking in learning outcomes is how these should be interpreted (Erikson & Erikson, 2018). Critical thinking can be expressed in different ways in learning outcomes, which places the burden of interpretation on the teacher. Erikson and Erikson (2018, p. 2298) describe how "critical thinking can be expressed very differently in learning outcomes, from explicit references to the ability to 'criticize', to the more elusive descriptions of 'analysing' or even 'understanding'". These learning

outcomes, even those that mention critical thinking skills most explicitly, will not facilitate students' development of critical thinking if teachers do not interpret them correctly and form learning activities accordingly. Related to this is teachers' individual interpretation of words such as *analysis*, *critically* or *criticize*. One teacher's understanding of critical thinking is not necessarily the same as another's.

It is possible that the implementation of critical thinking in learning outcomes is also affected by discipline-specific understandings of it. As discussed above, some understand critical thinking as specific to each discipline (Moore, 2011a). Therefore, where and how critical thinking is to be incorporated in a degree program needs to be considered. Biggs and Tang (2011, p. 117) describe how a "simple solution is to see that programme committees and course teachers check that where possible and appropriate the intended learning outcomes address the listed graduate outcomes, but grounded in the content and context of the degree programme". As a degree program consists of several courses, it is not always possible for each course to include all graduate outcomes. Rather, these graduate outcomes should be placed where they fit best with the content.

Few studies have investigated the actual presence of critical thinking and HOTS in learning outcomes in higher education. One of these, however, is Schoepp's (2017) study mentioned above. Through a content analysis of syllabi from ten of the world's top teaching universities, it showed that only 27 percent of the learning outcomes investigated had verbs indicating the highest two levels in Bloom's Taxonomy. According to this study, the most common thinking skill in learning outcomes was Application, followed by Comprehension, Evaluation, Analysis, Synthesis and Knowledge. Of the 70 learning outcomes investigated, 31 (44%) targeted the three highest levels of Bloom's Taxonomy. Learning outcomes focusing on critical thinking were also investigated by Cananau (2021). Cananau's (2021) study is highly relevant to the present study as it investigates critical thinking in learning outcomes in English literature courses at Swedish universities. The study is described in more detail in section 4.2.3. However, relevant to the discussion here is the fact that among the 54 first-cycle English literature course syllabi investigated, learning outcomes focusing on critical thinking skills were found in all syllabi.

Based on the theoretical assumptions of constructive alignment described in section 3.2, the content of learning outcomes should be reflected in assessment tasks. Previous research on the assessment of critical thinking and HOTS is presented in the following section.

4.1.3 HOTS and critical thinking in assessment tasks

In accordance with the theory of constructive alignment and with a consideration of the importance of critical thinking in higher education, the development of these skills should ideally be integrated in assessment tasks. Moreover, assessment tasks are mentioned as "a crucial site for graduate attribute development" (Treleaven & Voola, 2008, p. 163). In this section, the term *graduate attributes* is frequently used. Bowden et al. (2000, p. 3) define graduate attributes as "the qualities, skills and understandings a university community agrees its students would desirably develop during their time at the institution, and consequently, shape the contribution they are able to make to their profession and as a citizen". Critical thinking is included in this term, but also skills such as team work, communication skills, leadership, professionalism, ethical competency, etc. Assessment tasks are often used to develop graduate attributes such as critical thinking and HOTS.

Before reviewing previous research about assessment for the development of critical thinking and HOTS, it is important to understand the role of assessment in learning. As far back as the 1970s it has been known that assessment has a crucial role in student learning. Two studies by Snyder (1971) and Miller and Parlett (1974), both conducted in the 1970s, found that assessment was the most influential factor in student learning. Gibbs and Simpson (2005, p. 4) explain that in these two studies "students describe all aspects of their study – what they attended to, how much work they did and how they went about their studying – as being completely dominated by the way they perceived the demands of the assessment system". Moreover, the importance of assessment for learning is widely acknowledge and confirmed in other more recent, studies (Black et al., 2004; Boud & Falchikov, 2007; Wiliam, 2011).

The significance of assessing critical thinking is further highlighted in a study by Jorre de St Jorre and Oliver (2017). To gain understanding of students' perceptions and understanding of graduate attributes, such as critical thinking, a semi-structured group interview study was carried out with 45 students from Australian universities (Jorre de St Jorre & Oliver, 2017). Participants came from different disciplines and both first-cycle and second-cycle students were included. Among the main themes that appeared in this study was that students seemed to focus on the learning outcomes which were contextualized and assessed in the course. Moreover, students expressed that general graduate attributes were "too generic to be meaningful" (Jorre de St Jorre & Oliver, 2017, p. 49). However, students also mentioned that the assessment of graduate attributes contributed to both greater confidence in and understanding of these. From the study, it was not evident which assessment format was the

most beneficial in this regard. The authors conclude that "regardless of the assessment format, design and delivery should aim to facilitate student understanding and interest in achievement of the assessment outcome" (Jorre de St Jorre & Oliver, 2017, p. 52). Hence, the format seems not to be the highest priority and it is likely that different formats suit different disciplines and graduate attributes.

Moreover, regarding the assessment of graduate attributes, Green et al. (2009, p. 22) describe how "appropriately designed assessment that is self-directed, reflective and authentic is the cornerstone of graduate skill development". On the other hand, assessment which is teacher-centered and focused on content is perceived as less suitable for students' development of these skills. In relation to this, Green et al. (2009) explain that there is a strong emphasis on these latter types of assessment tasks in higher education. According to the authors, the lack of suitable assessment for graduate attribute development calls for a shift from an exclusive focus on content to a focus on content together with process. This, however, is not an easy shift to make. Green et al. (2009) suggest Bloom's Taxonomy (Bloom, 1956) as a foundation for assessing both content knowledge and processes. The taxonomy, described in more detail in section 3.1.1, is seen as suitable as it describes learning outcomes related to thinking skills in a hierarchical manner, which can be helpful in planning for the development of graduate attributes within a program.

Furthermore, the actual effect of assessment tasks on students' HOTS and critical thinking development is investigated in prior studies. For example, in a study by Jensen et al. (2014), two sections of an introductory biology course were given exam items on different cognitive levels based on Bloom's Taxonomy. The participants studied at a university in the US. One section was given items that target the lowest level of Bloom's Taxonomy and the other section was given items which tap into HOTS throughout the entire semester. Students given HOTS items scored higher on both HOTS and LOTS items on the final exam compared with the group given only LOTS items. Even though the study mentioned does not claim to prove that training in HOTS items leads to the development of such skills, the results indicate the benefits of HOTS assessment tasks in preparing students for higher cognitive activities.

Additionally, the relationship between assessment items and critical thinking is more directly investigated by Barnett and Francis (2012). In this study, three sections of students from an educational psychology course in a university in the US were assigned to three groups given different assessment tasks: (a) MCQs that measure factual knowledge, (b) quizzes with essay questions that require critical thinking, and (c) quizzes with essay questions that require factual

knowledge. Students' critical thinking skills were measured with the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980), which is a multiple-choice item test containing five sections: assumptions, analyzing arguments, deductions, inferences and interpreting information. Barnett and Francis (2012) discovered that students in all three groups significantly improved their critical thinking skills; however, no differences between the groups were detected. Critical thinking is extremely complex and, as discussed by Barnett and Frances (2012), many factors are active in students' development of these skills, which could explain the results. Another possible explanation mentioned by the authors lies in the test method. The Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980) is a general test of critical thinking. Thus, it is possible that the critical thinking skills students have developed in the educational psychology courses do not transfer to this general test of critical thinking.

As alluded to above, the assessment of graduate attributes, such as critical thinking, is described as inherently difficult. This seems to a large extent to be a consequence of the complex nature of these skills. In a discussion of graduate attributes, Knight and Page (2007) mention several reasons why these may be difficult to assess. Among these are that "the competences themselves are a mix of dispositions, understandings, attributes and practices" and that "they are typically non-determinate, in the sense that it is seldom possible to specify fully what it would mean to be competent in, say, emotional intelligence" (Knight & Page, 2007, pp. 11-12). Several of these reasons relate well to how critical thinking and higher-order thinking skills are understood and described in previous research. As discussed in section 3.1, both critical thinking and HOTS contain a mix of attributes and skills. According to some, critical thinking also implies certain dispositions. Hence, neither critical thinking nor HOTS can be defined as a single skill or attribute. Moreover, Knight and Page (2007) describe these attributes as nondeterminate, which reflects the difficulties in defining HOTS and specifically critical thinking. The many definitions of and approaches to critical thinking testify to the non-determinable nature of it. Similarly, Green, Hammer and Star (2009) point to the theoretical confusion over what graduate attributes entail as a factor that prevents the teaching and assessment of these skills. Being such complex skills and attributes, it is not surprising that these take time to develop. It is well-known that HOTS and critical thinking develop over time and cannot be internalized or learned quickly. Critical thinking and HOTS are also context, criteria and condition-dependent, meaning that they do not occur and cannot be used in a vacuum. This leads to difficulties in assessing them. Consequently, assessment tasks need to be designed to take the complex nature of critical thinking and HOTS into consideration.

In addition to the discussion of difficulties in assessing graduate attributes, Knight and Page (2007) identify two main approaches to the assessment of these: (1) they must be assessed, and (2) these attributes should not be part of the assessment system. Both approaches have advantages as well as disadvantages; however, if critical thinking skills are mentioned in course syllabi and in policy documents for higher education, it seems inevitable that they must be included in assessment. Among the disadvantages of avoiding assessing graduate attributes mentioned by Knight and Page (2007) is that this avoidance will lead to students not considering these attributes important. This resonates well with the discussion in section 3.2 about students developing skills and focusing on areas which they believe they will be assessed on. Hence, from a student learning perspective, assessing graduate attributes seems important.

Moreover, factors influencing the assessment of graduate attributes in higher education are further discussed by Hughes and Barrie (2010). These are conceptualization, stakeholders, implementation, curriculum approach, staff development, quality assurance and students' role. Starting with conceptualization, the authors identify several different understandings of graduate attributes, which in turn lead to different assessment choices and ideas. Stakeholders influence assessment in that they have different roles and approaches towards assessment based on those roles. The influence of different stakeholders will also vary between universities, institutions and programs. The third influencing factor is the implementation strategies used. These should ideally include opportunities "to critique and questioning of the underlying assumptions about the nature of *what* is being assessed" (Hughes & Barrie, 2010, p. 330). Another influencing factor is the curriculum approach, which will affect what options are available for assessment. Depending on how a course or program is set up, there are different assessment alternatives which will suit. Assessment choices should ideally take the incremental nature of graduate attributes into consideration. Regarding this, the authors mention that:

> As much as graduate attribute progress is unlikely to be assessable within the time spans of courses (and even less so in shorter 'modules'), assessors need an openness to alternative and authentic forms of assessment such as capstone tasks that extend beyond and across traditional course boundaries. (Hugh & Barrie, 2010, p. 330)

Taking a collective approach towards the assessment of graduate attributes within a program seems to be advantageous.

While many vital factors in implementing assessment for critical thinking and HOTS have been discussed so far, perhaps the most important of these is the teacher. This was also touched upon by Hughes and Barrie (2010). Realizing the importance of the teacher perspective, de la Harpe and David (2012) conducted a study on this topic. In their study, 1,065 academics working at 16 Australian universities completed an online survey focusing on perceptions of and familiarity with graduate attributes, willingness and confidence to teach and assess graduate attributes and approaches and obstacles. It was found that the majority of the participants believed that graduate attributes are important and should be included in the curriculum. De la Harpe and David (2012) identify graduate attributes as written communication, oral communication, problem solving, critical thinking, teamwork, independent learning, ethical practice, information literacy and information communication technology. Of these, critical thinking is the attribute that academics indicate as having the highest level of importance, emphasis and willingness in assessment, and the second highest in confidence after written communication. However, there were lower degrees of willingness and confidence than expected. The authors describe this relationship as indicating that "academics may hold an 'idealized' belief or conception about the importance of graduate attributes, but that this belief may not always be 'realized' and translated into a 'working' conception or desired behavior" (de la Harpe & David, 2012, p. 498). Thus, the study seems to align with previous research which indicates that while considered important, critical thinking is not given its due place in higher education.

In the same study by de la Harpe and David (2012), a regression analysis showed that familiarity, confidence to teach and willingness to teach among teachers were significant predictors of emphasis in assessing critical thinking. Moreover, gender, teaching qualifications, teaching experience, industry experience, employment level, employment load, employment status and beliefs about graduate attributes in the curriculum proved to predict emphasis on critical thinking. Willingness and confidence are described as important for assessing all graduate attributes. The authors explain that "it appears that the more willing and confident academic staff are, the more likely they are to emphasize the teaching and assessment of all graduate attributes" (de la Harpe & David, 2012, p. 501). However, beliefs in graduate attributes did not prove to be a strong predictor. According to de la Harpe and David (2012), their study shows the importance of focusing on willingness and confidence if we want academics to assess graduate attributes. At the same time, caution should be taken to not over-emphasize the importance of teachers' beliefs. What teachers believe about graduate attributes does not always align with the emphasis they place on assessing these attributes, including critical thinking.

Assessment is described as perhaps the most influential factor in student learning and there is little doubt about its importance. There is, however, no clear evidence on what assessment format best suits the development of critical thinking and HOTS. Literature within the field indicates a general preference for student-oriented assessment tasks (Green et al., 2009). While previous studies (Barnett & Francis, 2012; Jensen et al., 2014) indicate that assessment tasks may facilitate students' development of thinking skills, these are not entirely convincing, as discussed above. These results could perhaps be assigned to the fact that HOTS and critical thinking are inherently difficult to assess, as discussed by Knight and Page (2007). The general conclusions which can be made based on the research presented in this section are that there is a need for further research on the benefits of assessing thinking skills and on what assessment formats facilitate this development. The present study seeks to partially investigate the assessment of HOTS and critical thinking. It is hoped that this study will provide further understanding of the role of assessment tasks in developing students' HOTS and critical thinking.

Moreover, it is evident that the teacher has an important role in forming assessment tasks which target HOTS and critical thinking. De la Harpe and David's (2012) study showed that teachers believe that critical thinking is important and that they have a strong willingness to assess this skill. Willingness and confidence were mentioned as important predictors for emphasizing critical thinking in assessment tasks. The present study seeks to further investigate teachers' experiences of and views on the assessment of HOTS and critical thinking, such as willingness and confidence. To the knowledge of this author, there exists little or no research in this field in the Swedish context. This is a gap which the present study seeks to fill.

4.1.4 Summary

This section has reviewed and discussed previous research about HOTS and critical thinking in higher education. Previous studies suggest a relatively low focus on critical thinking in higher education, contributing to insufficient development of these skills (Arum & Roksa, 2011). At the same time, previous studies and policy documents from higher education indicate the importance of HOTS and critical thinking. Hence, these skills should be part of teaching activities and assessment tasks. Learning outcomes focusing on HOTS and critical thinking were discussed in this section. The theory of constructive alignment, described in section 3.2, clarifies the benefits of aligning intended learning outcomes with assessment tasks. Therefore, assessment is a suggested way forward for developing students' critical thinking and HOTS skills.

Moreover, this section has reviewed previous research on the assessment of graduate skills, which includes critical thinking. Based on these studies, we may conclude that students benefit from the assessment of these skills. However, the assessment of graduate skills is not entirely easy. The inherent complexity of skills such as critical thinking, combined with teachers' beliefs, perceptions and confidence, as well as external factors such quality assurance, curriculum approach and professional development, will influence the assessment of these skills.

To the best of my knowledge, few previous studies investigate the assessment of critical thinking and higher-order thinking skills in English courses. Moreover, this review reveals that little is known about HOTS and critical thinking assessment in Swedish higher education in general, as the majority of the above-mentioned studies come from other countries than Sweden. This is a gap which the present study partially aims to fill.

This section has so far mainly concerned research on critical thinking and HOTS in higher education. As the present thesis investigates thinking skills in English courses, there is a need to discuss previous research on critical thinking and HOTS in English and EFL courses.

4.2 HOTS and critical thinking in English and EFL courses

This section discusses past and current research on HOTS and critical thinking in English and EFL courses. Section 4.2.1 gives a short historical overview of critical thinking in EFL teaching and learning. The following section (4.2.2) reviews previous research on critical thinking, HOTS and L2 learning. The focus of this section is to discuss the relationship between thinking skills and L2 learning. Section 4.2.3 surveys previous research on teaching critical thinking and HOTS in EFL and English courses. Finally, section 4.2.4 provides a summary of section 4.2.

4.2.1 A historical overview

Atkinson's (1997) seminal article on critical thinking in the EFL classroom became the starting point of the debate on developing thinking skills in L2 education. Before that, very little attention was given to critical thinking in L2 learning and teaching. The article by Atkinson (1997) discusses critical thinking pedagogies in TESOL (Teaching English to Speakers of Other Languages) classrooms and the author offers a number of reasons for re-thinking this practice. The majority of these reasons rest upon the claim that critical thinking

is cultural thinking. According to this view, critical thinking is tacit knowledge possessed by the people of certain cultures where it is valued. Being a social practice makes it difficult to define, according to Atkinson (1997). Moreover, Atkinson (1997) portrays critical thinking as a concept inherently dependent upon the existence of individualistic norms. Cultures outside the Western norm often value ideas opposite to those of individualism. Thus, language in these cultures is not used as a means of self-expression, which is described as an important means of developing and communicating critical thinking. Moreover, Atkinson (1997) questions whether critical thinking can be taught, based on previous studies that indicate a failure to generalize and transfer these skills to other areas of life. He reasons that the fact that critical thinking has been proven to be difficult to transfer and generalize sheds doubt on whether it is possible to teach (Atkinson, 1997).

Atkinson's (1997) views on implementing critical thinking in the EFL classroom have not been left unanswered. Davidson (1998) issued a reply to the article and addressed several of the claims made by Atkinson (1997). Davidson (1998, p. 121) mentions that Atkinson (1997) portrays critical thinking as "a Western, masculine, individualistic, adversarial, and coldly rational approach to life". Supported by previous research, Davidson (1998) views critical thinking as a construct that can be taught and practiced in societies with cultural norms different from those of the Western world. Moreover, EFL students living in societies that value traits such as submission and conformity will benefit from being taught critical thinking. The EFL instructor's job is not merely to teach their students the target language, but also to teach them how to converse with native speakers. This includes training the students in critical thinking skills. Moreover, the definition issue brought up by Atkinson (1997) can easily be dealt with if existing definitions are compared. Such a comparison will demonstrate that while there exist several different definitions of the term, these overlap in meaning. Furthermore, Davidson (1998) argues that the fact that teachers, or people in general, find it difficult to define critical thinking does not mean that it cannot be defined, but that more efforts have to be put into defining the concept.

The discussion between Atkinson (1997) and Davidson (1998) is relevant to the present study as it laid the foundations for further research within the field. Atkinson (1997) and Davidson (1998) mainly discuss critical thinking in EFL courses in non-Western countries. Probably as a result of this, the majority of studies on thinking skills in L2 learning are conducted in non-Western countries. To this author's knowledge, there are few studies which investigate critical thinking and HOTS in English courses in the Swedish context. While it is acknowledged that cultural differences as portrayed by Atkinson (1997) and

Davidson (1998) make the study of critical thinking interesting in non-Western cultures, it is also a topic worthy of investigation in a Swedish context.

4.2.2 The relationship between HOTS and critical thinking and L2 learning

This section seeks to review and discuss previous research on how critical thinking and HOTS are related to L2 learning. Since the 1990s a number of studies have been carried out investigating the possibility of teaching thinking skills in EFL learning (e.g. Enayat et al., 2015; Hashemi & Ghanizadeh, 2012; Mehta & Al-Mahrooqi, 2014). As mentioned above, the vast majority of these studies have been conducted in Asian countries. While the present thesis concerns critical thinking in EFL courses in Sweden, which is a Western country, some important conclusions which add to our understanding of the subject can be drawn from research on critical thinking in non-Western countries. Hence, these studies are also part of this discussion.

Among the studies indicating a relationship between critical thinking and L2 proficiency is one by Rashid and Hashim (2008). In this study, 280 Malaysian second year undergraduate students' critical thinking was investigated in relation to their English language proficiency. Critical thinking was measured through the Cornell Critical Thinking Test, Level X (Ennis et al., 1985), which was translated into Bahasa Malaysia. The Cornell Critical Thinking Test, Level X is a multiple-choice test which measures induction, credibility, deduction and assumption identification. Moreover, students' English proficiency was measured through two separate tests. The first of these was the SPM English test, which is a leaving examination taken in the fifth year of high school. The second test was the Malaysian University English Language Test (MUET), which all students take before entering university. These two tests covered skills in speaking, reading, writing and grammar. Consequently, the tests are considered to provide information about students' general English proficiency. It should be noted that both the SPM English test and the MUET were taken quite a while before the critical thinking test. The exact time between the SPM English test and the critical thinking test depends on whether the students entered university directly after high school. If they did, then there is at least two years between the SPM English test and the critical thinking test. The same timeframe applies to the MUET and the critical thinking test, as this is taken before entering university. The study found that critical thinking positively correlated with students' language proficiency; however, the relationship was not strong. The authors conclude that "the small correlation coefficients computed in this study indicated that proficiency in English partly contributed to undergraduates' ability to think critically" (Rashid & Hashim, 2008, p. 381).

Even though the study indicates that critical thinking and L2 learning are related, it has some limitations, such as students' English proficiency not being measured at the same time as their critical thinking skills. Correlating critical thinking skills with students' English proficiency three semesters prior to the critical thinking test reveals little about how these are related. Both critical thinking and language proficiency are likely to develop over time and with participation in higher education. Hence, these need to be measured at the same time.

The relationship between L2 proficiency and critical thinking skills was more directly investigated in a study by Manalo and Sheppard (2016). Manalo and Sheppard (2016) suggested two possible explanations for the relationship between L2 learning and critical thinking. The first is based on the well-known Sapir-Whorf hypothesis, which is a theory of linguistic relativity. According to the Sapir-Whorf theory, language influences thought and perception. Hussein (2012, p. 642) describes how the theory implies that "the speakers of different languages think and perceive reality in different ways and that each language has its own world view". With regard to critical thinking, this entails that languages vary in how well they can undertake and express critical thinking skills (Manalo & Sheppard, 2016). Hence, students' native languages affect the ability to use and express critical thinking skills. While this theory is interesting, Manalo and Sheppard (2016) conclude that it is not supported in previous literature. The second theory suggested by Manalo and Sheppard is cognitive load theory (in the study referred to as cognitive cost theory), which is traced to students' levels of language proficiency. The reasoning is that students speaking English as their L2 find it more difficult to perform critical thinking tasks in English due to lower levels of language proficiency. Both critical thinking and using a second or foreign language demand cognitive resources. Consequently, speakers of a second or foreign language may have used all the cognitive resources available to them, which leads to insufficient cognitive resources available for the execution of critical thinking.

The study by Manalo and Sheppard (2016) seeks to investigate whether there is support for these two explanations among Japanese students; it consists of two parts. In both parts, critical thinking in the form of evaluative statements in both Japanese and English are investigated. The first study was conducted with second year Japanese science and engineering students who had English as L2. These students had undergone instruction on academic discourse and were hence familiar with evaluative statements. The second study was conducted with first year Japanese university students in science and engineering who also had English as L2. This group, however, had not received the same training in academic discourse. Language proficiency was measured through the TOEIC-IP (Test of English for International Communication –

Institution Program) (ETS, 2022) and by analyzing the complexity of sentences in English and Japanese. Regarding the method, operational criteria on what constitute evaluative statements were set up to analyze the data. Examples of these criteria were that "the sentence must explicitly say something about the worth of the subject, and that worth or value must be in comparison to something else" (Manalo & Sheppard, 2016, p. 44).

The first part of the study, with the students trained in academic discourse, showed that language proficiency in both English and Japanese correlated with students' performance on evaluation tasks. This indicates a general support for cognitive load theory. Moreover, students using their L1 (Japanese) produced a higher proportion of evaluative statements and, therefore, the Sapir-Whorf theory is not supported. In the second study, students who had received no instructions wrote less evaluative sentences than the students in the first study and no correlation between language proficiency and the proportion of evaluative sentences was detected. Hence, the results indicate that language proficiency affects the execution of the critical thinking skill evaluation and that these skills transfer across languages. Manalo and Sheppard (2016, p. 47) explain that "although the conceptualization of critical thinking is likely to be independent of the language being used, the use of a language that one is not so proficient in requires greater cognitive processing recourses and thus limits the remaining resources that could be utilized for the expression of critical thinking".

The growing interest in thinking skills in EFL education has contributed to a number of studies which investigate the relationship between critical thinking and EFL proficiency from different perspectives. A critique that has been raised against the research field so far is that studies on HOTS and L2 learning tend to focus on one particular language skill, rather than investigating language proficiency in general. Alnofaie (2013) makes the same observation and mentions that there is a strong focus on literary skills, which she explains in terms of the fact that these skills are prioritized in higher education.

In a study by Soodmand Afshar, Movassagh and Radi Arbabi (2017), the relationship between critical thinking and argumentative writing ability among Iranian university students majoring in English translation was investigated. Critical thinking was tested by the California Critical Thinking Skills Test (CCTST) (Insight Assessment, 2020). The CCTST includes five subskills: *Analysis*, *Evaluation*, *Inference*, *Deductive reasoning* and *Inductive reasoning*. Argumentative writing was tested in an IELTS writing test (IELTS, n.d.), which was assessed with the rubrics: *Task Achievement*, *Coherence and Cohesion*, *Lexical Resources* and *Grammatical Range and Accuracy*. As the data was not normally distributed, the non-parametric test Spearman's Rho was used in investigating the relationship between critical thinking and argumentative writing ability. This

relationship proved to be significant and argumentative writing ability correlated with the overall critical thinking score, as well as with its subskills. However, only Coherence and cohesion (referred to as *Organization* in the study), among the writing subskills, correlated with scores on the CCTST.

Moreover, in the same study, a step-wise multiple regression analysis was conducted to investigate which critical thinking skills predicted argumentative writing ability. According to the analysis, 15 percent of the variance in argumentative writing ability can be explained by the different critical thinking skills. Of the critical thinking subskills, Evaluation and Analysis significantly predicted argumentative writing ability. The authors conclude that taking critical thinking into consideration is important as it can facilitate writing among EFL students.

While the study mentioned is relevant and interesting in that it establishes the importance of critical thinking skills in argumentative writing among EFL students, it is difficult to draw conclusions about the relationship between critical thinking and EFL proficiency based on it. Only the writing subskill Organization correlated with critical thinking. Moreover, as little is known about the relationship between critical thinking and argumentative writing ability among L1 students, drawing conclusions about how much L2 proficiency affects this relationship is difficult.

Recognizing the need for more knowledge about how different language backgrounds affect critical thinking, Moeiniasl et al. (2022) conducted a study aimed at investigating critical thinking among diverse groups of English language learners (ELL), including both L1 and L2 speakers of English. The participants in the study were 721 students enrolled in a first-year psychology course at a Canadian university. These participants were divided into three groups: (1) students who had English as their first language (L1), (2) L2 English speakers who had completed four years of high school in Canada (L2c), and (3) L2 English speakers who had completed less than four years of high school in Canada (L2i). Testing included five different tests: a reading self-assessment survey, two psychology-specific critical thinking assessment tests taken in the first and second semesters (PS-CTA Form A and B), a general critical thinking test based on the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980) (WG-PT) and course academic achievement based on multiple-choice mid-term tests. The WG-PT consists of five subscales*: Argument, Assume, Deduction, Inference* and *Interpret*. The results indicate a statistically significant difference between the three groups on the first semester critical thinking test. On the first semester PS-CTA, both L2 groups showed lower critical thinking skills. However, this difference had disappeared in the second semester test. Moreover, the general critical thinking test in the last semester indicated

statistically significant differences between the three language groups. The authors mention that "differences in students' performance on PS-CTA might be related to the lower-level English proficiency of L2i students, compared with their native English-speaking counterparts, as CT tasks may cognitively overload these students" (Moeiniasl et al., 2022, p. 9). Furthermore, the study found that there were significant differences between the three groups on two subscales (Deduction and Interpretation) on the general critical thinking test WG-PT, but not on the other three subscales. The results of this study are discussed in the light of cognitive load theory, similarly to the study by Manalo and Sheppard (2016). While indicating a relationship between L2 proficiency and critical thinking, the study does not detail this relationship, as it does not, besides the reading self-assessment, measure language proficiency.

EFL students' reading performance in relation to critical thinking has been studied more directly by Heidari (2020). 112 Iranian upper-intermediate EFL learners from four different high schools participated in this study. Critical thinking skills were measured with the Cornell Critical Thinking Skills Test (Ennis et al., 1985), which is a multiple-choice test measuring *Induction, Credibility, Deduction* and *Assumption identification*. Reading comprehension was measured through a test including three items: "textually-explicit items (for which the participants merely needed to search the passage to find the response), textually-implicit items (for which the participants needed to infer the response based on the information entailed in the passage), and script based items (for which the participants needed to both understand the passage information as well as make use of their previous mental knowledge)" (Heidari, 2020, p. 4). According to the study, there was a statistically significant difference between students with high critical thinking skills and students with low critical thinking skills in overall reading comprehension. This difference was discovered in the textually-implicit items and the script-based items, but not in the easier textually-explicit items. These results seem to indicate that critical thinking and reading skills development are related. Critical thinking is described by the author as having "a seminal role in language learning in general and reading skills in particular" (Heidari, 2020, p. 6).

Similarly, Kamali and Fahim (2011) investigated how critical thinking affects EFL students' reading comprehension ability with unfamiliar vocabulary items. Their study was conducted with 63 Iranian intermediate EFL students. Critical thinking was measured with a questionnaire developed by Honey (2005), which evaluates the skills of analysis, inference, evaluation and reasoning. Four reading passages were used to measure students' reading comprehension ability; reading comprehension was tested through a multiple-choice and vocabulary items tests. To investigate the differences between students with high and low critical thinking skills and their reading comprehension skills, a t-test was used.

According to this test, there was a statistically significant difference between the groups; levels of critical thinking had a significant effect on participants' reading comprehension. The authors explain that "the presence of such a strong relationship may be due to the fact that critical thinking and reading are both cognitive abilities which have some identifiable cognitive skills in common" (Kamali & Fahim, 2011, p. 109). These skills include synthesis, evaluation, inference and monitoring.

Additionally, the relationship between reading comprehension and critical thinking skills among EFL students has been studied by Hashemi and Zabihi (2012). This study looks into the relationship between listening comprehension, English language proficiency and critical thinking. As the students were Iranian EFL learners, a Persian version of the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980) was used. Reading comprehension, listening comprehension and English language proficiency were all measured by the Interchange Objective Placement Test (Lesley et al., 2005). This is a multiple-choice items test measuring reading, listening and language use, focusing on grammar. A statistically significant correlation was found between total proficiency scores, including listening, reading and language use, and the critical thinking test categories *Drawing inference, Argument evaluation, Deductive reasoning* and *Logical interpretation.* Moreover, a Pearson's product moment correlation was used to investigate the correlation between total scores on the Watson-Glaser Critical Thinking Appraisal and language proficiency, which proved a statistically significant correlation. Another interesting result is that the study used a One-way ANOVA to investigate the effect of critical thinking on English proficiency and found this effect to be significant. Based on these findings, the authors recommend that "critical thinking be developed as a core academic skill so that multiple educational outcomes are accomplished by learners" (Hashemi & Zabihi, 2012, p. 177).

Furthermore, some studies fail to provide evidence for any kind of relationship between critical thinking skills and L2 learning. For instance, Davidson and Dunham (1997) studied the effect of a year-long critical thinking course on Japanese EFL students' English proficiency. While the study discovered that students were able to learn critical thinking skills, it did not reveal any significant relationship between English proficiency level and critical thinking (Davidson & Dunham, 1997). Likewise, a more recent study carried out by Toyoda (2015) reveals similar results. In this study, Australian students studying Japanese as a foreign language took part in a video-sharing project aimed at improving L2 proficiency and HOTS. Students' L2 performance was measured through reflective diaries, student videos, transcripts and teacher observation notes, and HOTS was investigated through diary entries. The analysis of the material gathered failed to reveal a clear relationship between

HOTS and L2 performance (Toyoda, 2015). Thus, the author concludes that HOTS seems to play some role in L2 learning; however, it is far from being the only contributing factor and its role in the learning process is not yet clearly outlined. In essence, the studies by Davidson and Dunham (1997) and Toyoda (2015) indicate that more research is needed within the field to truly understand how critical thinking and L2 proficiency are related.

Furthermore, the vast majority of the above-mentioned studies neglect to investigate the relationship between the development of critical thinking and the development of L2 proficiency. The relationship between these can only be measured through a longitudinal research design with pre- and post-tests aimed at measuring students' levels of critical thinking and L2 proficiency. Current research that indicates a relationship between critical thinking and L2 learning is encompassed within the term cross-sectional research and could be seen as mere snapshots of how critical thinking and L2 learning correlate at one particular moment, without looking into how the development of critical thinking affects the development of a second language. As such, it becomes difficult to prove that students, from an L2 learning point of view, benefit from being taught these skills in the EFL classroom.

From the studies discussed in this review, there are indications that some kind of relationship exists between EFL proficiency and critical thinking; however, more research is needed to clarify this. Critical thinking is mentioned as being beneficial for general academic success (Ghanizadeh, 2016), which also seems to include L2 learning. Manalo and Sheppard (2016) mentioned two possible explanations for the relationship between critical thinking and language proficiency, namely the Sapir-Whorf theory and cognitive load theory. Of these, the latter is supported by both Manalo and Sheppard's (2016) study and the study by Moeiniasl et al. (2022). However, several of the studies reviewed in this chapter point to a third possible explanation: the role of critical thinking in general academic success. Kamali and Fahim (2011, p. 105), for example, mention that learning a new language demands "flexibility and higher-order thinking skills"; hence, "it seems inevitable for second language learners to be high critical thinkers". While there is probably no theory which will fully explain how and why critical thinking and L2 proficiency are related, there seem to be skills which are present in both critical thinking and among successful L2 learners, which could provide a partial explanation for this relationship. Moreover, evidence that students who have high levels of critical thinking are successful L2 learners calls for the integration of critical thinking into L2 learning and teaching.

4.2.3 Teaching HOTS and critical thinking in English and EFL courses

With the increased focus on thinking skills in EFL teaching and learning, interventions and programs aimed at supporting their development have become more common. For example, Chen (2010, 2016a, 2016b) studied the effectiveness of higher-order questioning in a face-to-face EFL classroom. Higher-order questioning was defined in this study using Bloom's Taxonomy (Chen, 2010). The study indicates that the intervention had positive effects on Taiwanese EFL students' speaking skills. Moreover, Yang and Gamble (2013) conducted a study on the effect of critical thinking-integrated EFL instructions on Taiwanese EFL students' English proficiency. The participants consisted of a control group of 37 students and an experimental group of 31 students. The experimental group participated in activities which aimed at developing students' critical thinking skills, such as argumentative writing and debating. Students' English proficiency was tested by the General English Proficiency Test (The Language Training and Testing Center, n.d.) and the results showed that the experimental group outperformed the control group in English proficiency following the former group's participation in critical thinking-integrated EFL instructions.

The studies mentioned above can be interpreted as indicating that critical thinking interventions and teaching are beneficial for students' development of EFL proficiency. However, it is possible that these benefits can be traced to the actual learning situation, more than to the explicit teaching of critical thinking skills. In line with this, Yang and Gamble (2013) conclude that it is likely that the effectiveness of critical thinking-integrated EFL instruction has more to do with matters such as higher levels of instructor support, collaboration and self-regulated learning. These are factors which have proven to positively affect L2 learning (Nejabati, 2015; Storch, 2005). In the studies by Chen (2010, 2016a), the interventions are based on higher-order questioning. This type of questioning encourages collaboration among students and gives opportunities for increased interaction. The use of an L2 combined with interaction among L2 students is likely to have at least partially contributed to students' development of English language proficiency. Since the development of critical thinking is in many ways dependent on interaction, argumentation and debating, it is difficult to investigate how critical thinking interventions without these factors affect L2 learning. Halpern (2014, p. 8) mentions that "critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome". Critical thinking interventions seem to create learning situations which are beneficial for learning in general and which produce desired outcomes in the form of L2 learning.

Even though the above-mentioned studies indicate the effectiveness of teaching critical thinking on students' development of EFL proficiency, some of the studies have limitations that, taken together, affect this conclusion. As mentioned by Alnofaie (2013), and as confirmed by this literature review, most studies within the field are experimental and investigate the effect of certain interventions designed to promote critical thinking (Chen, 2016b; Liaw, 2007; Yang & Gamble, 2013). Experimental research has received criticism for creating conditions that are too controlled to be generalized (Dörnyei, 2007). Regarding this, Dörnyei (2007, p. 120) mentions that the lack of external validity often found within experimental studies "is one of the reasons why the merits of their use in education have been seriously questioned". Thus, estimating the effectiveness of critical thinking interventions on authentic EFL learning contexts becomes difficult. Very few studies look into authentic learning situations when exploring the link between critical thinking and L2 proficiency.

There are, however, a few studies which investigate the presence of HOTS and critical thinking in authentic EFL learning settings. Among these is Ulum's (2016) study of HOTS in the EFL course book *Q: Skills for Success 4 Reading and Writing* (Norloff et al., 2011). This course book is aimed at the B2 level of the Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2020). Ulum's study found, through a content analysis, that 51 percent of the material targeted *Knowledge* and 49 percent of the material targeted *Comprehension*. Thus, HOTS was not targeted at all in the EFL course book. Moreover, in another study by Köksal and Ulum (2018), the presence of HOTS was investigated in exam questions in general English courses at Turkish universities. A total of 5,171 questions were analyzed and none of these questions targeted HOTS. According to the study, 81.7 percent of the questions targeted LOTS *Knowledge* and 18.3 percent targeted *Comprehension.* The studies by Ulum (2016) and Köksal and Ulum (2018) both indicate low levels of HOTS in EFL courses at the university level. However, it should be noted that both of these studies were conducted in the same country, Turkey, and it is possible that the same results do not apply to the Swedish context.

As discussed in section 2.2, English language courses at Swedish universities contain two major parts: content knowledge and development of students' EFL proficiency. The discussion has so far only concerned how critical thinking relates to the development of EFL proficiency. Hence, the following section will review and discuss previous research on critical thinking concerning content teaching and learning in English language courses. It should be noted that little research has been done within this area, which is a gap the present study aims to fill.

In a recent article by Cananau (2021), critical thinking in English literature courses at Swedish universities is investigated. Cananau's study (2021) concerns learning objectives in relation to critical thinking in 54 first-cycle English literature course syllabi from 22 Swedish universities. Certain discipline-specific critical thinking skills were found in all or almost all syllabi, such as "the ability to analyze literary texts using the disciplinary terminology" and "the ability to produce interpretations that relate literary texts to their social, cultural, and/or historical contexts" (Cananau, 2021, p. 116). Consequently, it is concluded that studying English literature in a Swedish university comes with training in critical thinking.

Moreover, the study also investigated critical thinking as a general skill in English course syllabi. This discussion is informed by the approaches to critical thinking discussed in section 3.1.3. All four approaches, the skills-and-judgement approach (referred to as cognitive-argumentative skills), the skills-plus-dispositions approach (referred to as cognitive-argumentative skills and dispositions), the skills-plus-dispositions-plus-actions approach (referred to as criticality) and critical pedagogy, were present to varying degrees in the English course syllabi. The most common of these was the skills-and-judgement approach, which focuses on skills such as analyzing, synthesizing, evaluating, making inferences, etc. Regarding the skills-plus-dispositions approach, this was not quite as frequent as the former. Examples of skills included in this approach mentioned in the syllabi were flexibility, open-mindedness, intellectual humility, sensitivity to others' feelings and a desire to be well-informed. Furthermore, critical pedagogy was present, but to different degrees. Both basic levels of critical pedagogy, such as showing awareness of gender perspectives and analyzing text from different perspectives, and deeper levels, such as assessing and demonstrating insight, were found. Lastly, the skills-plus-dispositions-plus-actions approach, also known as the criticality approach, was also found in intermediate-level English literature course syllabi, both in stronger and weaker formulations. An important aspect of criticality is self-reflection, which includes the process of evaluating oneself, as well as one's discipline.

Hence, the study indicates that both discipline-specific and general critical thinking skills are intended learning outcomes in English literature courses at Swedish universities. However, investigating the syllabi does not capture the entire picture. This is expressed in the following citation:

> One may have excellent understanding of the different approaches to critical thinking and of the present curricular, disciplinary, and institutional conditions and opportunities to implement it in higher

> education, but teaching English literature with the purpose of cultivating critical thinking in accordance with the aim, practices, and methods of any of the approaches I have discussed here is a very different matter. (Cananau, 2021, p. 122)

4.2.4 Summary

Section 4.2 has discussed a number of studies which sought to investigate the relationship between thinking skills and L2 proficiency and learning. Some of the studies indicate a relationship between these (Hashemi & Zabihi, 2012; Heidari, 2020; Moeiniasl et al., 2022; Rashid & Hashim, 2008; Soodmand Afshar et al., 2017), while others do not (Davidson & Dunham, 1997; Toyoda, 2015). The varying results suggest that there is a possible relationship between thinking skills and L2 proficiency; however, the nature of this relationship is not entirely clear.

Based on Cananau's (2021) study, it is evident that critical thinking is an intended learning outcome in English literature courses at Swedish universities. But little is known about whether critical thinking is also an intended learning outcome in English linguistics courses. Thus, there is a need to take a wider approach and investigate the topic of critical thinking from both a literature and a linguistics perspective. Furthermore, little is known about whether and how critical thinking is realized in these courses. The present study seeks to expand our knowledge of whether critical thinking is considered in assessment tasks set by English teachers at Swedish universities and whether assessment tasks in English courses in higher education focus on critical thinking and HOTS.

Moreover, English courses at Swedish universities have a two-fold objective: the teaching of content knowledge and the development of students' English language proficiency. Previous research indicates that there is a relationship between critical thinking and L2 proficiency. The studies reviewed point to three possible explanations for this relationship: cognitive load theory, the Sapir-Whorf theory and similarities between critical thinking and L2 learning which aid the learning of both. While the present study does not seek to confirm any of these theories, discussing them is essential in order to understand the importance of teaching critical thinking in EFL courses from a theoretical point of view.

Furthermore, the limitations mentioned within the studies that establish this relationship, combined with studies that fail to find any type of relationship between thinking skills and L2 proficiency, suggest that further research is needed. Relatedly, Rashid and Hashim (2008, p. 374) described the research field as being in its "infancy stage", which is also confirmed by Soodmand

Afshar and Movassagh (2014), Chen (2010) and Liaw (2007). Additionally, the developmental aspects missing in most of these studies need to be accounted for through a longitudinal post- and pre-test research design in which critical thinking and L2 proficiency development can be followed and correlated over time.

Chapter 5: Research Methodology

This section contains a description of the methods used in the present research project. Section 5.1 explains the general outline of the research project. Sections 5.2, 5.3 and 5.4 include details about the three parts of the research project. In section 5.5, the ethical considerations of this thesis are discussed. Finally, section 5.6 discusses the methodological decisions.

5.1 Research design

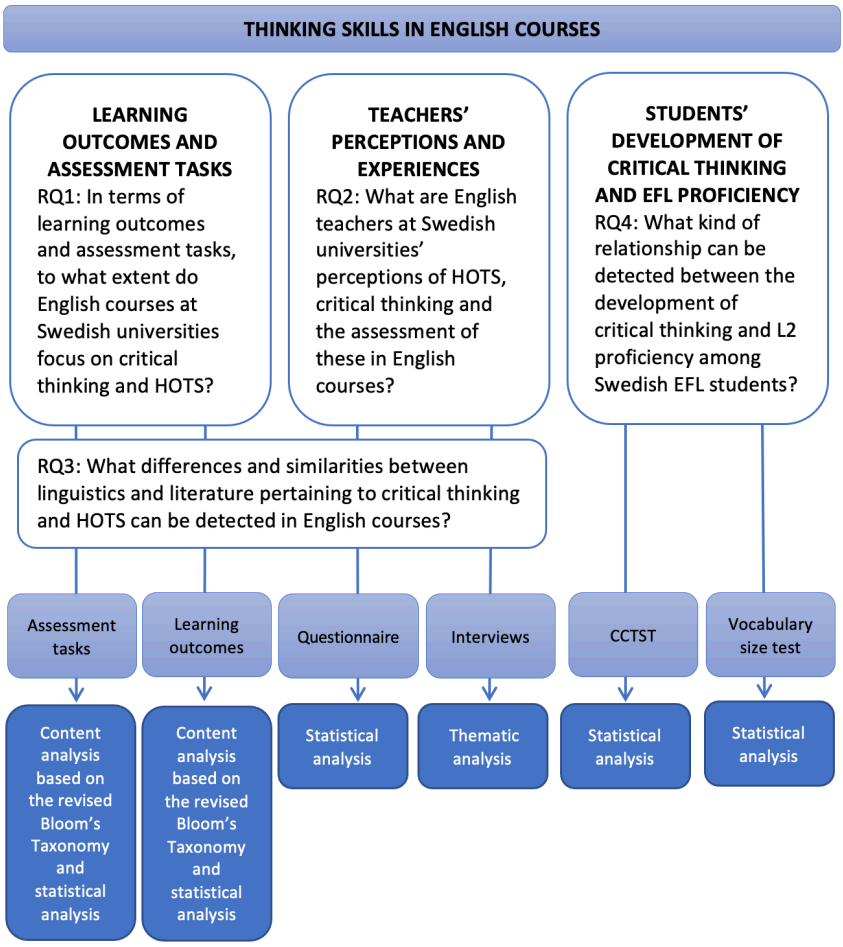
The research project consists of three studies which together aim to explore students' opportunities to develop thinking skills in English courses at Swedish universities and whether students develop critical thinking and HOTS in the courses concerned. The methods and data used in these studies are described in detail in this section. Figure 1 provides an overview of the research design with its three parts.

The first research question of this thesis was: In terms of learning outcomes and assessment tasks, to what extent do English courses at Swedish universities focus on critical thinking and HOTS? Based on this research question, the first part of the project sought to map the existence of assessment tasks that support these skills and the presence of HOTS and critical thinking in learning outcomes in these courses. Data, methods and analysis tools are described in section 5.2.

The second part of this research project was inspired by the following research question: What are English teachers at Swedish universities' perceptions of HOTS, critical thinking and the assessment of these in English courses? It aims to investigate teachers' views on critical thinking and HOTS and HOTS assessment through a questionnaire and interviews with teachers working on English courses at Swedish universities. This part of the research project is described in detail in section 5.3. Moreover, the first two studies of this research project also aimed to explore similarities and differences between linguistics and literature in terms of HOTS and critical thinking, in accordance with the third research question: What similarities and differences between linguistics and literature pertaining to critical thinking and HOTS can be detected in English courses? Hence, assessment tasks, learning outcomes, the questionnaire and interviews are analyzed with this in mind.

The third, and last, part of this research project seeks to investigate the fourth research question: What kind of relationship can be detected between the development of critical thinking and L2 proficiency among Swedish EFL students? This was carried out through a longitudinal pre- and post-test study that investigated EFL students' critical thinking skills using the CCTST and English vocabulary size at the beginning and end of the course. A more detailed description of the instruments and participants is provided in section 5.4.

Figure 1: Research design



Before describing the methodology in more detail, it is necessary to mention that the present thesis initially aimed to focus on online English courses at Swedish universities. Therefore, the assessment tasks investigated come from English courses provided online; students participating studied in online English courses and teachers responding to the questionnaire taught courses given online. It was believed that the assessment tasks in these courses would be different from those given to students in face-to-face courses. However, the quantitative content analysis showed that most courses only included assessment tasks commonly used in face-to-face courses, such as assignments, oral presentations, seminar questions and essays. Very few courses took use of more technology-driven assessment formats. As it was believed that the online feature would have a significant role, the subject was first investigated from this perspective. Consequently, there are references to terms such as *e-assessment*. To not alter the data collected for this thesis, these references remain. However, it is this author's strong belief that the data in this thesis is equally applicable to face-to-face courses. To be transparent about the online feature, it is explicitly mentioned throughout the methodology section. While it was intended that the present thesis would be fully situated within the online learning discourse, this focus came to change during the process of collecting and analyzing the data. This is not to be interpreted as a belief that online learning does not have a role in the development of HOTS or critical thinking, but stems from the fact that the online English courses investigated in this study resembled traditional face-to-face courses to a very high degree, and that teachers often taught both online and face-to-face courses.

5.2 Learning outcomes and assessment tasks

This section covers the methods, data and analysis in the first part of this research project, which aims to investigate HOTS and critical thinking in learning outcomes and assessment tasks in English courses at Swedish universities. Section 5.2.1 describes the English courses. In section 5.2.2, the learning outcomes are described. Section 5.2.3 includes an account of the method used to analyze both assessment tasks and learning outcomes. Finally, section 5.2.4 describes the analysis procedure. The results of this part of the study are presented in section 6.1.

5.2.1 English courses

As previously mentioned, the initial aim of this research project was to investigate HOTS and critical thinking in online courses. Hence, the assessment tasks analyzed in the study were taken from online English courses.

During the spring term of 2018, eight universities in Sweden gave the intermediate English course online. All eight universities were invited to participate in this study; however, only four of these chose to participate. The intermediate English course is a second semester course, valued at between 31 and 60 higher education credits (HEC). It is sometimes also called English B, English 31-60 or English 2. Moreover, the English language subject is traditionally divided into literature and linguistics modules at Swedish universities, which was also the case with the courses in this study. Table 7 provides information about the courses, modules, content and assessment tasks. All four courses consisted of 15 credits of literature modules and 15 credits of linguistics modules. Note that the universities in table 7 do not represent the universities in any of the other tables in this thesis. The identity of these universities is entirely confidential. Thus, the names University 1, 2, 3 and 4 are not to be understood as indicating the placement of the universities in any of the tables, such as in table 1 (section 2.2).

The intermediate English course was chosen for this study as it includes modules within both linguistics and literature. Students taking these courses were invited to participate in the present study, as described in section 5.4.1. Since courses build on progression, the students had already passed a one-semester course of English studies. Hence, it was assumed that they were already quite proficient in English and that they had a good understanding of both linguistics and literature. Other alternatives were the English 1-30 HEC course or the English 61-90 HEC course. Even though the English 1-30 HEC course consists of modules in both literature and linguistics, it was believed that the students in this course were quite new to academic studies and would find the CCTST too challenging. As for the English 61-90 HEC course, it contains a degree project worth 15 HEC. Consequently, there are relatively few assessment tasks in the course.

Table 7: Courses investigated
This table was originally published in Johansson (2020a, p. 236).

	Credits	Modules	Assessment tasks
University 1			
Literature	15	1	Written exam, discussion forum questions, written essay
Linguistics	15	1	Seminar questions, written exam, written essay

University 2			
Literature	15	1	Written essays, written exam, oral presentation, seminar discussions
Linguistics	15	2	Written assignments, oral presentation, seminar questions, written exam
University 3			
Literature	15	2	Seminar questions, written assignments, written exam
Linguistics	15	3	Written exams, discussion forum questions, oral presentation, seminar questions
University 4			
Literature	15	2	Written exams, oral presentation, compulsory study questions
Linguistics	15	2	Discussion forum questions, written exam, written assignments, peer-reviewing, oral presentation

5.2.2 Learning outcomes

Learning outcomes in English courses were analyzed in order to investigate whether they focus on HOTS and critical thinking skills. The data in this study consists of 190 learning outcomes from intermediate English courses at Swedish universities. Syllabi from all universities which gave the intermediate English course in 2022, where these were available in English, were included in this study. These consisted of intermediate English course syllabi from 12 universities: Dalarna University, University of Gothenburg, University of Gävle, Karlstad University, Linnaeus University, Lund University, Malmö University, Mid Sweden University, Stockholm University, Södertörn University, Umeå University and University West.

5.2.3 Content analysis

Quantitative content analysis was used in order to classify the assessment items and learning outcomes in the first part of the study. The method aims to systematically categorize written material, in this case assessment items and learning outcomes, so that they can be analyzed (Neuendorf, 2002). The coding scheme (see table 8) used in the categorization was the cognitive dimension of

the revised Bloom's Taxonomy. Each assessment item was categorized according to the thinking level that it covers. As these assessment items were often complex, many of them covered more than one thinking level and have thus been categorized accordingly. As previously mentioned, the first three thinking levels of the revised taxonomy are considered to be LOTS and the remaining three levels are classified as HOTS. Assessment items that were categorized into more than one level were considered at the highest level of that categorization. The analysis of learning outcomes focused on the action verbs they contained. All action verbs were categorized using the coding scheme based on the revised Bloom's Taxonomy (table 8).

In order to ensure the reliability of the content analysis, intercoding is normally used (Drisko & Maschi, 2015). However, this was not possible in the present study. To compensate for the absence of an intercoder, each assessment item was first coded and later compared with other items at the same coding level. This procedure was carried out in order to ensure that all assessment items categorized at each category were on the same level of thinking.

The presentation of the results also includes qualitative data in the form of examples of assessment tasks from each level; see section 6.1.2. The purpose of this is to provide the reader with a deeper understanding of the assessment tasks and the coding procedure.

Table 8: Coding scheme
This table was originally published in Johansson (2020a, pp. 239-240).

Level	Definition	Action Verbs
Remember	**Retrieve relevant knowledge from long-term memory**	Choose, define, find, how, label, list, match, name, omit, recall, relate, select, show, spell, tell, what, when, where, which, who, why
Recognize	Locating knowledge in long-term memory that is consistent with material presented	
Recalling	Retrieving relevant knowledge from long-term memory when given a prompt to do so	

Understand	**Construct meaning from instructional messages, including oral, written, and graphic communication**	Classify, compare, contrast, demonstrate, explain, extend, illustrate, infer, interpret, outline, relate, rephrase, show, summarize, translate
Interpreting	Changing from one form of presentation to another	
Exemplifying	Finding a specific example or illustration of a concept or principle	
Classifying	Determining that something belongs to a category	
Summarizing	Abstracting a general theme or major point	
Inferring	Drawing a logical conclusion from the information presented	
Comparing	Detecting correspondences between two ideas, objects, and the like	
Explaining	Constructing a cause-and-effect model of a system	
Apply	**Carry out or use a procedure in a given situation**	Apply, build, choose, construct, develop, experiment with, identify, interview, make use of, model, organize, plan, select, solve, utilize
Executing	Applying a procedure to a familiar task	
Implementing	Applying a procedure to an unfamiliar task	
Analyze	**Break material into its constituent parts and determine how the parts**	Analyze, assume, categorize, classify, compare, conclusion,

	relate to one another and to an overall structure or purpose	contrast, discover, dissect, distinguish, divide, examine, function, inference, inspect, list, motive, relationships, simplify, survey, take part in, test for, theme
Differentiating	Distinguishing relevant from irrelevant parts or important from unimportant parts of the material presented	
Organizing	Determining how elements fit or function within a structure	
Attributing	Determine a point of view, bias, values or intent underlying the material presented	
Evaluate	**Make judgements based on criteria and standards**	Agree, appraise, assess, award, choose, compare, conclude, criteria, criticize, decide, deduct, defend, determine, disprove, estimate, evaluate, explain, importance, influence, interpret, judge, justify, mark, measure, opinion, perceive, prioritize, prove, rate, recommend, rule on, select, support, value
Checking	Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented	
Critiquing	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	
Create	**Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure**	Adapt, build, change, choose, combine, compile, compose, construct, create, delete, design, develop, discuss, elaborate, estimate, formulate, happen, imagine, improve, invent, make up, maximize, minimize, modify, original, originate, plan, predict, purpose, solution, solve, suppose, test, theory
Generating	Coming up with alternative hypotheses based on criteria	
Planning	Devising a procedure for accomplishing some task	
Producing	Inventing a product	

5.2.4 Data analysis

Much of the data in this study is quantitative and has been analyzed through statistical procedures using SPSS. In the first sub-study, learning outcomes and assessment tasks in intermediate English intermediate courses were analyzed. Learning outcomes were analyzed through descriptive statistics. The Chi-square test of independence was used to investigate the difference in learning outcomes between linguistics and literature modules. These statistical tests were also supported by a qualitative analysis of the learning outcomes. In the investigation of HOTS and LOTS tasks in English courses, descriptive statistics were used to describe the frequency of HOTS and LOTS assessment tasks. Moreover, as the data were not normally distributed, the non-parametric tool, the chi-square test of independence, was used to analyze the difference between linguistics and literature modules in the assessment of HOTS. Qualitative data in the form of examples of assessment tasks were added where suitable. The purpose of this was to illustrate how assessment tasks at different levels of thinking were formed and to provide an understanding of the categorization of assessment tasks.

5.3 Teachers' perceptions and experiences

In this section, the methods, data and analysis of the second part of this research project, which focuses on English teachers' views and experiences with HOTS and critical thinking, are described. In section 5.3.1, the teachers participating in the questionnaire study are described; section 5.3.2 includes an account of the teachers in the interview study. The methods used in this part of the study, questionnaire and interviews, are described in section 5.3.3 and 5.3.4. Finally, in section 5.3.5, the data analysis is explained. The results of this part of the research project are presented in section 6.2.

5.3.1 Teachers in the questionnaire study

The participants in the questionnaire study consisted of English teachers teaching online at the first-cycle level at Swedish universities. There is no information available about how many teachers work on these courses. Hence, convenience sampling was seen as the most appropriate sampling method. Contact information for teachers working on online English courses was gathered from university websites. This information was either found by searching course pages or through contact with representatives of the departments. Teachers were sent an invitation to participate in the study via e-mail. This e-mail included information about the study and a link to the Google form questionnaire (see section 5.3.3). Of 46 invited teachers, 19 chose to participate. Table 9 provides information about the teachers.

Most teachers were between the ages of 41-50 years (9), followed by 31-40 years (4), 51-60 years (4) and 61 or more years (2). Regarding years of experience, we find that 15 or more years was the most common situation (6), followed by 4-9 years (5), 10-15 years (5) and 0-3 years (3). Therefore, it can be concluded that the majority of the participants had quite a lot of experience of teaching English. Moreover, many participants had completed a PhD (13) and some had a Master's degree (6). The division between literature and linguistics teachers was fairly equal. Six teachers taught linguistics, eight teachers taught literature and five teachers taught both subjects.

Table 9: English teachers' details
The table was originally published in Johansson (2020b, p. 168).

Partici-pant	Age	Years of experience	Highest degree	Courses (credits)	Subject
1	41-50	10-15	Master's	1-30, 31-60	Literature
2	51-60	15+	PhD	91+	Linguistics, literature
3	51-60	0-3	Master's	1-30, 31-60	Linguistics, literature
4	41-50	4-9	PhD	1-30, 31-60, 61-90	Literature
5	41-50	4-9	PhD	1-30, 31-60, 61-90	Literature
6	41-50	10-15	PhD	61-90, 91+	Linguistics
7	31-40	10-15	PhD	1-30, 31-60, 61-90	Literature
8	41-50	4-9	PhD	1-30, 31-60, 61-90, 91+	Linguistics
9	41-50	0-3	Master's	1-30	Literature
10	61+	15+	PhD	1-30, 31-60, 61-90, 91+	Linguistics
11	61+	15+	Master's	1-30	Linguistics, literature
12	51-60	15+	PhD	1-30, 31-60, 61-90	Linguistics, literature
13	41-50	10-15	PhD	31-60, 61-90, 91+	Linguistics
14	31-40	4-9	PhD	1-30, 31-60, 61-90, 91+	Literature
15	41-50	10-15	Master's	1-30, 91+	Literature
16	31-40	15+	Master's	1-30, 31-60	Literature
17	31-40	0-3	PhD	1-30, 31-60, 61-90	Linguistics, literature
18	51-60	15+	PhD	1-30, 31-60, 61-90, 91+	Linguistics
19	41-50	4-9	PhD	31-60, 61-90	Linguistics

5.3.2 Teachers in the interview study

Participants in the interviews were found through convenience sampling. Two teachers indicated through the previous questionnaire that they were willing to participate in an interview. The other two teachers were found through contacts. For participation in the interviews, the only requirement was that the participants identified themselves as teachers of English linguistics or literature at a university in Sweden. Two of the interviewees were literature teachers and two were linguistics teachers. See table 10 for details about the participants.

The interviews were conducted in English as all interviewees were comfortable with being interviewed in English. This also removed the problem of translating the interviews from Swedish to English.

Table 10: Participants in the interview study

Code	Age	Subject	Degree	Years of experience
T1LIT	47	Linguistics	PhD	25
T2LIT	47	Linguistics	PhD	20
T3LING	36	Literature	PhD	11
T4LING	*[10]	Literature	PhD	21

5.3.3 Questionnaire

The questionnaire used to investigate teachers' experiences and views on HOTS and HOTS assessment was sent out before the interviews were conducted. As some of the questions aimed at finding out whether departmental support was an issue in supporting teachers' development of HOTS assessment items, the anonymity of a questionnaire was preferred over interviews for this purpose.

The questionnaire (see appendix 2) consisted of two parts. The first part included factual questions which sought to give information about the participants' age, years of experience, educational level and courses and topics taught. The second part of the questionnaire consisted of attitudinal questions (Dörnyei, 2007). These questions aimed to find out participants' experiences with and perceptions of critical thinking and HOTS and HOTS assessment in English courses. Multiple-choice items and Likert scale items were used in the second part of the questionnaire. Rating scale items have been described as flexible and suitable for measuring attitudes and opinions and were thus considered appropriate for the aims of this study (Cohen et al., 2011).

5.3.4 Interviews

The purpose of the interviews was to investigate English teachers' perceptions and experiences of critical thinking on a deeper level. In contrast to the questionnaire study, these interviews focus more on critical thinking than on HOTS. The relationship between these terms is discussed in more detail in section 3.1.3. The reason for a shift in focus from HOTS to critical thinking was based on the fact that critical thinking is a more familiar concept. Hence, it was believed that teachers would have more knowledge and more to say about critical thinking than HOTS. Still, it is important to point out that this author

[10] Not reported.

understands these concepts as closely related. Thus, the interview study is not be understood as entirely unrelated to the questionnaire.

The interviews with English university teachers were conducted on Zoom in the form of semi-structured interviews. Table 11 presents the interview guide. The interviews focused on three themes: (1) teachers' views on critical thinking, (2) assessment tasks, and (3) challenges with assessing critical thinking in English courses. Each interview lasted between 45 and 60 minutes. The interviews were recorded on Zoom and later transcribed. The transcription of the interviews is described in more detail in section 5.3.5.

Table 11: Interview guide

Theme	Main question	Support question
Theme 1	How do English teachers view critical thinking?	What is critical thinking for you?
		Some consider the ability *Create* to be a higher-order thinking skill. How do you understand this skill? Is *Create* a higher-order thinking skill?
		Do you believe that students learn critical thinking in a specific subject or is it more of a general skill which can be applied to different subjects?
		Do you think that students should be taught critical thinking in English courses or would it be better to have a separate course for teaching students critical thinking?
		Do you think that there is a difference in how critical thinking is understood between teachers in linguistics and literature? Or in how important these skills are considered to be?
		How do you understand the development of critical thinking in relation to learning outcomes in English courses?

Theme 2	How do English teachers view assessment for critical thinking?	What do you think about using assessment tasks as a means to develop students' critical thinking skills? Is it possible? If so, which assessment tasks do you consider most suitable for students' development of critical thinking? If we think about assessment tasks, are there some that are less suitable for students' development of critical thinking? Do you take critical thinking into consideration when developing assessment tasks? What critical thinking skills do you try to include in assessment tasks? If we think about lower-order thinking skills, such as *Remember* and *Understand*, is this something that the assessment tasks in your courses focus on?
Theme 3	What challenges do English teachers experience in assessing critical thinking?	What do you think is the greatest challenge in developing assessment tasks which target critical thinking? How can your department support you in this? Do you feel that critical thinking is considered important in your department?

5.3.5 Data analysis

Descriptive statistics were used to analyze the data from the questionnaire in the second study, which sought to investigate English teachers' experiences and perceptions of critical thinking, as well as HOTS and the development of HOTS assessment tasks. When suitable, the Kruskal-Wallis H test was used to compare the experiences and perceptions of linguistics and literature teachers.

The Kruskal-Wallis H test is often described a non-parametric equivalent to the one-way analysis of variance. As the sample was rather small, using a non-parametric test was necessary.

The interviews were transcribed semi-verbatim. This means that words and meanings were transcribed verbatim, but some non-verbal utterances were omitted. The transcriptions of these interviews were analyzed through thematic analysis. Thematic analysis is described as "the process of identifying patterns or themes within qualitative data" (Maguire & Delahunt, 2017, p. 3352). The analysis is based on the six steps procedure suggested by Braun and Clarke (2006). These six steps include (1) familiarizing yourself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, (6) producing the report. Thematic analysis was chosen as a method as it is theory-independent, in contrast to many other qualitative analysis methods.

5.4 Students' development of critical thinking and EFL proficiency

In the following section, the methods, data and analysis of the third part of this research project are described. This study focused on investigating students' development of critical thinking in English courses at Swedish universities and how these skills correlate with students' development of English as a foreign language. Section 5.4.1 describes the students who participated in the study. In sections 5.4.2 and 5.4.3, the tests are described. These include the California Critical Thinking Skills Test (CCTST) and the Vocabulary Size Test. Finally, section 5.4.4 presents an account of the analysis of the data.

5.4.1 Procedure

Students who were enrolled in the four courses described in 5.2.1 during the spring and autumn semester of 2019 were invited to participate in this study (see appendix 3). As access to the actual courses was not provided, invitations were sent out to the students by the course teachers. Students who were willing to participate were encouraged to contact me via e-mail to get more information about the study. While this was not the most optimal study design as it placed an additional burden on the participants to contact me if they were interested in participating, no other method was considered possible.

The students received login details to the CCTST (section 5.4.3) and a link to the VST (section 5.4.4). Participating students took both tests twice: at the beginning of the semester and at the end of the semester.

5.4.2 EFL students

The only requirement for participating in the study, besides studying one of the online English courses, was that the participants had Swedish as their L1. The reason for this requirement was that the CCTST should be taken in the students' first language. In order to prevent students' levels of English proficiency from interfering with their results on the test, the CCTST was translated into Swedish. Details about the participants are given in table 12. As is evident from the table, the majority of the participants were female (11) and very few were male (2). Their ages ranged from 26 years to 52 years. Regarding the highest degree attained, high school degree (7) was the most common, followed by Bachelor's degree (4) and Master's degree (2).

Table 12: EFL students' details
This table was originally published in Johansson (2022, p. 59).

	Age	**Gender**	**Highest degree**
1	49	Female	Bachelor
2	26	Male	High school
3	52	Female	Bachelor
4	35	Female	Master
5	26	Female	High school
6	44	Male	Bachelor
7	26	Female	High school
8	35	Female	High school
9	50	Female	Bachelor
10	31	Female	High school
11	51	Female	Master
12	30	Female	High school
13	44	Female	High school

5.4.3 California Critical Thinking Skills Test

The California Critical Thinking Skills Test (CCTST) is a multiple-choice test designed to test critical thinking skills (Facione & Facione, 1994). The CCTST is based on the APA Delphi Consensus definition of critical thinking; see section 3.1.2. As per the APA Delphi Consensus definition, critical thinking

includes the following core skills: interpretations, analysis, evaluation, inferences, explanation and self-regulation (Facione, 2020).

The following is an example of how a question in the CCTST is formulated:

> Three graduate school friends, Anna, Barbara, and Carol, graduated successfully. Being in the same program, the three often worked as a team on group assignments. Anna earned the special recognition of "pass with distinction" when she graduated. Carol and Barbara, although receiving their degrees, did not earn this special honor. A fourth student in the same graduate program, Deirdre, often said that the graduate program was poorly designed and not difficult at all. Deirdre did not graduate, instead she was advised by the faculty to withdraw from the program because her work was below acceptable standards. Given this information only, it follows that
> A = Carol and Barbara deserved to receive "pass with distinction" like Anna.
> B = Barbara's work in the program was superior to Carol's.
> C = Barbara was jealous of the academic success her friend, Anna, enjoyed.
> D = Deirdre's work in the program was below the quality of Carol's work.
> E = Anna, being successful, will decide to enroll in another advanced graduate program (Insight Assessment, 2023).

The CCTST gives an overall score of critical thinking skills, a percentile score and a score of the cognitive skills: analysis, inferences, evaluation, induction and deduction. The overall score describes test takers' "overall strength in using reasoning to form reflective judgments about what to believe or what to do" (Insight Assessment, 2020, p. 9), while the percentile score reports the percentile in relation to the benchmark group. In this study, the selected benchmark group was four-year college and university students. The CCTST version used in this study consists of 34 multiple-choice format items and takes about 45-55 minutes to complete.

There are a number of other tests aimed at measuring students' critical thinking skills. Some of these are mentioned in the literature review in relation to previous studies within the field. These are the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980), the Cornell Critical Thinking Skills Test (The Critical Thinking Co., 2022) and the Ennis-Weir Critical Thinking Essay Test (Ennis & Weir, 1985). Among these, the Watson-Glaser Critical Thinking Appraisal is perhaps the most commonly used test. The

critical thinking skills tested through a multiple-choice format in the Watson-Glaser Critical Thinking Appraisal are inference, deduction, recognizing assumption, interpretation and evaluating assumptions (Bernard et al., 2008). Similarly, the Cornell Critical Thinking Skills Test is also a multiple-choice test. The level Z test of the Cornell Critical Thinking Skills Tests is targeted towards college and graduate students and assesses induction, deduction, credibility, identification of assumptions, semantics, definition and prediction in planning experiments (The Critical Thinking Co., 2022).

The latter two tests are quite similar to the CCTST in that they measure general critical thinking skills based on a cognitive-argumentative approach to critical thinking. While both the Watson-Glaser Critical Thinking Appraisal and the Cornell Critical Thinking Skills Test are considered standardized measures of critical thinking, it was believed that the CCTST was a better measure of critical thinking. The reasons for this choice were twofold. Firstly, the CCTST is a widely used test in research studies, which makes it possible to compare the results of this study with those of other studies. Secondly, the CCTST offers tools for analyzing participants' critical thinking score, such as a comparison with a selected benchmark group. It was believed that these features would benefit the present study.

While the tests mentioned so far are all in a multiple-choice format, the Ennis-Weir Critical Thinking Essay Test (Ennis & Weir, 1985) is one of the few standardized critical thinking tests based on open-ended questions. In this test, critical thinking is understood in terms of argumentation. Even though there are benefits to an essay test, such as the ability to assess thinking processes, the scoring is often more objective in multiple-choice tests (Leach et al., 2020). Furthermore, a multiple-choice test is often perceived as less demanding. As low participation was a problem in the present study, the multiple-choice format was seen as a better alternative.

5.4.4 The Vocabulary Size Test

In order to measure students' general language proficiency, the Vocabulary Size Test (VST) (Nation & Beglar, 2007) was used. The rationale behind using a vocabulary size test to measure general language proficiency is the strong relationship between vocabulary size and language proficiency, as confirmed in an overview of the research field by Miralpeix (2020). Schmitt (2010, p. 3) explains that there are "high correlations between vocabulary and various measures of language proficiency", which provides a rationale for using a vocabulary test as a measure of language proficiency.

Moreover, Meara and Milton (2003) found that vocabulary size scores were associated with CEFR (Common European Framework of Reference for Languages) levels (Council of Europe, 2020). According to this study, a vocabulary size of 4,500-5,000 words based on the X_Lex tests (Meara & Milton, 2003) represented C2 level on CEFR. C2 is the highest level on the CEFR scale and students at this level are considered proficient users (Council of Europe, 2020). Similar results were detected by Milton and Alexiou (2009) in an investigation of vocabulary size compared with CEFR levels among EFL learners in Greece and Hungary. EFL students in Greece at the C2 level had a mean vocabulary size of 4,068 words, while Hungarian EFL students at the C1 level had a mean of 4,340 words. The C2 level was not reported for the Hungarian students.

In a more recent study by Miralpeix and Muñoz (2018), vocabulary size was investigated among Catalan/Spanish university students in the first year of English studies. Receptive vocabulary size was measured by X_Lex (Meara, 2005) up to 5,000 words and Y_Lex (Meara & Miralpeix, 2006) from 5,000 to 10,000 words. EFL proficiency was measured in listening, reading, writing, grammar and vocabulary. The students in Miralpeix and Muñoz's (2018) study had a vocabulary size of between 2,500 and 7,200 words with a mean of 5,100 words. There was a statistically significant correlation between vocabulary size and EFL proficiency. Moreover, it was estimated that a vocabulary size of 3,000 words corresponded to an EFL proficiency level of 4.37 (max 10), 4,000 words to 5.14, 5,000 words to 5.91, 6,000 words to 6.69 and finally 7,000 words to 7.46. Hence, the study mentioned provides evidence that vocabulary size is related to general EFL proficiency. With regard to proficiency level of the students in Miralpeix and Muñoz's (2018) study, they are described by the authors as upper-intermediate/advanced EFL learners. As 7,200 words was the highest vocabulary size in the study, it seems reasonable to assume that advanced levels of EFL proficiency represent upper levels of vocabulary size. Moreover, regarding vocabulary size and CEFR levels, Milton (2009) gives the following general guidelines:

> From 2000 to 2500 words (of 5000) in English seems to be a threshold for moving from beginner to intermediate level, where language use can start to become independent. From 6000 to 7000 words are needed for oral fluency and 8000-9000 for written fluency and for attaining the kind of proficiency needed for examinations at the C2 level of the CEFR. (Milton, 2009, p. 251)

Regarding Swedish students' vocabulary size, some studies can be found. For example, Snoder and Laufer (2022) investigated 9th (15 years) and 12th (18 years) graders' receptive vocabulary size using the VST. The 12th graders were considered advanced EFL learners, while the 9th graders were categorized as intermediate EFL learners. Based on a comparison between levels of English in the Swedish education system and CEFR, 9th grade English corresponds to B1.1 on the CEFR scale and 12th grade English corresponds to B2.2 (Skolverket, 2022a). Hence, B2.2 is the highest CEFR level in the Swedish educational system before university. According to Snoder and Laufer's (2022) study, the mean vocabulary size of the Swedish 12th graders was 6,400 word families, while the mean of the 9th graders was 5,600.

Another relevant study is the dissertation by Lemmouh (2010), in which vocabulary size among Swedish university students was examined. The study investigated, among other things, students' development of receptive vocabulary size over one and two semesters of English studies. 34 students who took the first semester course in English at Stockholm University participated in this study. Of these, 16 went on to study a second semester of English studies. Receptive vocabulary size was measured by the Receptive Vocabulary Levels Test (RVLT) (Nation, 2001). According to the study, the mean receptive vocabulary size at the beginning of the first semester was 7,769 word families. As the RVLT used in Lemmouh (2010) measures vocabulary at the 2,000, 3,000, 5,000 and 10,000 word levels, as well as academic vocabulary, it is possible that students' vocabulary knowledge was greater than detected in the study. Moreover, the results of Lemmouh's (2010) study revealed that there was no statistically significant change in students' receptive vocabulary size from the beginning of the first semester to the end of the first semester. However, an increase of approximately 700 words in receptive vocabulary size was detected from the beginning of the first semester to the end of the second semester for those students who continued their studies in English. This increase was small, however. It is interesting to note that students who scored below average on the RVLT made "substantially greater gains than the above average students" (Lemmouh, 2010, p. 140).

The Vocabulary Size Test (VST) used in the present study was developed by Nation and Beglar (2007). It is a multiple-choice test aimed at measuring test takers' receptive vocabulary knowledge in English. In order of frequency, vocabulary items are divided into levels of 1,000 items each. From each level, ten words have been chosen and are part of the VST. The test is available in several versions; for this study, the 14,000 version was used. This version of the VST includes 140 test items, with each item representing 100 words. The 14,000 version was considered suitable in this study as it was assumed that the

participants had relatively high levels of English vocabulary. Thus, in order to avoid a ceiling effect, the 14,000 version was seen as the best option.

As the participants in this study were online students and as such located in different parts of Sweden, the online version of the VST was used. All participants were sent a link to LexTutor (https://lextutor.ca/), where the test is available. The online test reports the time taken to take the test, which to some degree helped to ensure the validity of this study. The approximate time to complete the test is 30 minutes. For the participants in the present study, the mean time was 27 minutes. Time was used as a factor to ensure that students did not look up the answers, as the test was conducted without supervision. It was decided that students who deviated more than 1 standard deviation from the mean would be excluded from the study. However, none of the students deviated from the mean with 1 standard deviation or more. Even though these measures were taken to ensure the study's reliability, the lack of supervision of the VST is a limitation which should be taken into consideration.

5.4.5 Data analysis

The data in the third study, exploring students' development of critical thinking and language proficiency, was also quantitative. In order to investigate this topic, descriptive statistics for students' CCTST and VST scores were calculated. The low number of participants called for the use of non-parametric tests. Students' development of critical thinking and vocabulary size were measured by the Wilcoxon signed rank test. This test is described as a non-parametric alternative to the t-test. Moreover, the correlation between vocabulary size development and critical thinking development was measured by the Spearman's rho. Differences between pre- and post-test scores were first calculated and later correlated.

5.5 Ethical considerations

The Swedish Research Council's (2017) guidelines *Good Research Practice* were followed in this research project. In the first part, assessment tasks used in English courses at Swedish universities were examined. These assessment tasks were confidential; hence, none of the data collected is published. The examples of HOTS and LOTS assessment tasks were altered in consideration of this.

The data collection was carried out through a number of tests, questionnaires and interviews which were based on voluntary participation. The participants, including teachers and students, were informed about the purpose of the study before deciding to participate. Voluntary participation was ensured

through information and the option to withdraw from participation at any time. Information about the purpose of the research project and the procedure was sent out to the participants by e-mail. It was clearly stated in this e-mail who is responsible for the research, how it is carried out, that participation is voluntary and that those who have chosen to participate can withdraw from participation at any time. The same information was given verbally to the participants in the interviews.

Moreover, in order to ensure confidentiality, the participants' personally-identifying information was removed. The questionnaire and the interviews used in part two were formed so that no personally-identifying information was collected. Thus, the teachers participating in this study are entirely anonymous. This was seen as essential in order to ensure the validity of the study.

A new law about ethics in research came into effect in 2020 (The Swedish Government, 2019). This law stipulated clearer regulations about ethics in research and ethical reviews. Most of the data in this research project were collected before 2020, such as the assessment tasks (2018), the questionnaire study (2019) and the CCTST and the VST (2019). However, the interviews were conducted in 2022. Due to uncertainties about how to interpret the new law about ethics and ethical review, an ethical review for the interviews was applied for from the Swedish Ethical Review Authority. This was to ensure that all rules and guidelines for ethical research were followed in the interview study. The Swedish Ethical Review Authority did not consider it necessary to apply for an ethical review.

In order to connect the results of the CCTST to the VST, students were asked to enter their first name when taking these tests. After collecting the data, names which could identify participants were removed and replaced with numbers for identification. Documents containing students' personal names were destroyed as soon as possible. Any information collected through the CCTST, VST, the questionnaire and the interviews which could reveal the participants' identity has been removed and is not published in any part in this thesis or in other publications.

5.6 Methodological reflections

This thesis aimed to investigate critical thinking and higher-order thinking skills in English courses, with a special focus on assessment tasks. In the process of doing so, several different research methods were used. While these are the methods I have chosen for this study, other methods could also have been used with successful results. This section includes a brief discussion of the methodological choices made in this thesis.

In the first part, content analysis was used to analyze assessment tasks and learning outcomes in English courses. Traditionally, content analysis is carried out by more than one researcher. Intercoding was, however, not an option in the present thesis due to external constraints. In order to compensate for this limitation and to further strengthen the study's validity, all items were coded twice, with the intention of searching for inconsistencies in coding. Still, this is a limitation which needs to be taken into consideration. Collaborating with another researcher to ensure the validity of the coding would have been ideal. Examples of assessment tasks are provided in the results to be transparent about how the coding was conducted. This allows the reader to form their own opinion and evaluate the procedure of coding the assessment tasks.

In the present study, both HOTS and critical thinking are important concepts. As discussed in section 3.1, these are closely related terms. Considering this, it is legitimate to question the need for both of these concepts. This partly stems from methodological decisions. While critical thinking is a more precise and well-known term, the difficulties in defining it makes it unsuitable for the purpose of analysis. However, HOTS is clearly defined in the revised Bloom's Taxonomy (Anderson & Krathwohl, 2001), which made it practical in the analysis of learning outcomes and assessment tasks.

In the second part of this research project, a questionnaire developed by the author of this study was used with the intention of investigating English teachers' views and experiences of HOTS and HOTS assessment. The questionnaire format made it easy to reach teachers and since little previous knowledge about the topic was available, it was considered important to get a first overview of the field. Moreover, sampling was an issue considered when sending out the questionnaire. There is no official information about how many teachers work on English courses at Swedish universities. Hence, I chose to send out the questionnaire to as many teachers as I could find. In order to reach as many teachers as possible, course pages were visited for information on teachers and e-mails were sent to directors of studies at English departments. While every effort was made to ensure that an invitation reached all English teachers, it is inevitable that some teachers were missed in this process. It is difficult to tell whether and how this affects the study's validity and reliability.

Teachers' views on critical thinking and experiences of assessing it in English courses were also investigated through a number of interviews. The benefit of interviews is that these are more open-ended and often yield more in-depth answers. These were considered important aspects as this type of data could not be retrieved through the questionnaire. Thus, the interviews are an effective complement to the questionnaire. Moreover, the purpose of the

interview study was not to gain entirely new information, but to clarify and deepen the data from the questionnaire. As such, many of the questions in the interviews concern the same topics found in the questionnaire.

The present study uses both quantitative and qualitative methods. This approach is often referred to as triangulation (Dörnyei, 2007). Among the benefits of triangulation is that it can raise the validity of a study when the data based on qualitative and quantitative methods support each other. Triangulation was primarily used in investigating teachers' views and experiences of HOTS and critical thinking assessment, but also in the analysis of assessment tasks and learning outcomes. The lack of suitable tests, combined with the difficulty of finding students willing to participate in the present study contributed to the use of only quantitative methods in the investigation of students' critical thinking skills.

In the third part, the CCTST and the Vocabulary Size Test were used. As described in section 5.4.2 and 5.4.3, these are well-established tests within their respective fields. Furthermore, the methodological choices of these two tests are grounded in theory about critical thinking and vocabulary size. Grounding a test instrument in theory is one means to ensure a study's validity (Cohen et al., 2011). A major limitation of this study is the relatively few participants. It is likely that the online feature made it more difficult to find students willing to participate in the present study.

This chapter has presented and discussed the methods used to investigate HOTS and critical thinking in intermediate English courses at Swedish universities. Chapter 6 includes a presentation of the results gained from these methods.

Chapter 6: Results

This chapter reports the results of the present study. It includes the analysis of learning outcomes and assessment tasks, the questionnaire, the interviews, the CCTST and the Vocabulary Size Test. Section 6.1 covers the results pertaining to critical thinking and HOTS in English courses and seeks to answer the first research question: In terms of learning outcomes and assessment tasks, to what extent do English courses at Swedish universities focus on critical thinking and HOTS? This section is based on the analysis of learning outcomes and assessment tasks in English courses at Swedish universities.

In section 6.2, English teachers' perceptions and experiences of critical thinking, HOTS and the assessment of HOTS are presented. This section is based on the questionnaire and on interviews with English teachers, and seeks to answer the second research question: What are English teachers at Swedish universities' perceptions of HOTS, critical thinking and the assessment of these in English courses? Both section 6.1 and 6.2 also aim to investigate the third research question: What similarities and differences between linguistics and literature pertaining to critical thinking and HOTS can be detected in English courses? Hence, learning outcomes, assessment tasks, the questionnaire and the interviews focus on similarities and differences between linguistics and literature.

Finally, section 6.3 concentrates on the fourth research question: What kind of relationship can be detected between the development of critical thinking and L2 proficiency among Swedish EFL students? The section covers the relationship between EFL learning and the development of critical thinking in English courses based on the CCTST and the Vocabulary Size Test.

Parts of the results have been published before in a number of articles (Johansson, 2020a, 2020b, 2022). In this thesis, these results, together with new data, are discussed in a broader context and in the light of a new theoretical framework. For clarity, references to previous publications are made throughout the results section.

6.1 HOTS and critical thinking in English courses

This section aims to investigate whether and how English courses at Swedish universities focus on higher-order thinking and critical thinking skills, based on the first research question: In terms of learning outcomes and assessment tasks,

to what extent do English courses at Swedish universities focus on critical thinking and HOTS? This is done in two ways: an analysis of learning outcomes (section 6.1.1) and an analysis of assessment tasks (section 6.1.2). This section also presents the results from the perspective of linguistics versus literature teaching, thus aiming to investigate the third research question: What similarities and differences between linguistics and literature pertaining to critical thinking and HOTS can be detected in English courses?

6.1.1 Learning outcomes in English intermediate courses

Critical thinking skills and higher-order thinking skills were found in all English subject course syllabi at the intermediate level, as evident in table 13. This table presents intended learning outcomes focusing on critical thinking and HOTS from universities giving the intermediate English course where syllabi were available in English on their webpages. Some learning outcomes are repeated in several modules within one course and these are only mentioned once in the table. To understand the frequency of learning outcomes focusing on HOTS and critical thinking, the action verbs in learning outcomes in these courses were investigated. The analysis is based on the action verbs in table 8 and included 190 learning outcomes.

Table 13: Critical thinking and HOTS learning outcomes in intermediate English course syllabi

University	Linguistics	Literature	General
Dalarna University	reflect on the use and functions of the English language with reference to basic linguistic concepts analyze different types of English-language data and reflect on differences and similarities between fundamental categories such as speech and writing	show proficiency in critically reflecting, analysing and interpreting literary texts from a historical and contextual perspective, with a certain degree of independence, both orally and in writing	
University of Gothenburg		produce close readings and analyses of literary	search, evaluate and handle information in

		texts that are well grounded in previous research	relation to concrete research assignments and questions with a historical perspective and on the basis of central research concepts, theories and methods critically relate to the limitations and possibilities of language, literature and culture with regard to sustainable social progress critically reflect on his or her own theoretical arguments and methods in his or her production and those of others
University of Gävle	analyze English from different linguistic perspectives using central concepts in linguistics apply a linguistic research method to analyse a particular linguistic topic	analyze literature from the English-speaking world using the appropriate terminology analyse literary works in connection with the main currents of American and British literary histories and their relevant sociohistorical contexts analyse the relation between texts from different historical periods	critically evaluate their own and others' texts

Karlstad University	give an account of and discuss what characterises well written academic prose	apply concepts of literary studies in textual analysis compare literary and historical aspects of texts from different periods after 1800 apply concepts of literary studies in textual analysis compare literary and historical aspects of texts from different periods before 1800 produce well structured texts of literary analysis in Standard English and with correct source use	
Linneaus University	demonstrate good abilities to apply linguistic theories and methods in analysis of texts in English analyse language variation in society and in interpersonal communication	apply different literary theories and methods in analysis of fiction analyse literary texts in a way that takes cultural and historical contexts into account use these terms and concepts in basic analysis of authentic English texts reflect on issues concerning literature history from a theoretical perspective	explain, account for and analyse a number of language, culture or programme specific themes
Lund University	analyse English texts with regard to their linguistic structure assess and discuss the appropriateness of	analyse the content of fiction and non-fiction texts in English and argue for alternative interpretations	based on critical source management, produce an investigative paper in English that applies

	different linguistic expressions in given contexts	discuss advanced fiction and non-fiction texts in English using appropriate vocabulary compare, assess and argue for alternative analyses of a single text	correct reference and citation techniques discuss explicit and implicit statements about class, gender and ethnicity in texts
Malmö University	can analyze English words and sentences using semantic methods and concepts can seek and evaluate further information within the field of semantics	can seek and evaluate further information within the field of narrative theory can practice techniques of analysis through concepts and reflect on their own ability to produce interpretations, and can seek and evaluate further information within the field of literary theory and aesthetics understands some of the most important distinctions in narrative theory and can analyse narratives by using those distinctions can practise techniques of close reading and reflect on their own ability to produce interpretations	
Mid Sweden University	demonstrate the ability to search for, evaluate and select information, as well as independently use language tools,	show a developed ability to read, understand and analyse cultural and literary texts in relation to the transatlantic world's	show a more developed ability to understand, produce and critically evaluate spoken and written

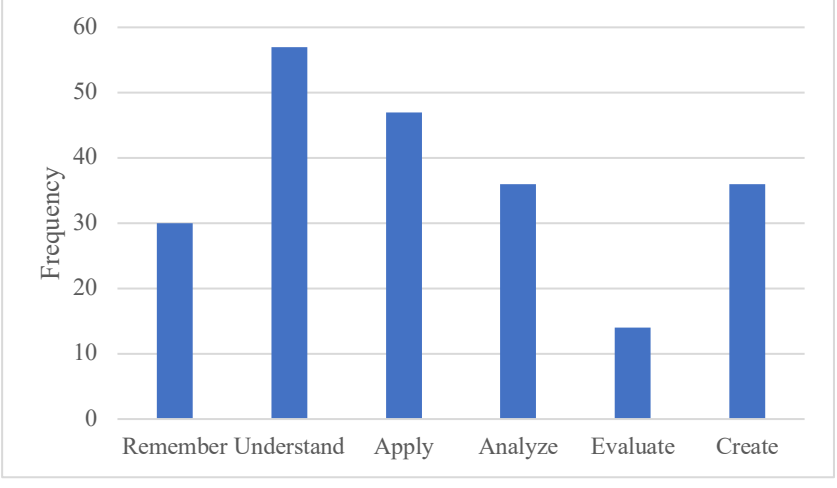
	dictionaries, grammars and corpora.	literary and cultural historical eras show a developed ability to read, understand and analyse individual literary texts in their global contexts	English of different levels and styles demonstrate the ability to search for, evaluate and select information from the Internet, library resources and other sources show the ability to collaborate with other students to develop, improve and critically evaluate his/her and other students' oral and written proficiency in English
Stockholm University		critically analyse different types of literary texts from different time periods critically analyse different types of literary texts from different time periods and different parts of the English-speaking world	
Södertörn University	formulate a research question and justify a suitable linguistic methodology evaluate the appropriateness of linguistic methodology in relation to specific linguistic inquiry discuss the ethical aspects of linguistic	describe and discuss central issues within the field of British literary history, with a focus on the interactions between cultural, social, and political phenomena evaluate the role of literature in Great Britain from a historical perspective	reflect on the ethical and political implications of humanistic studies interpret and present qualitative and quantitative data based on systematic analysis

	methods for linguistic inquiry analyse spoken and written language according to linguistic methodology and theory reflect on the relationship between language and power in their own and others' language use discuss the opportuniti es and limitations of li nguistic analysis	use theoretical texts to analyse postcolonial literature use relevant terminology to discuss central issues in postcolonial literary studies, focusing on the connections between cultural, social and economic phenomena reflect on literary representation in relation to postcolonial society assess the ethical implications of their position as historically situated readers	
Umeå University		demonstrate the ability to analyze and discuss a number of representative literary works with a nuanced and in-depth method	demonstrate the ability to search for, compile, analyze and critically interpret material as well as draw conclusions from the analysis and discuss/evaluate these conclusions
University West	show knowledge of and be able to discuss changes and developments in the English language from a historical perspective reflect upon the relationship between	demonstrate an ability to analyze and understand intertextual connections in classic and recent cultural narratives from the English-speaking world, in particular	

	linguistic varieties and the regional, social and functional context	Great Britain and North America
		plan, carry out and compose a literary analysis that demonstrates independent critical thought and argumentation according to academic conventions

Figure 2 presents the categorization of all the verbs found in the learning outcomes investigated. The 190 learning outcomes contained 219 verbs; thus, some learning outcomes had more than one verb. Understand (57) was the most common, followed by Apply (47), Analyze (36), Create (36), Remember (30) and Evaluate (14). A total of 38 percent of the action verbs in the learning outcomes cover the three highest levels of the revised Bloom's Taxonomy and are considered HOTS.

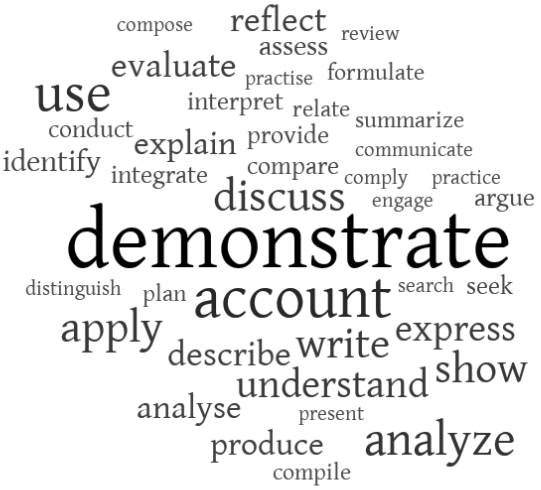
Figure 2: Frequency of thinking skills in learning outcomes



Regarding the verbs found in the learning outcomes, figure 3 is a word cloud based on these. The size of the word indicates its frequency. *Demonstrate* is the

most frequent verb, with 27 occurrences, followed by *account* (17), *use* (15), *analyze* (12), *apply* (11) and the remaining verbs.

Figure 3: Word cloud of verbs in learning outcomes

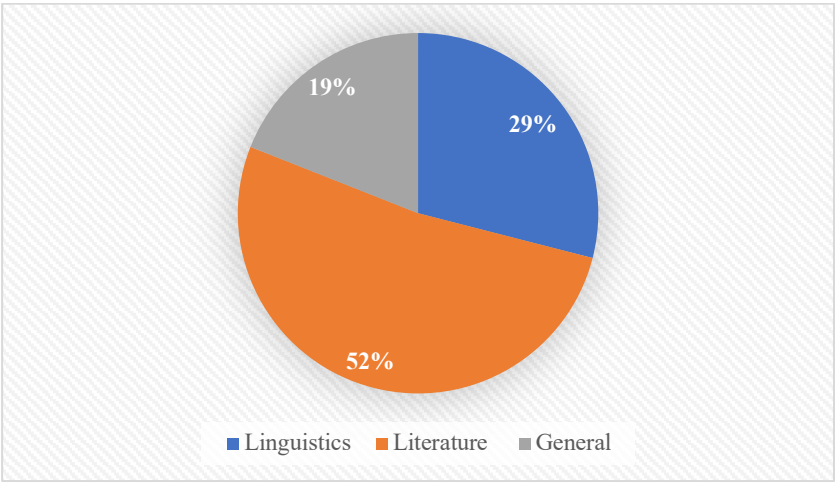


It should be noted that Create is not specifically mentioned in any of the syllabi. The majority of the Create learning outcomes, however, are based on the action verb *discuss*, such as in the following example from University West: "show knowledge of and be able to discuss changes and developments in the English language from a historical perspective". Other action verbs related to Create found in the learning outcomes include *plan* and *compose.* An example is the following outcome, also found in the syllabus of the University West: "plan, carry out and compose a literary analysis that demonstrates independent critical thought and argumentation according to academic conventions". Similarly, the action verb *produce*, related to the HOTS Create, is found in an outcome mentioned in the syllabus from Lund University: "based on critical source management, produce an investigative paper in English that applies correct reference and citation techniques". The same action verb is also found in two other syllabi: "produce interpretations" (Malmö University) and "produce and critically evaluate spoken and written English of different levels and styles" (Mid Sweden University).

A total of 20 out of 69 (30%) learning outcomes in linguistics targeted HOTS, 35 of 72 (49%) in literature and 13 of 47 (28%) in general. Of the total quantity of HOTS learning outcomes, linguistics modules stood for 29%, literature modules for 52% and 19% were found in general learning outcomes; see figure 4.

A Chi-squared test of independence revealed that there was a significant difference between linguistics and literature modules in terms of the frequency of HOTS learning outcomes (X^2 (1) = 36.17, p = .001). According to the Cramer's V, the effect size was large, .50.

Figure 4: HOTS learning outcomes in intermediate English course syllabi



In order to further understand the differences in learning outcomes between linguistics and literature modules, action verbs used in these learning outcomes were investigated. Figure 5 presents the most common action verbs in the form of a word cloud present in literature learning outcomes and Figure 6 presents the same for linguistics learning outcomes.

Figure 5: Word cloud of verbs in learning outcomes in literature syllabi

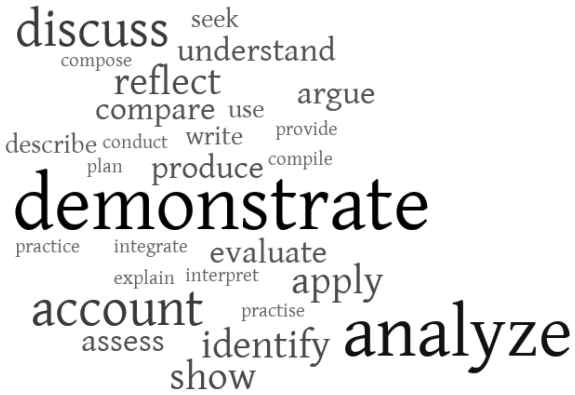


Figure 6: Word cloud of verbs in linguistics syllabi

It is evident that several words are frequent in both linguistics and literature learning outcomes, such as *demonstrate*, *account* and *analyze*. However, there are

also differences. *Apply* is more frequent in linguistics modules than in literature modules and *identify* and *assess* are more frequent in literature modules.

Surveying the intermediate English course syllabi in table 13, it is apparent that critical thinking and HOTS are goals in both linguistics and literature modules. Moreover, some intended learning outcomes in the syllabi concern general critical thinking and HOTS skills. Hence, these are applicable to both linguistics and literature.

6.1.2 Assessment tasks in English courses

A quantitative content analysis was conducted to investigate the presence of HOTS assessment tasks in four intermediate English courses given at Swedish universities[11]. To add further understanding of the results, the quantitative data is supported by qualitative data in the form of examples of assessment tasks. A total of 500 assessment tasks were analyzed in this study.

Figure 7 presents the total number of assessment tasks per thinking level in these four courses. Each assessment task is categorized in accordance with its highest thinking level. As is evident from figure 7, Understand was the most common thinking level, followed by Analyze, Evaluate, Remember, Apply and Create (Johansson, 2020a). A total of 202 assessment tasks targeted HOTS, which amounts to 40 percent of all assessment tasks. Table 14 provides examples of assessment tasks from each thinking level. Alterations have been made in the example assessment tasks in order to ensure confidentiality.

[11] As mentioned in section 5.1, the intention of the present thesis was initially to investigate this topic from an online perspective. Hence, the assessment tasks were collected from online English courses.

Figure 7: Assessment tasks per thinking level

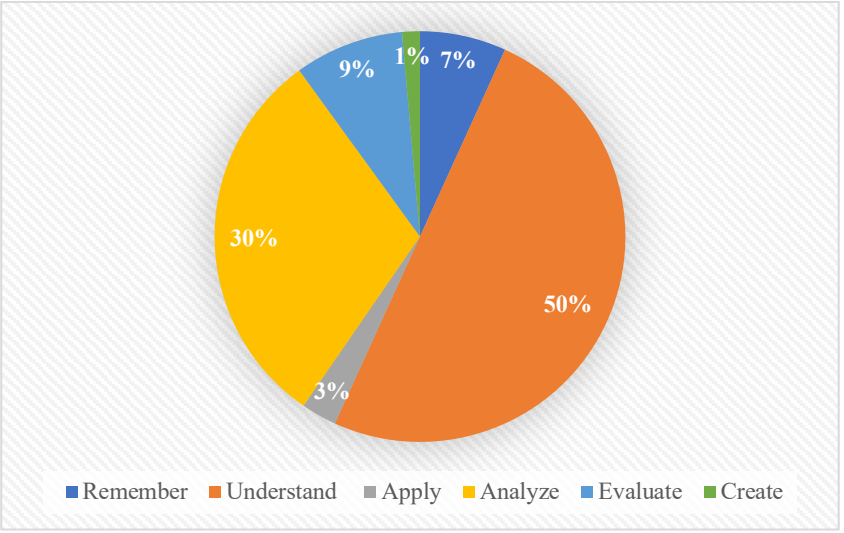


Table 14: Examples of assessment tasks

Thinking level	Example assessment task
Remember	*Collocation* is a relationship between words that seldom occur together. a) The statement is true. b) The statement is false.
Understand	Identify the underlined suffixes as inflectional or derivational. a. loneliness (lone-li-ness) b. modernist (modern-ist) c. stronger (strong-er)
Apply	Use two tests of any kind to show whether the underlined parts of the following sentences are phrases.
Analyze	Based on the mentioned text, give a brief analysis of it that includes an account of typical characteristics for the period or movement. The presentation should be 5-10 minutes long.

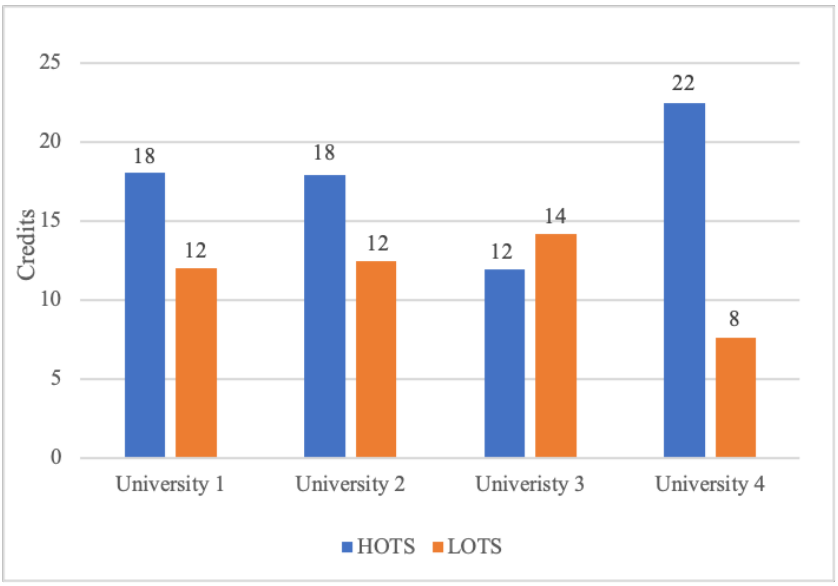
Evaluate	Read the following texts and discuss the main points of each critic. Which reading do you consider to be most correct? Motivate your answer.
Create	Essay instructions: The essay should be 3,500 words and research a topic of your choice. In the analysis you will argue for a particular reading of a historical literary text. The text should be typical for one of the historical periods we have discussed in this course.

As alluded to above, assessment tasks were often categorized into several thinking levels. However, in the presentation of the data, only the highest level is counted. Table 15 illustrates assessment tasks per thinking level for each university. As is evident from the table, the number of assessment tasks varied quite a lot between universities. As mentioned in section 3.1.1, the three first levels of the revised taxonomy are considered as LOTS and the three highest levels are considered as HOTS. Figure 8 shows the division between LOTS and HOTS assessment tasks per university. Assessment tasks in this figure are calculated per higher educational credit (HEC) in order to adjust for the unequal proportions of assessment tasks and differences in credit value between assessment tasks. Three of the four intermediate English courses investigated had more HOTS than LOTS assessment tasks. University 3 had slightly more LOTS than HOTS tasks. It should, however, be noted that due to changes in teaching staff, one 4-credit module in linguistics is missing from University 3. Furthermore, figure 8 shows that 70 credits out of 116 tap into HOTS, which amounts to 60 percent of all assessment tasks.

Table 15: Frequency of assessment tasks per university
This table was originally published in Johansson (2020a, p. 242).

	Remember	Understand	Apply	Analyze	Evaluate	Create	Total
Uni. 1	6	49	3	36	8	4	106
Uni. 2	27	125	0	50	12	3	217
Uni. 3	1	35	5	10	4	0	55
Uni. 4	0	41	6	56	19	0	122
Total	35	250	14	152	43	7	500

Figure 8: Credits of HOTS/LOTS assessment per university
This figure was originally published in Johansson (2020a, p. 243).



Figures 9 and 10 illustrate the frequency of HOTS assessment in linguistics and literature modules. Statistical procedures were used to investigate the difference in frequency in HOTS assessment in linguistics and literature modules (Johansson, 2020a). A Chi-square test of independence showed that there was a

significant difference in frequency of HOTS assessment (X^2 (1) = 84.85, p = .00). According to the Cramer's V, the effect size was moderate, .46.

Figure 9: Credits of HOTS/LOTS in literature and linguistics modules
This figure was originally published in Johansson (2020a, p. 244).

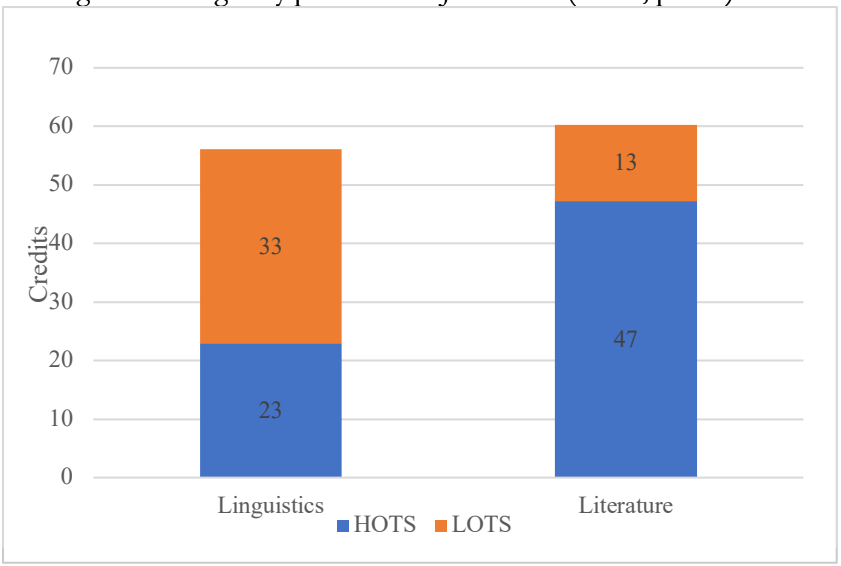
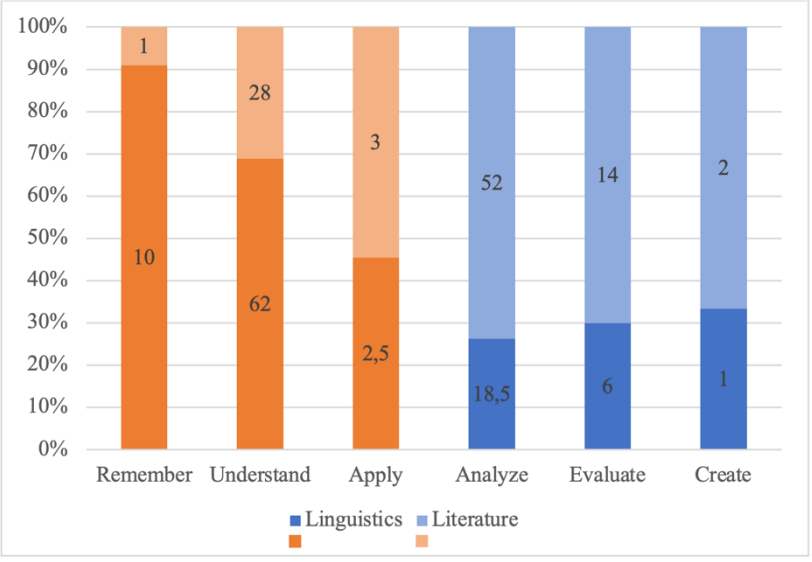


Figure 10: Distribution of thinking levels in linguistics and literature modules. This figure was originally published in Johansson (2020a, p. 244).



As is obvious from figures 9 and 10, literature modules contained more HOTS assessment and less LOTS assessment than linguistics modules. Table 16 provides examples of assessment tasks on all thinking levels from both linguistics and literature modules.

Table 16: Examples of assessment tasks in linguistics and literature modules

Thinking level	**Linguistics**	**Literature**
Remember	How is *semantics* usually defined?	Choose one of the prose texts below and identify the text and the author.
Understand	Language can be used in many ways. Provide examples of different types of functions of language, i.e., how it can be used in interpersonal contact.	How can we see that poems were popular at the time?

Apply	How can transfer in L2 acquisition help us understand the following L2 errors in English produced by students with Swedish as their L1?	What is "typically Gothic" in the poem?
Analyze	Analyze the meaning of the following words by creating a semantic feature analysis diagram: *cat, dog, hamster, tiger, horse.*	Select one of the themes we've discussed on the course to analyze. In your answer you should discuss any of the texts you have read that are relevant to your topic, but a minimum of three works and one intertext should be analyzed.
Evaluate	In your opinion, would it be better if languages were written in the IPA? What would be the consequences of such reform?	Read the text. What is the main point that each critic is making? Which reading do you prefer and why?
Create	Children acquire language in a typical sequence. Your assignment is to create a chart with the stages of acquisition. Provide examples for each stage.	Essay instructions: The essay should be 3,500 words and research a topic of your choice. In the analysis you will argue for a particular reading of a historical literary text. The text should be typical for one of the historical periods we have discussed in this course.

Differences between linguistics and literature modules were also evident in the frequency of format of assessment tasks. Figure 11 and table 17 show that the ranking of assessment tasks in linguistics modules from most to least frequent

was as follows: written exam questions, compulsory study questions, seminar questions, discussion forum questions, written essays/assignments, oral presentations and peer-reviewing. In literature modules, the most frequent assessment type was compulsory study questions followed by seminar questions, written exam questions, discussion forum questions, written essays/assignments and oral presentations. However, the frequency of assessment tasks does not give the entire picture, as assessment tasks differ in credits. While HOTS assessment was calculated in credit, the types of assessment tasks in figure 11 and table 17 are counted by frequency. It is likely that some assessment tasks, which to a high degree focus on HOTS, are given a larger number of credits in the modules. An example of this is written essays and assignments. These assessment tasks are regularly used to examine an entire module or a large part of a module. Thus, the higher frequency of written essays and assignments in literature courses could perhaps explain the difference in frequency of HOTS assessment between linguistics and literature modules.

Figure 11: Types of e-assessment items in linguistics and literature modules in percent.
This figure was originally published in Johansson (2020a, p. 245).

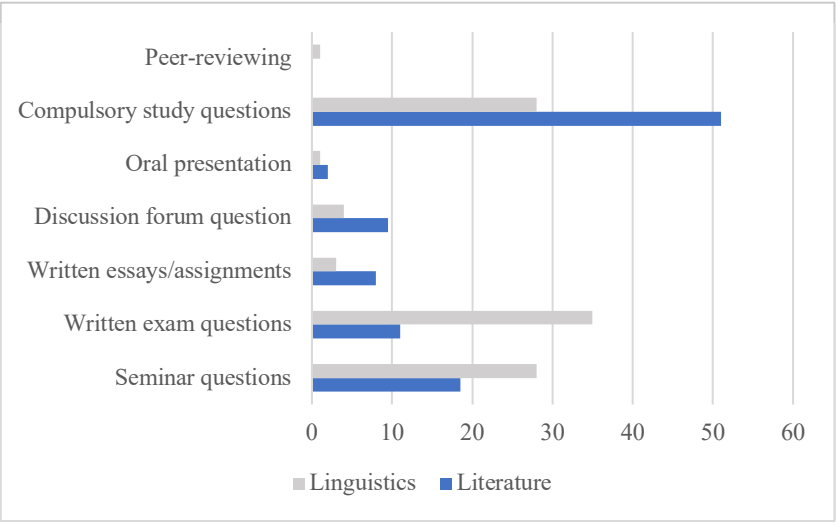


Table 17: Frequency of assessment items in linguistics and literature modules
This table was originally published in Johansson (2020a, p. 246).

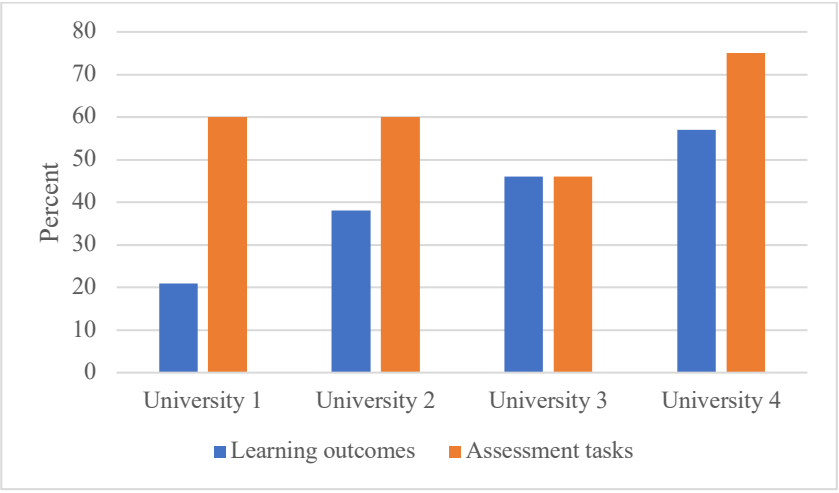
Assessment	**Literature**	**Linguistics**
Seminar questions	33	89
Written exam questions	19	114
Written essay/assignment	15	8
Discussion forum questions	17	14
Oral presentations	4	3
Compulsory study questions	90	92
Peer-reviewing	0	2
Total	178	322

6.1.3 Learning outcomes and assessment tasks in four intermediate English courses

This section presents the results of a comparison of learning outcomes and assessment tasks, focusing on HOTS in four English courses. These are the same courses as investigated in section 6.1.2 (see table 7 in section 5.2.1).

Figure 12 provides a comparison between HOTS learning outcomes and assessment tasks calculated in percent. As is evident from the table, there is an almost perfect match between HOTS learning outcomes and assessment tasks in University 3. However, in the other universities, HOTS assessment tasks were more frequent than HOTS learning outcomes.

Figure 12: Comparison between HOTS learning outcomes and assessment tasks in four English courses



Figures 13, 14, 15 and 16 consist of comparisons of action verbs in learning outcomes and assessment tasks in the four English courses. The frequency of action verbs is counted in percent in these figures.

Figure 13: Action verbs in learning outcomes and assessment tasks in University 1

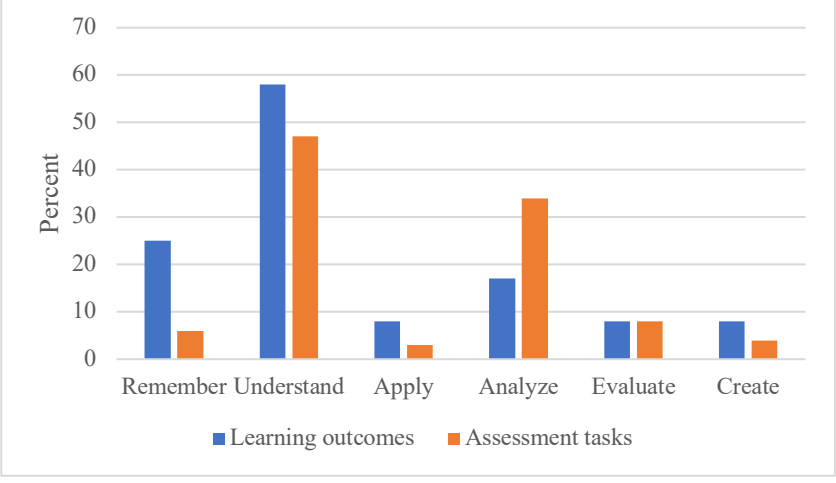


Figure 14: Action verbs in learning outcomes and assessment tasks in University 2

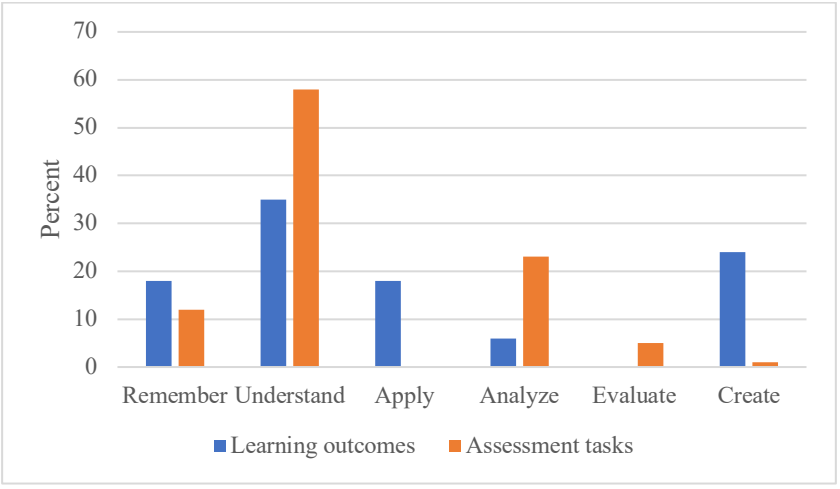


Figure 15: Action verbs in learning outcomes and assessment tasks in University 3

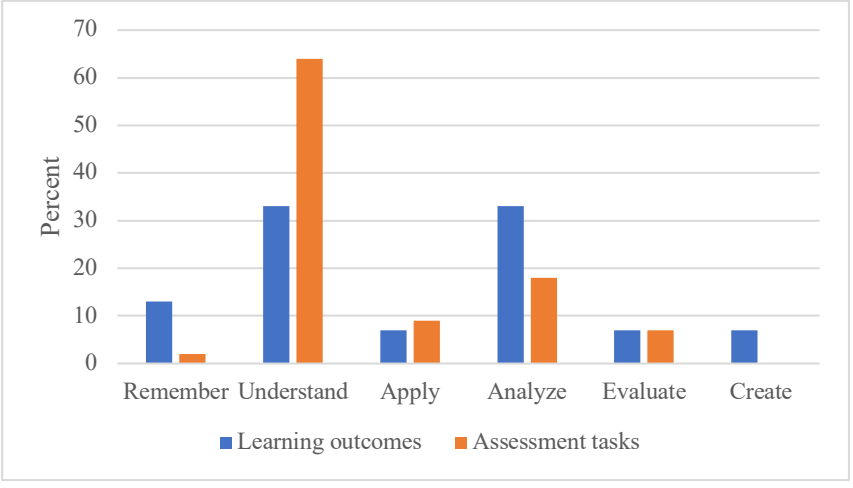
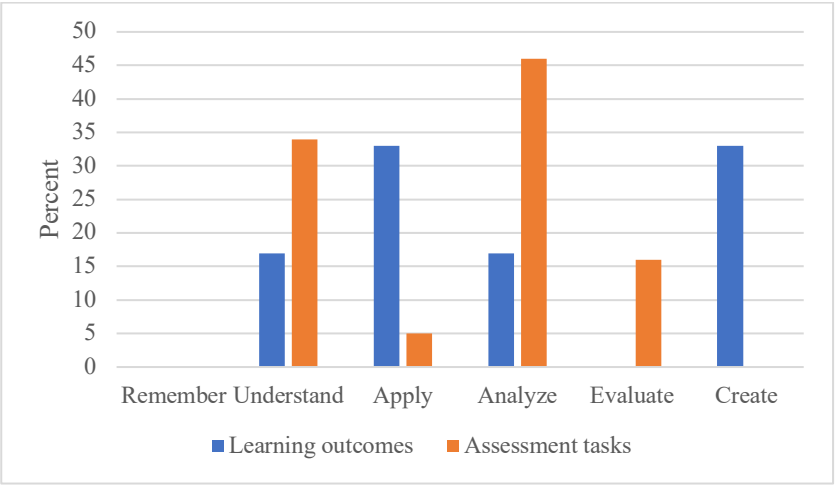


Figure 16: Action verbs in learning outcomes and assessment tasks in University 4



6.1.4 Summary

This section shows that critical thinking and HOTS were present both in learning outcomes in English courses at Swedish universities where the syllabus was available in English and in assessment tasks in four English courses at Swedish universities. A total of 38 percent of all learning outcomes in intermediate English courses at Swedish universities focused on HOTS. The most common of the skills in the revised Bloom's Taxonomy was Understand, followed by Apply, Analyze, Create, Remember and Evaluate. This topic was also investigated with the division between linguistics and literature in mind and the results showed that HOTS learning outcomes were significantly more common in literature than in linguistics modules.

As for the assessment tasks investigated, the study found that HOTS assessment tasks were more common than LOTS in three of the four courses. Similar to learning outcomes, literature modules had more HOTS assessment tasks than did linguistics modules. The study also showed that there are differences in assessment format between linguistics and literature, which may have affected the presence of HOTS in these modules.

Moreover, this section presents a comparison of HOTS learning outcomes and assessment tasks in four English courses at Swedish universities. HOTS assessment tasks were more frequent than HOTS learning outcomes in three of the four courses investigated. The data also revealed that some skills were more

aligned with assessment tasks; however, this also differed between the four universities.

The aim of this section was to provide an understanding of the presence of HOTS and critical thinking in English courses at Swedish universities by looking at learning outcomes and assessment tasks. Assessment tasks are constructed by teachers working on these courses. It is ultimately the teachers who make decisions about what thinking level an assessment task is placed on. Hence, understanding teachers' perspectives and experiences of HOTS and critical thinking is important to provide a more comprehensive picture of this topic. In section 6.2, data from a questionnaire and an interview study with English teachers are presented.

6.2 Teachers' perceptions and experiences of HOTS and critical thinking

This section presents the results concerning teachers' perspectives on and experiences of critical thinking, HOTS and HOTS assessment. The aim of this section is to investigate the second research question: What are English teachers at Swedish universities' perceptions of HOTS, critical thinking and the assessment of these in English courses? The results in section 6.2.1 are based on the questionnaire sent out to English teachers at Swedish universities and the results in section 6.2.2 are based on the interviews. The aim is also to investigate the third research question: What similarities and differences between linguistics and literature pertaining to critical thinking and HOTS can be detected in English courses? Therefore, the results are analyzed with the distinction between linguistics and literature in mind.

6.2.1 Results from the questionnaire

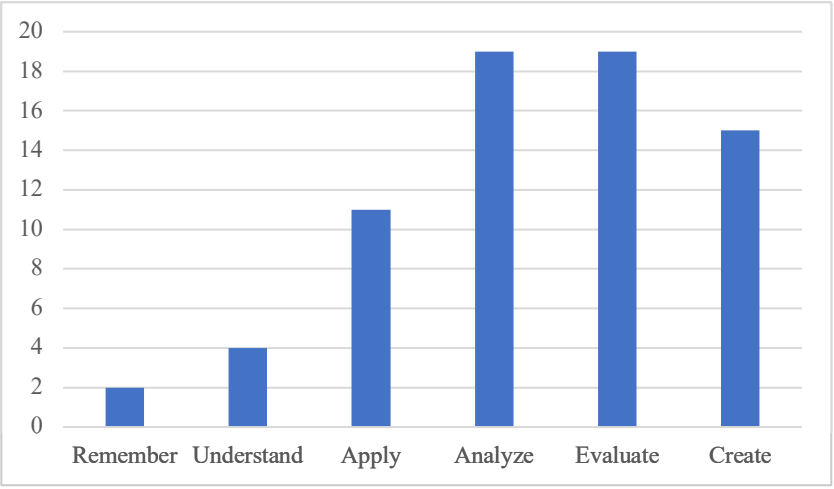
The teachers were asked in the questionnaire if they would be able to define HOTS. According to their replies, 17 participants (89%) replied affirmatively and two participants (11%) replied that they could not (Johansson, 2020b). Hence, the vast majority of participating teachers felt that they could define HOTS.

Furthermore, the participants were asked which skills among Remember, Understand, Apply, Analyze, Evaluate and Create, they considered to be HOTS (Figure 17). Regarding Analyze and Evaluate, all teachers believed these to be HOTS. The majority of teachers also included Create (15) and Apply (11) in the term. Relatively few teachers believed that Remember (2) and Understand (4) were HOTS.

The data from the questionnaire was also analyzed with the division between linguistics and literature in mind. Some teachers taught both subjects; hence, there are three groups of participants. All three groups agreed that Analyze and Evaluate are higher-order thinking skills. Approximately 60 percent of the participants (literature 62.5%, linguistics 66.7% and both 63.2%) considered Apply to be included in the definition of HOTS. Differences between the groups can be detected in their views of the skills Remember, Understand and Create. While none of the literature teachers considered Remember to be a higher-order thinking skill, 16.7 percent of the linguistics teachers and 20 percent of teachers in both linguistics and literature did. Likewise, 12.5 percent of the literature teachers and 16.7 percent of the linguistics teachers considered Understand to be a higher-order thinking skill and 40 percent of the teachers teaching both subjects did. Create was the skill that teachers disagreed most about. While only 50 percent of the literature teachers believed Create to be a higher-order thinking skill, 83.3 percent of the linguistics teachers and all teachers teaching both subjects did. It may be concluded that the participating teachers were generally in agreement regarding the skills Remember, Apply, Analyze and Evaluate, while the higher-order thinking skills Create and the lower-order thinking skill Understand produced some disagreement. As more than 20 percent of the alternatives were answered by less than 5 respondents, the Chi-square test of independence could not be used to measure how significant were the differences between the three groups' views of which skills are considered to be HOTS.

Figure 17: Frequency of participating teachers who believed thinking skills to be HOTS. N=19

This figure was originally published in Johansson (2020b, p. 170).



The next question in the questionnaire sought to investigate how important the participants believed that the development of HOTS is in language courses. On a 1-6 scale where 1 represents "not important at all" and 6 represents "very important", the median was 6 for all three groups of teachers and for the total group of teachers (see table 18). Thus, HOTS was considered highly important by the participating teachers. On a question regarding the belief that higher levels of HOTS help students learn a second language, 15 out of 19 teachers agreed with this claim. Taken together, these results indicate a strong preference for HOTS in language courses.

A Kruskal-Wallis H test showed that there was no statistically significant difference in views on the importance of HOTS between teachers in linguistics, literature and both subjects ($H(2) = .008$, $p = .931$). Thus, there was no statistically significant difference in how important they perceived the development of students' HOTS in language courses to be. Moreover, teachers of both linguistics and literature were inclined to believe that higher levels of higher-order thinking help students learn a second language. 62.5 percent of the literature teachers, 83 percent of the linguistics teachers and 100 percent of those who taught both subjects affirmed that they believed HOTS to help students in L2 learning. More literature teachers (37.5%) than linguistics teachers (17%) replied that they were unsure about whether higher levels of HOTS help students learn a second language. No teacher replied that they did not believe that HOTS help students learn a second language.

Table 18: How important do you believe that the development of students' higher-order thinking skills is in language courses? N=19

Category	Literature teachers (8)	Linguistics teachers (6)	Teachers in both literature and linguistics (5)	Total (19)
1: Not important	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	1	0	1
5	3	1	2	6
6: Very important	5	4	3	12

Regarding assessment tasks in English courses, there was an inclination among teachers to believe that e-assessment tasks that target HOTS develop students' L2 proficiency as well.[12] On a scale of 1-6 where 1 represents "not at all" and 6 represents "to a large extent", the median was 5 for the entire group of teachers, 4.5 for literature and linguistics teachers and 5 for the group of teachers who taught both subjects (see table 19). The Kruskal-Wallis H test was run to compare the scores between the three groups of teachers. It showed that there was no statistically significant difference between the three groups in the extent to which they believed that assessment tasks help students develop L2 proficiency ($H(2) = 1.502$, $p = .472$).

Similarly, on a question regarding the importance of assessment tasks in supporting students' development of HOTS, the median was 5 among all teachers, 5 for literature teachers, 4.5 for linguistics teachers and 6 for teachers of both subjects (see table 20). The Kruskal-Wallis H test was conducted to investigate the difference between linguistics and literature teachers and teachers of both subjects. The test did not report a statistically significant difference between these groups ($H(2) = .303$, $p = .582$).

[12] As mentioned in section 5.1, the present study first intended to investigate HOTS assessment in online English courses. Hence, there are references to e-assessment in the questionnaire.

Table 19: To what extent do you believe that e-assessment tasks that target higher-order thinking skills develop students' proficiency in the second language? N=19

Category	Literature teachers (8)	Linguistics teachers (6)	Teachers in both literature and linguistics (5)	Total (19)
1: Not at all	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	4	3	0	7
5	3	2	3	8
6: To a large extent	1	1	2	4

Table 20: How important do you believe e-assessment tasks are in supporting students' development of higher-order thinking skills? N=19

Category	Literature teachers (8)	Linguistics teachers (6)	Teachers in both literature and linguistics (5)	Total (19)
1: Not at all	0	0	0	0
2	0	0	0	0
3	0	2	0	2
4	1	1	2	4
5	6	3	0	9
6: Very important	1	0	3	4

Moreover, the participants were asked which skills are targeted by the assessment tasks used in their courses. Table 21 includes the frequency of skills which teachers aim to target among teachers of literature, of linguistics, of both subjects and in all three groups of teachers.

Table 21: Which of the following abilities do the e-assessment tasks used in your course target? N=19.
Percentage in parentheses.

	Literature teachers	**Linguistics teachers**	**Teachers in both literature and linguistics**	**Total**
Remember	0 (0)	2 (33)	1 (20)	3 (15.8)
Understand	5 (62.5)	5 (83.3)	5 (100)	15 (78.9)
Apply	7 (87.5)	5 (83.3)	5 (100)	17 (89.5)
Analyze	8 (100)	6 (100)	5 (100)	19 (100)
Evaluate	8 (100)	6 (100)	4 (80)	18 (94.7)
Create	1 (12.5)	4 (66.7)	5 (100)	10 (52.6)

Furthermore, the teachers were asked about their experiences of developing assessment tasks which target HOTS; see table 22. The median for the entire group of teachers was 4, on a scale of 1-6 where 1 represents "Very difficult" and 6 represents "Very easy". Moreover, the median was 4 for literature teachers, 3.5 for linguistics teachers and 4 for teachers of both subjects. A similar question was asked regarding how comfortable teachers felt about developing assessment tasks targeting each thinking skill (Table 23). According to the teachers' replies, they felt equally comfortable with developing assessment tasks which target all skills except Remember. The Kruskal-Wallis H test was run to investigate the difference between the groups of teachers. There was no statistically significant difference between the three groups ($H(2) = 1.191$, $p = 0.275$). Breaking down the results and looking into each specific skill, the results vary between the three groups with regard to the skill Remember. The Kruskal-Wallis H test found that there was a statistically significant difference between the three groups ($H(2) = 6.834$, $p = 0.033$). Dunn's pairwise tests were carried out for the three groups. According to these, the difference between literature teachers and teachers teaching both subjects was statistically significant ($p = 0.011$, $r = 0.41$). The means of the teachers teaching both subjects were higher than the means of the literature teachers, indicating that teachers teaching both subjects felt more comfortable about targeting the skill Remember than literature teachers. No statistically significant

difference could be detected between how comfortable teachers felt with developing assessment tasks that target students' ability to Understand, Apply, Analyze, Evaluate and Create.

Table 22: How do you find developing e-assessment tasks that target higher-order thinking skills? N=19

Category	Literature teachers (8)	Linguistics teachers (6)	Teachers in both literature and linguistics (5)	Total (19)
1: Very difficult	0	0	0	0
2	1	1	0	2
3	2	2	1	5
4	4	2	2	8
5	1	0	2	3
6: Very easy	0	1	0	1

Table 23: I feel comfortable in developing e-assessment tasks that target students' ability to… (median). N=19. Max 6.

	Literature teachers	Linguistics teachers	Teachers of both literature and linguistics	Total
Remember	3	3	6	3
Understand	5	5.5	5	5
Apply	5	5	5	5
Analyze	5	5.5	6	5
Evaluate	5	5	5	5
Create	3	5	5	5

The participants were given a list of common e-assessment tasks (take-home exam, written assignment, term paper, oral presentation, discussion forum, peer-reviews, e-Portfolio and MCQs) and asked which skills they believed these tasks could target. Table 24 and 25 show participants' replies for each thinking level and a summary of LOTS (Remember, Understand and Apply) and HOTS (Analyze, Evaluate and Create). E-assessment tasks that were considered

suitable for targeting students' HOTS often also had high points for LOTS, such as written assignments and take-home exams. Multiple-choice questions were the only assessment alternative to receive very low points for HOTS, while the majority of the participants considered it suitable for targeting LOTS.

Table 24: Which skills do you believe the following e-assessment tasks can target? (LOTS)

Assessment task	Remember	Understand	Apply	**LOTS total**
Take-home exam	7	15	18	**40**
Written assignment	6	16	18	**40**
Term paper	10	14	15	**34**
Oral presentation	13	17	14	**44**
Discussion forum	7	16	16	**39**
Peer-review	5	13	11	**29**
e-Portfolio	5	14	14	**33**
MCQs	18	12	5	**35**

Table 25: Which skills do you believe the following e-assessment tasks can target? (HOTS)

Assessment task	Analyze	Evaluate	Create	**HOTS total**
Take-home exam	17	17	10	**44**
Written assignment	19	16	18	**53**
Term paper	13	11	11	**35**
Oral presentation	13	11	11	**35**
Discussion forum	18	16	7	**41**
Peer-review	17	19	5	**41**
e-Portfolio	14	14	12	**41**
MCQs	3	3	0	**6**

The questionnaire also sought to investigate whether and how teachers had participated in any kind of training in teaching HOTS and critical thinking. Of the 19 participants, 7 (36%) had been invited to participate in some kind of training by their department, while 12 (63%) teachers had not (Johansson, 2020b). Table 26 outlines the forms of training which the teachers had been

offered. Courses were the most common form, followed by workshops, seminars and podcasts. On a question regarding whether the teachers had taken own their initiatives in terms of training to teach HOTS and critical thinking, the numbers were reversed, compared to those being offered training. A total of 12 (63%) teachers replied affirmatively on this question, while 7 (36%) replied that they had not taken their own initiative to seek HOTS and critical thinking training. Table 27 outlines the forms of training initiated by the teachers. The most common form was books, followed by lectures, MOOCs, workshops, pedagogy courses, discussions and assessment courses.

Table 26: Forms of HOTS/CT training offered
This table was originally published in Johansson (2020b, p. 172).

Forms	**Courses**	**Workshop**	**Seminars**	**Podcasts**
Number	5	4	1	1

Table 27: Forms of HOTS/CT training initiated by the teachers
This table was originally published in Johansson (2020b, p. 172).

Forms	**Books**	**MOOC**	**Work-shops**	**Pedagogy courses**	**Lecture**	**Discussions**	**Assessment course**
Nr.	6	1	1	1	2	1	1

Attitudes to and challenges in developing HOTS assessment were also investigated through the questionnaire. Table 28 lists a number of statements. The teachers were asked to indicate their level of agreement with these on a scale of 1-6 where 1 represents "Strongly disagree" and 6 represents "Strongly agree". The replies indicated that the development of students' higher-order thinking skills was considered important in their departments to a high degree. This was also discussed in the departments, but to a lesser degree. Moreover, the results indicate that technical and pedagogical support were areas in need of improvement.

Table 28: Attitudes to and support of HOTS e-assessment

Statement	Median
The development of students' higher-order thinking skills is discussed in my department	4
The development of students' higher-order thinking skills is considered important in my department.	5
I'm given the technical support needed to develop e-assessment tasks that target higher-order thinking	4
I'm given the pedagogical support needed to develop e-assessment tasks that target higher-order thinking	3

A list of supposed challenges in developing HOTS assessment was given to the teachers; see table 29. The teachers could choose as many of these challenges as they wanted. Lack of time to develop and grade HOTS assessment tasks stood out as the main challenge, followed by lack of technical skills, lack of pedagogical skills, lack of support from the department and ineffective learning management systems. However, beliefs and understanding of HOTS and HOTS assessment were not indicated as challenges by the teachers. Students' lack of language proficiency was mentioned by two teachers in the free text field.

Table 29: Challenges in developing HOTS e-assessment

This table was originally published in Johansson (2020b, p. 173).

Challenge	Percent
I do not have the technical skills needed	22%
I'm not sure what higher-order thinking is	0%
I do not have the pedagogical skills needed	20%
I do not have enough time to develop these e-assessment tasks	61%
I do not consider higher-order thinking important in language courses	0%
The learning management system does not support e-assessment tasks that target higher-order thinking:	11%
Grading e-assessment tasks that target higher-order thinking skills takes a long time and I do not have that time	61%
I do not feel that I have the support needed from my department to develop these e-assessment tasks	17%
I'm not interested in higher-order thinking	0%

To sum up, teachers participating in this questionnaire study perceived HOTS as important in English courses. They also believed that the assessment of these skills facilitates students' development of L2 proficiency, which is a topic we will return to in section 6.3. Among the HOTS, teachers replied that they targeted Analyze and Evaluate in assessment tasks to a high extent. This was, however, not the case with Create. While most teachers declared that they felt comfortable with developing HOTS assessment, there were also challenges, such as limited time. Some differences were detected regarding HOTS assessment between teachers of linguistics, literature and the group of teachers teaching both subjects.

The questionnaire study aimed to give an overview of a relatively unexplored research area. In section 6.2.2, the results of an interview study on the same topic are presented, with the aim of providing deeper knowledge about teachers' perceptions and experiences of HOTS and critical thinking in English courses.

6.2.2 Results from the interviews

In this section, the results of the interview study are presented. The interviews were analyzed thematically and four distinct themes were apparent in teachers' talk about critical thinking and the assessment of critical thinking. These include (1) definitions, (2) nature of critical thinking, (3) the teachers' role and (4) challenges.

6.2.2.1 Definitions

From the varying definitions of critical thinking mentioned by the teachers and from the explicit mention of varying definitions as a problem or challenge, it was obvious that there was no consensus definition of critical thinking. The problem of defining exactly what critical thinking is was expressed by a teacher as follows:

> "I do think that at least most university teachers in humanities would say that we know it when we see it, which is strange to say but very true" (T2LIT).

Critical thinking was described in different ways by the teachers. The replies reveal traces of different approaches to critical thinking. A teacher who

expressed that he/she was inclined towards the criticality approach to critical thinking explained his/her understanding as follows:

> "Careful attentive to social issues, cultural issues, power structures and has a more clearly democratic liberal goal but tries to at the same time avoid the ideological Marxism that drives or has been driving critical pedagogy" (T1LIT).

The skills-and-judgement view on critical thinking was also apparent among teachers. Analysis was often seen as the main skill involved in critical thinking, as the following quote from a teacher illustrates:

> "I think for me it is the ability of applying an analytical mindset where you manage to take in many different perspectives of the same thing. Instead of advocating just one perspective, which is often your own perspective. That is to step out of your own perspective and analyze a situation, a category, anything from more than one perspective. I would say that that is how I would formulate critical thinking for myself" (T2LIT).

Another teacher also described critical thinking in terms of a disposition or as a personal trait. This teacher explained that:

> "The kind of procedures that I talked about as critical thinking skills before like the ability of adopting different perspectives, taking a step back, asking questions of why, challenging traditional ways of doing things" (T3LING).

As is evident from the quotes above, there are both similarities and differences in how critical thinking is understood and defined among the teachers. Moreover, there seemed to be an awareness of the lack of consensus with regard to what constitutes critical thinking. This lack of consensus was also seen as a limitation for implementing critical thinking in teaching and for assessing critical thinking in English courses. A teacher mentioned that:

> "I get the sense that most of my colleagues have a lot of respect for critical work, sometimes just different ideas of what actually constitutes being critical in a productive way, right." (T3LING).

In relation to assessing critical thinking, another teacher pointed out the lack of consensus among teachers as a problem:

> "If we manage to come to some sort of agreement of what it is then we can start thinking about how we can assess that" (T2LIT).

6.2.2.2 Nature of critical thinking

The second theme concerns the nature of critical thinking and mainly focuses on whether or not critical thinking is understood as a discipline-specific skill or a general skill. Several teachers indicated that they see the development and teaching of critical thinking as one of the core purposes of the humanities. Hence, there seemed to be an agreement among teachers about the importance of critical thinking in humanities in general. This belief is explained by one of the teachers as follows:

> "So critical thinking to my mind is very, very important as a fundamental… almost like a skill set or fundamental commitments in humanities research, social science research. It can fit in anywhere really, but I connect it most strongly with what I view to be kind of the core purpose of the humanities in my mind" (T3LING).

A sub-theme which emerged was that of the differences between linguistics and literature in terms of the extent to which each discipline focuses on critical thinking. Literature was more often associated with critical thinking and was perceived as lending itself better to the development of critical thinking skills. This is expressed in the following quote from a teacher of literature:

> "When it comes strictly to the field and the differences when it comes to linguistics and literary studies in English, I could see for example that literary studies are perhaps more suitable for promoting this kind of criticality that I'm interested in because it discusses issues of value, ideologies, attitudes, beliefs, you know all that is much more present in literary studies than in language studies" (T1LIT).

This notion was also expressed by teachers of linguistics and explained by a teacher as a result of different traditions and educational backgrounds:

> "I think literature scholars are more commonly steeped in at least a part of, kind of critical traditions, like for example Frankfurt school, critical theory or continental philosophy like poststructuralist theory that often has a critical bend or feminist theory or whatever the case might be. It seems more likely for me that linguists can be maybe even a bit skeptical about approaching things critically and ask what does that even mean" (T3LING).

Moreover, the teachers often talked about lower-order thinking skills in relation to linguistics. One teacher commented that linguists

> "still rely, some of them, on these lower-order skills" (T1LIT).

Another teacher, working in linguistics, points out that

> "on the linguistics side, there can definitely be entire courses or research projects that don't really raise those questions" (T3LING).

On a question about whether critical thinking is discipline-specific or a general skill, there seemed to be a strong inclination among teachers towards seeing critical thinking as a general skill. Of the four participating teachers, three talked about critical thinking in these terms. This was mentioned very directly by two teachers:

> "Critical thinking is a general skill you might end up with towards the end of your education" (T2LIT)

And

> "to me it's more a general skill" (T4LING).

Another teacher expanded their views on this topic and said that:

> "I would lean more towards calling it a general set of skills. The kind of procedures that I talked about as critical thinking skills before like the ability of adopting different perspectives, taking a step back, asking questions of why, challenging traditional ways of doing things. I think

> that all of those things to my mind seem very general, where if you can learn the habits of doing that in a specific discipline, you can probably generalize it to other disciplines" (T3LING).

However, there was no consensus about critical thinking being a general skill. One teacher firmly believed that it was discipline-specific. This teacher mentioned that:

> "I believe that it's discipline specific (…) it has to be really adapted to the discipline" (T1LIT).

Moreover, when asked if critical thinking should be taught in a separate course or together with content knowledge in an English course, most teachers agreed that the latter was preferable. One teacher expressed that he/she thought that it would be

> "very difficult to teach in a specific course in critical thinking" (T2LIT).

Another teacher explained as follows:

> "I don't think that subject-specific knowledge necessarily makes you more critical, but I think it can be one of the components that feed into critical thinking" (T3LING).

6.2.2.3 The teachers' role

The third theme concerns the role of the teacher in developing students' critical thinking skills. It became apparent that the teachers believed that the presence of critical thinking in a course to a large extent depends on the individual teacher. On a question regarding similarities and differences between linguistics and literature pertaining to the assessment of critical thinking, a teacher mentioned:

> "I wouldn't say there is much of a difference between these two specializations. It is more again in my experience connected to specific teachers and their interests in providing more perspectives for

> example. And so, it is teacher dependent rather than dependent on the field" (T2LIT).

Similarly, another teacher emphasized that the assessment of critical thinking to a large extent depends on the teacher and on how he or she understands critical thinking.

> "But ultimately it is a question of the teacher" (T1LIT).

Regarding assessment tasks targeting critical thinking, it was evident from the teachers' replies that teachers believed that these need to be well-designed in order to target students' critical thinking skills.

> "If they can develop these skills in the tasks that are graded then or examined. Well, for example if a task is to discuss advantages and disadvantages of something, or a position paper, take a stance on something, then you would need to show that you have critical thinking skills in actually creating an argument and showing a position on a problem or topic. I'm not sure the students will learn it in that, but it is the outcome of that exercise that is shown in the task. Then yes, I would say you can do that. It has to be carefully designed, but yes" (T4LING).

The above statement indicates some ambivalence regarding whether assessment tasks can facilitate students' development of critical thinking. However, other teachers were more positively inclined towards this, as is evident from the following quote:

> "The task has to be very carefully thought over so as it stimulates this kind of critical thinking you want your students to practice" (T1LIT).

Written assessment formats were often mentioned as being the most suitable for students' development of critical thinking.

> "I would think in general that analysis assignments or essay kind of assignments, written assignments tend to be good" (T3LING).

All of the participating teachers indicated that they try to include critical thinking activities in their assessment tasks. This emerged as a conscious choice on the part of the teachers, driven by their understanding of critical thinking as an important goal in English courses.

> "It is something that I take into account in all courses, really, that I develop myself or if I develop the assessment tasks, but also when I take over courses that someone else has developed and I think about what I want to change" (T3LING).

Teachers were also asked about how they understood critical thinking in learning outcomes. The replies indicate that teachers were aware of how critical thinking was part of learning outcomes.

> "We have so many courses that if you read the syllabus there is at least one learning outcome that says something about you are not just supposed to be able to understand this but be able to able to critically evaluate or these kinds of formulations" (T3LING).

However, learning outcomes targeting critical thinking were also problematized by several teachers. While there was general agreement about including critical thinking in learning outcomes, it was also mentioned that these do not have to be part of every course or course module.

> "There are these general learning outcomes that anyone that pursues a Bachelor's regardless if it is physics or English or history, they are supposed to reach these very general skills if they would like to earn a Bachelor's degree and then of course in Master's levels as well. And that's the level for I think you should say that for Bachelor's you're supposed to become a critical thinker or that should be a skills set which you should have when you have your degree. But in every specific subject then, it becomes our job to deconstruct that and provide bits of it rather than the specific skill of critical thinking" (T2LIT).

Thus, while critical thinking was expressed as important and the development of critical thinking was seen as a principal goal of higher education in general, it was not understood by all teachers as something that necessarily needed to be

part of every course. The decision to implement and adapt critical thinking within courses was considered to be the teacher's responsibility.

Moreover, continuity and progression of development of critical thinking skills were often talked about as important aspects. This applied to the progression of critical thinking in courses.

> "There should be some continuity if you are serious about it. I mean it shouldn't stop with you. In other words, they stumble upon critical thinking in your module but in the next module they move to there is no critical thinking" (T1LIT)

Continuity was also mentioned in relation to the progression of thinking skills from basic levels to more cognitively complex skills.

> "It will look different on an introductory level and there will be a progression from introductory level up to Bachelor's, Master's or doctoral level then" (T4LING).

The progression of critical thinking skills was often understood as based on the existence of content knowledge.

> "I would even say that critical thinking is based on that you have a solid base of knowledge. It is extremely difficult to be a critical thinker without a solid base of knowledge, which is why I'm quite critical of critical thinking in school… in children's school" (T2LIT).

Thus, the teachers interviewed understood content knowledge as important for students' development of critical thinking skills, even though it was not always the focus of the assessment tasks in their courses.

6.2.2.4 Challenges

The fourth, and last, theme that was apparent in the analysis of the data focused on challenges with critical thinking and with assessing critical thinking skills. Several teachers described the assessment of critical thinking as challenging in general.

> "I think it is very difficult to in an examination format provide questions which test critical thinking because critical thinking is going behind the question" (T2LIT).

Hence, targeting these skills appeared to be difficult. These challenges were described in terms of different factors. Among these were difficulties in describing critical thinking and in getting the students to understand what critical thinking is and how it is done.

> "It is always a challenge and I reckon that other people have told you that as well or have the same experience, that it's kind of hard to pin down a sort of step-by-step process of doing, being critical" (T3LING).

Teachers gave examples to illustrate how they try to develop their students' critical thinking skills and these often included modelling critical thinking. In these cases, the teacher used practical examples of how to think critically and showed the students the process of doing this.

Another challenge which was mentioned was finding the right level of critical thinking in assessment tasks. When asked about what specific challenges there are in assessing critical thinking, a teacher replied:

> "Well, as is often the case, it is about individualizing or personalizing course content or exercises" (T4LING).

Moreover, the level of students' critical thinking skills and their willingness to develop these skills were also mentioned as challenges.

> "I have a 20 years perspective on this, students have become less inclined to actually study hard and in order to develop critical thinking skills, you need to study hard, you need to read a lot and you need to read many books and you need to go to many courses and diligently listen to the teacher and you need to build that knowledge base. I think that is the greatest obstacle towards developing critical thinking" (T2LIT).

Another teacher described the same phenomenon and mentioned that

> "I can say that I haven't really noticed that until recently, that some students want it very simple" (T1LIT).

Based on these two accounts, it seems that the lack of interest in critical thinking skills among students is something rather new.

When asked about challenges in assessing critical thinking, most teachers replied that lack of time was one of the greatest challenges. As one teacher said:

> "It takes time to do these things" (T4LING).

Developing well-designed assessment tasks at a level appropriate for the student group is something which demands time from the teachers. The time aspect was also mentioned in relation to students' development of critical thinking skills.

> "With limited time throughout the courses, it's not like you can give the students an infinite amount of exercises to the students either and if you do, very often the students don't do it unless it's an exam" (T3LING).

Hence, critical thinking appears to be more demanding to assess and develop than lower-order thinking skills.

6.2.3 Summary

The results from both the questionnaire and the interviews reveal that English teachers at Swedish universities consider HOTS and critical thinking important and that they make attempts to incorporate them in teaching and assessment. However, there does not seem to be a unified understanding of what these skills constitute. This was especially the case for the HOTS Create. Moreover, teachers expressed difficulties in terms of the limited time available to assess and develop assessment tasks which target HOTS and critical thinking. This was mentioned both in the questionnaire study and by the teachers in the interviews.

Part of the purpose of this study was to investigate similarities and differences between teachers in linguistics and literature. As seen in section 6.2.1, very few differences were detected between these groups. The only statistically significant difference that was found was in how comfortable the

groups felt in developing assessment tasks which target the LOTS Remember. However, several teachers in the interviews believed that there were differences between linguistics and literature in terms of whether and how critical thinking is assessed.

So far, the results of this study have focused on critical thinking and HOTS in English courses and on teachers' perspectives on this topic. In order to understand how effective the efforts to develop students' HOTS and critical thinking skills are, we need to move our attention to the students in these courses. Section 6.3 presents data from the investigation of students' development of critical thinking and English language proficiency.

6.3 Critical thinking and EFL proficiency

The aim of this section is to present the results pertaining to the fourth research question: What relationship can be detected between critical thinking and EFL proficiency? This question is answered through a pre-test post-test study design, including the CCTST and the Vocabulary Size Test.

Tables 30 and 31 present the results for the CCTST, which measured students' critical thinking skills (Johansson, 2022). Both the pre-test and the post-test were taken by 13 students. The two tests were taken at the beginning and the end of the semester. A semester is 20 weeks; thus, there were approximately 17-18 weeks between the two tests. According to the CCTST, scores between 0-7 are labelled as "not manifested", 8-12 as "weak", 13-18 as "moderate", 19-23 as "strong" and 24 or above as "superior". The results on the pre-test ranged between 14, moderate, and 25, superior. The post-test results are quite similar, with the lowest score being 12 and the highest score 26. Moreover, the overall mean of both the pre-test and the post-test was 19.54. Hence, the participants in this study had generally strong critical thinking skills. The CCTST score is compared to an aggregate sample of fourth year college student test results in the US and the average percentile of the participants in the present study was 71, with a range from 26 to 96. Hence, the participants in the present study hade relatively high scores on the CCTST.

Statistical procedures were used to investigate the difference between pre- and post-tests (Johansson, 2022). According to the Wilcoxon test there was no statistically significant difference between these ($T = 35$, $p = .857$, $r = .035$). Breaking down the results into each thinking skill, we found that there were no statistically significant differences between the pre-test and post-test skills: induction ($T = 26.5$, $p = .918$, $r = .020$), deduction ($T = 8.5$, $p = .783$, $r = .054$), analysis ($T = 13.5$, $p = .248$, $r = -.226$), inference ($T = 45.5$, $p = .252$, $r = .225$) and evaluation ($T = 32$, $p = .571$, $r = -.111$).

Table 30: Students' scores on the CCTST pre- and post-tests (max 30)
This table was originally published in Johansson (2022, pp. 61-62).

Student	Pre-test	Post-test
1	24	26
2	24	24
3	24	22
4	16	17
5	25	25
6	22	24
7	21	24
8	15	18
9	16	15
10	21	16
11	17	18
12	15	13
13	14	12

Table 31: CCTST pre- and post-tests: descriptive statistics
This table was originally published in Johansson (2022, p. 62).

	N	Minimum	Maximum	Mean	Std. deviation
Pre-test	13	14	25	19.54	4.115
Post-test	13	12	26	19.54	4.841

Tables 32 and 33 present the results of the Vocabulary Size Tests, which measured students' English vocabulary size. The participants' scores on the pre-test ranged from 10,200 to 12,300, and on the post-test from 9,900 to 12,800. The mean on the pre-test was 11,384 and the mean on the post-test was 11,469.

As is evident from table 32, students' means on the Vocabulary Size Test improved by 84 words and the median improvement was 100 words. However, only seven students actually made improvements on the post-test compared with the pre-test. This indicates that six students made little or no improvement in their vocabulary size development.

Statistical procedures were used to calculate the difference between pre- and post-test results on the VST (Johansson, 2022). The Wilcoxon test showed that there was no statistically significant difference between students' pre- and post-test scores on the Vocabulary Size Test ($T = 45.5$, $p = .511$, $r = .119$). The statistical analysis shows that no development of vocabulary size can be detected on a group level.

Table 32: Students' results on the Vocabulary Size Test
This table was originally published in Johansson (2022, p. 62-63).

Student	**Pre-test vocabulary size**	**Post-test vocabulary size**
1	11500	10700
2	11800	12000
3	10900	10900
4	12300	12000
5	11000	10600
6	11800	12800
7	10700	10800
8	11800	12600
9	10800	11400
10	10600	9900
11	12000	11900
12	12600	12700
13	10200	10800

Table 33: Vocabulary size: descriptive statistics
This table was originally published in Johansson (2022, p. 63).

	N	Minimum	Maximum	Mean	Std. deviation
Pre-test	13	10200	12600	11384	732
Post-test	13	9900	12800	11469	928

As mentioned above, part of the purpose of this study was to investigate the correlation between the development of critical thinking and vocabulary development. In order to do this, a Spearman's rank-order correlation was run. This showed that there was no statistically significant relationship between students' critical thinking development and their development of vocabulary size (r_s = .351, p = .240). Similarly, no statistically significant correlation between post-CCTST scores and post-VST scores could be detected (r_s = -.175, p = .568).

Differences in scores on the CCTST based on students' highest education level and age were also investigated in this study. There was no statistically significant difference on post-test CCTST scores based on students' highest education level (H(2) = .928, p = .629), nor based on age (H(8) = 9.39, p = .339) (Johansson, 2022).

6.3.1 Summary

The results of this part of the study reveal that students did not develop critical thinking skills over a semester of English studies. Neither did they develop English language proficiency based on the Vocabulary Size Test. Furthermore, no correlation between the results on the CCTST and the Vocabulary Size Test was detected. In all, these results indicate that critical thinking and EFL proficiency measured by vocabulary size are not related. These results, as well as those in section 6.1 and 6.2, need to be discussed in the light of previous research and in relation to each other, which is done in the coming chapter.

Chapter 7: Discussion

The following section discusses the results in the light of previous research and the theoretical framework. Section 7.1 discusses HOTS and critical thinking in intermediate English courses at Swedish universities and deals with the first research question of this thesis: In terms of learning outcomes and assessment tasks, to what extent do English courses at Swedish universities focus on critical thinking and HOTS? The following section, 7.2, concerns the second research question: What are English teachers at Swedish universities' perceptions of HOTS, critical thinking and the assessment of these in English courses? Similarities and differences between linguistics and literature, both in the form of assessment tasks and teachers' views, are discussed in sections 7.1 and 7.2. Thus, these two sections seek to discuss the third research question: What similarities and differences between linguistics and literature pertaining to critical thinking and HOTS can be detected in English courses?

Finally, section 7.3 covers the fourth research question: What kind of relationship can be detected between the development of critical thinking and L2 proficiency among Swedish EFL students? This section includes a discussion about the development of critical thinking in relation to the development of EFL proficiency among students participating in English courses at Swedish universities.

7.1 HOTS and critical thinking in English courses

This section is divided into two sub-sections. Section 7.1.1 discusses the assessment of HOTS in English courses and section 7.1.2 treats these in relation to the learning outcomes in intermediate English course syllabi.

7.1.1 The assessment of HOTS in English courses

This section seeks to discuss the results pertaining to the first research question: In terms of learning outcomes and assessment tasks, to what extent do English courses at Swedish universities focus on critical thinking and HOTS? The results are also discussed in light of the third research question, which aims to investigate differences between linguistics and literature in HOTS assessment. Previous studies have established the importance of assessment for learning in general (Black et al., 2004; Wiliam, 2011), as well as in the process of aiding students' development of graduate attributes, including

critical thinking skills (Jorre de St Jorre & Oliver, 2017). Assessment tasks are described as a "cornerstone of graduate skills development" (Green et al., 2009, p. 22). Hence, including HOTS and critical thinking in assessment tasks seems meaningful. The results of the present study show that the majority of the English courses investigated include more HOTS than LOTS assessment tasks. This could perhaps be interpreted as implying an awareness among teachers about HOTS as meaningful in higher education.

As indicated by the quantitative content analysis of assessment tasks in English courses at Swedish universities, these do target HOTS to a large extent. While not all Swedish universities providing the English 31-60 credits course as an online course participated in this study, 50 percent of them did. Three of the four participating universities had relatively similar results regarding the targeting of HOTS and LOTS. The conclusions that can be made based on these results possibly also apply to the assessment of HOTS and LOTS in intermediate English courses at Swedish universities in general. At the least, the results give an indication of whether and how HOTS and LOTS are considered in these courses.

The results stand partly in contrast with several other studies that have been carried out on HOTS assessment (e.g. Köksal & Ulum, 2018; McNeill et al., 2012). Quantitative content analysis has been used in at least one previous study on HOTS in EFL learning. As discussed in section 4.2.3, Ulum (2016) found, through a content analysis of HOTS in an EFL coursebook, that there was a low focus on HOTS in this book. Similarly, Köksal and Ulum (2018) found that HOTS was not present in EFL exam questions at Turkish universities. While the results of the present study stand in contrast to these studies and indicate a higher degree of focus on HOTS, little previous research has actually focused on the frequency of HOTS and LOTS assessment in English courses. Moreover, the few studies carried out so far are mainly conducted in countries and cultures which are different from the Swedish context in many ways, and it is possible that this affects the results of these studies. Another contrast is that these studies often investigate HOTS in English courses which focus on the development of students' language proficiency. As discussed in section 2.2, English courses at Swedish universities have a two-fold objective: the learning of content knowledge and the development of students' EFL proficiency. Therefore, comparing these English courses to courses which mainly aim at developing students' language proficiency is somewhat problematic.

Although some of the results of this study proved a general inclination towards HOTS in assessment tasks in English courses, there was a significant difference between literature and linguistics modules. HOTS assessment was more common in literature modules than in linguistics modules. A possible

explanation, at least partial, is the types of assessment tasks used in these courses. Biggs (2014) argues for the importance of the assessment format in assessing students' HOTS. Open-ended tasks are mentioned as more suitable for this objective. Similarly, Hughes and Barrie (2010) mention curriculum approach among the influencing factors affecting what options are available for the assessment of graduate attributes, including critical thinking skills. The availability of assessment alternatives varies depending on how the course is designed. It is also likely that some assessment alternatives lend themselves better to HOTS than others. This is in line with the results of the present thesis. Both the questionnaire and the interviews with English teachers at Swedish universities revealed that they considered the assessment format and design important for the development of critical thinking skills. Teachers indicated that written assignments and essays, but also take-home exams, discussion forums and peer-reviews, were more suitable for targeting HOTS. On the other hand, multiple-choice question formats were not considered suitable for this task.

Figure 11 and table 17 in section 6.1.2 show that there are differences between linguistic modules and literature modules in the distribution of assessment tasks. Written exam questions, seminar questions and compulsory study questions were the most common assessment tasks in both linguistics and literature modules. However, the actual frequency of these differs to a large extent. Linguistics modules contained 114 written exam questions, 89 seminar questions and 92 compulsory study questions, while literature modules contained 19 written exam questions, 33 seminar questions and 90 compulsory study questions. As is evident in figure 11, written essays and assignments only take up a small percentage of the assessment tasks. However, HOTS in this thesis is also calculated per credit in order to adjust for the unequal distribution of credits in assessment tasks. Essays and assignments often form a major part of the assessment of a course. The results in table 17 show that literature modules included 15 essays or assignments, while linguistics modules only included eight. Hence, it is likely that the high frequency of written essays and assignments measured in credits in literature modules contributes to the higher number of HOTS assessment in literature modules than in linguistics modules. The results indicate the importance of the assessment format. Adapting assessment tasks according to this knowledge could perhaps increase the frequency of HOTS assessment in English courses. Regarding the assessment of critical thinking, Green et al. (2009) stress that in order to develop students' critical thinking skills, assessment tasks should be self-directed, reflective and authentic. These are traits which to large extent accord with essays and written exam questions.

Explanations for the differences between literature and linguistics in the assessment of HOTS were sought in the questionnaire which investigated English teachers' perceptions and experiences of HOTS and HOTS assessment. No differences could be detected between linguistics and literature teachers' views on the importance of HOTS in English courses, nor on the importance of HOTS assessment. The most significant difference that was detected between these two groups was in the classification of Create as a HOTS. Linguistics teachers considered Create to be a HOTS to a greater extent than did literature teachers. However, as Create was not common in any of the courses investigated, it does not seem likely that this difference has contributed to the results. In the absence of other explanations for the noticeable difference in HOTS assessment between linguistics and literature modules, possible explanations were sought in teachers' perceptions of linguistics and literature in the interviews. Among the teachers interviewed, literature was often talked about as better suited to the development of critical thinking skills than linguistics. It is perhaps true that developing assessment tasks which facilitate students' HOTS and critical thinking is easier in literature than in linguistics. At the same time, both subjects are placed on the same level in the Swedish higher educational system. As discussed in chapter 1, both programs and courses on first-cycle level are expected to develop students' critical thinking skills. Teachers stated that it should be the teachers themselves who decide on which skills and to what extent HOTS and critical thinking should be part of each module or course. which skills and the extent of HOTS and critical thinking that should be part of each module or course need to be decided upon by the teacher. Not every skill is suitable for every course or module. The analysis of assessment tasks in the English courses, without consideration for the division between literature and linguistics, reveals that HOTS assessment is more common than LOTS assessment. Based on this, one may question whether it is problematic for literature modules to contain significantly more HOTS assessment tasks than linguistic modules did. My belief is that this needs to be further investigated to understand what effect this difference has on students' development of subject-specific critical thinking skills and content knowledge.

7.1.2 Alignment between learning outcomes and assessment tasks in relation to HOTS and critical thinking

According to the theory of constructive alignment (Biggs & Tang, 2011), learning outcomes should be reflected in teaching practices and assessment tasks. This section discusses the analysis of learning outcomes in intermediate English course syllabi and is based on the first research question: In terms of

learning outcomes and assessment tasks, to what extent do English courses at Swedish universities focus on critical thinking and HOTS? Moreover, in relation to the third research question, the results are also discussed with the distinction between linguistics and literature in mind.

As discussed in chapter 1, the development of HOTS and critical thinking is an important goal in Swedish higher education. This is evident in the Qualification Descriptor of Bachelor's degree (Swedish Higher Education Ordinance, 2022), which includes skills from all three HOTS levels. There is a specific mention of the skill Evaluate in the Descriptor; however, the two other HOTS are not mentioned by name but by their subskills or action verbs. The verbs *interpret* and *identify* are encompassed within Analyze and *formulate* and *solve* within Create, according to the revised Bloom's Taxonomy (Anderson et al., 2014). Moreover, a specific mention of *critically* is made in the intended learning outcomes. This indicates that students are expected to develop higher-order thinking skills. Based on this, the present thesis sought to investigate whether these intended learning outcomes were also present in intermediate English course syllabi and whether there was a relationship between the frequency of HOTS learning outcomes and assessment tasks. Furthermore, a previous study by Cananau (2021) confirms that critical thinking is present in learning outcomes in English literature syllabi in Swedish universities, both in the form of general and discipline-specific critical thinking skills. However, as the subject of English is often studied as a course containing both linguistics and literature, it was perceived as interesting to investigate this topic from both perspectives.

As is evident from figure 2, section 6.1.1, skills from all three HOTS levels were found in learning outcomes in the syllabi of intermediate English courses at Swedish universities, although to varying degrees. Analyze and Create were almost equally frequent and are the most commonly mentioned HOTS in the syllabi. While Analyze was present 36 times and Create 35 times, Evaluate was only found in 14 learning outcomes. Furthermore, the results of the analysis of learning outcomes show that 38 percent of all action verbs in learning outcomes in intermediate English course syllabi target the HOTS Analyze, Evaluate and Create. These results are similar to those found in Schoepp's (2017) study, mentioned in section 4.1.2, of learning outcomes from ten leading teaching universities in the UK and the US, in which 44 percent of the action verbs in learning outcomes targeted the three highest levels of Bloom's Taxonomy. However, the study mentioned mainly considers the two top levels of Bloom's Taxonomy, Synthesis and Evaluation, as advanced levels of thinking. These two levels only accounted for 27 percent of the learning outcomes in Shoepp's (2017) data. Schoepp's (2017) conclusion about these results is that more learning outcomes need to focus on higher levels of thinking.

While the syllabi analyzed in this thesis contained similar or higher levels of HOTS learning outcomes than those in Schoepp's (2017) study, the majority of the learning outcomes still targeted LOTS. It is, however, important to keep in mind that the development of HOTS and critical thinking is largely based on content knowledge within the field of study and this needs to be reflected in the learning outcomes. As discussed by Willingham (2009, 2019) (see section 3.1.6), content knowledge is a pre-requisite for students' development of HOTS and critical thinking. This understanding was also shared by the teachers who participated in the interviews. Several teachers mentioned the importance of content knowledge for the development of critical thinking. Illustrating this, one teacher mentioned that "it is extremely difficult to be a critical thinker without a solid base of knowledge" (T2LIT). Therefore, there should also be room for LOTS in learning outcomes, as these form the basis of content knowledge within the field.

In the investigation of the relationship between HOTS learning outcomes and assessment tasks (see section 6.1.3), the results showed that HOTS was more frequent in assessment tasks than in learning outcomes in three of the four courses. University 3 had almost equal levels of HOTS assessment tasks and learning outcomes. The higher frequency of HOTS in assessment tasks could indicate that teachers make efforts beyond those mentioned in the learning outcomes to target students' HOTS and critical thinking skills. This would be in line with the emphasis on critical thinking and HOTS expressed by teachers both in the questionnaire and in the interviews. The discussion of learning outcomes and assessment is potentially important as there are suggestions that alignment between these benefits students' development of deeper understanding (Leber et al., 2018). How the lower frequency of HOTS learning outcomes compared to HOTS assessment tasks in English courses affect students' development of thinking skills is a topic for future investigation. Moreover, the higher frequency of HOTS assessment tasks compared to HOTS learning outcomes could be an indication of a not too strict adherence to learning outcomes in English courses at Swedish universities. The use of learning outcomes has received criticism for leaving little room for unanticipated learning outcomes and creativity (Hussey & Smith, 2003; Loughlin et al., 2021). One teacher expressed in the interview that students graduating from a Bachelor's degree should have attained critical thinking as expressed in the learning outcomes; however, it is up to the teacher to implement teaching activities aimed at HOTS and critical thinking where it is suitable in their course. This seems to imply a not too strict understanding of how learning outcomes are to be used in English courses, which could possibly explain why there is no perfect relationship between the frequency of HOTS learning outcomes and assessment tasks.

Regarding the relationship between action verbs in learning outcomes and assessment tasks, drawing a general conclusion is difficult. Hence, the action verbs are discussed one at a time in this section. The comparison between learning outcomes and assessment tasks regarding the LOTS Remember shows that only one university had similar levels. In the remaining three universities, learning outcomes tended to focus more on Remember than assessment tasks did. These results seem to align well with the fact that teachers mentioned Remember as the skill they intend to target the least in assessment tasks. Conversely, the second LOTS, Understand, is more frequent in assessment tasks than in learning outcomes in three of the four universities. University 1 had quite similar levels of Understand in learning outcomes and assessment tasks. It is interesting to note that teachers in both the questionnaire and the interviews indicate that they target this skill to quite a low degree. Thus, there seems to be an unwillingness among teachers to target Understand, although this is not reflected in assessment tasks. Based on the results of this study, it is difficult to understand this misalignment with regard to the skill Understand. One possible explanation could be that developing understanding of a topic is essential for thinking critically about that topic. Critical thinking is described as "intimately intertwined with factual knowledge" (Willingham, 2009, p. 22), as discussed in section 3.1.6. This seems to be an understanding shared by the teachers participating in the interviews. Hence, the high frequency of assessment tasks targeting Understand can perhaps be an indication of the importance of content knowledge for developing critical thinking. Furthermore, for the last LOTS, Apply, similar levels of learning outcomes and assessment tasks were detected in University 1 and University 3. However, both University 2 and University 4 had more learning outcomes than assessment tasks targeting Apply. The data from the questionnaire shows that teachers, to a rather high degree, reply that they intend to target Apply in assessment tasks. In general, there was quite a low frequency of Apply assessment tasks. The reasons for misalignment between teachers' intentions, assessment tasks and learning outcomes in some of the courses are not evident in the present study.

Regarding HOTS, there are also some mixed results. Analyze was more frequent in assessment tasks than in learning outcomes in three of the four universities. Moreover, Analyze is the most commonly targeted skill in learning outcomes, in assessment tasks and in teachers' intentions. Thus, there is generally a strong alignment between all three aspects; however, this is not reflected at the course level. As is evident from table 4 (section 3.1.1), Analyze is quite a broad category with several sub-levels in the revised Bloom's Taxonomy. Perhaps the high frequency of Analyze assessment items and learning outcomes could be explained by this fact. This does not, however,

reveal why three out of the four universities investigated had more assessment tasks than learning outcomes which target Analyze. As for the second HOTS, Evaluate, two universities had quite similar levels of both assessment tasks and learning outcomes, while two universities had no learning outcomes targeting Evaluate but did have assessment tasks to varying degrees. The questionnaire reveals that teachers intend to target Evaluate to a relatively high degree. Hence, there seems to be an alignment between teachers' intentions and the actual assessment of Evaluate. However, two of the universities had no learning outcomes which targeted Evaluate. These results are quite remarkable taking into consideration that the skill is part of both the assessment tasks and teachers' intentions. In contrast to this, there is the skill Create. Create is the least common skill found in assessment tasks and teachers do not intend to target this skill in assessment tasks to a high degree. Still, it is almost as common as Analyze in learning outcomes. In a comparison of learning outcomes and assessment tasks targeting Create in the four universities, it was found that Create learning outcomes were more frequent than assessment tasks in all universities. To sum up, drawing a conclusion based on the investigation of the alignment of specific thinking skills in learning outcomes and assessment tasks is difficult. There does not seem to be any pattern and alignment varies between the four courses.

So far, the discussion has been based on the notion that there is a desired alignment between learning outcomes and assessment tasks with regard to thinking skills. That alignment between learning outcomes and assessment tasks is beneficial for students' learning has already been discussed. Based on the study by Leber et al. (2018), discussed in section 3.2, the problem with misaligned courses seems to occur when we expect more from the students than what we assess. Leber et al. (2018) investigated one such course and found that students reduced their efforts to reach higher levels. While Leber et al.'s study gives a rationale for aligning learning outcomes with assessment tasks, it focuses on a course with lower cognitive levels in assessment tasks than in learning outcomes. However, the courses investigated in this thesis seem to be the opposite of that, as three of the four courses investigated had more HOTS assessment tasks than learning outcomes. To the best of my knowledge, little is known about how a higher frequency of HOTS assessment tasks than learning outcomes affects students' development of these skills. This needs to be further investigated in comparison with an aligned course.

While learning outcomes aimed at HOTS and critical thinking are treated as beneficial for students' learning in the present thesis, they have also received criticism. The pre-specification of learning outcomes is accused of seeing development in unilinear and cognitive terms (Hussey & Smith, 2003). Similar criticism has been raised against Bloom's Taxonomy (Marzano & Kendall,

2007). It is possible that this criticism to a large extent stems from the complexity of thinking skills and, by extension, the complexity of assessing them. Moreover, there are concerns that not everything can be expressed as a learning outcome and not everything can be assessed (Erikson & Erikson, 2018). It is possible that the lack of alignment between learning outcomes and assessment tasks for some skills, such as Create, can be explained by these factors. As discussed above, teachers indicate uncertainties as to how to assess the skill Create. Teachers' views on Create are discussed in more detail in section 7.2.

While the present study indicates that HOTS assessment is more common than LOTS assessment in intermediate English courses in general, linguistics modules included more LOTS than HOTS, as discussed in section 7.1.1. This difference between linguistics and literature is also reflected in learning outcomes. According to the analysis of learning outcomes, there is a statistically significant difference in the frequency of HOTS learning outcomes between linguistics and literature modules with a large effect size. HOTS assessment tasks were also less common in linguistic modules than in literature modules. The alignment between HOTS learning outcomes and assessment tasks in linguistics and literature modules can be discussed in terms of two different interpretations. Firstly, the results seem to indicate that higher proportions of HOTS learning outcomes correlate with higher proportions of HOTS assessment tasks. This interpretation is also partially supported by the results of a general comparison between HOTS learning outcomes and assessment tasks in the four courses; see figure 12 in section 6.1.3. However, causality is not investigated; hence, it is impossible to recommend including more HOTS learning outcomes in order to increase the frequency of HOTS assessment tasks in a course. The second possible explanation for the alignment between HOTS learning outcomes and assessment tasks in linguistics and literature modules is traced back to teachers' perceptions of these two subjects. As is discussed in more detail in section 7.2, several teachers in the interviews expressed a view of literature as lending itself better to the development of students' critical thinking skills. If this is a general view among English teachers, it is not surprising that both learning outcomes and assessment tasks in literature have significantly higher levels of both HOTS learning outcomes and assessment tasks. The analysis of learning outcomes could possibly provide a partial explanation for the lower focus on HOTS in assessment tasks in linguistics modules.

Moreover, regarding the action verbs, Erikson and Erikson (2018) point to the fact that these stand in relation to the subject matter. The word clouds with action verbs from linguistics and literature learning outcomes show that there are many similarities between the two subjects. *Demonstrate*, *analyze* and *account*

were frequently used in both subjects. However, there were also differences. The main difference was found regarding the word *apply*. *Apply* was more frequent in linguistics modules than in literature modules. Many of the learning outcomes with *apply* refer to the application of linguistic theories. The analysis of action verbs in linguistics and literature modules does not entirely support the idea of these being discipline-specific. This can also be due to linguistics and literature being relatively similar subjects, as both of them are placed within the field of humanities.

7.2 Teachers' perceptions and experiences

Section 7.2.1 discusses teachers' perceptions of critical thinking and HOTS, while in section 7.2.2, teachers' views and experiences of assessing critical thinking and HOTS are treated.

7.2.1 Teachers' perceptions of critical thinking and HOTS

This section, as well as section 7.2.2, aims to discuss the results pertaining to the second research question: What are English teachers at Swedish universities' perceptions of HOTS, critical thinking and the assessment of these in English courses? This discussion is based on the questionnaire study and the interview study. Moreover, the results are also discussed in light of the third research question, which seeks to investigate potential differences between linguistics and literature pertaining to HOTS and critical thinking.

The questionnaire reveals that English teachers at Swedish universities have a good understanding of what HOTS is. They felt confident in their own ability to define the term. Moreover, the results reveal that teachers' understandings of what skills constitute HOTS are in general in agreement with established definitions. The skills Analyze, Evaluate and Create were considered to be HOTS by the majority of participants, which is in line with the definition of HOTS used in this thesis. However, Apply was also considered a HOTS by the majority of teachers in this study. As discussed in section 3.1.1, there are some disagreements regarding the skill Apply. Some consider it a HOTS (Bissell & Lemons, 2006), while others place it within LOTS (Ulum, 2016). To the best of my knowledge, very little is yet known about English teachers' beliefs and views on HOTS. However, it is perhaps not surprising that Apply is placed within the term HOTS by many English teachers, considering that the application of theory to literature and linguistic data is an important part of language studies.

Moreover, part of the purpose of the interviews was to investigate English teachers' views on critical thinking on a deeper level. These interviews reveal that there was no consensus among teachers about what critical thinking constitutes, and that teachers were aware of this lack of consensus. One teacher stated that, while difficult to define, critical thinking is recognized by teachers when they see it. The difficulties in agreeing on a consensus definition of critical thinking or even defining it contribute to questions about how this may affect the teaching of critical thinking skills. There seems to be an agreement in higher education policy documents and among English teachers at Swedish universities that developing student' critical thinking skills is important, but there is no agreed upon definition of what these skills constitute. Thus, one teacher's understanding of critical thinking may not end up being the same as another's. This is interesting to discuss for a number of reasons. The first is what is actually taught in the name of critical thinking, which is a topic the present thesis has partially sought to investigate. Without a consensus definition, it seems probable that what is being taught as critical thinking is entirely dependent on teachers' individual understanding. Another issue which is interesting to discuss, related to the lack of a consensus definition, is that of continuity. Teachers in the interviews expressed a belief in the importance of continuity in focusing on critical thinking in English courses. These courses often constitute several modules taught by different teachers. It is possible that each of these teachers has a different understanding of what critical thinking is and what students are expected to develop in terms of critical thinking. Thus, ensuring continuity can become a problem without a consensus definition of critical thinking among teachers.

Among the four teachers interviewed, different approaches to critical thinking were detected. These approaches are outlined in section 3.1.3. Some teachers understood critical thinking as skills, mainly analytical skills; this fits well with the skills-and-judgment view in which the cognitive dimension of critical thinking is emphasized (Davies & Barnett, 2015). Teachers indicated that besides cognitive skills, critical thinking also involves a certain disposition. One teacher gave evidence of perceiving critical thinking as open-mindedness, through "adopting different perspectives, taking a step back". Furthermore, one of the teachers working within literature was clear in that he/she understood critical thinking as criticality, or through a skills-plus-dispositions-plus-actions approach (Davies, 2015). As described in section 3.1.3, there is a strong focus on reflecting on and questioning one's own assumptions in criticality (Burbules & Berk, 1999), which the same teacher also expressed as traits of critical thinking.

Part of the aim of the present thesis was to investigate potential differences in how critical thinking is understood by teachers of linguistics and literature.

The investigation of teachers' approaches does not reveal preferences for any of these based on the division between the two sub-disciplines. However, several teachers expressed a belief that there are differences between linguistics and literature in terms of how important they understand critical thinking to be. Literature was more strongly associated with critical thinking by teachers of both linguistics and literature. At the same time, linguistics was more often talked about in terms of LOTS. The differences in focus on critical thinking were partially explained by different traditions within the two subjects. Teachers' perceptions of literature as more suitable for critical thinking could perhaps provide a possible explanation for the significantly higher frequency of both HOTS learning outcomes and HOTS assessment tasks in literature modules than in linguistic modules. At the same time, while the low adherence to critical thinking in linguistics was expressed by teachers of both subjects, it was also described as problematic. Linguists were described as being "maybe even a bit skeptical about approaching things critically" (T3LING). Thus, while the perception among teachers seems to be that literature as a subject is more suitable for the development of critical thinking, there appears also to be a desire among teachers for a stronger critical thinking approach in linguistics. It should be noted that this discussion is based on interviews with only four English teachers at Swedish universities. To gain a more comprehensive understanding of critical thinking in linguistics, further investigation of this topic is needed.

Moreover, the teachers interviewed were inclined to understand critical thinking as a general skill rather than as being discipline-specific. Most teachers were quite specific in this regard and clearly expressed the view that critical thinking is a general skill, in line with Davies (2013) and others. However, from a practical point of view, the majority of teacher thought that teaching critical thinking in a content course would be more beneficial for students' development than teaching it in a separate course. These results seem to contradict each other, as a generalist view of critical thinking is traditionally linked with the explicit teaching of critical thinking in a separate course, as discussed in sections 3.1.4 and 3.1.5. The study by Marin and Halpern (2011) mentioned in section 3.1.4 points to the benefit of explicit teaching of critical thinking over implicit teaching. However, in that study, students' critical thinking skills were tested through a general critical thinking test. As the explicit teaching mode focused on just those skills, it seems obvious that students in this group would show higher levels of critical thinking. Marin and Halpern's (2011) study, as well as this thesis, contributes to questions regarding what type of critical thinking skills students are expected to develop in English courses. Should students develop general critical thinking skills which can be transferred to other subjects and areas of life, or should they develop critical thinking

related to the subject of study? The present thesis does not have an answer to this question. However, similar to the lack of a consensus definition of critical thinking, this is a matter which could affect how critical thinking is taught in different modules in English courses. Consequently, it is recommended that teachers discuss what type of critical thinking students are expected to develop in these courses.

Teachers viewed content knowledge as being important for the development of critical thinking, and considered that a general course with no relevance to the topic of study would have little benefit for students' development of these skills. While critical thinking was considered a general skill, it was obvious that content knowledge was important and was seen as the foundation for the development of these skills. As discussed in section 3.1.6, Willingham (2019, 2009) explains the role of content knowledge in critical thinking based on cognitive science. While the teachers did not explicitly mention the reasons for the importance of content knowledge for critical thinking, their replies can be interpreted as indicating an understanding of content knowledge in this process. Moreover, the importance placed on content knowledge by the teachers interviewed testifies to LOTS having a role in higher education.

While most teachers subscribed to the generalist view on critical thinking, one teacher specifically mentioned that he/she understood critical thinking in terms of being discipline-specific. As discussed above, previous research supports this view; the study by Moore (2011a) in which academics' views on critical thinking were investigated is an example. The latter study revealed differences between various disciplines in how critical thinking was understood. Moreover, the specifist approach to critical thinking calls for teaching methods in which critical thinking is implicitly imbedded within the content. This is an approach which agreed well with how this teacher mentioned that he/she taught and assessed critical thinking in English courses.

Finally, this topic also needs to be discussed with the division between linguistics and literature in mind. Teachers' different approaches to critical thinking and views about critical thinking as either a general skill or a discipline-specific skill cannot be traced to discipline-belonging. Rather, these differences seem to stem from individual understandings of critical thinking. Based on this limited study, it is difficult prove that a discipline-specific view of critical thinking is correct.

7.2.2 Teachers' experiences and views on assessing critical thinking and HOTS

The results from the questionnaire confirm that English teachers at Swedish universities consider assessment tasks important in developing students' HOTS. They also indicate that they try to incorporate higher-order thinking skills into assessment tasks. Similar replies were found in the interviews with English teachers at Swedish universities, which also proved that many teachers were aware of the importance of students' development of critical thinking skills. In de la Harpe and David's (2012) study, described in section 4.1.3, about influences on assessing graduate attributes, teachers indicated highest levels of importance, willingness and emphasis for critical thinking of all graduate attributes. Similarly, the questionnaire study and the interviews suggest that English teachers at Swedish universities considered HOTS and critical thinking important and were willing to assess them. Indications of teachers' awareness of and efforts to support HOTS in assessment tasks can likewise be found in the study by McNeill, Gosper and Xu (2012). However, they also found that while teachers aim for HOTS, there is still a strong focus on lower-order thinking skills. Although not as obviously as in McNeill, Gosper and Xu (2012), the results of the questionnaire do not entirely align with the results of the analysis of assessment tasks. While all teachers in the questionnaire confirm that they consider HOTS in the development of assessment tasks, one of the four courses investigated contained more LOTS than HOTS tasks.

Moreover, the teachers were asked about which assessment tasks are best suited for targeting different thinking skills. According to the results, it is evident that some assessment tasks were considered more suitable for HOTS. These were, first and foremost, written assignments, but also take-home exams, discussion forums, peer-reviews and e-portfolio. Written assignments stood out with regard to HOTS and were considered by far the most suitable assessment format. As mentioned above, assessment format seems to coincide with degrees of HOTS and LOTS assessment. Courses relying heavily on written assignments and essays also included more HOTS assessment. The results of the questionnaire point to the fact that English teachers are aware of how the assessment format can facilitate the development of HOTS.

In order to investigate the differences between linguistics and literature teachers' views on and experiences of HOTS assessment investigated in the questionnaire, statistical measures were used. There was no difference between the groups' views on the importance of HOTS in L2 learning, nor on the importance of HOTS assessment. The results indicate a general agreement with the importance of HOTS in L2 learning and that assessment tasks that target HOTS help students develop L2 proficiency. Similarly, the interviews revealed

that all teachers agreed on the importance of critical thinking and students' development of critical thinking skills. They also agreed about including critical thinking in assessment tasks.

The results from the questionnaire are interesting when compared with the analysis of learning outcomes and assessment tasks. Although both literature and linguistics teachers believed that HOTS are important in L2 learning, HOTS assessment is much more common in literature modules than in linguistics modules, as is discussed in more detail in section 7.1.1. There were, however, differences regarding which skills the groups considered to be HOTS. Teachers of linguistics and teachers of both subjects thought, to a higher degree than literature teachers, that Create is a higher-order thinking skill. It is interesting to note that Create was also the skill that most teachers did not target or felt uncertain about how to target. Perhaps part of the explanation for the low focus on Create is that many literature teachers did not consider it to be a higher-order thinking skill. The content analysis of assessment tasks indicates that assessment tasks which focus on the skill Create are quite rare in both literature and linguistics courses.

Moreover, limited time was mentioned in the questionnaire responses as the main challenge in assessing HOTS. Lack of time is also a problem mentioned in previous research on higher-order thinking (Ganapathy et al., 2017; Jones, 2008). Based on the results of this thesis, university teachers teaching English courses seem to need more time to develop assessment tasks which tap into HOTS. Similarly, teachers participating in the interviews also mentioned lack of time as a constraint on developing students' critical thinking skills. This included teachers' lack of time to develop assessment tasks which target critical thinking, but also students' lack of time. The teachers understood the improvement of critical thinking as time demanding. Developing these skills does not occur over a single course; rather, it was expected to take time. It is worth pointing out here that the intermediate English course is only one course of several taken in order to receive a Bachelor's degree. It is possible that an entire program of three years of fulltime study is necessary in order to develop critical thinking, as is discussed in more detail in section 7.3. Hence, it is perhaps not surprising that teachers emphasize the importance of time in developing students' HOTS and critical thinking. The time aspect is also mentioned in El Soufi and See's (2019) study, which indicates that at least one semester is needed in order to improve critical thinking. One teacher in the present study said that the students needed to do a lot of exercises to develop these skills; however, there was neither time for this in the courses nor interest among the students. Two of the teachers interviewed mentioned that they found that students today are less interested in developing critical thinking skills, or in putting in the effort which the development of these skills

demands. While it is difficult to draw a conclusion on whether or not this is actually the case or what causes there might be behind this experience of lack of interest in critical thinking among students, this is interesting to compare with Arum and Roksa's (2011) study. As discussed in section 4.1.1, Arum and Roksa's study indicates that students today do not develop critical thinking to the same extent as students did before. However, the reasons for this remain unclear.

7.3 Development of critical thinking and EFL proficiency

The aim of this section is to discuss the results related to the fourth research question: What kind of relationship can be detected between the development of critical thinking and L2 proficiency among Swedish EFL students? This discussion is based on the investigation of students' critical thinking skills and vocabulary size (section 6.3).

Few would disagree on the importance of the development of critical thinking in higher education. The teaching of such skills has been pointed out as the principal goal of education (Arum & Roksa, 2011). As discussed in chapter 1, the development of critical thinking and HOTS is mentioned as a goal in higher education in the Swedish Higher Education Act (1992: 1434) and in the Qualification Descriptor of Bachelor's degree in the Swedish Higher Education Act (2022). Hence, this is a goal both in freestanding courses and in Bachelor's degree programs. The results of both the interviews and the questionnaire in the present thesis indicate that English teachers at Swedish universities believe that students' development of these skills is important. At the same time, there are uncertainties about the extent to which students in higher education develop critical thinking skills. As mentioned in section 4.1.1, Arum and Roksa (2011) found that American college students only developed minimal critical thinking skills over two years of studies. Huber and Kuncel's (2016) meta-analytical study showed slightly higher levels of critical thinking development among students in higher educational institutions. Moreover, the recent OECD report by Van Damme and Zahner (2022) indicates that students from six countries improved their critical thinking skills in higher education, but not to a satisfactory degree. As little is known about Swedish EFL students' development of critical thinking skills in university courses, this was investigated in the present thesis. The results showed no statistically significant gains in critical thinking among the students participating.

It should be pointed out that critical thinking is measured over one semester in the present thesis, compared with two years in Arum and Roksa's (2011)

study and three years in Van Damme and Zahner's (2022) study. It is possible that a longer time frame would have benefitted the students in terms of critical thinking. This is an important note, as time in education is perhaps the most likely factor affecting the participants' development of critical thinking. English teachers participating in the interviews mentioned time constraints as possibly the biggest challenge in developing students' critical thinking skills, as discussed in section 7.2.2. Developing these skills demands effort from the students and, as one teacher expressed it: "With limited time throughout the courses, it's not like you can give the students an infinite amount of exercises to the students either" (T3LING). Thus, it is possible that one semester is too short a time for measuring the development of critical thinking skills. Moreover, Hitchcock (2003, p. 12) mentions in a study about the development of critical thinking that the results of his study point to the fact that "one semester of university education, without a course dedicated to teaching critical thinking, will improve a student's critical thinking skills very little". The results of the present study indicate that this claim seems to be valid. The actual time in higher education required to develop critical thinking is in need of further investigation.

Another aspect which should be taken into consideration in the discussion about the low level of development of critical thinking in the present study is students' already high levels of critical thinking. As seen in section 6.3, the average percentile of the participants in the CCTST test was 71, with a range from 26 to 96 when compared to an aggregate sample of four-year college students' test results in the US. The results suggest that students had relatively high levels of critical thinking. Some students even had what can be categorized as very high levels. Based on these results, one may question how much room there is for improvement. As discussed in section 4.1.1, Huber and Kuncel (2016) mention students' high levels of critical thinking skills as a possible explanation for the low level of development of critical thinking in recent studies. Hence, this is not an unlikely explanation for the limited development of critical thinking in the present study.

As no correlation was detected between CCTST scores and vocabulary size, possible correlations between CCTST scores, age and highest educational level were investigated (see section 6.3). The results reveal that no statistically significant difference in students' levels of critical thinking can be found based on age and highest educational level. These results are quite interesting, especially pertaining to educational level, when discussed in the light of the table of participant details (see table 12, section 5.4.1). Both age (26-52 years) and educational level (high school, Bachelor's degree and Master's degree) varied to quite a large extent among students. Time in education was discussed above as possibly being important for students' development of critical thinking. This, however, is not supported by the results of this study. Taking

into consideration that the development of HOTS and critical thinking is found among the intended learning outcomes for a Bachelor's degree, it seems quite remarkable that students who have completed a Bachelor's degree, or even a Master's degree, do not show higher levels of critical thinking than students who have only completed a high school certificate. Based on the data collected in this study, these results are difficult to explain. The general development of critical thinking in Swedish higher education is perhaps a topic in need of further investigation.

Related to the discussion of the lack of critical thinking development evident in the present study is the placement of the intermediate English course within a possible Bachelor's degree. As discussed in chapter 1, among the intended learning outcomes of a Bachelor's degree in Sweden is the development of HOTS and critical thinking skills. The intermediate English course takes up 30 of the 180 credits needed to attain a Bachelor's degree. It is possible that a discernable development of critical thinking is evident among students who have passed through an entire Bachelor's degree. Perhaps 30 credits amount to too short a time for developing such advanced skills as critical thinking. At the same time, the courses investigated in the present study are freestanding courses which can be part of a Bachelor's degree or studied individually. It is not uncommon for students to take freestanding courses without the intention of completing a Bachelor's degree or to take them over several years. Moreover, freestanding courses can be studied in different orders, so that some students may have studied for several years at the university, while others have only completed the English 1-30 HEC course. Hence, it is quite difficult to know whether and how the development of critical thinking has been part of students' prior education. As discussed in section 3.1, there does not seem to be a unified idea among teachers about what critical thinking is and how it is to be taught in higher education. Thus, it seems probable that freestanding courses vary in level and type of critical thinking teaching, which may also affect students' levels of critical thinking.

Moreover, the fact that no development at all could be detected in terms of critical thinking skills is interesting to discuss in relation to the results of the analysis of assessment tasks. In this, it was noted that three of four English courses included more HOTS than LOTS assessment tasks. Hence, it was assumed that students participating in those courses would benefit from these assessment tasks. It is perhaps possible to discuss the results with the discipline-specific and generic views of critical thinking in mind (Davies, 2013; Moore, 2004, 2011a, 2011b). The results of the analysis of assessment tasks reveal that students are trained in HOTS and critical thinking through assessment tasks embedded within content knowledge. Students may have performed better on critical thinking tasks more specific to their topic of study,

which they have been trained in through HOTS assessment tasks. It is possible that the thinking skills developed through HOTS assessment tasks in English courses do not transfer to the CCTST, as this is a general test of critical thinking. This could perhaps also explain the lack of correlation between CCTST scores and educational level. It is possible that a correlation could have been detected between these had critical thinking been measured within the students' discipline.

The CCTST tests the skills analysis, inferences, evaluation, induction and deduction, while the analysis of assessment tasks focused on the skills Analyze, Evaluate and Create. Even though these two overlap with regard to some skills, there is no precise match between them. Thus, it is possible that the assessment tasks in the English courses investigated do not focus on the skills in the CCTST and, therefore, little development of these is found among students. This is, of course, a flaw in the research design of the present study, which needs to be addressed. Furthermore, Hitchcock (2003) also points to a similar possible explanation for differences in critical thinking development in previous studies. He mentions that "scores on the CCTST might be a poor measure of the critical thinking skills which critical thinking courses are designed to improve" (Hitchcock, 2003, p. 13). While Hitchcock (2003) discusses this in relation to critical thinking courses, the same is perhaps true of general university courses with learning goals aimed at critical thinking skills. Ideally, future studies will investigate students' development of critical thinking, with tests specifically developed for students on English courses.

Regarding the vocabulary size of the participating students, the mean on the VST pre-test was 11,384 and the mean on the VST post-test was 11,469. The vocabulary size scores in the present study are well above the levels in Meara and Milton (2003), Milton and Alexiou (2009), Milton (2009) and Mirelpeix and Muñoz (2018) discussed in section 5.4.3. Thus, the results indicate that the participants were advanced EFL learners. Moreover, students' receptive vocabulary size was also larger than the 10,000 word threshold for university studies in an L2 found in a study by Hazenberg and Hulstijn (1996). An implication of students' high levels of EFL proficiency is that executing critical thinking skills in English should not be a problem for these students. According to cognitive load theory, discussed in Manalo and Sheppard's (2016) study in section 4.2.2, both critical thinking and the use of an L2 demand cognitive resources. As such, it is possible that students with low levels of L2 proficiency find it more difficult to perform critical thinking tasks. Since the students in the present study had high levels of EFL proficiency, there should be little interference in the execution of critical thinking in, for example, assessment tasks. Hence, the results suggest that EFL students in intermediate

English courses at Swedish universities are able to complete the kind of HOTS tasks which were found in the majority of the courses investigated in this study.

The students' receptive vocabulary size can also be compared with other studies in the Swedish context. As mentioned in section 5.4.4, Snoder and Laufer (2022) found that Swedish 12th graders had a mean vocabulary size of 6,400 words and 9th graders had a vocabulary size of 5,600 words. Hence, the participants in the present study had a significantly larger vocabulary size, which is not surprising considering the difference in educational level between these students and those in Snoder and Laufer's study. Moreover, the highest level English course in the Swedish education system prior to university is studied by 12th graders and corresponds to B2.2 on the CEFR scale (Skolverket, 2022a). Taking into consideration that the participants in this study had taken this course as well as a 30 HEC course of English studies before the intermediate English course, it is not surprising that their level of EFL proficiency was high.

Highly related to the present study is the dissertation by Lemmouh (2010) discussed in section 5.4.4. According to this study, Swedish first semester students of English had an average vocabulary size of 7,769 words. The author mentions that the students "probably have an overall vocabulary size well over 8,000 word families" (Lemmouh, 2010, p. 153) and that this could perhaps have been captured by a test such as the VST which includes lower frequency bands. The VST was used to measure students' receptive vocabulary size in the present study and, according to the results, students showed greater receptive vocabulary knowledge in the present study than in Lemmouh's (2010). Hence, the claim Lemmouh (2010) made regarding the VST seems to be valid. Also relevant to the present thesis is that the students in Lemmouh's (2010) study did not show any statistically significant gains in vocabulary size over one semester. Considering this, it is not surprising that the students in the present study did not show any significant change in vocabulary size. The time frame of one semester is probably too short to measure any significant increase in vocabulary size. Another possible explanation for the higher levels of receptive vocabulary size among the students in the present study compared with Lemmouh's is the year of investigation. Lemmouh's study was conducted in 2006/2007 and the data collection for the present study was done in 2019. It is likely that students' exposure to English has increased during those 12-13 years. Thus, the year of investigation is perhaps also a reason for the higher levels of receptive vocabulary size among the students in the present study compared with Lemmouh's (2010) study.

Moreover, students' high levels of EFL proficiency could possibly explain the lack of vocabulary development evident in the pre- and post-test VST (Vocabulary Size Test) (see section 6.3). Vocabulary is often divided into high-,

mid- and low-frequency words. High-frequency words include the first 3,000 words, mid-frequency words range from 3,000-9,000 words, and low-frequency words include words beyond the 9000 most common words (Nation, 2013). The vocabulary test used in the present study is based on word frequency, as discussed in section 5.4.3. The mean of the pre-VST was 11,384. This implies that the students had mastered high-frequency and mid-frequency words and were well into the low-frequency vocabulary. Nation (2013, p. 18) describes low-frequency words as words which "consist of technical terms for various subject areas and words that we rarely meet in our use of the language". The implication of this is that students are more likely to meet high-frequency words than low-frequency words. For advanced EFL learners with already high levels of vocabulary, meeting an unknown word seems less likely than for a less advanced EFL learner. Related to this, Schmitt (2008, p. 339) mentions in an overview of L2 vocabulary learning that "increased frequency of exposure" is "one of those factors that recur throughout the literature as facilitating vocabulary learning" (339). As advanced EFL students have a larger vocabulary, it seems reasonable that more time is needed for them to encounter new words. Hence, students' already high levels of vocabulary size can possibly explain the lack of development evident in the present study. This is further supported by Lemmouh's (2010) study, in which students with scores below average on the RVLT showed greater gains in receptive vocabulary knowledge, as mentioned above.

The present thesis seeks to understand the relationship between critical thinking development and EFL learning over time. It was anticipated that the investigation of such a relationship would further add to the knowledge about the complex relationship between thinking skills and L2 learning. As discussed in section 4.2.2, previous research indicates that there is a relationship between critical thinking and L2 learning in general (DeWaelsche, 2015; Manalo & Sheppard, 2016; Moeiniasl et al., 2022). This relationship was found both in studies where critical thinking was tested in the L2 (e.g. Manalo and Sheppard, 2016) and in studies where critical thinking was tested in the L1 (e.g. Hashemi & Zabihi, 2012; Rashid & Hashim, 2008). However, in the present thesis no statistically significant correlation between critical thinking and EFL proficiency, nor between the development of critical thinking and EFL learning, was detected. It is difficult, based on the results, to explain the lack of correlation between critical thinking and EFL proficiency. To the best of my knowledge, few studies have previously investigated how critical thinking as tested in the students' L1 affects their EFL or L2 learning. It was believed that high levels of critical thinking would perhaps facilitate the learning of EFL. This was, however, not supported by the present study.

Furthermore, in comparing the results of this thesis with previous research within the field, it is important to keep in mind that many studies conducted on critical thinking and L2 learning are experimental (Alnofaie, 2013). It is often the case that a study has been designed with a focus on a particular teaching method aimed at developing students' critical thinking. These methods create learning situations which are beneficial for students' development of both critical thinking and L2 proficiency. It is, therefore, not surprising that such studies found that students' L2 proficiency benefit from teaching activities aimed at critical thinking. However, the present study aimed to investigate this relationship in a learning environment without critical thinking interventions of any kind. That the results of this study stand in contrast to previous studies within the field further strengthens the fact that critical thinking interventions support students' L2 proficiency, but says little about how these are related.

Chapter 8: Conclusions

This last chapter of the thesis aims to provide a short conclusion. Section 8.1 includes general conclusions, section 8.2 discusses the pedagogical implications and section 8.3 considers the limitations of this research project. Finally, section 8.4 provides suggestions for further research within the field of critical thinking in EFL teaching and learning.

8.1 General conclusions

The present study sought to explore HOTS and critical thinking in intermediate English courses at Swedish universities. Part of the intention of the present thesis was to investigate whether and how HOTS and critical thinking are considered in English courses. Hence, the first research question of this thesis was:

> In terms of learning outcomes and assessment tasks, to what extent do English courses at Swedish universities focus on critical thinking and HOTS?

The main finding pertaining to this research question was that HOTS and critical thinking are present to quite a high degree. However, some thinking skills, such as Analyze in assessment tasks and Analyze and Create in learning outcomes, were considerably more common than others. A comparison of HOTS in learning outcomes and assessment tasks showed that HOTS was more frequent in assessment tasks than in learning outcomes in three of the four courses investigated. With regard to specific HOTS skills, there were differences both between the skills and the universities in terms of how well learning outcomes and assessment tasks aligned. Thus, the general conclusion based on this study is that there is a need for a better alignment between HOTS assessment tasks and learning outcomes in English courses. Moreover, the analysis of assessment tasks indicates that selecting a suitable assessment format is important for including thinking skills in these courses.

Furthermore, this thesis also sought to investigate how teachers working on intermediate English courses perceived HOTS and critical thinking. Hence, the second research question which this thesis dealt with was:

> What are English teachers at Swedish universities' perceptions of HOTS, critical thinking and the assessment of these in English courses?

A general conclusion which can be drawn based on the present study is that teachers were aware of the importance of HOTS and critical thinking, and considered these skills important for students' development of EFL proficiency. In line with this, the present study also points to the role of the teacher in developing assessment tasks which target these skills. While considered important, the interviews reveal that there was no unified understanding of how to define critical thinking. This was also mentioned as a challenge in the assessment. The participants in the interviews expressed how it was ultimately up to the teacher to decide which skills to include in assessment tasks and to have knowledge and experience about how to form assessment tasks which target students' HOTS and critical thinking. Moreover, time emerged as an essential factor in both teachers' development of assessment tasks that target HOTS and critical thinking and students' development of these skills. To conclude, English teachers at Swedish universities seem to be well aware of HOTS and critical thinking. This does not, however, imply that including these skills in assessment tasks is without challenges, such as lack of time.

Furthermore, part of the aim of this thesis was to investigate the differences between linguistics and literature in intermediate English courses. This was driven by the following research question:

> What similarities and differences between linguistics and literature pertaining to critical thinking and HOTS can be detected in English courses?

The study found differences between linguistics and literature modules in both assessment tasks and learning outcomes. Based on the questionnaire, the differences were not reflected in teachers' beliefs about the importance of these concepts or in their intentions to assess critical thinking and HOTS. However, the more in-depth investigation of teachers' views and experiences of HOTS and critical thinking in the interviews revealed that literature was often talked about as more suitable for the development of these skills. While more research is needed to completely understand this, teachers' views on literature as a subject which lends itself better to developing critical thinking can perhaps be interpreted as support for critical thinking as discipline-specific.

The final part of this thesis sought to investigate EFL students' development of critical thinking and EFL proficiency. This was motivated by the fourth research question:

> What kind of relationship can be detected between the development of critical thinking and L2 proficiency among Swedish EFL students?

Based on the results of the CCTST and the Vocabulary Size Test, it can be concluded that there was no correlation between students' critical thinking skills and EFL proficiency. This subject has rarely been investigated with students with advanced levels of EFL proficiency before, as has been done in this study. Hence, it is somewhat problematic to compare the results of this study with other similar studies. The time aspect is discussed as a potential explanation for the lack of development of critical thinking and EFL proficiency among students in intermediate English courses. It is possible that a longer time frame is needed to fully evaluate students' development of these skills. Another aspect discussed as a potential explanation is students' already high levels of both critical thinking and EFL proficiency. Besides these explanations, there is also the possibility that a correlation between critical thinking and EFL proficiency does not exist.

8.2 Pedagogical implications

Among the pedagogical implications that have emerged based on the present thesis is the possibility of forming assessment tasks which tap into HOTS in English courses. The analysis of assessment tasks confirmed this possibility as three of the four courses contained more HOTS than LOTS assessment tasks. The implication of this is that English courses with limited HOTS assessment tasks actually can improve this. At the same time, no statistically significant development of critical thinking was detected among the students participating in these courses. While further research is needed in order to understand this, students' low level of development of critical thinking indicates that discipline-specific HOTS assessment tasks are perhaps not enough to develop general critical thinking skills. However, previous studies indicate that assessment tasks which tap into thinking skills can help students develop these skills (Barnett & Francis, 2012).

It is evident that the teacher has an important role in developing HOTS assessment tasks. Giving teachers both time and opportunities for professional development aimed at HOTS and critical thinking seems beneficial. Moreover, several teachers mentioned time as the main limitation in developing

assessment tasks that tap into HOTS. In an ideal situation, time should not be preventative. However, this seems to be very common. The pedagogical implication of this is that teachers working on English courses need more time in order to develop and grade these assessment tasks, and perhaps also more opportunities for continuous development.

Another important finding from this thesis with pedagogical implications is students' limited development of both critical thinking and EFL proficiency. According to the Qualification Descriptor of Bachelor's degree discussed in chapter 1, students awarded a Bachelor's degree are expected to have developed certain HOTS and critical thinking skills. Development of these skills was not evident in the present study. However, as discussed in section 6.3, this could be due to too short a time frame. It is also possible that the results can be explained by students' already high levels of both critical thinking and EFL proficiency. It could also be the case that the instruments used in the study were not suitable for this group of informants. However, the fact that no statistically significant improvement of either critical thinking or EFL proficiency could be detected is noteworthy. Based on this study, it would be worth considering how students' critical thinking skills can be developed in English courses at Swedish universities.

8.3 Limitations

There are a number of limitations within the present thesis. Some of them, pertaining to the methodological decisions made, are already mentioned in section 5.6. Among the main limitations is the lack of student perspective. In the investigation of critical thinking and HOTS, it would have been interesting to look into this subject from a student perspective. Such an investigation would expand our understanding of the role of assessment tasks in developing HOTS and critical thinking. While EFL students' critical thinking skills and EFL proficiency are measured, no investigation of their experiences or beliefs about HOTS and critical thinking in L2 learning were carried out.

As mentioned above, finding students and teachers willing to participate in the present study proved to be more difficult than anticipated. The low number of participants, particularly in the investigation of students' critical thinking skills, is among the main limitations of this thesis. This limitation makes it difficult to generalize the results to a broader context. Moreover, the difficulties in finding students willing to participate also caused problems in analyzing the results. Parametric statistical tests are generally perceived as more reliable than non-parametric alternatives. However, these cannot be used with small data sets. Thus, non-parametric tests were exclusively used in analyzing the data from the questionnaire, the CCTST and the Vocabulary Size Test.

Moreover, if critical thinking is a discipline-specific skill, then measuring it by means of a general critical thinking skills test such as the CCTST is not entirely appropriate. The CCTST and similar tests, such as those discussed in section 5.4.2, are general tests of critical thinking. A general test of critical thinking skills is based on the notion that these are skills which are transferable and independent of context. However, it has been argued, as discussed in more detail in section 3.1.4, that critical thinking is a discipline-specific skill. Based on this, it is possible that a sharper tool more adapted to the subject of English is needed to investigate students' development of critical thinking. However, to the knowledge of this author, such a test does not exist. Therefore, the CCTST was chosen as it was considered the best alternative. As discussed in section 5.4.2, it is perhaps the closest there is to a standardized critical thinking test.

Finally, a limitation regarding the analysis of learning outcomes and constructive alignment needs to be discussed. According to the theory of constructive alignment, there should be an alignment between intended learning outcomes, teaching activities and assessment tasks. The present study was not concerned with the actual teaching of HOTS and critical thinking in intermediate English courses. Moreover, while there is evidence that students benefit from courses in which learning outcomes and assessment are aligned, this study did not investigate whether students were aware of and had understood the intended learning outcomes.

8.4 Future research

There are a number of suggestions which can be made for future research based on the present study. First and foremost, as time in education was proposed as perhaps the most important factor in the development of critical thinking, students' development of these skills should be investigated over a longer time and with other test methods. As HOTS and critical thinking are mentioned as intended learning outcomes in the Qualification Descriptor of Bachelor's degree, future studies would ideally investigate the development of these skills over the duration of an entire Bachelor's degree program.

Moreover, it is hoped that future studies will investigate EFL students' perspectives on critical thinking and HOTS. As the results of the present thesis indicate that students in English courses did not improve their critical thinking skills over a semester, it would be beneficial to investigate this further. Perhaps there are constraints or limitations which the present study was not able to find, but which can be revealed if the subject is investigated from the students' perspective. Such a study would ideally investigate the subject using qualitative methods and with an eye to students' answers and replies in assessment tasks.

Investigating evidence of critical thinking in students' replies in assessment tasks can also provide further understanding of the nature of critical thinking as either a generic or a discipline-specific skill.

While the present study aimed to provide a broad understanding of whether and how critical thinking and HOTS are part of English courses at Swedish universities, further research is needed to understand whether and how this is taught in the classroom. This could ideally also include an investigation of how students understand learning outcomes in the syllabi. Such a study is best carried out through the observation of teacher practices and interactions between teachers and students in the classroom. This suggestion for further research, as well as that mentioned above, can be carried out with consideration to the division between linguistics and literature modules to explore this topic further.

Another area in need of further investigation is the role of HOTS and critical thinking among students with other language backgrounds than Swedish L1 speakers. The present thesis only includes students who had Swedish as their L1. If we assume that students' critical thinking and HOTS have a role in language learning, investigating this topic among students with other language backgrounds is interesting. Questions which need to be answered concern whether and how learning multiple languages affects students' critical thinking and whether there is a difference in thinking skills between L2 and L3 learners of English. Such a study could perhaps give more insight into the complex relationship between thinking skills and language learning.

Finally, based on cognitive load theory, discussed in relation to Manalo and Sheppard's (2016) study in section 4.2.2, it is suggested that future research should investigate the L2 proficiency threshold for using critical thinking in an L2. Several studies indicate that executing critical thinking skills is more difficult in an L2. However, to the best of my knowledge, none of those look into the actual L2 proficiency level at which this becomes challenging. Similarly to the present thesis, such a study could use receptive vocabulary size as a measure of L2 proficiency. The benefit of using vocabulary size as a measure of L2 proficiency is that it may provide a receptive vocabulary size goal for executing more cognitively demanding tasks in an L2.

References

Afflerbach, P., Cho, B.-Y., & Kim, J.-Y. (2011). The assessment of higher order thinking in reading. In G. Schraw & D. R. Robinson (Eds.), *Assessment of higher order thinking skills*. Information Age Publishing.

Alnofaie, H. (2013). A framework for implementing critical thinking as a language pedagogy in EFL preparatory programmes. *Thinking Skills and Creativity*, *10*, 154-158. https://doi.org/10.1016/j.tsc.2013.09.002

Anderson, L. W., & Krathwohl, D. R. (2001). *A Taxonomy for learning, teaching, and assessing*. Allyn and Bacon.

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J., & Wittrock, M. C. (2014). *A taxonomy for learning, teaching, and assessing: a revision of Bloom's taxonomy of educational objectives*. Pearson Educational Limited.

Arum, R., & Roksa, J. (2011). *Academically adrift: Limited learning in college campuses*. University of Chicago.

Atkinson, D. (1997). A critical approach to critical thinking in TESOL. *TESOL Quarterly*, *31*(1).

Barnett, J. E., & Francis, A. L. (2012). Using higher order thinking questions to foster critical thinking: a classroom study. *Educational Psychology*, *32*(2), 201-211. https://doi.org/10.1080/01443410.2011.638619

Barnett, R. (2015). A curriculum for critical being. In M. Davies & R. Barnett (Eds.), *The Palgrave handbook of critical thinking in higher education* (pp. 63-76). Palgrave Macmillan.

Bernard, R. M., Zhang, D., Abrami, P. C., Sicoly, F., Borokhovski, E., & Surkes, M. A. (2008). Exploring the structure of the Watson-Glaser Critical Thinking Appraisal: One scale or many subscales? *Thinking Skills and Creativity*, *3*(1), 15-22.

Biggs, J. (2014). Constructive alignment in university teaching. *HERDSA Review of Higher Education*, *1*, 5-22.

Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university* (3rd ed.). Open University Press/Society for Research into Higher Education.

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university* (4th ed.). Open University Press.

Bissell, A. N., & Lemons, P. P. (2006). A new method for assessing critical thinking in the classroom. *Bioscience*, *56*(1), 66-72.

Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2004). Working inside the black box: Assessment for learning in the classroom. *The Phi Delta Kappa*, *86*(1), 8-21.

Bloom, B. S. (Ed.). (1956). *Taxonomy of educational objectives*. David McKay Company.

Boud, D., & Falchikov, N. (2007). *Rethinking assessment in higher education: Learning for the longer term*. Routledge.

Bowden, J., Hart, G., King, B., Trigwell, K., & Watts, O. (2000). Generic capabilities of ATN university students. *Canberra: Australian Government Department of Education, Training and Youth Affairs*. http://www.clt.uts.edu.au/ATN.grad.cap.project.index.html

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Broughton, G., Brumfit, C., Flavell, R., Hill, P., & Pincas, A. (2003). *Teaching English as a foreign language*. Taylor and Francis.

Burbules, N. C., & Berk, R. (1999). Critical thinking and critical pedagogy: Relations, differences, and limits. In T. S. Popkewitz & L. Fendler (Eds.), *Critical theories in education: changing terrains of knowledge and politics* (pp. ???). Routledge.

Cananau, I. (2021). Critical thinking and English literature in higher education: The theoretical models and the Swedish syllabi. *Nordic Journal of English Studies*, *20*(2), 99-128. https://doi.org/https://doi.org/10.35360/njes.691

Chen, M.-H. (2010). *Infusing thinking skills into an L2 classroom: a case study of an innovation in a Taiwanese university* [Doctoral dissertation, Newcastle university].

Chen, M.-H. (2016a). Fostering L2 speaking and thinking through a HOT approach. *Curriculum & Instruction Quarterly*, *18*(4), 193-225.

Chen, M.-H. (2016b). Theoretical framework for integrating higher-order thinking into L2 speaking. *Theory and Practice in Language Studies*, *6*(2), 217-226. https://doi.org/10.17507/tpls.0602.01

Christodoulou, D. (2014). *Seven myths about education*. Routledge.

Churches, A. (2008). *Bloom's Taxonomy digitally*. Educators' eZine. http://www.techlearning.com/showArticle.php?articleID=196605124

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education*. Routledge.

Council of Europe. (2020). *Common European Framework of reference for language: learning, teaching, assessment*. Council of Europe.

Dalarna University. (2022). *English II*. https://www.du.se/sv/Utbildning/kurspaket/?applicationcode=H3CZD

Davidson, B. W. (1998). Comments on Dwight Atkinsons's "A critical approach to critical thinking in TESOL". *TESOL Quarterly*, *32*, 119-123.

Davidson, B. W., & Dunham, R. A. (1997). Assessing EFL student progress in critical thinking with the Ennis-Weir critical thinking essay test. *JALT Journal*, *19*(1), 43-57.

Davies, M. (2006). An 'infusion' approach to critical thinking: Moore on the critical thinking debate. *Higher Education Research & Development*, *25*(2), 179-193. https://doi.org/10.1080/07294360600610420

Davies, M. (2013). Critical thinking and the disciplines reconsidered. *Higher Education Research & Development*, *32*(4), 529-544. https://doi.org/10.1080/07294360.2012.697878

Davies, M. (2015). A model of critical thinking in higher education. In M. Paulsen (Ed.), *Higher education: Handbook of theory and research* (pp. ???). Springer.

Davies, M., & Barnett, R. (Eds.). (2015). *The Palgrave handbook of critical thinking in higher education*. Palgrave Macmillan.

de la Harpe, B., & David, C. (2012). Major influences on the teaching and assessment of graduate attributes. *Higher Education Research & Development*, *31*(4), 493-510. https://doi.org/10.1080/07294360.2011.629361

DeWaelsche, S. A. (2015). Critical thinking, questioning and student engagement in Korean university English courses. *Linguistics and Education*, *32*, 131-147. https://doi.org/10.1016/j.linged.2015.10.003

Dewey, J. (1933). *Experience and education*. Macmillan.

Dodou, K. (2020). The value of studying literature: A review of the English higher education curriculum in Sweden. *Nordic Journal of English Studies*, *19*(1), 257-298.

Drisko, J., & Maschi, T. (2015). *Content analysis*. Oxford Universtiy Press.

Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.

Education First. (2021). *EF English Proficiency Index*. https://www.ef.com/wwen/epi/

El Soufi, N., & See, B. H. (2019). Does explicit teaching of critical thinking improve critical thinking skills of English language learners in higher education? A critical review of causal evidence. *Studies in Educational Evaluation*, *60*, 140-162. https://doi.org/https://doi.org/10.1016/j.stueduc.2018.12.006

Enayat, M. J., Davoudi, M., & Dabbagh, A. (2015). Critical thinking instruction in Iran's ELT curriculum: To be or not to be? *International journal of English language and translation studies*, *3*(4), 29-41.

English, J. F. (2012). *The global future of English studies*. John Wiley & Son.

Ennis, R. H. (1985). A logical basis for measuring critical thinking skills. *Educational Leadership 43*(2), 44-48.

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In J. B. Baron & R. J. Sternberg (Eds.), *Teaching thinking skills: theory and practice* (pp. ???). Freeman.

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, *18*(3), 4-10.

Ennis, R. H., Millman, J., & Tomko, T. N. (1985). *Cornell critical thinking tests Level X and Level Z manual* (3rd ed.). Midwest Publications.

Ennis, R. H., & Weir, E. (1985). *The Ennis-Weir Critical Thinking Essay Test*. Midwest Publications.

Erikson, M. G., & Erikson, M. (2018). Learning outcomes and critical thinking – good intentions in conflict. *Studies in Higher Education*, *44*(12), 2293-2303. https://doi.org/10.1080/03075079.2018.1486813

ETS. (2022). *TOEIC*. Retrieved 2023-01-19 from https://www.ets.org/toeic.html

Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Research findings and recommendations*. The California Academic Press.

Facione, P. A. (1998). *Critical thinking: What it is and why it counts*. California Academic Press.

Facione, P. A. (2020). *Critical thinking: What it is and why it counts*. California Academic Press.

Facione, P. A., & Facione, N. C. (1994). *The California critical thinking skills test: Test manual*. California Academic Press.

Forsberg, J., Mohr, S., & Jansen, S. (2019). "The goal is to enable students to communicate": Communicative competence and target varieties in TEFL practices in Sweden and Germany. *EuJAL*, *7*(1), 31-60. https://doi.org/https://doi.org/10.1515/eujal-2018-0006

Ganapathy, M., Manjet Kaur Mehar, S., Kaur, S., & Liew, W. K. (2017). Promoting higher order thinking skills via teaching practices. *3L, Language, Linguistics, Literature*, *23*(1), 75-85. https://doi.org/http://doi.org/10.17576/3L-2017-2301-06

Gass, S., & Selinker, L. (2008). *Second language acquisition. An introductory course* (3rd ed.). Taylor and Francis Group.

Ghanizadeh, A. (2016). The interplay between reflective thinking, critical thinking, self-monitoring, and academic achievement in higher education. *Higher Education*, *74*(1), 101-114. https://doi.org/10.1007/s10734-016-0031-y

Gibbs, G., & Simpson, C. (2005). Conditions under which assessment supports students' learning. *Learning and Teaching in Higher Education*, *1*, 3-31.

Gilquin, G., & Granger, S. (2011). From EFL to ESL: Evidence from the International Corpus of Learner English. In J. Mukherjee (Ed.), *Exploring second-language varieties of English and learner English: Bridging a paradigm gap* (pp. 55-78). John Benjamins Publishing Company.

Giroux, H. A. (2011). *On critical pedagogy*. The Continuum International Publishing Group.

Glen, S. (1995). Developing critical thinking in higher education. *Nurse Education Today*, *15*, 170-176.

Gorard, S. (2014). A proposal for judging the trustworthiness of research findings. *Radical Statistics*, *110*, 47-59.

Granger, S., Dupont, M., Meunier, F., Neats, H., & Paquot, M. (Eds.). (2020). *International corpus of learner English version 3*. Presses Universitaires De Louvain.

Green, W., Hammer, S., & Star, C. (2009). Facing up to the challenge: why is it so hard to develop graduate attributes? *Higher Education Research & Development*, *28*(1), 17-29. https://doi.org/10.1080/07294360802444339

Halonen, J. S. (1995). Demystifying critical thinking. *Teaching of Psychology*, *22*(1), 75-81.

Halpern, D. F. (2010). *Halpern Critical Thinking Assessment* Schuhfried. Retrieved 2023-01-19 from http://www.schuhfried.com/vienna-test-system-vts/all-tests-from-a-z/test/hcta-halpern-critical-thinking-assessment-1/

Halpern, D. F. (2014). *Thought and knowledge: An introduction to critical thinking* (5th ed.). Psychology Press.

Hashemi, M. R., & Ghanizadeh, A. (2012). Critical discourse analysis and critical thinking: An experimental study in an EFL context. *System*, *40*(1), 37-47. https://doi.org/10.1016/j.system.2012.01.009

Hashemi, M. R., & Zabihi, R. (2012). Does critical thinking enhance EFL learners' receptive skills? *Journal of Language Teaching and Research*, *3*(1), 172-179. https://doi.org/doi:10.4304/jltr.3.1.172-179

Hatcher, D. L. (2013). The Halpern critical thinking assessment: A review. *Inquiry: critical thinking across the disciplines*, *28*(3), 18-23.

Hazenberg, S., & Hulstijn, J. H. (1996). Defining a minimal receptive second-language vocabulary for non-native university students: an empirical investigation. *Applied Linguistics*, *17*(2), 145-164.

Heidari, K. (2020). Critical thinking and EFL learners' performance on textually-explicit, textually-implicit, and script-based reading items. *Thinking Skills and Creativity*, *37*, 1-8. https://doi.org/10.1016/j.tsc.2020.100703

Hitchcock, D. (2003). *The effectiveness of computer-assisted instruction in critical thinking.* OSSA Conference Archive, University of Windsor.

Honey, P. (2005). *Critical Thinking Questionnaire*. https://peterhoney.com

Houghton, W. (2004). *Learning and teaching theory for engineering academics*. Loughborough University. https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/9413/2/EngSC-L%26T-guide-2004.pdf.

Huber, C. R., & Kuncel, N. R. (2016). Does college teach critical thinking? A meta-analysis. *Review of Educational Research*, *86*(2), 431-468. https://doi.org/10.3102/0034654315605917

Hughes, C., & Barrie, S. (2010). Influences on the assessment of graduate attributes in higher education. *Assessment & evaluation in higher education*, *35*(3), 325-334. https://doi.org/10.1080/02602930903221485

Hultgren, A. K. (2016). The role of policy in shaping English as a university subject in Denmark. In A. Hewings, L. Prescott, & P. Seargeant (Eds.), *Futures for English studies: Teaching language, literature and creative writing in higher education* (pp. 120-138). Palgrave Macmillan.

Hussein, B. A.-S. (2012). The Sapir-Whorf hypothesis today. *Theory and Practice in Language Studies*, *2*(3), 642-646. https://doi.org/10.4304/tpls.2.3.642-646

Hussey, T., & Smith, P. (2003). The uses of learning outcomes. *Teaching in Higher Education*, *8*(3), 357-368. https://doi.org/10.1080/13562510309399

IELTS. (n.d.). *IELTS for study*. Retrieved 2023-01-17 from https://www.ielts.org/

Insight Assessment. (2020). *CCTST user manual and resource guide*. California Academic Press.

Insight Assessment. (2023). *Sample thinking skills questions*. Retrieved 2023-02-24 from https://www.insightassessment.com/article/sample-thinking-skills-questions

Irvine, J. (2017). A comparison of revised Bloom and Marzano's New Taxonomy of Learning. *Research in Higher Education Journal*, *33*.

Jensen, J. L., McDaniel, M. A., Woodard, S. M., & Kummer, T. A. (2014). Teaching to the test…or testing to teach: Exams requiring higher order thinking skills encourage greater conceptual understanding. *Educational Psychology Review*, *26*(2), 307-329. https://doi.org/10.1007/s10648-013-9248-9

Johansson, E. (2020a). The assessment of higher-order thinking skills in online EFL courses: A quantitative content analysis. *Nordic Journal of English Studies*, *19*(1), 224-256. https://doi.org/http://doi.org/10.35360/njes.519

Johansson, E. (2020b). Higher-order thinking e-assessment in online EFL courses: Swedish instructors' perceptions and experiences. *Moderna Sprak*, *114*(2), 161-187.

Johansson, E. (2022). Development of critical thinking and language proficiency among undergraduate Swedish online EFL students. *Educare*, *4*, 50-71. https://doi.org/10.24834/educare.2022.4.3

Johnson, S. (2010). Teaching thinking skills. In C. Winch (Ed.), *Teaching thinking skills* (2nd ed., pp. 1-50). Continuum International Publishing Group.

Jones, A. (2008). Generic attributes as espoused theory: the importance of context. *Higher Education*, *58*(2), 175-191. https://doi.org/10.1007/s10734-008-9189-2

Jorre de St Jorre, T., & Oliver, B. (2017). Want students to engage? Contextualise graduate learning outcomes and assess for employability. *Higher Education Research & Development*, *37*(1), 44-57. https://doi.org/10.1080/07294360.2017.1339183

Kachru, B. B. (1976). Models of English for the third world: White man's linguistic burden or language pragmatics? *TESOL Quarterly*, *10*(2), 21-39.

Kachru, B. B., Kachru, Y., & Nelson, C. L. (2009). *The handbook of world Englishes*. Blackwell Publishing.

Kamali, Z., & Fahim, M. (2011). The relationship between critical thinking ability of Iranian EFL learners and their resilience level facing unfamiliar vocabulary items in reading. *Journal of Language Teaching and Research*, *2*(1), 104-111. https://doi.org/10.4304/jltr.2.1.104-111

Kapranov, O. (2017). The use of metonymy and metaphor in descriptive essays by intermediate and advanced EFL students. *Linguistics Beyond and Within*, *3*, 87-101. https://doi.org/https://doi.org/10.31743/lingbaw.5652

Karlstad University. (2019). *English B*. https://www3.kau.se/kursplaner/en/ENGB60_20201_en.pdf

King, F., Goodson, L., & Rohani, F. (2011). *Higher order thinking skills*. Center of Advancement of Learning and Assessment.

Klein, S., Benjamin, R., Shavelson, R., & Bolus, R. (2007). The collegiate learning assessment: facts and fantasies. *Evaluation Review*, *31*(5), 415-439.

Knight, P., & Page, A. (2007). *The assessment of 'wicked' competences: A report to the practice-based professional learning centre of excellence in teaching and learning in the Open University*. Centre for Excellence in Teaching and Learning, The Open University. http://oro.open.ac.uk/76353/1/Knight-and-Page-The-assessment-of-wicked-competences-2007.pdf

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory Into Practice*, *41*(4), 212-218. https://doi.org/10.1207/s15430421tip4104_2

Kuteeva, M. (2014). The parallel language use of Swedish and English: the question of 'nativeness' in university policies and practices. *Journal of Multilingual and Multicultural Development*, *35*(4), 332-344. https://doi.org/10.1080/01434632.2013.874432

Köksal, D., & Ulum, Ö. G. (2018). Language assessment through Bloom's taxonomy. *Journal of Language and Linguistic Studies*, *14*(2), 76-88.

Larsson, T. (2012). On spelling behavio(u)r: A corpus-based study of advanced EFL learners' preferred variety of English. *Nordic Journal of English Studies*, *11*(3), 127-154. https://doi.org/ https://doi.org/10.35360/njes.268

Leach, S. M., Immekus, J. C., French, B. F., & Hand, B. (2020). The factorial validity of the Cornell Critical Thinking Tests: A multi-analytic approach. *Thinking Skills and Creativity*, *37*, 1-14. https://doi.org/https://doi.org/10.1016/j.tsc.2020.100676

Leber, J., Renkl, A., Nückles, M., & Wäschle, K. (2018). When the type of assessment counteracts teaching for understanding. *Learning: research and practice*, *4*(2), 161-179. https://doi.org/https://doi.org/10.1080/23735082.2017.1285422

Leighton, J. P. (2011). A cognitive model for the assessment of higher order thinking in students. In G. Schraw & D. R. Robinson (Eds.), *Assessment of higher order thinking skills* (pp. 151-184). Information Age Publishing.

Lemmouh, Z. (2010). *The relationship among vocabulary knowledge, academic achievement and the lexical richness in writing in Swedish university students of English* [Doctoral thesis, Stockholm University].

Lesley, T., Hansen, C., & Zukowski-Faust, J. (2005). *Interchange passages: Placement and evaluation package*. Cambridge University Press.

Lewis, A., & Smith, D. (1993). Defining higher order thinking. *Theory Into Practice*, *32*(3), 131-137. https://doi.org/10.1080/00405849309543588

Liaw, M.-L. (2007). Content-based reading and writing for critical thinking skills in an EFL context. *English Teaching & Learning*, *31*(2), 45-87.

Linneaus University. (2022). *English 2*. https://lnu.se/en/course/english-2/vaxjo-exchange-spring/

Lipman, M. (1988). Critical thinking - what can it be? *Educational leadership*, *46*(1), 38-43.

Liu, L., Lois, F., & Crotts Roohr, K. (2014). *Assessing critical thinking in higher education: Current state and directions for next-generation assessment*. ETS Research Report Series. https://doi.org/https://doi.org/10.1002/ets2.12009

Lorencová, H., Jarošová, E., Avgitidou, S., & Dimitriadou, C. (2019). Critical thinking practices in teacher education programmes: a systematic review. *Studies in Higher Education*, *44*(5), 844-859. https://doi.org/10.1080/03075079.2019.1586331

Loughlin, C., Lygo-Baker, S., & Lindberg-Sand, Å. (2021). Reclaiming constructive alignment. *European Journal of Higher Education*, *11*(2), 119-136. https://doi.org/https://doi.org/10.1080/21568235.2020.1816197

Lu, H., & Luk, J. (2014). "I would study harder if I was a girl": Gendered narratives of low-achieving male and high-achieving female EFL learners. *Journal of Language, Identity & Education*, *13*(1), 1-15. https://doi.org/10.1080/15348458.2013.835571

Lund University. (2019). *English: Level 2 (31-45).* https://kursplaner.lu.se/pdf/kurs/en/ENGH13

Macaro, E., Curle, S., Pun, J., An, J., & Dearden, J. (2017). A systematic review of English medium instruction in higher education. *Language Teaching*, *51*(1), 36-76. https://doi.org/10.1017/s0261444817000350

Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: a practical, step-by-step guide for learning and teaching scholars. *AISHE-J*, *3*, 3351-3354.

Malmström, H., & Pecorari, D. (2022). *Språkval och internationalisering: Svenskans och engelskans roll inom forskning och högre utbildning*. Språkrådet (Institutionen för språk och folkminnen).

Malmö University. (2022). *English II*. https://mau.se/en/study-education/course/en102c/

Manalo, E., & Sheppard, C. (2016). How might language affect critical thinking performance? *Thinking Skills and Creativity*, *21*, 41-49. https://doi.org/10.1016/j.tsc.2016.05.005

Marin, L. M., & Halpern, D. F. (2011). Pedagogy for developing critical thinking in adolescents: Explicit instruction produces greatest gains. *Thinking Skills and Creativity*, *6*(1), 1-13. https://doi.org/10.1016/j.tsc.2010.08.002

Marsh, D. (Ed.). (2002). *CLIL/EMILE - The European dimension: actions, trends and foresight potential*. European Commission.

Marzano, R. J., & Kendall, J. S. (2007). *The new taxonomy of educational objectives* (2nd ed.). Corwin Press.

McNeill, M., Gosper, M., & Xu, J. (2012). Assessment choices to target higher order learning outcomes: the power of academic empowerment. *Research in learning technology*, *20*, 283-296. https://doi.org/0.3402/rlt.v20i0.17595

McPeck, J. (1981). *Critical thinking and education*. St. Martin's Press.

Meara, P. (2005). *X_Lex, The Swansea Vocabulary Levels Test, v.2.05*. Lognostics.

Meara, P., & Milton, J. (2003). *X_Lex, the Swansea Levels Test*. Express.

Meara, P., & Miralpeix, I. (2006). *Y_Lex: The Swansea Advanced Vocabulary Levels Test, v.2.05*. Lognostics.

Mehta, S. R., & Al-Mahrooqi, R. (2014). Can thinking be taught? Linking critical thinking and writing in an EFL context. *RELC journal*, *46*(1), 23-36. https://doi.org/10.1177/0033688214555356

Mertes, L. (1991). Thinking and writing. *Middle School Journal*, *22*, 24-25.

Mid Sweden University. (2020). *English BA (B)*. https://www.miun.se/utbildning/kurser/sprak-litteratur-historia-och-religion/engelska/engelska-gr-b-30-hp/kursplan/?kursplanid=22312

Miller, C. M. I., & Parlett, M. (1974). *Up to the Mark: a study of the examination game*. Society for Research into Higher Education.

Milton, J. (2009). *Measuring second language vocabulary acquisition*. Multilingual Matters.

Milton, J., & Alexiou, T. (2009). Vocabulary size and the Common European Framework of Reference for Languages. In B. Richards, M. H. Daller, D. D. Malvern, P. Meara, J. Milton, & J. Treffers-Daller (Eds.), *Vocabulary studies in first and second language acquisition* (pp. 194-211). Palgrave.

Ministry of Education and Research Sweden. (1993: 100). *The Higher Education Ordinance*. https://www.uhr.se/en/start/laws-and-regulations/Laws-and-regulations/The-Higher-Education-Ordinance/#chapter6

Miralpeix, I. (2020). L1 and L2 vocabulary size and growth. In S. Webb (Ed.), *The Routledge handbook of vocabulary studies* (pp. 189-206). Routledge.

Miralpeix, I., & Muñoz, C. (2018). Receptive vocabulary size and its relationship to EFL language skills. *International Review of Applied Linguistics in Language Teaching*, *56*(1), 1-24. https://doi.org/10.1515/iral-2017-0016

Moeiniasl, H., Taylor, L., deBraga, M., Manchanda, T., Huggon, W., & Graham, J. (2022). Assessing the critical thinking skills of English language learners in a first year psychology course. *Thinking Skills and Creativity*, *43*, 1-13. https://doi.org/10.1016/j.tsc.2022.101004

Moore, T. (2004). The critical thinking debate: how general are general thinking skills? *Higher Education Research & Development*, *23*(1), 3-18. https://doi.org/10.1080/0729436032000168469

Moore, T. (2011a). Critical thinking and disciplinary thinking: A continuing debate. *Higher Education Research & Development*, *23*(1), 3-18. https://doi.org/https://doi.org/10.1080/07294360.2010.501328

Moore, T. (2011b). *Critical thinking and language: the challenge of generic skills and disciplinary discourse*. Continuum.

Morton, T. (2016). Content and language integrated learning. In G. Hall (Ed.), *The Routledge handbook of English language teaching* (pp. 252-264). Taylor and Francis.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge University Press.

Nation, I. S. P. (2013). *Learning vocabulary in another language* (2nd ed.). Cambridge University Press.

Nation, I. S. P., & Beglar, D. (2007). A vocabulary size test. *The Language Teacher*, *31*(7), 9-13.

National Qualifications Authority of Ireland. (n.a.). *National Framework of Qualifications*.

Nejabati, N. (2015). The effects of teaching self-regulated learning strategies on EFL students' reading comprehension. *Journal of Language Teaching and Research*, *6*(6), 1343-1348. https://doi.org/10.17507/jltr.0606.23

Neuendorf, K. A. (2002). *The content analysis guidebok*. Sage Publications.

Nguyễn, T. M. T., & Nguyễn, T. T. L. (2017). Influence of explicit higher-order thinking skills instruction on students' learning of linguistics. *Thinking Skills and Creativity*, *26*, 113-127. https://doi.org/10.1016/j.tsc.2017.10.004

Norloff, C., Daise, D., & Carne, P. (2011). *Q: Skills for success 4 reading and writing*. Oxford University Press.

Olsson, E., & Sylvén, L. K. (2015). Extramural English and academic vocabulary. *Apples - Journal of Applied Language Studies*, *9*(2), 77-103. https://doi.org/10.17011/apples/urn.201512234129

Paul, R. (1993). *Critical thinking: What every person needs to survive in a rapidly changing world*. Foundation for Critical Thinking.

Pecorari, D., & Malmström, H. (2018). At the crossroads of TESOL and English medium instruction. *TESOL Quarterly*, *52*(3), 497-515. https://doi.org/10.1002/tesq.470

Rashid, R. A., & Hashim, R. A. (2008, 19-21 November). *The relationship between critical thinking and language proficiency of Malaysian undergraduates* EDU-COM International Conference, Symposia and Campus Events, Edith Cowan University, Perth Western Australia.

Sauro, S., & Sundmark, B. (2016). Report from Middle-Earth: fan fiction tasks in the EFL classroom. *ELT Journal*, *70*(4), 414-423. https://doi.org/10.1093/elt/ccv075

Schmitt, N. (2008). Instructed second language vocabulary learning. *Language Teaching Journal*, *12*(3), 329-363.

Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Palgrave Macmillan.

Schoepp, K. (2017). The state of course learning outcomes at leading universities. *Studies in Higher Education*, *44*(4), 615-627. https://doi.org/10.1080/03075079.2017.1392500

Schraw, G., & Robinson, D. R. (Eds.). (2011). *Assessment of higher order thinking skills*. Information Age Club.

Schröter, T. (2016). Small research projects about social and regional variation for advanced university students of English in Sweden: Their purpose and content. In F. Bianchi & S. Gesuato (Eds.), *Pragmatic issues in specialized communicative contexts* (pp. 217-235). Brill. https://doi.org/10.1163/9789004323902_012

Siegel, H. (1988). *Educating reason: Rationality, critical thinking and education*. Routledge.

Siegel, H. (2010). On thinking skills. In C. Winch (Ed.), *Teaching thinking skills* (pp. 51-84). Continuum.

Skolverket. (2022a). *Kommentarmaterial till ämnesplaner i moderna språk och engelska: Gymnasieskolan och kommunal vuxenutbildning på gymnasial nivå*. Skolverket. https://www.skolverket.se/getFile?file=9918

Skolverket. (2022b). *Timplan för grundskolan*. Retrieved 17-05-2022 from https://www.skolverket.se/undervisning/grundskolan/laroplan-och-kursplaner-for-grundskolan/timplan-for-grundskolan

Skolverket. (2022c). *Ämne - Engelska*. Skolverket. Retrieved 16-05-2022 from https://www.skolverket.se/undervisning/gymnasieskolan/laroplan-program-och-amnen-i-gymnasieskolan/gymnasieprogrammen/amne?url=-996270488%2Fsyllabuscw%2Fjsp%2Fsubject.htm%3FsubjectCode%3DENG%26tos%3Dgy&sv.url=12.5dfee44715d35a5cdfa92a3

Snoder, P., & Laufer, B. (2022). EFL learners' receptive knowledge of derived words: the case of Swedish adolescents. *TESOL Quarterly*, *56*(4), 1242-1265.

Snyder, B. R. (1971). *The hidden curriculum*. MIT Press.

Soodmand Afshar, H., & Movassagh, H. (2014). On the relationship among critical thinking, language learning strategy use and university achievement of Iranian English as a foreign language majors. *The Language Learning Journal*, *45*(3), 382-398. https://doi.org/10.1080/09571736.2014.914238

Soodmand Afshar, H., Movassagh, H., & Radi Arbabi, H. (2017). The interrelationship among critical thinking, writing an argumentative essay in an L2 and their subskills. *The Language Learning Journal*, *45*(4), 419-433. https://doi.org/10.1080/09571736.2017.1320420

SOU. (2019:6). *En långsiktig, samordnad och dialogbaserad styrning av högskolan*. https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2019/02/sou-20196/

Stockholm University. (2018). *English II*. https://sisu.it.su.se/pdf_creator/25819/33070

Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing*, *14*(3), 153-173. https://doi.org/10.1016/j.jslw.2005.05.002

Sundqvist, P. (2009). *Extramural English matters: Out-of-school English and its impact on Swedish ninth graders' oral proficiency and vocabulary* [Doctoral dissertation, Karlstad University].

Swedish Higher Education Act. (1992:1434). *The Swedish Higher Education Act*. https://www.uhr.se/en/start/laws-and-regulations/Laws-and-regulations/The-Swedish-Higher-Education-Act/#chapter1

Swedish Higher Education Ordinance. (2022). *Systems of qualification*. Swedish Council for Higher Education, . Retrieved 2022-09-12 from https://www.uhr.se/en/start/laws-and-regulations/Laws-and-regulations/The-Higher-Education-Ordinance/Annex-2/#Degree-of-Bachelor

Sylvén, L. K. (2022). Very young Swedish children's exposure to English outside of school. In C. Bardell, C. Hedman, K. Rejman, & E. Zetterholm (Eds.), *Exploring language education: global and local perspectives*. Stockholm University Press. https://doi.org/https://doi.org/10.16993/bbz

Säljö, R. (2015). *Lärande: en introduktion till perspektiv och metaforer*. Gleerups.

Södertörn University. (2022). *English B*. https://www.sh.se/rest-api/cpl/syllabus?code=EN018G&period=20223&lang=sv

Tapper, M. (2005). Connectives in advanced Swedish EFL learners' written English – preliminary results. *The Department of English: Working Papers in English Linguistics*, *5*, 115-144.

The Critical Thinking Co. (2022). *Cornell Critical Thinking Tests*. Retrieved 2023-01-10 from https://www.criticalthinking.com/cornell-critical-thinking-tests.html

The Language Training and Testing Center. (n.d.). *The General English Proficiency Test*. Retrieved 2023-01-17 from https://web.archive.org/web/20130315033625/http://www.lttc.ntu.edu.tw/e_lttc/E_GEPT/index.htm

The Swedish Government. (2019). *Etikprövning av forskning - tydligare regler och skärpta straff*. Regeringen. Retrieved 2023-01-11 from https://www.regeringen.se/rattsliga-dokument/lagradsremiss/2019/07/etikprovning-av-forskning--tydligare-regler-och-skarpta-straff/

Thompson, T. (2008). Mathematics teachers' interpretation of higher-order thinking in Bloom's taxonomy. *International Electronic Journal of Mathematics Education*, *3*(2), 96-109.

Toyoda, E. (2015). Relationship between higher-order thinking skills and L2 performance. *Electronic Journal of Foreign Language Teaching*, *12*(2), 200-218.

Treleaven, L., & Voola, R. (2008). Integrating the development of graduate attributes through constructive alignment. *Journal of Marketing Education*, *30*(2), 160-173. https://doi.org/https://doi.org/10.1177/0273475308319352

Twomey Fosnot, C., & Stewart Perry, R. (2005). Constructivism: a psychological theory of learning. In C. Twomey Fosnot (Ed.), *Constructivism theory, perspectives and practices* (2nd edition ed., pp. 8-33). Teacher College Press.

Ulum, Ö. G. (2016). A descriptive content analysis of the extent of Bloom's taxonomy in the reading comprehension questions of the course book Q: Skills for success 4 reading and writing. *The Qualitative Report*, *21*(9), 1674-1683. https://doi.org/https://doi.org/10.46743/2160-3715/2016.2172

Umeå University. (2021). *English B*. https://www.umu.se/utbildning/kurser/engelska-b/kursplan/

University of Gothenburg. (2021). *English, intermediate course*. https://www.gu.se/studera/hitta-utbildning/engelska-fortsattningskurs-en1210

University of Gävle. (2019). *English (31-60)*. http://utb.hig.se/fafne/app/public/pdf/course.pdf?identifier=ENG312

University West. (2019a). *English (level 31-60): Language structure and language variation, 15 HE credits*. https://kursinfo-print.hv.se/CoursePlan/Pdf/ENS210/7%2c000/sv

University West. (2019b). *English (level 31-60): Literary history and intertextuality, 15 HE credits*. https://kursinfo-print.hv.se/CoursePlan/Pdf/ENL210/4%2c000/sv

Van Damme, D., & Zahner, D. (Eds.). (2022). *Does higher education teach students to think critically?* OECD Publishing. https://doi.org/10.1787/cc9fa6aa-en.

Vetenskapsrådet. (2017). *Good research practice*. Vetenskapsrådet.

Watson, G., & Glaser, E. M. (1980). *Watson-Glaser critical thinking appraisal*. Psychological Corporation.

Wiliam, D. (2011). What is assessment for learning? *Studies in Educational Evaluation*, *37*(1), 3-14. https://doi.org/10.1016/j.stueduc.2011.03.001

Willingham, D. T. (2007). Critical thinking: Why is it so hard to teach? *American Educator*, *31*(2), 8-19. https://doi.org/https://doi.org/10.3200/AEPR.109.4.21-32

Willingham, D. T. (2009). *Why don't students like school?* Jossey-Bass.

Willingham, D. T. (2019). *How to teach critical thinking*. NSW Department of Education.

Yang, & Gamble, J. (2013). Effective and practical critical thinking-enhanced EFL instruction. *ELT Journal*, *67*(4), 398-412. https://doi.org/10.1093/elt/cct038

Appendices

Appendix 1: Qualification descriptor of Bachelor's degree

Degree of Bachelor [Kandidatexamen]

Scope

A Degree of Bachelor is awarded after the student has completed the courses required to gain 180 credits in a defined specialisation determined by each higher education institution itself, of which 90 credits are for progressively specialised study in the principal field (main field of study) of the programme.

Outcomes

Knowledge and understanding

For a Degree of Bachelor the student shall

- demonstrate knowledge and understanding in the main field of study, including knowledge of the disciplinary foundation of the field, knowledge of applicable methodologies in the field, specialised study in some aspect of the field as well as awareness of current research issues.

Competence and skills

For a Degree of Bachelor the student shall

- demonstrate the ability to search for, gather, evaluate and critically interpret the relevant information for a formulated problem and also discuss phenomena, issues and situations critically
- demonstrate the ability to identify, formulate and solve problems autonomously and to complete tasks within predetermined time frames
- demonstrate the ability to present and discuss information, problems and solutions in speech and writing and in dialogue with different audiences, and

- demonstrate the skills required to work autonomously in the main field of study

Judgement and approach

For a Degree of Bachelor the student shall

- demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues
- demonstrate insight into the role of knowledge in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the need for further knowledge and ongoing learning.

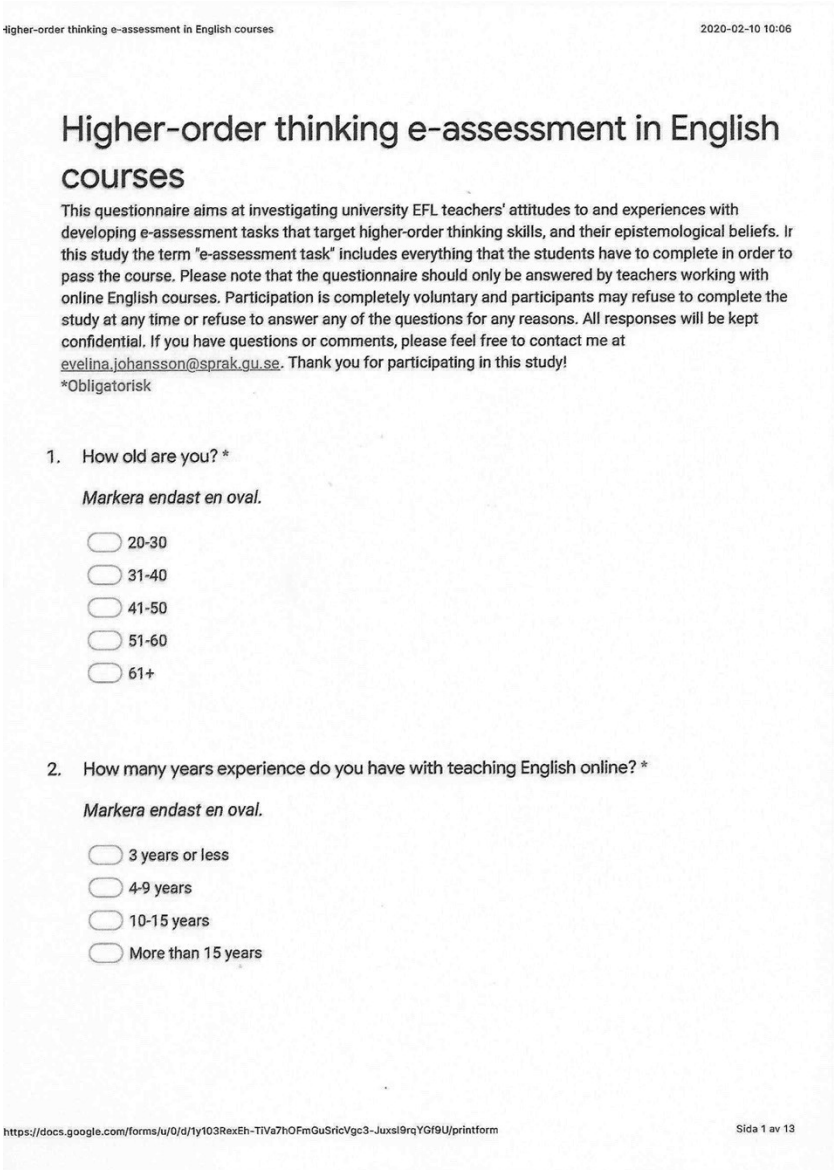
Independent project (degree project)

A requirement for the award of a Degree of Bachelor is completion by the student of an independent project (degree project) for at least 15 credits in the main field of study.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Bachelor with a defined specialisation.

Appendix 2: Questionnaire



higher-order thinking e-assessment in English courses 2020-02-10 10:06

Higher-order thinking e-assessment in English courses

This questionnaire aims at investigating university EFL teachers' attitudes to and experiences with developing e-assessment tasks that target higher-order thinking skills, and their epistemological beliefs. In this study the term "e-assessment task" includes everything that the students have to complete in order to pass the course. Please note that the questionnaire should only be answered by teachers working with online English courses. Participation is completely voluntary and participants may refuse to complete the study at any time or refuse to answer any of the questions for any reasons. All responses will be kept confidential. If you have questions or comments, please feel free to contact me at evelina.johansson@sprak.gu.se. Thank you for participating in this study!

*Obligatorisk

1. How old are you? *

Markera endast en oval.

- ◯ 20-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ 61+

2. How many years experience do you have with teaching English online? *

Markera endast en oval.

- ◯ 3 years or less
- ◯ 4-9 years
- ◯ 10-15 years
- ◯ More than 15 years

https://docs.google.com/forms/u/0/d/1y103RexEh-TiVa7hOFmGuSricVgc3-Juxsl9rqYGf9U/printform Sida 1 av 13

3. What is your highest level of education? *

Markera endast en oval.

- ◯ Master's degree
- ◯ PhD

4. Which of the following courses do you teach? *

Markera alla som gäller.

- ☐ English 1-30 credits (A)
- ☐ English 31-60 credits (B)
- ☐ English 61-90 credits (C)
- ☐ English advanced level (above 91 credits)

5. Which of the following topics do you teach? *

Markera endast en oval.

- ◯ Linguistics
- ◯ Literature
- ◯ Both linguistics and literature
- ◯ Övrigt: _____

6. If requested, would you be able to define the term "higher-order thinking skills"? *

Markera endast en oval.

- ◯ Yes
- ◯ No

7. Which of the following skills do you consider to be higher-order thinking skills? *

Markera alla som gäller.

- [ ] Remember
- [ ] Understand
- [ ] Apply
- [ ] Analyze
- [ ] Evaluate
- [ ] Create

8. How important do you believe that the development of students' higher-order thinking skil is in language courses? *

Markera endast en oval.

	1	2	3	4	5	6	
Not important at all	◯	◯	◯	◯	◯	◯	Very important

9. Do you believe that higher levels of higher-order thinking help students learn a second language? *

Markera endast en oval.

- ◯ Yes
- ◯ No
- ◯ I don't know

10. To what extent do you believe that e-assessment tasks that target higher-order thinking skills develop students' proficiency in the second language? *

Markera endast en oval.

	1	2	3	4	5	6	
Not at all	◯	◯	◯	◯	◯	◯	To a large extent

11. How important do you believe e-assessment tasks are in supporting students' developme of higher-order thinking skills? *

Markera endast en oval.

	1	2	3	4	5	6	
Not at all	◯	◯	◯	◯	◯	◯	Very important

12. When developing e-assessment tasks, do you consider higher-order thinking skills? *

Markera endast en oval.

◯ Yes
◯ No

13. How do you find developing e-assessment tasks that target higher-order thinking skills? *

Markera endast en oval.

	1	2	3	4	5	6	
Very difficult	◯	◯	◯	◯	◯	◯	Very easy

14. Which of the following abilities do the e-assessment tasks used in your course target? *

Markera alla som gäller.

- [ ] Remember
- [ ] Understand
- [ ] Apply
- [ ] Analyze
- [ ] Evaluate
- [ ] Create

15. I feel comfortable in developing e-assessment tasks that target students' ability to *

Markera endast en oval per rad.

	1 Strongly disagree	2	3	4	5	6 Strongly agree
Remember	◯	◯	◯	◯	◯	◯
Understand	◯	◯	◯	◯	◯	◯
Apply	◯	◯	◯	◯	◯	◯
Analyze	◯	◯	◯	◯	◯	◯
Evaluate	◯	◯	◯	◯	◯	◯
Create	◯	◯	◯	◯	◯	◯

16. Which skills do you believe the following e-assessment tasks can target?

Markera alla som gäller.

	Remember	Understand	Apply	Analyze	Evaluate	Creat
Take-home exams	☐	☐	☐	☐	☐	☐
Written assignments/essays	☐	☐	☐	☐	☐	☐
Term paper	☐	☐	☐	☐	☐	☐
Oral presentation	☐	☐	☐	☐	☐	☐
Discussion forum	☐	☐	☐	☐	☐	☐
Peer-reviews	☐	☐	☐	☐	☐	☐
e-Portfolio	☐	☐	☐	☐	☐	☐
Multiple-choice question quizzes	☐	☐	☐	☐	☐	☐

17. Have you been offered any training by your university in how to target students' higher-order thinking/critical thinking? *

Markera endast en oval.

◯ Yes
◯ No

18. If you have been offered training in how to target students' higher-order thinking/critical thinking by your university, in what format was this training?

Markera alla som gäller.

☐ Workshop
☐ Course
☐ Seminar
Övrigt: ☐ _____

19. Have you yourself taken any initiative to training in how to target students' higher-order thinking/critical thinking? *

Markera endast en oval.

- ◯ Yes
- ◯ No

20. If you have taken initiative to training in higher-order thinking/critical thinking, in what forı was this training?

Markera alla som gäller.

- ☐ MOOC
- ☐ Lecture
- ☐ Youtube tutorial
- ☐ Book

Övrigt: ☐ _____

21. Do you feel that you need more training in how to target students' higher-order thinking skills/critical thinking through e-assessment tasks? *

Markera endast en oval.

- ◯ Yes
- ◯ No

22. Please indicate your level of agreement with the following statements *

Markera endast en oval per rad.

	1 Strongly disagree	2	3	4	5	6 Strongl agree
The development of students' higher-order thinking skills is discussed in my department	◯	◯	◯	◯	◯	◯
The development of students' higher-order thinking skills is considered important in my department	◯	◯	◯	◯	◯	◯
I'm given the technical support needed to develop e-assessment tasks that target higher-order thinking	◯	◯	◯	◯	◯	◯
I'm given pedagogical support needed to develop e-assessment tasks that target higher-order thinking	◯	◯	◯	◯	◯	◯
I am confident in my ability to design e-assessment tasks that target higher-order thinking	◯	◯	◯	◯	◯	◯

Higher-order thinking e-assessment in English courses 2020-02-10 10:06

23. Which of the following alternatives do you find to be the main challenges in developing e-assessment tasks that support higher-order thinking? (You can choose several options)

Markera alla som gäller.

- ☐ I am not sure what higher-order thinking is
- ☐ I do not have enough time to develop these e-assessment tasks
- ☐ I do not have the technical skills needed
- ☐ I do not consider higher-order thinking important in language courses
- ☐ I do not have the pedagogical skills needed
- ☐ The learning management system (läroplattformen) does not support e-assessment tasks that target higher-order thinking
- ☐ Grading e-assessment tasks that target higher-order thinking skills takes a long time and I do not have that time
- ☐ I do not feel that I have the support needed from my department to develop these e-assessment tasks
- ☐ I'm not interested in higher-order thinking

Övrigt: ☐ _____

Appendix 3: Invitation letter to EFL students

To you who study English xxx (Autumn/Spring 20XX)

A study aimed at investigating critical thinking and second language learning will be carried out during the autumn semester 2019. The aim of the study is to investigate whether and what type of relationship can be detected between critical thinking and language learning in online courses.

The participants' critical thinking and vocabulary knowledge in English will be tested at the beginning of the semester and after completion of the course. This will provide insights into how students' critical thinking and language skills develop over the semester. The tests that will be used in this study are the California Critical Thinking Skills Test (CCTST) and the Vocabulary Size Test (VST). These take together approximately one hour to complete. CCTST is a well-used and validated test that measures test takers' ability to think critically. All participants will be given an evaluation of their critical thinking skills after completing the last test.

The invitation to participate in this study includes all students who study on this course (English xxx) and have Swedish as their mother tongue. If you are interested in participating in this study, please contact me (Evelina) through mail and after that you will get access to the tests.

Participation in this study is entirely voluntary and you may stop participating at any time. Your answers and results will be treated with full confidentiality. All participants will be entirely anonymous in the publication of the study's results.

Kind regards,

Evelina Johansson
Doctoral student in English linguistics
University of Gothenburg
evelina.johansson@sprak.gu.se

Supervisor:
Christina Lindqvist
Senior lecturer in French
christina.lindqvist@sprak.gu.se