What's Behind the Label? A Qualitative Study of Critical Thinking Exercises in Two Popular English for Academic Purposes (EAP) Textbooks

by

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Abstract

A review of the theoretical literature suggests three rival approaches to critical thinking: *informal logic* (e.g. D'Angelo, 1971; Ennis, 1987; Scriven, 1976), centred on generalizable cognitive abilities; *epistemological* (e.g. McPeck, 1981; Moon, 2008; Paul & Elder, 2016), centred on acquiring disciplinary knowledge and a relativist worldview; and *critical pedagogy* (e.g. Benesch, 2001; Canagarajah, 2005; Giroux, 1994), centred on neo-Marxist social transformation. The aim of this qualitative study was to determine the extent to which these three critical thinking approaches were evidenced in exercises labelled as critical thinking in two popular English for Academic Purposes (EAP) textbooks. This study employed deductive and inductive coding strategies (Pingel, 2010; Saldaña, 2016), in which analytical codes are drawn from the scholarly literature and from the sample, respectively. The textbook analysis revealed three major findings related to the sampled exercises: the abilities targeted were frequently inconsistent with those abilities identified in the theoretical literature, the importance of subject-specific background knowledge was undermined, and there was a lack of concern for social issues and a potential change agenda (i.e. neo-Marxist socio-political transformation). The study concluded by offering several heuristic assumptions towards the development of a more comprehensive and dynamic EAP-centred approach to critical thinking.

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| Accommodationist ideology | the view that EAP is pragmatically-oriented and ideologically neutral, and should unquestioningly induct learners into institutional norms vis-à-vis academic skills and knowledge |
| Argument analysis | identifying and evaluating the premises and conclusions of an argument |
| Background knowledge | the information required to engage sufficiently and knowledgably with critical thinking exercises |
| Critical thinking approach | any systematic way of engaging with an issue or exercise that conforms to the *informal logic*, *epistemological*, or *critical pedagogy* approaches |

        a) *Informal logic*: any approach that subscribes and gives prominence to generalizable cognitive abilities, namely those identified by Ennis (1987)

        b) *Epistemological*: any approach that negates *or* undermines the importance of generalizable thinking abilities *and* offers as a substitute

subject-specific reasoning (i.e. disciplinary epistemology) *or* the adoption of a relativist worldview

c) *Critical Pedagogy*: any approach that equates critical thinking with antagonistic thoughts towards the norms and values of liberal capitalist society and seeks to transform such a society along neo-Marxist lines

Critical thinking exercise      any textbook exercise that has been explicitly labelled as critical thinking by the publisher in the unit in which it is located

English for Academic Purposes      English instruction intended to prepare non-native speakers of English for academic study

Epistemology      what counts as a good reason in an academic discipline *or* the worldview held by a person vis-à-vis knowledge (e.g. dualist, multiplist, and relativist)

| | |
|---|---|
| Everyday issues/problems | any issue that the informal logic approach to critical thinking considers debatable by other than subject-specialists |
| Ideological detoxification | identifying and deconstructing dominant capitalist values and norms |
| Informal logic | a body of knowledge related to evaluating arguments, identifying assumptions, and detecting logical fallacies |
| Neo-Marxism/Critical theory | the views that Western democracies are extremely unequal societies, that unequal power relations are reproduced through the pervasion of dominant ideology, and that changing the status quo presupposes a true understanding of it (Brookfield, 2015) |
| Transformation | changing one's worldview from dualist to multiplist, or multiplist to relativist *or* changing the social and political institutions in liberal capitalist societies based on neo-Marxist ideals |

**Chapter One: Introduction**

Criticizing the usage of the word *creative*, Fowler (1922) writes, "A luscious, round, meaningless word…so much in honour that it is the clinching term of approval from the schoolroom to the advertiser's studio" (p. 114). A similar sentiment has been expressed more recently about the term *critical thinking* (Lipman, 1991). Indeed, critical thinking persists as a term of approbation and ambiguity. Despite the lack of consensus in the theoretical literature regarding the definition of critical thinking, broad approaches do exist within which much of the critical thinking literature may be classified (e.g. Davies & Barnett, 2015; Fasko, 2003; Moon, 2008). These extant classifications were used to develop a useful analytical framework for uncovering and appraising the critical thinking approaches underlying English for Academic Purposes (EAP) textbooks, or textbooks that are specifically intended for use in EAP courses. A general working definition of an EAP course, which will be expanded upon shorty, is one that focuses on communication and other skills necessary for participation in and engagement with academic study for non-native speakers of English (Jordan, 1997). This analytical framework comprises three competing critical thinking approaches: *informal logic* (e.g. D'Angelo, 1971; Ennis, 1987; Scriven, 1976), *epistemological* (e.g. McPeck, 1981; Moon, 2008; Paul & Elder, 2016), and *critical pedagogy* (e.g. Benesch, 2001; Canagarajah, 2001, Giroux, 1994).

My academic interest in the present research stems from my workplace frustrations as an EAP instructor tasked with teaching critical thinking. Recently, I taught four-month long content-based EAP courses to prospective Master of Education

(M.Ed.) students.  The overall goal of these courses was to enable students to communicate critical thoughts about contemporary issues in education.  The first time I taught one of these courses, I followed the lesson plans and materials that were handed down by the previous instructor.  These lesson plans and materials involved teaching weekly themes accompanied by a smattering of peer-reviewed journal articles.  These articles were to be carefully read and analyzed by students and then discussed in a class seminar.  As an outcome, critical thinking was supposed to materialize.

However, I soon realized that students were not thinking critically, but they seemed to be displaying the overt features commonly associated with critical thinking.  For example, in a seminar involving comparisons between the Canadian and Chinese schooling systems, students agreed, disagreed, negotiated, identified assumptions, and asked for clarification.  However, despite these overt features, I suspected that there was little substance beyond the critical thinking veneer.  For example, I noticed that students did not engage with the reading material, but responded on the basis of personal opinion shaped by their experiences.  The academic skills textbooks we were using contained a chapter on critical thinking; however, I was uncertain as to whether a cursory treatment of argument analysis would promote transfer to the convoluted contemporary educational dilemmas, which M. Ed. students typically address as part of their program of studies.

The second time I taught this course I knew that I had to make significant changes if I wanted my students to go beyond the overt features.  I decided that instead of teaching a new education theme each week, I would sustain the same topic, for example, inclusive education or multiple intelligence theory, over multiple weeks; reduce the number of dense scholarly journal articles; and increase the number of introductory

materials, which would offer readable and expanded background information and definitions of essential concepts. I reasoned that if students had a thorough understanding of the issues at hand, the superficiality of the previous term could be avoided.

However, by giving my students more to think about and revealing the real complexities inherent in educational issues, I inadvertently had cognitively overloaded my students. They were now reluctant to express opinions on issues. Naturally, this did not lend itself well to the outcomes-based rubrics I was using. I eventually left that teaching assignment with ambivalence regarding the meaning of critical thinking, whether it is teachable in EAP courses, and if so, what role textbooks should play in all of this.

Given the salient role of textbooks in shaping instruction in at least some language instruction classrooms (Bondi, 2016), and given the potential influence of textbooks on students' perceptions, it is important to understand the critical thinking approaches that underlie such textbooks. This is not to suggest that the textbook is the curriculum, but to suggest that examining textbooks constitutes an integral step to understanding the larger picture (Cortazzi & Jin, 1996): I contend that failing to understand how EAP textbooks operationalize critical thinking precludes a complete understanding of the impact of critical thinking on student learning. As such, the present study hopes to inform the community of researchers and practitioners regarding approaches to critical thinking in two popular EAP textbooks, *Pathways 3: Reading, Writing, and Critical Thinking* (Vargo & Blass, 2013a) and *Oxford EAP: Upper-Intermediate* (de Chazal & McCarter, 2012a).

This research differs from previous studies of critical thinking in English as a Second Language (ESL) or EAP textbooks (e.g. Aziz & Talebinejad, 2012; Birjandi & Alizadeh, 2013; Gordani, 2010, Mizbani & Chalack, 2017; Sobkowiak, 2016; Talebinezhad & Matou, 2012; Ulum, 2016), because the primary objective was not to assess whether, or to what extent, one particular normative understanding of critical thinking was present, but the objective was to describe the critical thinking approaches that appear in textbooks through a broad lens informed by the theoretical literature. This objective allowed for a clearer understanding of how critical thinking is operationalized in textbooks, and how this operationalization measures against the competing critical thinking approaches found in the theoretical literature. This study's analysis of textbooks was largely based on the role played by the concepts of reasoning, knowledge, and society—prominent features of the informal logic, epistemological, and critical pedagogy approaches to critical thinking, respectively—in exercises labelled as critical thinking in *Pathways 3* and *Oxford EAP*. However, to fulfill the exploratory objective of this study, skills identified as critical thinking by the sampled textbooks—but outside of the three broad critical thinking approaches in the literature—were also analyzed and discussed. Thus, both top-down (deductive) and bottom-up (inductive) content analysis strategies were employed (Pingel, 2010; Saldaña, 2016)

The central research question was, *are the approaches to critical thinking in popular EAP textbooks related to the major approaches to critical thinking that are evidenced in the literature? If so, in what way? What are the implications of this relationship?* In order to respond to these questions, I first reviewed the various theorizations of critical thinking in the scholarly literature. This review provided the

background to this study and, along with a review of the literature on EAP, is presented

in Chapter 2, Literature Review.

**Chapter Two: Literature Review**

Having introduced the study in Chapter 1, in Chapter 2 the literature that informed the study is considered. It begins with an introduction to research on English for Academic Purposes (EAP), by defining the terms EAP, English for Specific Purposes (ESP), and English as a Second Language (ESL). It then turns to the underlying principles and assumptions that have informed EAP research and practice. This leads to a description of the three major pedagogical approaches to EAP: study skills, academic socialization, and critical EAP (CEAP). This is followed by a brief history outlining the practical and theoretical circumstances behind the emergence of EAP in Britain and North America. The EAP section of the literature review concludes with a discussion of two major scholarly debates in the field: the question of a general versus specific EAP in the context of knowledge and skill transfer; and the position of EAP in relation to students' cultures, as well as the academic and institutional cultures, into which they are to be inducted.

The second major section of the literature review deals with critical thinking research. It will offer a summary of three prominent critical thinking approaches: *informal logic*, *epistemological*, and *critical pedagogy*. This is followed by a discussion of the relationship between critical thinking and reasoning, knowledge, and society.

The third major section of the literature review will examine empirical research on critical thinking in EAP/ESL. It will offer an analysis of recent studies based on the analysis of critical thinking approaches offered in the previous section.

The final section of the literature review will offer a summary of the pro- and anti-textbook debate in EAP, and an analytical summary of empirical research into critical thinking in EAP/ESL textbooks.

## EAP Research

English for Academic Purposes (EAP) may be understood, as well as distinguished from other second language (L2) teaching and learning research domains or study programs, by examining its definition, principles, and approaches. EAP, as a profession, has been defined as "teaching English with the aim of facilitating learners' study or research in that language" (Flowerdew & Peacock, 2001, p. 1). As an area of research, EAP is concerned with "the communicative needs and practices of individuals working in academic contexts" (Hyland & Shaw, 2016, p. 1). Moreover, EAP is "explicitly concerned with the skills and strategies in English that are required for study purposes in formal education systems" (Jordan, as cited in Fox, Cheng, & Zumbo, 2014, p. 58). To understand this term further, it is useful to contrast it with two other L2 teaching approaches, English for Specific Purposes (ESP) and English as a Second Language (ESL). ESP usually refers to language instruction aimed at preparing students for communicative practices within a particular professional field, for example, engineering or nursing (e.g. Fox & Artemeva, 2017). On the other hand, ESL is concerned with

> increasing communicative capability (Savignon, 2002) and tend[s] to emphasize
> speaking activities and social interaction (e.g., role-plays, conversation gaps,

group work) while fostering a sense of belonging, community, and connection with the new… context and culture (Fox et al., 2014, p. 58).

**Assumptions**

The above definitions of EAP, however, fail to go beyond a paraphrase of the constitutive elements in the term—English, academic, and purposes. To understand the term one needs to examine its principles and approaches. Hyland and Shaw (2016) have identified four major principles relating to both EAP as a profession and as a research domain: *authenticity, groundedness, interdisciplinarity,* and *relevance*. The principle of authenticity means that EAP seeks to approximate the "real" academic world as much as possible (Hyland & Shaw, 2016, p. 3). Moreover, it involves "classroom uses of real examples of spoken, written, graphical and non-verbal communication" (p. 2). Groundedness refers to the commitment among EAP researchers to integrate research and practice. In other words, "teachers… do not just read the research, but are actively involved in creating it" (p. 3). The third principle, interdisciplinarity, refers to EAP researchers' and practitioners' uses of a variety of theories from different disciplines. This principle is essential since EAP is not in itself a particular theory or method; instead, "EAP draws its strength from a broad and eclectic range of different ideas" (Hyland & Shaw, 2016, p. 3). Some of the theories, which Hyland and Shaw cite, include socio-cognitive theory, critical theory, and social constructionism. The last principle, relevance, is evident in the central role afforded to needs analysis in determining EAP course content; that is, the program of study should cater to the language skills that students need to acquire for their immediate academic pursuits. Such an analysis could entail "identifying a number of general skills for a heterogeneous group of students from

different fields or for freshman or pre-university student…[such as] skills related to lecture comprehension…participating in seminars…[and ]using sources" (Hyland & Shaw, 2016, p. 4).

**Approaches**

Within the broad field of EAP, scholars such as Storch, Morton, and Thompson (2016) have identified three major pedagogical approaches: *study skills*, *academic socialization*, and *critical English for Academic Purposes (CEAP)*. The first approach, study skills, being the earliest form of EAP instruction, presupposes a common set of discrete skills related to academic communication (Storch et al., 2016). Furthermore, it is assumed that these general skills can be taught effectively in isolation of a particular academic discipline (Lillis & Tuck, 2016). The second approach, academic socialization, views the function of EAP as primarily one of induction into undergraduate genres— "typified responses to events that recur over time and space… which are social acts inextricable from the wider discourse community" (Benesch, 2001, p. 18), such as the argumentative essay or the laboratory report (Storch et al., 2016). Such induction is supposedly achieved through the explicit teaching of the prominent features of each genre. The third approach, critical EAP (CEAP), sees the development of students' critical literacy as the ultimate instructional goal. As such, the instructional focus is not on the formal features of academic texts but on academic practices, thereby highlighting the role of cultural contexts. For example, regarding writing, CEAP practitioners seek to explicate the socio-political contexts in which writing occurs, emphasizing the role of student identity in the academic writing process (Storch et al., 2016).

Flowerdew and Peacock (2001b) outline six syllabus design approaches in EAP: lexico-grammar-based, focused on instruction in grammatical structures and vocabulary; function-notional-based, focused on communicative functions and aims; discourse-based, focused on text coherence and cohesion; genre-based, focused on the conventions of particular academic genres; skills-based, focused on particular academic skills; and content-based, focused on informational content. This latter approach includes three sub-approaches: *theme-based, sheltered instruction*, and *adjunct instruction.*

The first of these sub-approaches, theme-based, refers to instruction centred on overall academic skills. Sheltered instruction, on the other hand, refers to discipline-specific courses that are adapted to ESL learners and are taught by or in collaboration with subject-specialists. The third sub-approach, adjunct instruction, is when learners are enrolled concurrently in regular content courses, alongside English native speakers, and in EAP courses dealing with the same content (Flowerdew & Peacock, 2001b, pp. 80-81). Flowerdew and Peacock's discussion of syllabus design approaches in EAP is of relevance to the present study's research question because these approaches indicate some of the overarching curricular or programmatic structures within which critical thinking approaches in EAP textbooks must function, and perhaps be subservient to. Therefore, the application of critical thinking to EAP textbooks is more than just a textbook on critical thinking. In a sense, critical thinking, as a concept, must negotiate the terms of its existence within the overarching structures of particular syllabus design approaches, hence the difficulty of incorporating critical thinking approaches in EAP textbooks.

What is perhaps evident from the above overview of EAP approaches is that there is no single methodology for EAP instruction (Flowerdew and Peacock, 2001b).

Nevertheless, what arguably unifies these otherwise distinct approaches to EAP instruction is their goal of academic readiness, in contrast to *professional* readiness (i.e. ESP), discussed below, or everyday living (i.e. ESL).

**History of EAP**

The origins of EAP may be viewed from both a practical and a theoretical perspective. In the 1960s, Britain witnessed a massive influx of international students. Seeing that the available programs, namely, those offered by British grammar schools (Halliday, McIntosh, & Strevens, 1964), were incapable of preparing English L2 learners for vocational contexts or tertiary studies outside the humanities (Halliday et al., 1964), ESL practitioners developed *ad hoc* programs, which catered to learners' prospective postsecondary training (Hamp-Lyons, 2011), while favouring the sciences over humanities (Benesch, 2001).

On the other hand, the theoretical origins of EAP are generally thought to have emerged out of the register analysis research coming primarily out of Britain in the 1960s (Swales, 2001). Scholars such as Halliday et al. (1964) argued that there was a need to jettison the view that language is an abstract system—grounded in behaviourism (Swales, 2001)—and instead to adopt a scientifically informed view, grounded in descriptions of the language *as used* in specific communicative situations, or registers (Flowerdew & Peacock, 2001a; Halliday et al., 1964). Halliday et al. were essentially arguing for a pragmatically-oriented language curriculum rather than one aimed at an ascetic appreciation of literature or mental discipline. In specific reference to first language (L1) instruction, Halliday et al. affirm, "We cannot afford in any way to neglect the language requirements of [those] who are going to become nurses, engineers….or any member of

the thousand and one occupations…" (p. 243).  Elsewhere, they argue for a fundamental

reorganization of second language (L2) instruction based on "practical language

teaching" (p. 264).  This new orientation towards linguistics and language instruction saw

parallels in North America in the efforts of American linguists such as Fries (1952) and

Hymes (1972/1979).  Thus, Fries (1952) begins *The Structure of English* by asserting,

> The reader will find here, not how certain teachers or textbook writers or
>
> 'authorities' think native speakers of English ought to use the language, but how
>
> certain native speakers actually do use it in natural, practical conversations
>
> carrying on the various activities of a community (p. 3).

Grounded in this new paradigm of how linguists (and later applied linguists)

ought to view language, research emerged that was characteristically descriptive,

representative, synchronic, and textual (Swales, 2001).  This new research direction is

most notably illustrated by the emergence in the 1960s of register analysis, which sought

to describe the lexical and syntactic features of language varieties within specific

occupations or disciplines (Flowerdew & Peacock, 2001a).  Following the focus on

register analysis, EAP researchers shifted to rhetorical analysis (Benesch, 2001).  Rather

than focusing on *what* language was being used, the question that had once preoccupied

register analysis research, scholars now began asking *why* specific grammatical choices

were being made, seeking to uncover the underlying rhetorical purpose.  This research

focus was then followed by research on study skills and needs analysis.  The argument

was made that current approaches to writing, with their uniform emphasis on process,

failed to prepare students for the actual contingencies of high-stakes timed essay writing.

Following this focus, EAP researchers shifted their focus to genre analysis.  Despite the

social dimension in modern understandings of genre, Benesch argues that EAP researchers have generally limited their analyses to the formal features of academic genres, thereby effectively ignoring the social dimension.  It appears that the focus on genre analysis persists today.

As a caveat to this discussion of the origins of EAP, it should be noted that there is a difference of opinion among researchers regarding the historical relationship between EAP and ESP.  While some scholars view EAP as having emerged from ESP research (e.g. Jordan, 1997), others argue that the two are "sister fields" (Hamp-Lyons, 2011, p. 89).  The above discussion on historical origins seems to indicate that there had existed two discrete exigencies in Britain in the 1960s.  The first was that the language training offered by the grammar schools failed to serve the needs of international students seeking postsecondary education in scientific fields, as opposed to the humanities.  On the other hand, there was a second set of exigencies, albeit related to the first set, which was that L2 speakers were unable to function well communicatively in occupational contexts, hence the need for language instruction that would cater to specific purposes, with *specific* here denoting occupational, professional, and vocational (Jordan, 1997). Therefore, it may be argued that though EAP and ESP both emerged in Britain at roughly the same time, and both were a reaction against the perceived narrowness and practical irrelevance of British grammar school training, and even more, both were grounded initially in register analysis research, they nevertheless addressed two separate—albeit related—communicative exigencies, one academic and the other occupational.

The above summary of the history of EAP demonstrates that EAP has always been pragmatic.  This is important for the present research because it indicates that the

critical thinking approaches employed in EAP textbooks should be understood within the overarching pragmatism of EAP.  In the following section, two key issues related to EAP will be discussed.

**Issues**

There are a number of contentious issues in the field of EAP research.  Hyland and Shaw (2016) highlight three: the professional status of EAP as a subject, as well as that of EAP practitioners, vis-à-vis the tertiary education hierarchy; the position of EAP in relation to students' cultures, as well as the normative academic culture, into which they are to be inducted; and the question of a general versus specific EAP in the context of knowledge and skill transfer.  A fourth issue, which is not as well-researched as the other three, is the nature and structure of EAP textbooks (Bondi, 2016; Carkin, 2005). While the first and fourth issues are discussed in the EAP Textbook Research section of this chapter, the second and third issues are discussed below.

**General versus specific EAP.**  Although EAP, when viewed historically, arguably represents both a practical and theoretical reaction particularly against British grammar school approaches, which disregarded language use in specific situations, thereby failing to be relevant to science and mathematics-oriented international students, there is a long-standing debate in the field over whether EAP should be specialized even further.  Some have subdivided EAP into what may be called English for General Academic Purposes (EGAP) and English for Specific Academic Purposes (ESAP) (Clapham, 2001; Jordan, 1997).  The general versus specific EAP debate usually centres on the broader issue of knowledge transfer: "are there skills and features of language that are transferable across different disciplines or should we focus on what is needed by

particular learners" (Hyland, 2016, p. 17)?  This issue may be viewed as a continuum, the

two ends of which are language skills and features (i.e. EGAP) and disciplinary content

(i.e. ESAP) (Master, 2005).  However, supporters of ESAP—while not all using this

term—argue for both linguistic and epistemological differences unique to each discipline

(Clapham, 2001; Flowerdew & Peacock, 2001a; Hyland, 2016).  Thus, the general-

specific debate is more than a matter of whether or not discipline-specific content should

be included.

Hyland (2016) identifies key arguments on both sides of the debate, for and

against specific EAP.  In support of general EAP, he mentions the following.  Firstly,

EAP teachers are unprepared for the demands of subject-specific instruction.  Inevitably,

rendering EAP curricula specific to a particular discipline or sub-discipline, demands

from EAP instructors a corresponding level of disciplinary knowledge.  Another

argument in support of general EAP is that lower-level EAP students are unprepared for

the language demands of subject-specific English.  That is, to engage fully with

discipline-specific content, students must have first acquired a firm grasp of a certain

level of rudimentary language skills.  In addition, by focusing on subject-specific

knowledge, EAP is rendered institutionally subservient to other departments: EAP will

cease to exist as a discipline in its own right and will function merely as an institutional

rung leading towards a prospective field of study.  A final argument for general EAP is

that despite linguistic variations in the language practices among disciplines, there exists

a generic set of language skills, such as paraphrasing, scanning, and skimming, which

may be readily transferred across disciplines.  This final argument hinges on the

"common core hypothesis"; that is, there are basic grammatical and lexical items that are

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mutually shared across all linguistic registers (Bloor & Bloor, 1986, as cited in

Flowerdew & Peacock, 2001a, p. 16). What is demonstrated by these four arguments—

touching on matters of logistics, pedagogy, professional status, and cognitive theory—is

the complexity of the general-specific debate, and perhaps the reason for why it endures.

Hyland (2016) identifies six arguments in support of specific EAP instruction.

Firstly, instructors of discipline-specific courses generally lack the ability or willingness

to teach language skills. Instead, their focus lies on the final product rather than the

process. Secondly, the concept of incremental learning, or the idea of learning step-by-

step, wherein students begin from general rudimentary language forms to specific

complex and contextualized forms, is an inaccurate description of how languages are

actually learned (Flowerdew & Peacock, 2001a). Thus, the need to include matters of

discourse and discipline pervades all stages of language instruction; therefore, it should

not be deferred to subject specialists. This argument is further supported by research on

theories of comprehension. Since comprehension involves both bottom-up and top-down

processes, students' general language proficiency may be insufficient to understand

discipline-specific texts insofar as they lack the necessary background knowledge

(Clapham, 2001). Thirdly, the meaning of language forms is highly contextualized, so

determining a common core of language items applicable across various contexts is an

arduous task. This third argument is premised on social constructionism, "which stresses

that disciplines are largely created and maintained through the distinctive ways in which

members jointly construct a view of the world through discourses" (Bruffee, as cited in

Hyland, 2016, pp. 20-21). For example, looking at the academic skill of argumentation,

proponents of subject-specific EAP argue, "What counts as a convincing argument… is

managed for a particular audience" (Hyland, 2016, p. 21). Therefore, teaching a generic argumentative essay format ignores the particularized audiences that exist in each discipline, and this, from a social constructivist viewpoint, undermines the persuasive potency of such essays. A fourth argument is that such instruction is more conducive to students' classroom engagement inasmuch as it targets their specific research and study needs. This argument may be illustrated by examining the case of the Academic Word List (AWL), which includes the most frequently used words in academic discourse except those words included in the General Service List (GSL). While these words frequently occur in academic discourse, when examining frequency levels across disciplines, significant differences abound. Put differently, of the 570 words that form the list, the relative coverage of each item in the more specialized discipline-specific corpora, which students will invariably encounter, is quite different. Fifthly, the general EAP position erroneously views academic English as a developmental extension of general English, or English used in everyday situations, and that background in EAP is sufficient to prepare students for the language demands of any discipline. Lastly, supporters of specific EAP programs argue that grounding EAP programs in a specific academic discipline, thereby rendering it a more specialized field, works to elevate the professional status of EAP practitioners (Hyland, 2016).

Irrespective of the relative strengths and weaknesses of ESAP and EGAP, most courses and textbooks follow the general EAP position, seeing that the specific EAP alternative proves logistically challenging to implement (Hyland, 2016). The antipodean claims regarding transfer forwarded by proponents of ESAP and EGAP, is understandable given the inconclusiveness of the research on transfer (James, 2014).

While the evidence does prove the presence of transfer from EAP courses, given the number of variables present in learning contexts, as well as the types and dimensions of transfer, it is difficult to determine precisely *what* is being transferred (James, 2014). Therefore, it is difficult to determine which side of the general-specific EAP debate, if any, is being supported.

It is important for the present study to address the general-specific debate in EAP because this debate informs both the content and skills covered in EAP textbooks as well as the critical thinking approaches employed by the textbooks.

**Culture.** A second key issue in EAP research is the relationship between EAP course content and students' home cultures, as well as the larger institutional culture, into which students are inducted (Canagarajah, 2005; Hyland & Shaw, 2016). In other words, researchers have been asking how the language conventions, particularly of writing, of non-Western cultures should be integrated into EAP; and whether EAP should teach the language conventions of the academic elite, which make up the status quo, or whether it should critique the status quo in order to transform it (Hyland & Shaw, 2016). The first question has been most notably addressed by Kaplan's (1966, 2005) concept of contrastive rhetoric, while the second has been addressed by several researchers working within the tradition of critical theory (e.g. Benesch, 2001; Canagarajah, 2005; Giroux, 1994; Pennycook, 1999).

Kaplan's (2005) research into the writing practices of ESL students uncovers what may be termed a *writing culture.* That is, the particular rhetorical features of writing are determined by writers' acculturated responses to questions related to who has authority to write, who may be addressed, what topics are up for discussion, what form

can the writing take, what counts as evidence, and how evidence can be arranged to persuade the reader (Kaplan, 2005).  One pedagogical implication of this research for EAP practitioners is that it demonstrates the importance of acknowledging learners' cultural differences, albeit falling short of explicitly promoting a transformative agenda (Canagarajah, 2005).

A second aspect of the broader issue of culture in EAP research and classrooms is the attitude of EAP researchers and practitioners vis-á-vis institutional culture, and whether this attitude should be one of accommodation or transformation (Lillis & Tuck, 2016).  According to CEAP scholars, the purpose of EAP is to prepare students *unquestioningly* to conform to the normative expectations of tertiary education institutions (Benesch, 2001), or to simply transmit the canon of academic genres (Bondi, 2016).  Benesch argues that this fundamental pragmatic assumption serves to *accommodate* underlying political, economic, and ideological agendas—the unofficial roots of EAP.

Critical EAP researchers (e.g. Benesch, 2001; Macallister & Haack, 2016) have levelled against their non-critical EAP counterparts the unwelcomed charge (Allison, as cited in Benesch, 1994) of supporting accommodationist ideology.  In other words, they argue that EAP researchers who fail to challenge dominant intuitional ideologies—arguing that such matters are beyond the pale of language instruction and that EAP is ideologically neutral being concerned with pragmatic affairs only (e.g. Santos, as cited in Macallister & Haack, 2016)—are inadvertently perpetuating the perceived social injustices of capitalism.  In contrast to these traditional EAP researchers, CEAP

researchers view as an integral part of standard EAP language instruction the challenging of liberal capitalist ideology.

However, even as CEAP researchers and practitioners, particularly first wave instructors, seek to undermine dominant political ideology, they fall short of being aware of their own ideological biases (Ellsworth, 1989, as cited in Macallister & Haack, 2016). This want of self-awareness may suggest that CEAP researchers have succumbed to an analogous accommodationist attitude vis-á-vis neo-Marxist ideology. Aggravating this ontological conundrum is a more practical classroom-level problem. Storch et al. (2016) cite research suggesting that students actually prefer accommodationist approaches to CEAP. This is perhaps a reasonable preference because expecting criticality from EAP students in relation to recondite issues underlying disciplinary discourses is a tough sell indeed (Storch et al., 2016). In addition, students may simply be uninterested in enacting critical pedagogues' transformative agenda (Ramanathan & Kaplan, 1996).

The overall research question addressed in this study, that is, *how are the approaches to critical thinking in popular EAP textbooks related to the major approaches to critical thinking that are evident in the literature,* is situated in the abovementioned debate on accommodation versus transformation. In other words, the present study sought to determine whether the critical thinking exercises in EAP textbooks reinforced institutional norms, for example, through unquestioning induction into academic genres, or whether they challenged the status quo by encouraging learners to enact a transformative (i.e. neo-Marxist) agenda. To this point, drawing on the relevant literature, a summary was provided of definitions, assumptions, approaches, and key issues in EAP research. In the following section, the three major critical thinking

approaches of relevance to the present study are explained and discussed. Identifying and analyzing the major critical thinking approaches is an essential step in responding to the overall research question of the present study.

## Critical Thinking Research

**Three Approaches**

A cursory read of critical thinking literature might suggest unsurmountable scholarly disagreement on the nature of critical thinking (Benderson, as cited in Fasko, 2003). Indeed, critical thinking both conceptually and pedagogically has persisted in its elusiveness (Davies & Barnett, 2015; Thomas, 2015). This point has been made quite cogently by Moon (2008): "Critical thinking is a messy concept with many ideas about it presented in forceful but conflicting ways that do not lead us easily to a coherent conclusion" (pp. 63-64). However, when one looks deeper into the seeming messiness, one sees that ostensibly competing definitions are essentially harmonious (Ennis, 2016). Even beyond the definitional level, examining the various features of critical thinking in the literature, one can also identify broad approaches, which have been variously classified (e.g. Davies & Barnett, 2015; Fasko, 2003; Moon, 2008).

Moon (2008), for example, has identified six major critical thinking approaches. The first approach, *logic*, deals with the quality of reasoning. Features of this approach include a belief in objective truth, centrality of language, and systematic methods of analysis. A second approach is the *skills and abilities approach*, which involves a series of steps and components. A third approach is the *pedagogy approach*, which is less structured than other critical thinking approaches and emphasizes the epistemological

conditions needed for critical thinking to develop.  A fourth approach is *ways of being*, wherein critical thinking is conceived of as a habit of engagement with one's surroundings.  The emphasis is on the dispositions of the critical thinker rather than on the particular skills.  The fifth approach stresses the *cognitive and affective processes* involved in learners' developmental progression towards critical thinking.  A final approach is the *overview approach*, which is a highly comprehensive view of critical thinking.  Moon illustrates this approach by citing Ennis's (1987) comprehensive taxonomy of critical thinking (see Appendix A for an updated version of the taxonomy).

Alternatively, Davies and Barnett (2015) identify three possibly overlapping approaches: *philosophical, educational,* and *socially active*.  The first approach, philosophical, also referred to as *traditional* (Walters, 1994), is primarily concerned with clear and principled thinking, involving either formal or informal logic.  On the other hand, the educational approach is focused on the development of a critical attitude towards one's social and cultural norms.  The final approach, socially active, includes critical pedagogy and critical citizenship (Davies & Barnett, 2015).  Fasko (2003) labels both Ennis's (1987) and McPeck's (1981) approaches as philosophical, thereby conflating the categories of *informal logic* and *epistemological* as used in the present study.  Also, Fasko's classification appears to dismiss the *critical pedagogy* approach.  Differences in how critical thinking has been classified are indicative of the mutual inclusivity of the approaches (Davies & Barnett, 2015).  The differences are also indicative of the "messiness" and "incoherence" apparent in the critical thinking literature (Moon, 2008).

Whereas Moon (2008), Davies and Barnett (2015), and Fasko (2003) identify different conceptual approaches to critical thinking, Ennis (1989) identifies four

pedagogical approaches to critical thinking: *general, infusion, immersion,* and *mixed.*
The general approach teaches critical thinking skills to be used outside of school
contexts.  While some content is involved in this approach, teaching the content is not the
aim.  This position regarding content renders the general approach suitable for stand-
alone courses targeting audiences of diverse background.  The infusion approach
integrates explicit critical thinking instruction into a sustained subject matter.  A third
approach, immersion, also involves critical thinking in specific subject matter; however,
there is no explicit critical thinking instruction involved.  Rather, critical thinking is
supposed to emerge as a result of deep engagement with disciplinary knowledge.  A
fourth approach, which is favoured by Ennis (1989) for its practicality, is the mixed
approach, or *critical thinking across the curriculum* (CTAC) (Ennis, 2015, 2016).  This
final approach involves combining the general approach with infusion or immersion.
Some research indicates that the infusion approach may be the most effective (Bensley,
2011).

Given the messiness and incoherence apparent in the critical thinking literature
(Moon, 2008), there have been several efforts towards unifying critical thinking
approaches (e.g. Bailin, Case, Coombs, & Daniels, 1999; Fasko, 2003; Halonen, as cited
in Fasko, 2003; Moon, 2008).  Bailin et al.'s (1999) conceptualization of critical thinking
involves an assortment of intellectual resources: background knowledge, knowledge of
critical thinking standards, knowledge of critical thinking strategies, possession of critical
concepts, and certain dispositions.  Moon (2008) identifies several critical thinking traits
held in common by the six approaches mentioned above.  These traits include the
following: the need for strong linguistic proficiency, the need to go beyond skills and

processes, the importance of emotions, the need for a questioning habit of mind, the presence of developmental progression, and the importance of creativity. More recently, Davies and Barnett (2015) have attempted to bring together competing approaches focusing on the context of higher education. They propose a broader term, *criticality,* which they claim includes skills and attitudes, but also potential action, in other words, *critical thought, critical self-reflection,* and *critical action* (Barnett, 2015). This discussion of unifying critical thinking approaches accentuates the difficulty in viewing critical thinking approaches as mutually exclusive. Indeed, there is much in common among all approaches. Therefore, the present study's analysis of EAP textbooks went beyond merely labelling textbooks a particular critical thinking approach, but instead, the analysis described the content of the textbooks based on key areas of disagreement.

The classification of critical thinking approaches used in the present research borrowed from several classifications found in the literature (Davies & Barnett, 2015; Fasko, 2003; Moon, 2008). In the following section, the classification of critical thinking approaches used in the present study will be identified and described, along with a discussion of major issues debates. See Table 1 for a summary.

**Informal logic.** As the name suggests, this approach gives primacy to generalizable critical thinking skills grounded in informal logic. This approach represents the earliest modern view, having been first proposed by Glaser in the 1940s and then developed by Ennis in the 1960s (Walter, 1994). Although this approach is not exclusively based on logic, it nevertheless affords to (generalizable) logical abilities a weighty position (Walter, 1994). The informal logic approach, as the name suggests, holds that critical thinking is essentially thinking that conforms to the procedures of

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informal logic (Walter, 1994).  Ennis (1962) represents one of the earliest modern

scholarly works within this tradition; Black's *Critical Thinking* (1946, as cited in Ennis,

2015) represents one of the earliest modern textbooks.  Ennis (1962) offers a set of

criteria for critical thinking, or "the correct assessing of statements" (p. 83), as he initially

defined it.  Ennis's (1962) early conceptualization of critical thinking excluded creative

thinking and evaluating value judgments.

In Ennis (1987), the initial narrow working definition of critical thinking is

expanded to the following: "reasonable reflective thinking that is focused on deciding

what to believe or do" (p. 10).  In addition to revising his earlier definition, Ennis (1987)

offers an elaborate taxonomy of critical thinking, which includes no less than fourteen

dispositions and twelve abilities (see [Appendix A](#) for abilities).  The dispositions include

the following: "seek a clear statement of the thesis or question, seek reasons, try to be

well informed, use and mention credible sources…" (Ennis, 1987, p. 12).  The abilities

include four basic elements: clarity, basis, inference, and interaction.  Clarity involves

focusing on a question, analyzing arguments, and asking questions.  Basis, which is

supporting one's inferences, involves judging the credibility of sources and observing

evidence.  Inference involves deducing and judging deductions, inductive inference, and

making value judgments.  Interaction involves communicating arguments and views to

others and using fallacy labels.

While informal logic plays a crucial role in this approach, Ennis (1987) cautions

that informal logic, particularly generalizable abilities, such as the detection of logical

fallacies, in isolation of critical thinking dispositions and background knowledge is

dangerous.  Scriven (1976) makes a similar case regarding what he labels the *fallacies*

*approach*.  It may be said that the informal logic approach to critical thinking has three

key elements: generalizable abilities, dispositions, and topic-specific knowledge (Ennis,

1987).  However, it is first element that sets this approach at odds with other critical

thinking approaches.

Ennis (1987) sets critical thinking apart from the upper levels (i.e. analysis,

synthesis, and evaluation) of Bloom's Taxonomy (Bloom, Englehart, Furst, Hill, &

Krathwohl, 1956) (see Appendix B), which he argues are vague and lack specific criteria

(p. 11).  Ennis (1987) views his taxonomy of critical thinking, particularly that of

abilities, as a departure from Bloom's Taxonomy (p. 25).  Despite this early theoretical

departure, some empirical research on critical thinking in the context of EAP classroom

instruction (e.g. Burder, Tangalakis, & Hryciw, 2014; Liaw, 2007) and EAP textbook

analysis (e.g. Birjandi & Alizadeh, 2013; Gordani, 2010; Mizbani & Chalack, 2017;

Ulum, 2016) has partially or entirely equated critical thinking with the broad categories

of higher order thinking identified in Bloom's Taxonomy.

Applications of critical thinking that are premised on the informal logic approach

may include Andrews's (2015) proposal of focusing on both general and discipline-

specific argumentation in the context of higher education (p. 60).  His approach

emphasizes critical dispositions in students and professors, knowledge of general theories

and models of argumentation, and discipline-specific awareness of arguments.  Following

a similar line, Llano (2015) supports the use of debating, while van Gelder (2015)

supports argument mapping.

**Epistemological.**  The epistemological approach gives primacy to the educative

process, particularly the learning of subject-specific epistemology, or what counts as a

good reason in a particular discipline, and the gradual development of learners' epistemology, or their personal view towards knowledge.  Dewey's (1910) *How We Think* represents a seminal work in the critical thinking movement in general, and in the epistemological approach in particular.  In it, Dewey defines critical thinking, which he labels as *reflective thought*, as: "Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends" (p. 6).  Prominent theorists of this approach include McPeck (1981) and Paul and Elder (2016).  However, whereas McPeck (1981) defines critical thinking as "the appropriate use of reflective skepticism within the problem area under consideration" (p. 7), Paul and Elder (2016) define it as "self-directed, self-disciplined, self-monitored, and self-corrective thinking" (p. 4).  In other words, the critical thinker needs to "[recognize and assess]… assumptions, implications, and practical consequences" (p. 4).  McPeck (1981) enumerates several major features of critical thinking, arguing that it is inextricably tied to a particular subject, thus precluding the possibility of teaching general critical thinking skills; is field dependent; does not necessarily entail opposition to the status quo (in contrast to the critical pedagogy approach); is reflective scepticism; includes (discipline-specific) logic and problem-solving; is non-transferable, and involves methods, techniques, and strategies (McPeck, 1981).

According to Paul and Elder (1999), critical thinking is a socio-critical developmental process involving stages which may be gradually passed once one internalizes a specific body of knowledge and skills.  This approach to critical thinking, which may also be referred to as critical thinking in the *strong sense* (being juxtaposed to

the informal logic approach) carries important assumptions (Paul, 1994). These include the following: the evaluation of arguments depends more on one's worldview than reasoning and logic, and skillful evaluation should involve the examination of several perspectives. The first assumption is in direct contrast to the informal logic view, which sees reason as the best means of arriving at the (objective) truth (Scriven, 1976). According to Paul and Elder (2016), a cultivated critical thinker will ask important questions, use abstract ideas to interpret information, arrive at reasonable conclusions based on certain standards, think open-mindedly by employing different thought systems, and communicate effectively. Furthermore, Paul and Elder see critical thinking as the opposite of egocentric thinking and socio-centric thinking. They see critical thinking not merely as a set of skills and dispositions but in fact as a way of being (Paul & Elder, 2016).

A central tenant of this approach to critical thinking is the value afforded to epistemology. In the sense that McPeck (1981) uses the term, epistemology refers to knowing what counts as a good reason in a given field and by implication, knowing the semantics of the field. In other words, epistemology refers to "understanding concepts and the peculiarities of the nature of evidence, as they are understood by practitioners in the field from which they emanate" (McPeck, 1981, p. 23). McPeck makes the case that learning discipline-specific epistemology is essential for knowing the *soundness* of a given argument, as opposed to its *validity*. On the other hand, scholars such as Moon (2008) and Paul and Elder (2016) argue for the importance of changing personal epistemology and way of being. In other words, critical thinking entails that one forgoes dualism (right or wrong) and multiplism (uncertainty and diversity in opinion), and

adopts the position that all knowledge is constructed and therefore relative: "Critical thinking… is only possible if relativism is recognized" (Kember, as cited in Moon, 2008, p. 110). This assertion appears to go beyond the more open-ended role of epistemology in critical thinking recognised by McPeck (1981). Thus, the notions of transformative (personal) agenda and relativism called for by Moon and Paul and Elder, bring this approach somewhat close to the critical pedagogy approach.

**Critical pedagogy.** From the critical pedagogy perspective, critical thinking is seen as "a democratic learning process examining power relations and social inequities" (Benesch, 1993, p. 547). As the name suggests, this approach is rooted in the broader educational persuasion of critical pedagogy, and therefore, neo-Marxism. The most important figure in critical pedagogy is arguably Paulo Freire (Cowden & Singh, 2015). However, critical pedagogy comes from a long intellectual tradition that includes figures such as Kant (*self-thinking*), Hegel (*dialectical method*), Marx (*praxis*), and Dewey (*education as democratic participation*) (Cowden & Singh, 2015).

Freire (1982/2000) implicates the banking model of education in the undermining of students' critical thinking abilities in order to reproduce oppressive social norms—the status quo. Freire views *dialogical education*, which involves critical thinking, as the cultivator of revolutionary behaviour required to overturn oppressive systems. In addition, Freire sees dialogue as also being the generator of critical thinking. In a word, Freire sees critical thinking as both the vehicle for social change and the product of transformative pedagogy.

Giroux (1994), a leading proponent of critical pedagogy in North America, argues that traditional approaches to critical thinking, namely the informal logic approach, being

rooted in the positivist tradition, fail to recognize the role of human interests, values, and norms in knowledge construction. Giroux asserts that when such elements are recognized the primary function of critical thinking becomes deconstructing knowledge and facts rather than seeking to identify them. Examining the state of social studies instruction, Giroux argues that such instruction is hostile to critical thinking because it universalizes the status quo; lacks a dialectical approach to developing worldviews, wherein issues of social class and culture may be deconstructed and debated (Hudson, 1999); and creates and reproduces the unequal social relations extant in classrooms.

To understand Giroux's (1994) criticism, however, it may be useful to situate it within the presuppositions of the broader critical theory tradition. These include the following (Brookfield, 2015): Western democracies are extremely unequal societies, unequal power relations are reproduced through the pervasion of dominant ideology, and changing the status quo presupposes a true understanding of it. In this context, critical thinking is the ability to penetrate through the benign veneer of mainstream culture to reveal underlying oppressive ideologies, such as capitalism, white supremacy, and patriarchy: in a word, critical thinking is "ideological detoxification" (Brookfield, 2015, p. 531).

It behooves the present author to address the propriety of including the critical pedagogy approach to critical thinking in the present analysis. Scholars within EAP (e.g. Atkinson, 1997) and without (e.g. J. McPeck, personal communication, August 23, 2018) have challenged the legitimacy of the critical pedagogy approach to critical thinking on various grounds (see Burbules & Berk, 1999). J. McPeck (personal communication, August 23, 2018) undermines the approach insofar as it represents an ideology (i.e. neo-

Marxism), and is thereby grounded in several socio-political assumptions (see

Brookfield, 2015). Furthermore, Atkinson (1997), asserts that

> critical pedagogy has very different intellectual roots and is a minority movement
>
> at least in L1 contexts, compared with mainstream critical thinking approaches.
>
> The very appearance of the word critical in critical pedagogy, I assume, is largely
>
> coincidental, having its origins in the classic Marxist concept of critical
>
> consciousness, rather than non-Marxist traditions of Western thought and the
>
> critical traditions that accompany them (p. 74).

The present author will address these concerns by forwarding several propositions

supporting the inclusion of the critical pedagogy approach in the present analysis.

Firstly, although the critical pedagogy approach to critical thinking is largely

absent from the mainstream philosophical literature on critical thinking, the critical

pedagogy approach, or some aspects of it, figures prominently in EAP research in critical

thinking (e.g. Benesch, 1999; Pally, 1997; Ramanathan & Kaplan, 1996, Thompson,

2002). Therefore, the inclusion of this approach is not so much an act of legitimizing the

approach, let alone its neo-Marxist assumptions, as it is an act of accounting for the array

of approaches in the literature, irrespective of their relative strength or weakness.

Secondly, an *a priori* acceptance of assumptions (or conclusions) is not unique to

the critical pedagogy approach (Burbules & Berk, 1999). For example, the notion that

critical thinking is personal epistemological movement from dualism, to multiplism, and

finally to relativism is taken for granted by Paul and Elder (2016) and Moon (2008), who

represent the epistemological approach to critical thinking.

Thirdly, to undermine the legitimacy of the critical pedagogy approach on the grounds that it constitutes ideology—in the layperson sense of the term—masquerading as critical thinking, would be to suggest rather *un*critically that other critical thinking approaches, despite descending from a common patriarch, John Dewey (Cowden & Singh, 2015; Ennis, 2015; Paul, Elder, & Bartell, 1997), are ideologically neutral—focusing on *how* to think rather than *what* to think.  However, such naiveté may be at once dismissed by an investigation into the (leftist) socio-political commitments of early Progressivism and Progressive educators, a discussion of which is beyond the scope of the present study.[1]  Moreover, the how to think/what to think dichotomy appears to dismiss the possibility of a mutual relationship.  To elaborate, McPeck (1981) criticizes the informal logic approach—a how to think approach—on the grounds that its cavalier treatment of subject-specific knowledge renders superficial opinion as profound insight into complex social issues.  However, McPeck does not analyze the ideology(ies) possibly underlying (or engineering) the expressed superficial opinions on social issues.  Therefore, it is not farfetched to suggest the possibility of using critical thinking approaches that subscribe to such an approach to knowledge to promote neo-Marxist ideology among unsuspecting learners (perhaps, indoctrination by subterfuge).

The above discussion has offered a summary of the three major approaches to critical thinking: informal logic, epistemological, and critical pedagogy.  However, a

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[1] A damning intellectual history demonstrating striking similarities between critical pedagogy and Progressive education (the impetus behind "mainstream" critical thinking) may be gleaned by consulting the following sources: Hobbs (1953), Krey, Counts, Kimmel, and Kelly (1934), Quigley (1966), Wormser (1958).

fuller understanding of the distinctions between these three approaches may be achieved

through a discussion of significant areas of contention among them.  These issues will be

used to frame the discussion of this study's findings.

**Issues**

Several contentious issues have been discussed at length in the literature by

scholars of the various critical thinking persuasions (e.g. Benesch, 2001; Ennis, 1981;

McPeck, 1981).  Examining some of these issues carefully is essential for a clear

understanding of the various approaches to critical thinking, which will inform the

present study's analysis of EAP textbooks.  Some of the major issues include the

following:

- the role of explicit instruction in generalizable thinking skills;

- whether critical thinking is subject-specific, and related to this, the role of

  background (or content) knowledge;

- whether critical thinking is a cultural (i.e. Western) phenomenon; and

- whether critical thinking is transferable.

Put differently, critical thinking approaches may be demarcated by the relative

importance afforded to (and the conceptualization of) three variables: reasoning,

knowledge, and culture.  Transferability is discussed in relation to all three variables.

**Reasoning.**  A pivotal issue in the critical thinking literature is the role of

informal logic in critical thinking instruction.  By informal logic, what is generally

referred to in the literature are topics such as evaluating arguments, assumption hunting,

and detecting logical fallacies.  Informal logic differs from its counterpart formal logic in

that the former is concerned with practical affairs or *everyday problems* (Scriven, 2003).

Argument analysis seeks to determine the relevance, acceptability, and sufficiency of

premises relative to the conclusion(s) that they support (Johnson & Blair, 1994/2006).

The three critical thinking approaches outlined above, informal logic, epistemological,

and critical pedagogy, appear to have antipodean positions on the place and nature of

reasoning in critical thinking.  The contention among scholars of the former two

approaches appears to be one of degree; however, critical pedagogy scholars treat the

matter of logic in a rather cavalier manner.

Walter (1994) identifies four reasons that have contributed to the longstanding

dominance of logic in critical thinking: logic is key to succeeding academically, critical

thinking courses are often taught by departments of philosophy, curriculum design is

simplified when based on informal logic, and the textbooks are not available to support

an alternative view to critical thinking.  It is uncertain whether the last point is still valid

today.

Ennis (1981) and McPeck (1981) represent two competing positions on the issue

of the role of informal logic, while Paul (1985) appears to represent a middle ground.  At

the core of the issue is whether there exists a generalizable thinking skill, that is, a

universal critical thinking ability, which may be applied across disciplines and domains.

In other words, are critical thinking skills a decontextualized toolkit that may be readily

applied to various everyday problems or are they confined to subject-specific boundaries?

McPeck's (1981, 1984, 1990a, 1990b) consistent response to this is that if generalizable

thinking skills exist, they amount to no more than platitudinous axioms, such as *don't*

*contradict yourself* or *be relevant*, therefore precluding the need for explicit instruction.

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Moreover, he argues that the usefulness of these general skills, which are advocated by the informal logic approach, is quite dubious (McPeck, 1984). In addition, McPeck (1981) asserts that informal logic is the least important ingredient of critical thinking, citing anecdotally, the case of individuals who fail to think critically despite prowess in informal logic. On the other hand, Ennis, while admitting that generalizable critical thinking skills are not *sufficient* for critical thinking, argues that such skills are nevertheless *necessary,* transferable, and should be taught explicitly. He too alludes to anecdotal evidence, citing the case of a person who failed to think critically despite subject-specific expertise.

Ennis (1981) essentially argues that the principles and rules of informal logic, including informal fallacies, play a significant role in critical thinking and they may be taught in isolation of a particular subject, in a stand-alone course for example. On the other hand, to reiterate the point made above, McPeck (1981) argues that generalizable rules of informal logic play only a small role in critical thinking and that it is rather the internal logic of a given discipline, or its epistemology, which produces critical thinking. While Ennis (1989) concedes to variations in logic between disciplines, he nevertheless maintains that there is a common core of generalizable principles worth teaching. Therefore, it may be concluded that the key difference between the informal logic and epistemological approaches is the relative importance afforded to generalizable cognitive abilities. McPeck (1981) also asserts that the disproportionate importance given to generalizable rules of informal logic leads to belittling the role of subject-specific knowledge—what he calls the "trivial pursuit" theory of knowledge (McPeck, 1994, p. 110).

Paul (1985) appears to straddle the issue of generalizable thinking abilities, namely informal logic, by arguing that such abilities are important for critical thinking but not as important as a person's worldview.  McPeck (1990b) responds by asserting that a person's worldview is the product of disciplinary knowledge.

**Knowledge.**  A second issue is the role of background knowledge and disciplinary expertise in critical thinking, or what is called in the literature *subject-specificity* (Ennis, 1989).  It appears that the importance ascribed to knowledge is inversely related to that of informal logic skills.  While the informal logic approach has traditionally betrayed a strong faith in the cognitive powers unleashed by informal logic (e.g. Ennis, 1987; Glaser, 1941; Scriven, 1976), the epistemological approach subscribes to the primacy of epistemology—both subject-specific (McPeck, 1981) and personal, or one's worldview (Moon, 2008; Paul, 1994)—in bringing about critical thinking.

Scholars such as Ennis (1981) view critical thinking as essentially the skillful application of specific generalizable rules to a set of premises and conclusions along with the possession of certain dispositions.  While background knowledge plays a role in this approach, there is an indication in the literature (e.g. D'Angelo, 1971; Ennis, 1989) that background knowledge, or knowledge of facts, may serve merely as a *placeholder*—for $P$ and $Q$, for example.  On the other hand, McPeck (1981) asserts, "The core ingredient of critical thinking is fundamental knowledge—which is epistemology" (p. 156).  Therefore, it is more important to know the meaning (semantics) of $P$ and $Q$ than to know how they are related (syntax): "Indeed it is this straightforward semantic dimension of the assessment of statements and arguments… which is the most important for critical thinking" (McPeck, 1982, p. 220).  In other words, the chief dilemma of the critical

thinker is not determining whether the conclusion follows from the premise but whether the premise or premises are acceptable and sufficient (McPeck, 1984). Also, the detection of a particular fallacy in any given argument does not necessitate the falsity of the conclusion; that is, an argument may be poorly constructed, yet maintain a tenable conclusion. Thus, according to McPeck (1984), argument analysis's educational value is dubious inasmuch as it is devoid of subject-specific expertise. McPeck (1982) contends poignantly that by oversimplifying everyday problems, the informal logic approach to critical thinking promotes "superficial opinion masquerading as profound insight into complex public issues" (p. 222). McPeck (1984) maintains that truly understanding everyday problems is in fact quite complex, given the number of distinct fields of knowledge, or disciplines, it demands. The tenor of this argument has more recently been supported by Bailin and Battersby (2015).

Consequently, McPeck (1984, 1990a, 1990b), and more recently Pithers and Soden (2010), calls for an *infusion approach* (to use Ennis's [1989] terminology) to critical thinking wherein subjects are taught with particular attention to matters of epistemology, or what counts as a good reason, and taught through discussion and debate. What this amounts to, according to McPeck (1984, 1994), is a revival of liberal education that, unlike traditional pedagogy, is balanced in its concern with facts and epistemology. Furthermore, McPeck (1994) argues that critical thinking is the *product* of mastery of a discipline rather than the tool by which understanding may be gained. In other words, critical thinking presupposes disciplinary expertise. This position appears to contrast with that of Ennis (2016), who believes, "We can think critically to a degree about the issue, even if we have not mastered all of the relevant information" (p. 169).

The critical pedagogy approach to critical thinking, particularly in the field of ESL/EAP, as illustrated in the works of Benesch (2001), Canagarajah (2001), and Pennycook (1999), seems to reject the epistemological approaches' emphasis on acquiring subject-specific mastery while approximating the trivial pursuit theory of knowledge, which was originally associated with the informal logic approach (McPeck, 1994). In other words, knowledge does play a role in the critical pedagogy approach; however, it does not demand the disciplinary depth that McPeck (1981) asserts. Rather, what appears to be evident from the empirical research on the critical pedagogy approach to critical thinking in EAP (e.g. Benesch, 1999; Thompson, 2002) is a superficial engagement with background knowledge, particularly of competing perspectives.

**Society.** The issue of the role of culture in critical thinking centres on whether the understanding of critical thinking that seems to underlie the U.S. educational literature and related instructional approaches is exclusively a Western (middle-class) "social practice" (Atkinson, 1997, p. 72) or whether it is a cognitive and dispositional quality transcending ethnic, national, and continental boundaries. A strong advocate for the former view, particularly in the context of EAP/ESL research, is Atkinson. However, it appears that those who argue that critical thinking is a Western concept (Moon, 2008), are referring to the informal logic approach to critical thinking rather than the epistemological or critical pedagogy approaches. Therefore, the applicability of such an argument to other critical thinking approaches is dubious (Gieve, 1997).

Atkinson (1997), who appears to be responding to the informal logic approach to critical thinking, argues that critical thinking is social practice. In other words, it represents tacit behaviour that is largely acquired and enacted unconsciously, similar to

gender roles.  Atkinson supports this claim by citing the few attempts by academics to

define it despite apparently knowing what it means.  Atkinson claims that the limited

definitions that are extant in the literature are mere attempts at "reifying social practice"

(p. 74).  However, given the plethora of definitions in the last couple of decades it may be

argued that Atkinson's claim, at least concerning the number of definitions, is outdated.

Additional evidence Atkinson brings to support his social practice view of critical

thinking is his claim that the various conceptualizations of it in the literature reflect the

mental habits of the middle class.  As such, the apparent absence of critical thinking is a

consequence of a changing student body comprised of lower class children.  Benesch

(1999) appears to straddle the issue of social practice by first arguing that all forms of

discipline-specific knowledge represent cultural impositions.  Second, Benesch addresses

Atkinson's concern by conceptualizing critical thinking as dialectical thinking rather than

logical thinking—thereby skirting the issue of ethnocentrism raised by Atkinson.  Pally

(1997) also concedes to the social practice claim but responds by promoting a sustained

content approach.

Davidson's (1995) study of Japanese students and critical thinking appears to

support the claim that critical thinking, as understood by the informal logic approach, is a

Western phenomenon.  Davidson cites significant aspects of Japanese culture that he

argues are inimical to critical thinking.  Among these impediments is Japanese students'

credulous acceptance of authority, which he argues stems from deep-rooted cultural

practices borne out of the teachings of Zen Buddhism.  However, as will be shown below,

Davidson's observations of Japanese students are not in complete agreement with

Atkinson (1997).

Appraising Atkinson's claim (1997), Davidson (1997) argues that the elusiveness of the term critical thinking does not indicate that it is indefinable. Moreover, the multiplicity of competing definitions, which Atkinson cites to show the lack of agreement, hides the striking commonalities inherent in these definitions. Critical thinking, Davidson argues, exists in all cultures, while differing in degree and application. This is supported by Davidson's (1995) earlier study, which demonstrated that despite the Japanese students' lack of critical thinking in academic contexts, they demonstrated critical thinking in everyday situations. Moreover, the Japanese students demonstrated a certain keenness in learning critical thinking skills when taught by their instructors (Davidson, 1995). This appears to contradict Atkinson's claim that critical thinking cannot be acquired through explicit instruction. Thus, Davidson (1997) concedes that certain cultural norms may be averse to critical thinking; however, he argues that this reality should only enlist greater support for the teaching of critical thinking. A subsequent study of Japanese students by Stapleton (2002) also indicates that Japanese students possess critical thinking skills. Additionally, more recent research on the critical thinking abilities of non-Western students appears to support the view that critical thinking does exist in non-Western cultures (Bali, 2015; Manalo, Kusumi, Koyasu, Michita, Tanaka, 2015).

Also responding to Atkinson (1997), Gieve (1997) straddles the issue by arguing that although critical thinking constitutes social practice, this does not necessitate that critical think is unconscious, unreflective, or tacit behaviour. Furthermore, rather than associating critical thinking with Western middle-class norms, Gieve associates it with modernity, and the growing predisposition to skepticism among people. However, Gieve

appears to meet Atkinson halfway by favouring a dialogical view of critical thinking, wherein competing perspectives are debated, rather than the traditional mono-logical view characteristic of the informal logic approach.

Therefore, it may be concluded from the above studies that the characterization of critical thinking as a Western middle-class habit of mind (Atkinson, 1997) is not only narrow in its understanding of critical thinking by limiting it to informal logic (Gieve, 1997), but also misguided in its estimation of non-Western students' critical thinking abilities (Bali, 2015; Davidson, 1995, 1997; Manalo et al., 2015; Stapleton, 2002). In a word, critical thinking, in one form or another, seems to exist in various degrees outside of non-Western cultures. Furthermore, the notion that critical thinking is social practice or that certain cultural elements discourage its application should not justify eschewing critical thinking instruction altogether.

The issue of culture pervades the critical pedagogy approach to critical thinking at a deeper level than what the above discussion may suggest (Cowden & Singh, 2015). As has been mentioned above, the critical pedagogy approach, being grounded in critical pedagogy, and by extension neo-Marxism, is fundamentally concerned with dismantling the edifice of elite cultures. It is from this perspective that critical pedagogy scholars criticize the ethnocentrism of logic, all the while promoting a neo-Marxist ideology with its own biases and metanarrative. Indeed this has been a salient criticism of critical pedagogy (Pennycook, 1999). However, specific applications of critical pedagogy to the ESL/EAP context (e.g. Ivanič, 1997), betraying an awareness of this ideological double standard, have effectively abandoned certain neo-Marxist assumptions such as the emancipatory metanarrative (Pennycook, 1999). Nevertheless, critical thinking in the

critical pedagogy approach, particularly in the context of CEAP, can be construed

primarily as thinking that problematizes dominant (Western) ideologies, such as

capitalism, white supremacy, and patriarchy (Brookfield, 2015).

A review of the literature on critical thinking allows for an initial response to the

overall research question by identifying the critical thinking approaches in the scholarly

literature.  This review suggests that what fundamentally distinguishes the informal logic,

epistemological, and critical pedagogy approaches to critical thinking is their varied

accentuation and conceptualization of reasoning, knowledge, and society.  The above

discussion is summarized in Table 1.

Table 1

*Critical Thinking Approaches Matrix*

| | Informal logic | Epistemological | Critical Pedagogy |
|---|---|---|---|
| **Definitions** | Thinking that is in accordance with the procedures of informal logic (Walter, 1994)<br><br>"Reasonable reflective thinking that is focused on deciding what to believe or do" (Ennis, 1987, p. 10)<br><br>Clear and principled thinking (Davies & Barnett, 2015) | "Critical thinking is self-directed, self-disciplined, self-monitored, and self-corrective thinking" (Paul & Elder, 2016, p. 4)<br><br>"The appropriate use of reflective skepticism within the problem area under consideration" (McPeck, 1981, p. 7) | "A democratic learning process examining power relations and social inequities" (Benesch, 1993, p. 547) |

**Major Characteristics**

| | | Informal logic | Epistemological | Critical Pedagogy |
|---|---|---|---|---|
| | Reasoning | Informal logic is necessary and generalizable but insufficient (Ennis, 1981, 1989) | Informal logic insignificant (McPeck, 1981)<br><br>Internal logic, or epistemology, of a discipline is essential (McPeck, 1981) | Logic/cognitive abilities insignificant (Benesch, 1993)<br><br>Need for dialogical thinking (Benesch, 1999) |
| | Knowledge | Background knowledge can serve as a placeholder (D'Angelo, 1971; Ennis, 1989)<br><br>Mastery of information may be unnecessary (Ennis, 2016) | Deep disciplinary knowledge is necessary and sufficient (McPeck, 1981) | Some background knowledge, especially of multiple perspectives, is useful (Benesch, 1999) |

| | | Knowledge is constructed and relative (Moon, 2008; Paul & Elder, 2016) | Deconstructing knowledge and facts more important than identifying them (Giroux, 1994) |
|---|---|---|---|
| | Society | Not culturally biased but should be taught and applied with caution (Ennis, 1998) | Opposite of egocentric thinking and socio-centric thinking (Paul & Elder, 2016) | Discipline-specific knowledge represents cultural impositions (Benesch, 1999) |
| | | | Does not necessarily entail opposition to the status quo (McPeck, 1981) | Goal is challenging status quo/Western culture (Giroux, 1994) |
| | | | | Ideological detoxification (Brookfield, 2015) |
| Applications | General | Critical thinking courses teaching transferrable generalizable skills applied to everyday issues (Ennis, 1989) | | |
| | Immersion | | | Multiple perspectives on controversial social issues presented and debated (Benesch, 1999) |

| | | | | Assumptions are identified and questioned (Benesch, 1999) |
|---|---|---|---|---|
| **Researchers** | Infusion | Critical thinking skills taught explicitly alongside course material (Andrews, 2015; Llano, 2015) | Instruction on epistemology of subject (McPeck, 1981)<br><br>Students' epistemology/worldview examined (Moon, 2008) | |
| | EAP/ESL | | Pally (1997) | Benesch (2001), Canagarajah (2001) Pennycook (1999) |
| | K-12, Higher Ed | Ennis (1987)<br>Scriven (1976)<br>Glaser (1941)<br>D'Angelo (1971) | McPeck (1981)<br>Paul & Elder (2016)<br>Moon (2008) | Giroux (1994)<br>Freire (2000) |

This matrix includes a comparison of the three major critical thinking approaches, informal logic, epistemological, and critical pedagogy, based on their respective position vis-à-vis reasoning, knowledge, and society.  Also, the three approaches have been compared in terms of pedagogical approaches, using Ennis's (1989) classification including general, immersion, and infusion (see Critical Thinking Research section).

**Critical Thinking in EAP/ESL Research**

While the previous section discussed the theoretical research on critical thinking largely outside of EAP/ESL, the following section will focus on empirical research, in which critical thinking approaches are applied to particular EAP/ESL classroom contexts. An analysis of such research, while unrelated to textbooks, is important to the present research because it demonstrates how EAP/ESL practitioners have understood and then applied critical thinking approaches given the idiosyncrasies inherent in and the variations across EAP/ESL contexts of instruction.

Macallister and Haack (2016) locate the *critical turn* in EAP in the newfound self-awareness among researchers and practitioners of the socio-political implications of their craft. Before that point, EAP, having emerged out of ESP (Jordan, 1997), or developed concurrently (Hamp-Lyons, 2011), was regarded as *a*political and ideologically neutral: Its ostensible goal was teaching English for practical and instrumental purposes. However, critical theorists argue that EAP, or more generally, ESL, (like other seemingly benign domains) is inextricably snarled in power, ideology, and social justice (e.g. Benesch, 2001; Canagarajah, 2005; Luke, 2004; Pennycook, 1999).

In the following sections, empirical research in the ESL/EAP context will be summarized. Given the overlapping nature of critical thinking approaches *in practice*, it is difficult to analyze empirical research as belonging exclusively to a particular approach. It is perhaps more likely that there will be a significant overlap of various

approaches.  Therefore, the analysis below attempts to classify empirical research based on the *preponderant* critical thinking approach.

**Epistemological**

Liaw's (2007) study examines the impact of content-based instruction on critical thinking abilities in the context of a junior high school in Taiwan.  Researchers designed several three-hour long instructional units each focusing on a specific topic related to social studies, science, mathematics, and language arts.  The material was designed to target various cognitive levels as identified by Bloom's Taxonomy.  Students were evaluated before and after the course using two measures: a critical thinking test, designed specifically for Taiwanese students, and a written response related to the unit topic, which was assessed based on Bloom's Taxonomy.  The study found that students' grades on the critical thinking test did not improve while their written response grades did improve.  This study is important because it acknowledges that critical thinking is more than Bloom's Taxonomy.  The critical thinking measure employed seems to approximate elements of Ennis's (1987) taxonomy.  The focus on sustained content-based instruction, rather than explicit critical thinking skills, suggests an affinity to the epistemological approach.  However, it is doubtful whether the three-hour instructional units offered students the subject expertise called for by McPeck (1981).  Also, there is no mention of the role of disciplinary or personal epistemology in the material design.

Tanaka and Gilliland's (2017) study focuses on ESL students' perceptions of a critical thinking instructional approach.  Researchers developed a curriculum based on a dialectical critical thinking approach wherein multiple competing perspectives were presented to students.  Students were explicitly taught three principles of dialectical

reasoning: "Be sympathetic to opposing viewpoints; strongly criticize your viewpoints; define all assumptions and concepts thoroughly and clearly" (Tanaka & Gilliland, 2017, p. 661).  At the conclusion of the course, students were interviewed.  The researchers found that students' attitudes towards the critical thinking intervention were favourable despite the challenges of implementing dialectical thinking.

These two studies of critical thinking in EAP are essential to the present study because they demonstrate the challenges of applying the epistemological approach to critical thinking in general EAP courses.  Moreover, the limitations of presenting sustained content in only several lessons and expecting learners to think critically about the content, indicates some of the limitations that general EAP textbooks may face.  It also offers a justification for discrepancies between the critical thinking approaches identified in the literature and textbooks.

**Critical pedagogy**

Benesch's (1999) study represents the critical pedagogy approach to critical thinking in the EAP context.  In her suggested curricula, she responds to Atkinson's (1997) criticism of ethnocentric critical thinking (i.e. informal logic approach) by proposing a dialogical approach, "in which the taken-for-granted assumptions and presuppositions that lie behind argumentation are uncovered, examined, and debated" (Gieve, as cited in Benesch, 1999, p. 576).  In her study of an EAP class, Benesch immerses students in a discussion on violence against gays and lesbians, wherein students state their assumptions and mutually exchange views.  The stated learning outcome of this lesson is "to promote tolerance and social justice" (Benesch, 1999, p. 576) through the "balance between extended student contributions and gentle challenges by the

teacher" (p. 578).  In other words, by skillfully straddling the role of facilitator and

intervener during class discussions, Benesch sought to change students' attitudes from

contempt for homosexuality to tolerance and greater acceptance of human complexity.

Unlike Pally's (1997) lesson which included the informal logic approach to critical

thinking as well as an effort to give students a good amount of background knowledge,

Benesch's limited treatment of background knowledge, exclusion of informal logic, and

explicit ideological reservations, situates her suggested application of critical thinking

squarely in the critical pedagogy approach.

**Hybrid**

Pally's (1997) study represents one of the earliest studies aimed at applying

critical thinking to EAP curricula.  Pally's study uses a *hybrid* definition of critical

thinking including both what she called the cognitive psychology and transformative

pedagogy definitions, which appear to equate the informal logic and critical pedagogy

approaches, respectively.  Using evidence from both ESL research and cognitive

psychology, Pally argues for the use of sustained-content as a vehicle for critical

thinking.  In her suggested curriculum, three subject areas are used as *universal donors* of

content, which are sustained throughout the term or semester.  These donors include

popular culture, specific political and economic issues, and second language acquisition

(p. 300).  After reading several texts on the specified topic, students engaged in class

discussions and writing assignments involving identifying and evaluating concepts,

arguments, rhetorical conventions, and hidden assumptions in the texts.  In one example,

students evaluated a particular writer's stance on the effects of individualism versus

collectivism on writing practices.  In another example related to the topic of popular

culture, students addressed the possible contributions of economic, social, and religious factors to specific themes in a famous American film (p. 302).  A skeptical attitude towards liberal capitalist socio-political assumptions of power, culture, and individualism appears to underlie the classroom activities.  Throughout her suggested curricula, the instructional goal was two-fold: "students taking on the sorts of socio-political critique aimed at by transformative pedagogy and organizing their ideas within English rhetorical conventions…"  (p. 305).  Pally also states that the underlying aim of the curricula was to give students "the needed rehearsals…  [to] practice the skills they will need and may be better prepared for the demands that await them" (p. 306).  Pally's suggested curricula may also be partially representative of the epistemological approach, because of its aim at infusing critical thinking within a specific subject and using a subject's internal logic to develop critical thinking skills.  Therefore, this would suggest that Pally offers an example of all three critical thinking approaches being integrated into one lesson.

Thompson's (2002) study, also representing elements of all three critical thinking approaches, offers a specific procedure for applying critical thinking in the context of a university-level EAP lesson on Australia's aboriginals.  The purpose of teaching critical thinking in Thompson's (2002) lesson was to encourage students to "evaluate their own cultural beliefs and assumptions" in order to "expose cultural bias and generate discussion about the sociopolitical implications of ignoring cultural values…"  (p. 16). Several very short extracts of historical and contemporary texts exemplifying conflicting perspectives—Social Darwinist, indigenous Australian, scientific, and mythological—on Aboriginals' land rights were provided to students, thereby making the activity dialectical.  Then students were asked to define and discuss critical thinking while the

instructor sought "to avoid a predominantly Western approach to the concept" (p. 16). Before having students critically analyze the extracts, the instructor conducted a 15-minute discussion with students on applying a critical perspective to research. Discussion topics included the following: investigating authors' backgrounds, ascertaining relevance and currency of sources, evaluating arguments, assumption hunting, and exploring potential social, economic, cultural, and political ramifications of students' perspectives. Then students engaged in various application activities including writing, discussion, and presentation. These activities revolved around rival knowledge claims and their relative value in addressing issues such as the origins of Australian Aboriginals.

Yang and Gamble's (2013) study explored the effects of integrating critical thinking in ESL instruction on improving both language proficiency and critical thinking abilities. The researchers designed a content-based ESL course infused with critical thinking principles and skills as identified by Ennis (1987). Also, the course involved the use of dialectical thinking by presenting competing perspectives to students through sustained-content, which focused on the themes of ecology and environmental issues. Critical thinking was taught explicitly using rubrics with which students evaluated sources. Post-treatment tests of experimental and control groups found significant improvements in the former group in both language and thinking abilities. This study represents an interesting synthesis of the informal logic and epistemological approaches.

**Other**

Burder et al. (2014) examine whether text-based instruction followed by Socratic discussion improves the critical thinking skills of ESL students. Participants were ESL

biomedical science students who were enrolled in a content-based ESL course. Students first wrote a written response on the question of whether vitamin D deficiency and obesity are related. Students were then introduced to a particular scientific journal article on the topic and instructed to read while focusing on structural elements. Students discussed the article based on their structural analysis. Afterwards, a facilitator posed an open-ended question, which students were to discuss using information gathered from their previous analysis. Students then produced another written response to the same question of how vitamin D is related to obesity. Both writing responses, which were produced pre- and post-reading, as well as a discussion, were qualitatively evaluated using Bloom's Taxonomy, with a focus on the higher order levels, namely analysis, synthesis, and evaluation. The researchers found that 20% of students showed an improvement in their critical thinking abilities. The researchers' use of Bloom's Taxonomy, rather than a critical thinking test, as an assessment measure, represents a clear departure from much of the theoretical critical thinking research, which views critical thinking as much more than Bloom's Taxonomy (e.g. Ennis, 1987). Moreover, since Socratic discussion does not appear to be exclusive to any single critical thinking approach, it is difficult to classify this study within the three critical thinking approaches.

Galetcaia and Thiessen's (2010) study offers an operational model for developing critical thinking skills in preparation for evaluating academic texts. Their model arose out of a failed attempt at explicitly teaching critical text analysis to university students. The researchers realized that explicit instruction is ineffective because the concept of critical thinking, particularly for students from China and Saudi Arabia, was mystifying. Following Atkinson (1997) and Kaplan (2005), Galetcaia and Thiessen assert that

because critical thinking, mainly as expressed in academic writing, is social practice, students cannot be initiated into it through explicit instruction but rather through a cognitive apprenticeship model where students learn critical thinking through guided engagement with it in motivating real-world contexts. As such, students were given a fictitious story with an "arresting plot" and were asked to analyze and evaluate evidence to identify the real owner of the Pepsi-Cola Company's $1,000,000 prize (p. 121). The researchers assumed that students would be able to grasp the concept of critical thinking as well as use it if the context was enjoyable. While this approach may help to reassure students that critically analyzing academic texts is an extension of the crude critical thinking performed outside of the academy, it is unclear how cognitive apprenticeship can offer much more.

The view of critical thinking as argument analysis to be acquired through immersion (i.e. cognitive apprenticeship) and the role of content as potentially serving as *placeholders* renders the approach used in this study *somewhat* similar to the informal logic approach. Nevertheless, it is difficult to consider this study as an application of any of the three critical thinking approaches discussed above given the rejection of explicit instruction, an important feature of the informal logic approach; an unclear at best view of the role of disciplinary epistemology, an essential feature of the epistemological approach; and no direct concern for the transformative agenda of the critical pedagogy approach. However, this study is significant because it is quite distant from the major approaches to critical thinking identified in the literature. Instead, it appears to accept many of the assumptions evident in Atkinson's (1997) conceptualization of critical thinking.

The above summary of empirical critical thinking research in EAP/ESL illustrates that classifying critical thinking *as practiced* is not clear-cut.  The intermingling of various approaches in the above studies is indicative of the overlapping nature of the critical thinking approaches themselves (Davies & Barnett, 2015).  In addition, the studies, namely, Burder et al. (2014) and Galetcaia and Thiessen's (2010), demonstrate that applications of critical thinking may not fit into any of the three major critical thinking approaches.

These studies contribute to the present study's focus on critical thinking in EAP textbooks by offering several applications of critical thinking in EAP/ESL contexts. Moreover, the studies indicate some of the limitations inherent in such applications.

**EAP Textbook Research**

This section of the literature review will offer a summary of a key debate in EAP textbook research as well as empirical studies of critical thinking in EAP/ESL textbooks. It will conclude with a discussion of the significance of this literature to the present research.

**EAP Textbooks**

**Features.** Examining the features of ESP textbooks in 1960s and 1970s, Bondi (2016) argues that textbooks were focused on the lexico-grammatical characteristics of specific professional varieties of English. In addition, these books relied heavily on first-year introductory textbooks. Then in the 1970s, the focus shifted towards explicating the grammatical choices and rhetorical functions that constituted particular language varieties. During this time, there was a shift away from teaching disciplinary content towards teaching study skills and learning needs. Among the characteristics of present-day textbooks, which Bondi (2016) mentions, is the preponderance of writer-reader dialogue and the highly cyclical pattern in which information is presented, namely the repetitiveness of the general to specific approach. According to Bondi (2016), textbooks work to support learners' comprehension in three ways: firstly, through the process of *easyfication* the discourse structure in which readers are induced is enhanced; secondly, *simplification* enhances cohesion and coherence within the texts; and thirdly, *scaffolding*, gives students the needed domain knowledge.

In response to claims that textbooks represent an obscure genre, Swales (1995) argues that textbooks are "'hybrid' in their efforts to cope with a complex audience configuration, to represent a broad area of available knowledge, to offer a 'vision,' and to

incorporate new findings emerging as a result of the exigencies of textbook writing" (p. 15). Therefore, the features of EAP textbooks, particularly their incorporation and integration of research, are a complex matter, with exigencies such as coverage requirements often hindering a complete treatment of language topics.

**Significance of textbooks.** The significance of textbooks to language instruction has been reiterated by scholars past and present. For example, Halliday et al. (1964) argue, "The nature of the textbooks which are available to the teacher and to the class will have a profound effect on the way instruction is carried out" (p. xiii). According to Hutchinson and Torres (1994), textbooks are an almost universal element of ELT despite the lack of sufficient research into ELT textbooks. More recently, Bondi (2016) argues for the pedagogical importance of EAP textbooks, albeit in collaboration with other texts. She argues that textbooks are an indispensable source of disciplinary as well as general literacy. Moreover, textbooks function as acculturation tools into subject-specific epistemology, especially for those unfamiliar with the discipline.

**Anti-textbook views.** Before delving into the particular arguments for and against textbook use, it may be useful to understand several overarching factors that have swayed the pedagogical pendulum against textbooks. These factors include the market, status of practitioners, textbook analysis studies, and trends in research and development (Swales, 1980). Given the market forces that are brought to bear on textbook publishers, the commercial value of textbooks dominates stakeholders' agendas. Unfortunately, what seems to be more commercially prudent is not whether these books are grounded in research but whether these books are up-to-date and sprinkled with the right catchphrases (Swales, 1980). As Lipman (1991) asserts, this is also true of critical thinking:

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In the early 1980s, the textbook industry, after decades of studiously looking the other way, began to make some timid concessions to the advocates of reflective education, adding critical thinking labels to review questions, often regardless of content, and here and there providing a paper and pencil drill aimed at strengthening some particular thinking skill (pp. 1-2).

It is therefore somewhat unsurprising that there is a lack of critical review or appraisal of textbooks in the same way that research articles are reviewed (Swales, 1980). A second factor Swales identifies, as adversely influencing popular views on textbooks is the relatively inconsequential, if not detrimental, role of textbooks in academics' and practitioners' professional trajectories. As Meyers (1992) puts it, ESP textbooks are marginalized by the very academics whose discourse such textbooks are to be representing—a strange relationship indeed. While academics cannot count on writing textbooks to buttress their reputation, ESP practitioners cannot hope for any professional gains by using previously published material. Thus, in both contexts the value of using textbooks is dubious. A third factor that has negatively influenced attitudes is textbook analysis research, which often employs evaluation criteria that are too stringent, thereby underestimating the quality of the analyzed textbooks. A final factor bearing down on textbooks is trends in Applied Linguistics research, which suggest that external material stifles communicative language teaching (Swales, 1980). That is, textbooks inhibit student-centred learning by impeding student-teacher co-construction of course syllabi, thereby effectively stultifying instruction (Swales, 1992, as cited in Hutchinson & Torres, 1994). Thus, irrespective of the specific appraisals of EAP textbooks, which are

mentioned below, one may say that the toxic environment created by the above four factors, precludes the possibility of impartial judgment.

These overarching factors seem to inform the key assumptions of the anti-textbook position. Hutchinson and Torres (1994) have identified these assumptions as the following: textbooks are simply pre-packaged materials; a maximum level of instructional freedom is good; textbooks' fixedness hinders classroom negotiation; textbooks lead to de-skilling teachers; and textbooks, as instructional tools of mass consumption, fail to address the individual pedagogical exigencies related to specific situations.

Looking at EAP textbooks, Harwood (2005) outlines several criticisms. Firstly, EAP textbooks fail to reflect accurately the language that is used by academics in authentic academic discourses. In particular, textbooks, not having a sufficient empirical-base, oversimplify variations between registers. Secondly, and related to the first criticism, EAP textbooks may misinform less seasoned instructors as to the true nature of academic discourse, namely its diversity, and this, in turn, can lead to pedagogical blunders. Thirdly, textbooks, which represent officially sanctioned knowledge, may inadvertently undermine the authority of material designed by instructors. Fourthly, textbook writing often invites material that is commercially viable rather than theoretically valid, leading to the overrepresentation of writers' intuition in textbook development (Harwood, 2005). There also exists in the literature another line of criticism emerging out of the Kuhnian analysis of textbooks, which sees textbooks as a tool for perpetuating normal science, or the accepted paradigm (Apple, 1992; Bondi, 2016; Kuhn, 1970; Myers, 1992).

It is important to acknowledge that not all who have conceded to the above criticisms endorse a categorical rejection of textbooks (e.g. Harwood, 2005). In fact, there appear to be two anti-textbook positions among EAP researchers: a strong view, which calls for jettisoning textbooks; and a weak view, which concedes to the premises of the anti-textbook view while rejecting its overall conclusion (Harwood, 2005). Harwood takes the weak anti-textbook position claiming that textbooks do lack in empirical research and at present are failing EAP teachers. This view may also be ascribed to Swales (2009) and Bondi (2016).

**Pro-textbook view.** The pro-textbook view counters the above arguments with the following points (Harwood, 2005). Firstly, textbooks, far from attempting to undermine teacher-made material or teacher creativity, serve as a foundation upon which teachers may structure their lessons. Secondly, textbooks, unlike intermittent teacher-selected handouts, are systematic and coherent, and therefore, predictable (Swales, 1980). Thirdly, textbook writers, in fact, do claim a research-base for their textbooks, unlike what is suggested by the anti-textbook view. Lastly, rather than undermining teacher-made material, textbooks effectively facilitate teaching by offering readymade material. Often, the teacher-made material in effect reinvents the wheel as it merely duplicates published material. Thus, teachers labour away doing what has already been done for them (Harwood, 2005).

Responding to those who claim that textbooks stultify interactions between students, teachers, and materials, Hutchinson and Torres (1994) turn this claim on its head by asserting that textbooks may help to facilitate change by effectively organizing the teaching process. They argue that successful classroom reform requires a sense of

security, and security is achieved through structure and stability; therefore, the textbook, by offering to organize the lesson, may promote educational reforms.

The above discussion has offered an overview of key arguments for and against textbook analysis. This discussion contributes to the present study by situating the analysis of critical thinking in EAP textbooks within the broader debate as to the appropriateness of textbooks. While the above discussions focus on issues related to academic language and skills in general, there is no explicit mentioning of the relevance of critical thinking to this debate.

**Critical Thinking and EAP Textbook Analysis**

The literature on critical thinking and EAP textbooks is quite limited (N. Harwood, personal communication, December 12, 2017). This may be the result of EAP textbook analysis research usually consisting of analyses of disciplinary textbooks for coverage of particular linguistic features (Harwood, 2005). When EAP textbooks are analyzed, it is usually in the context of corpus-based research. Perhaps the lack of critical thinking in EAP textbook research, particularly research originating in North America, may be attributed to the low-status afforded to textbooks as a genre worthy of research. For example, Swales (1980) and Sheldon (1988, as cited in Feak, 2014) argue that ESP textbooks are necessary evils to be dispensed with. It is important to mention also that not all EAP textbook analysis dealing with thinking may be labelled a critical thinking study *per se*—not all thinking is critical thinking (D'Angelo, 1971; McPeck, 1990b). As such, recent studies (Gordani, 2010; Mizbani & Chalack, 2017; Ulum, 2016) relying exclusively on Bloom's Taxonomy have been excluded from this literature review. The studies below include both EAP and ESL textbook analysis research.

**EAP/ESL textbook analysis studies of critical thinking.** Ramanathan and

Kaplan's (1996) research involved a textbook analysis of L1 composition books used to

teach English L2 learners. Freshman composition textbooks that were published between

1989 and 1995 were randomly selected. The researchers found that the textbooks furnish

students with three channels to examine passages critically. These three channels parallel

foci in major critical thinking tests used in North America, such as the Cornell Critical

Thinking Test (levels 1 and 2) and the Watson-Glaser Critical Thinking Appraisal. The

first channel involves developing informal logic skills in students in order to augment

their reasoning skills. The textbooks that were analyzed presented critical thinking as

both a general ability as well as specific skills. However, apart from that, the textbooks

were in disagreement regarding the specific skills. Each textbook emphasized different

skills to a lesser or greater amount than the other textbooks. The second channel targets

the development of problem-solving skills through the presentation of a smattering of

readings mentioning diverging perspectives on certain issues. However, such an

approach leads to grossly simplifying the issues, by turning "real problems into pseudo-

problems with easy solutions" (p. 238). The researchers found that the reading passages,

being grounded in the assumptions of critical pedagogy, required students to be critical of

their social reality; however, such a predication is problematic insofar as it putatively

ascribes to students a certain level of cultural knowledge, which may be lacking. The

third channel addresses the need to uncover hidden assumptions and fallacies in everyday

arguments. The issue with this channel has been explained earlier in the Critical

Thinking Research section (e.g. McPeck, 1981). The researchers conclude that the

textbooks seem to support the opinion that critical thinking can be taught in isolation, a

position that they ascribe to Edward de Bono.  Because of the limitations inherent in these three channels, the researchers conclude:

> L2 student-writers, given their respective sociocultural and linguistic socialization practices, are more likely than native English speaking (NES) students to encounter difficulty when being inducted into CT courses in freshman composition classes...  (p. 232).

Although Ramanathan and Kaplan's (1996) study is not properly a study of EAP textbooks, it contributes to the present research because, unlike the studies that will be mentioned below, it is not limited by a particular normative approach to critical thinking. Instead, their study applies the critiques of various critical thinking approaches, which may be found in the literature (e.g. McPeck's [1981] criticism of everyday problems), to their sample of freshman composition textbooks.

Talebinezhad and Matou's (2012) research examines the extent to which questions in university ELT reading comprehension textbooks followed the self-proclaimed textbook objectives regarding critical thinking.  The sample consisted of three reading comprehension textbooks used at the university level: *Communicative Reading Skills, Effective Reading*, and *Active Book 4*.  The data were coded using a critical thinking framework that includes clarity, accuracy, precision, relevance, depth, breadth, and logic.  This framework was selected because of its comprehensiveness and recentness.  The reading comprehension questions were divided into three categories: *Vocabulary in Context* (VIC), *Literal Comprehension* (LC), and *Extended Reasoning* (ER).  The researchers found that ER questions were overrepresented in the textbooks. Talebinezhad and Matou's research demonstrates an example of a study that uses a

normative framework of critical thinking.  The present study is an attempt to move away from this *entirely* top-down approach.

Azizi and Talebinejad's (2012) research examines the role of critical thinking in general English textbooks using Facione's critical thinking model.  The skills included in this model are explanation, analysis, interpretation, evaluation, inference, and self-regulation.  The research question is to what extent Facione's critical thinking model is represented in university course books.  A second question that is asked is to what extent the course books support critical thinking in their reading comprehension questions.  The researchers found that critical thinking skills, as identified by Facione, were underrepresented in the textbooks.  They suggest that textbooks should include questions with an informal logic basis wherein learners need to uncover hidden messages (p. 2199).  This study suffers from a similar methodological limitation as Talebinezhad and Matou (2012).

Birjandi and Alizadeh (2013) examine the extent to which English as a Foreign Language (EFL) textbooks used in Iran employed critical thinking.  The primary research questions are the following: Do textbooks demonstrate aspects of critical thinking, what is the proportion of critical thinking skills in the various textbooks, what is the ranking of textbooks in relation to critical thinking, and are there significant variations among the textbooks in the inclusion of critical thinking (p. 31)?  The sample included three widely used textbooks: *Top Notch*, *Interlanguage*, and *English Files*.  The analysis tool used was a Likert-scale based on Bloom's Taxonomy as well as other skills commonly mentioned in the critical thinking literature.  Twelve skills were identified: knowledge, comprehension, application, analysis, synthesis, evaluation, balanced-thinking,

deduction, induction, creative thinking, building a community of thinkers, and multiple perspective taking. These twelve skills were then operationalized through six statements for each skill. Each statement was then given a range of 1 – 5. This checklist was validated by researchers and experts. The data were analyzed using both descriptive and inferential statistics, namely chi-square and Kruskal-Wallis. The researchers found that these textbooks were generally concerned with lower-level cognitive skills. The researchers suggest that EFL textbooks may better target critical thinking skills by including more questions related to identifying the underlying causes of issues as well as implicit and hidden agendas. Also, the lack of exercises targeting evaluation could be addressed by requiring learners to evaluate the strengths and weaknesses of an argument. Birjandi and Alizadeh's study is based on a skills-based understanding of critical thinking; therefore, it does not account for other approaches, namely epistemological and critical pedagogy, being potentially present in the sampled textbooks. As such, their study suffers a similar limitation as do Talebinezhad and Matou's (2012) and Azizi and Talebinejad's (2012). Therefore, their study cannot address in earnest the broader question, which was addressed in the present study, of how the critical thinking approaches in EAP textbooks relate to the theoretical critical thinking literature.

Sobkowiak's (2016) study examines the relationship between critical thinking and intercultural competence (ICC). Critical thinking is operationalized using Facione's model. The research questions are the following: to what extent do textbooks encourage learners to use evidence and appropriate reasons, to ask questions eliciting comprehensive cultural background of content, to develop appropriate explanations and evaluations, and to challenge cultural biases (p. 704)? A mixed methods content analysis

of twenty EFL textbooks, presumably selected at random, was undertaken. Ten of the most common ICC tasks were compiled based on a review of the intercultural (IC) and critical thinking literature. This list was then validated by two experts. Textbooks were then analyzed for frequency of each of the ten ICC activities. The relevant activities were then qualitatively analyzed for cultural input. The study found that critical thinking skills, particularly higher-level skills, were grossly underrepresented in the textbooks. In addition, where critical thinking skills were included, there was often a lack of explanation regarding "how the principles of CT can be applied to any IC exercises…" (p. 706). Furthermore, Sobkowiak (2016) argues that the textbooks' lack of intellectual standards for evaluating thinking in relation to IC leads to the promotion of superficial rather than substantial critical thinking (p. 706).

The research on critical thinking in EAP textbooks summarized above, apart from exhibiting a dearth of empirical studies, suffer conceptually due to the imposition of one particular understanding of critical thinking to the textbook. As such, the conceptual power of these studies to inform the broader community of EAP researchers and practitioners as to the nature of critical thinking approaches in the textbooks is quite limited. That is, these studies only reveal *whether* a textbook conforms to one particular understanding of critical thinking, but the studies do not shed light on *how* textbooks define critical thinking. Therefore, they do not contribute to addressing the overall research question of the present study, namely, *what is the relationship between critical thinking approaches in the literature and the textbooks?* The present research strives to address this gap by examining how the critical thinking approaches in popular EAP textbooks relate to the major approaches to critical thinking in the theoretical literature.

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The goal is an appraisal of one aspect of EAP textbooks by employing a broad theoretical lens. This lens has been illustrated in Table 1, *Critical Thinking Approaches Matrix.*

In Chapter 2, Literature Review, the three major critical thinking approaches were identified as an essential first step in addressing the research question. In addition, a review was provided of EAP textbook research in order to situate the present study within the broader research context to which it belongs.

In Chapter 3, Method, a detailed description will be offered of the research method that was used in the present study to address the research question guiding the study, namely, *to what extent are the approaches to critical thinking in popular EAP textbooks related to the major approaches to critical thinking in the theoretical literature*?

# Chapter Three: Method

**Aim of Study**

This qualitative study aimed to understand and appraise critical thinking approaches in popular EAP textbooks by comparing them with the theoretical literature. In order to address this research purpose, two sub-questions were identified:

1) What are the critical thinking approaches that are found in the theoretical literature?

2) What are the critical thinking approaches that are found in two popular EAP textbooks?

While Chapter 2 addressed the first sub-question, Chapter 4 will address the second sub-question. Addressing these two questions is an essential step to determining, *what is the relationship between critical thinking approaches found in the theoretical literature and those found in two EAP textbooks? What are the implications of this relationship?*

As previously noted in Chapter 2, based on the review of the literature on critical thinking (see Table 1), a classification of critical thinking approaches was developed to serve as an analytical framework for the present study. In deciding upon the qualitative research approach, approaches that have been used for textbook analysis in the broader research literature were reviewed.

**Textbook Analysis**

In order to identify an appropriate approach to the analysis of exercises labelled as critical thinking in the two sampled textbooks in this study, approaches to textbook analysis in the extant literature regarding textbook analysis were reviewed. A summary

is provided in the section that follows.

**History of textbook analysis.**  Looking at the European context, Nicholls (2003) states that textbook analysis research was first initiated in the 1920s by the League of Nations post-World War I (WWI) and then by the United Nations Education, Scientific and Cultural Organisation (UNESCO) after the World War II (WWII).  Beginning in the 1950s, the centre of textbook research was the Georg Eckert Institute for International Textbook Research, which formed in 1951 and worked closely with UNESCO.  Another organization that figures prominently in the history of textbook analysis is the Council of Europe, forming in 1949 (Nicholls, 2003).  Textbook analysis research that followed the world wars often took the form of bilateral efforts between former hostile states.  Then in the 1970s, these efforts became multilateral.  A key objective of textbook analysis research undertaken by organizations such as UNESCO and the Council of Europe was removing instances of bias and prejudice found particularly in history textbooks (Nicholls, 2003).  A more recent example of a textbook analysis project was one undertaken by UNESCO after the second Gulf War (Pingel, 2010).  The research projects that have come out of these organizations have mostly dealt with the subjects of social studies, history, civics, and to a lesser extent language textbooks as these subjects are believed to be the most relevant in terms of supporting democracy and global awareness (Pingel, 2010).

The research on the history of textbook analysis mentioned above indicates that the historical origins of textbook analysis studies are related to socio-political upheavals. That is, because of the critical function of textbooks as tools of induction into a particular discipline (Siler, 1986) or attitude (Pingel, 2010), textbooks are essentially gatekeepers of

public knowledge.  Therefore, changes in socio-political domains, as brought about by war or other phenomena, demand a corresponding change in the publics' socio-political attitudes vis-à-vis formerly belligerent nations.  As such, the textbook analysis research that was undertaken post-WWI and post-WWII represented efforts to re-socialize formerly hostile populations into attitudes conducive to the new socio-political order; in other words, the research was "a means to contribute to stabilizing conflict-shattered societies" (Pingel, 2010, p. 5).  In Kuhnian terms, one might say that global textbook analysis efforts were part of a "mopping-up operation" following a paradigm shift (Kuhn, 1970, p. 24), with the shift being from nationalism to cosmopolitanism (Pingel, 2010).

The above discussion of the early modern history of textbook analysis indicates that textbook analysis has often worked hand-in-hand with the promotion of particular national or international political agendas.  In a sense, the textbook analysis projects worked to accommodate new political regimes given the changing landscapes.

**Methodological approaches to textbook analysis.**  Looking at early studies of American history textbooks, Siler (1986) argues that these studies generally suffered from imprecise research methods.  In particular, he argues, "The subjective narrative method of analysis based upon the author's impression of textual content was the prevalent methodology" (p. 16).  More recent efforts by Pingel (2010) to fill this methodological gap have only led to minimum standards of analysis rather than detailed guidance (Nicholls, 2003), and they have failed to offer textbook analysis a theoretical grounding (Morgan & Henning, 2013; Weinbrenner, 1992; Weinbrenner, 2000, as cited in Nicholls, 2003).  Pingel has responded to the criticism regarding the lack of detailed

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standards by arguing that each textbook analysis project is unique; therefore, imposing a single specific set of standards is unfeasible.

***Principles and types of textbook analysis.*** Morgan and Henning (2013) identify six principles of textbook analysis: the need for a specific standard or guide that can be applied to the analysis, a common theoretical connection between data and the standards, a heuristic tool by which data may be represented visually, a relationship between the dimensions of the analysis tool and the text's discipline, the unavoidable exclusion of some important aspects of the text, and content-focused.

Pingel (2010) states that there are two methods of sample selection: horizontal and vertical. While horizontal textbook analysis is concerned with textbooks published around the same period, vertical textbook analysis is concerned with textbooks across multiple periods. Moreover, Pingel identifies two views of analysis: didactic and content. Didactic analysis is concerned with the question of *how* textbooks approach a given topic methodologically, as well as the pedagogy that informs the textbook. On the other hand, content analysis relates to *what* information is in the text, and particularly whether it aligns with research or whether it covers the topic adequately. Textbook analysis methods may also be classified into quantitative and qualitative (Pingel, 2010). Quantitative methods deal with the general issue of frequency and space. Questions that may be asked are the number of times something appears and how much space is given to something. On the other hand, qualitative analysis deals with the general issue of underlying assumptions, which naturally resist quantification. Questions of interest include what the message of a text is and what the context is in which people and terms are mentioned. Weinbrenner (1992) states that there are three types of textbook research:

process-oriented textbook research related to the life-cycle of a given textbook; product-oriented textbook research focused on content analysis, both of which can either be longitudinal or latitudinal (Pingel, 2010); and reception-oriented textbook research, where the textbook is viewed in relation to socialization.

*Developing textbook analysis tools.* Nicholls (2003) mentions two ways of developing analytical frameworks for textbook evaluation. The first framework is based on an idea of what is to be analyzed (deductive); the second is based on experiences of what is to be analyzed (inductive) (Pingel, 2010). The deductive approach involves developing a grid of external categories; the inductive approach, which is facilitated by grounded theory, develops analytical categories as they emerge during the coding process. Pingel offers a minimum standard of analysis dealing with textbook content, or a generic tool of analysis, applicable across projects. Included in this generic tool are the following categories: factual accuracy, completeness of information, and errors; updated representations; topic selection, emphasis, and representativeness; the degree of differentiation; and relative proportion of facts and interpretations (p. 71).

Looking to fill in the methodological gap in textbook analysis research with an eye to the idiosyncrasies of individual analysis projects, Morgan and Henning (2013) offer a three-stage method for designing a tool based on grounded theory, which begins with the data, then goes to the research, and finally returns to data. The first stage is open data coding, which involves alternating between inductive and deductive analysis of textbooks. In this stage, the data (i.e. textbook chapters) are read, annotated, colour-coded, and thematically clustered. The second sage of tool design is developing dimensions from the academic literature. This stage involves identifying a central

concept as well as relevant conceptual categories.  The final stage involves completing

the tool design by integrating principles based on the results of stages one and two.  It

also involves applying the tool to the data to further refine and consolidate the themes

towards a finalized set of dimensions (Morgan & Henning, 2013).

   ***Textbook analysis dimensions, categories, and questions.***  Weinbrenner (1992)

identifies five dimensions of textbook analysis: first, theory of knowledge, which

involves epistemological research interests, concept formation, statement analysis, value

judgments, or which values and attitudes textbooks promote, and ideology formation;

second, design, which refers to the visual representations in textbooks; third, subject

content; fourth, subject theory and methods; and fifth, epistemological  theory.  Also

addressing the lack of specific textbook analysis guidance in the literature, Nicholls

(2003) outlines the methodology employed by Straddling (2001) to analyze European

history books.  Straddling's analysis involves four categories with forty questions in total.

The first category deals with the evaluation of textbook content.  Issues that are covered

include coverage, sequencing, space allocation, the inclusion of multiple-perspective

cultural and regional identity, and omissions (p. 6).  The second category deals with

pedagogical values.  The issues that are covered include students' prior skills and

knowledge, whether textbooks promote memorization or skill development, explication

of historical concepts, and support of comparative thinking.  The third category deals

with textbooks' intrinsic qualities.  In particular, it covers issues such as assessing

textbook pitch, whether reductionism is relied on, and possibilities for identifying author

bias.  Straddling's (2001) last category deals with extrinsic factors that may influence the

book.  These include the date of publication, price, audience, and supplementary material.

Nicholls (2003) points out that what Straddling's framework is missing is questions probing the rhetorical form of textbooks, or how content is presented. Studies dealing with representations of WW2 in textbooks have asked questions probing the relationship between content and recent research, assumptions underpinning textual discourse, hidden messages, and authors' biases (Straddling, 2001, p. 11). Another exemplary study that Nicholls cites to offer more detailed guidance on textbook analysis is Foster and Morris's (1994) comparative analysis of British and US textbooks' treatment of the bombing of Hiroshima. Some of the questions the researchers ask are the following:

> How effective is the use of historical evidence across the textbook sample? To what extent can students formulate judgements based on the presentation of evidence? To what extent does the textbook invite the use of critical skills of investigation and inquiry? Is contradictory evidence used or included? (p. 13).

These questions were extrapolated from Foster and Morris's larger research question: How do we know?

The above discussion on textbook analysis research demonstrates that there is no one right way to analyze a textbook. Every textbook analysis project carries its own particular aims. As such, the analytical tool used in the present study is unique and not based on a previous analysis tool.

**Qualitative Research Approach**

In order to answer the research questions, this research used qualitative content analysis, which is "a method for systematically describing the meaning of qualitative data" (Mayring, as cited in Schreier, 2014, p. 170). Such an analysis may be used in exploratory research designs to develop a conceptualization of an idea when the goal is a

description of patterns in the data (Drisko & Maschi, 2015).  As part of this study, two popular EAP textbooks were analyzed using concept and provisional coding methods (Saldaña, 2016).  Concept coding is used to represent more abstractly, meanings that may be suggested in the apparent and tangible data; therefore, it is concerned with ideas rather than observable behaviour (Saldaña, 2016, p. 119).  Provisional coding is applied to data as a result of a predetermined initial list of codes, which have been developed prior to the coding.  These codes can be derived from literature reviews, research questions, and researchers' prior knowledge and experience.  During and after coding, the provisional list of codes may be "revised, modified, deleted, or expanded to include new codes" (Saldaña, 2016, p. 168).

**Materials**

Two popular EAP textbooks have been sampled for this study: *Pathways 3: Reading, Writing, and Critical Thinking* (Vargo & Blass, 2013a) and *Oxford EAP: A Course in English for Academic Purposes: Upper-Intermediate/B2* (de Chazal & McCarter, 2012a) (see Appendixes C and D for sample exercises).

### Pathways 3: Reading, Writing, and Critical Thinking

*Pathways 3: Reading, Writing, and Critical Thinking* (Vargo & Blass, 2013a) is an upper-intermediate EAP textbook, which is part of a textbook series published by *National Geographic Learning* (*Cengage Learning*).  The textbook has 10 academic theme-based units.  Some of the themes include social relationships, the tourism industry, and survival instinct.  Each unit includes three lessons and six components: academic pathways, vocabulary, reading, writing, viewing, and critical thinking.  The academic pathways component includes major academic skills such as organizing notes and

paragraph writing. Each lesson in the unit includes ten key vocabulary items used in the lesson's reading passage. Vocabulary items are presented and practiced before the reading passage. Vocabulary exercises include matching words with definitions, using vocabulary to complete definitions, and applying vocabulary in a personalized context. Lesson A's reading includes a linear text about the unit theme. Lesson B's reading delves into another aspect of the theme using various text types, such as interviews and visuals. Readings are followed by various types of comprehension questions including identifying main ideas, identifying key details, identifying meaning from context, interpreting visual information, and skimming to make predictions. The content of the reading material, as well as visuals, has been adapted from *National Geographic* content. Exercises aim to make a clear connection between reading and writings components of the unit. Lesson C of each unit focuses on different writing tasks where learners engage in guided writing assignments that synthesize the unit readings with their personal experiences. Grammar lessons are integrated into the writing lesson. Writing assignments include writing about similarities and differences, writing an opinion paragraph, and writing short essays. The viewing component of the unit bridges the contents of the two readings in Lessons A and B. Like the reading material, the videos are based on authentic *National Geographic* material.

Among the expressed aims of the series is developing learners' critical thinking abilities, namely, evaluating, analyzing, and synthesizing information. Item types include multiple choice, short-answer, matching, and chart completion. Exercises labelled critical thinking follow the reading passages, viewing tasks, and writing tasks. There is an average of six exercises that have been labelled as critical thinking per unit. An

exhaustive list of critical thinking skills included in these exercises is offered in the

"Academic Literacy Skills Index" (p. 252).  These include the following: analyzing,

applying information, brainstorming, considering counterarguments, discussing ideas,

distinguishing fact from speculation, evaluating, inferencing, making

connections/comparisons, peer evaluation, personalizing/reflecting, predicting content,

synthesizing, thinking ahead, understanding figurative language, understanding

predictions, understanding the purpose of anecdotes, and understanding tone and purpose.

According to the index, there are 158 critical thinking exercises in the textbook, or an

average of 15.8 per unit.  The discrepancy between this figure and the previous figure of

six is because most of the critical thinking skills that have been identified as such in the

index, such as brainstorming and predicting content, have not been labelled as critical

thinking in the unit nor in the Scope and Sequence.  *The analysis of critical thinking*

*exercises in the present study examined only those exercises that were labelled as critical*

*thinking in the unit.*  Critical thinking exercises include various item types, such as

complete the statement, open-ended group discussions, and variations of true-false.  In

addition to exercises, each unit contains a *CT Focus,* which appears after Lesson A's

reading and involves a heading indicating a critical thinking skill as well as a brief

explanation of around 50 words, which sometimes involves modelling the skill.

  The teacher's edition of *Pathways 3* (Vargo & Blass, 2013b) sheds some light on

the critical thinking approach used in the textbook (Table 2).  Critical thinking is defined

as "the ability to make judgments and decisions based on evidence and reason" (p. vi).

Furthermore, the teacher's edition states that critical thinking skills are taught explicitly,

and they centre on the analysis of information and on reflection rather than memorization.

In addition, the teacher's edition states that critical thinking can both support academic success as well as language acquisition "by requiring deep processing of the language" (p. vii).

Table 2

*Pathways 3: Reading, Writing, and Critical Thinking Analysis of Critical Thinking Tasks (Units 1 – 10)*

| Unit # | Theme | Module | Critical Thinking Skill |
|:---:|:---:|:---:|:---:|
| 1 | Social Relationships | Reading | Evaluating supporting arguments<br>Synthesizing |
| 1 | Social Relationships | Writing | Analyzing  (Paragraph) |
| 1 | Social Relationships | Viewing | Synthesizing |
| 2 | Science and Detection | Reading | Distinguishing fact from speculation<br>Synthesizing<br>Inferring Attitude |
| 2 | Science and Detection | Writing | Analyzing (Paragraph) |
| 2 | Science and Detection | Viewing | Synthesizing |
| 3 | City Solutions | Reading | Evaluating sources<br>Synthesizing |
| 3 | City Solutions | Writing | Analyzing (Thesis)<br>Analyzing  (Paragraph) |
| 3 | City Solutions | Viewing | Synthesizing |
| 4 | Danger Zones | Reading | Analyzing evidence<br>Synthesizing |
| 4 | Danger Zones | Writing | Analyzing (Paragraph) |
| 4 | Danger Zones | Viewing | Synthesizing |
| 5 | The Business of Tourism | Reading | Analyzing an argument (showing the drawbacks of an alternative idea)<br>Evaluating an argument<br>Making inferences<br>Synthesizing |
| 5 | The Business of Tourism | Writing | Analyzing (Paragraph) |
| 5 | The Business of Tourism | Viewing | Synthesizing |
| 6 | Landscape and Imagination | Reading | Understanding figurative language<br>Synthesizing |
| 6 | Landscape and Imagination | Writing | Analyzing (Essay) |
| 6 | Landscape and Imagination | Viewing | Synthesizing |

| | | | |
|---|---|---|---|
| 7 | Global Appetites | Reading | Understanding tone and purpose |
| | | | Evaluating an argument |
| | | | Interpreting visual information |
| | | | Evaluating ideas |
| 7 | Global Appetites | Writing | Analyzing (outline) |
| | | | Analyzing (essay) |
| 7 | Global Appetites | Viewing | Synthesizing |
| 8 | Medical Innovators | Reading | Making inferences |
| | | | Synthesizing |
| 8 | Medical Innovators | Writing | Evaluating sources |
| | | | Analyzing (essay) |
| 8 | Medical Innovators | Viewing | Synthesizing |
| 9 | World Languages | Reading | Personalizing |
| | | | Inferring Degrees of Certainty |
| | | | Understanding predictions |
| | | | Considering counterarguments |
| 9 | World Languages | Writing | Analyzing (essay) |
| 9 | World Languages | Viewing | Synthesizing |
| 10 | Survival Instinct | Reading | Analyzing and inferring purpose |
| | | | Identifying purpose |
| | | | Understanding an author's purpose |
| | | | Synthesizing |
| 10 | Survival Instinct | Writing | Analyzing (descriptive narrative) |
| 10 | Survival Instinct | Viewing | Synthesizing |

**Oxford EAP: Upper-Intermediate**

*Oxford EAP: Upper-Intermediate* (de Chazal & McCarter, 2012a) has 12 theme-based units. These themes include education, communication, culture, persuasion, and technology. In addition, each unit has a specific academic skills focus, such as preparation for academic study, using evidence, describing processes, and developing an argument. Each unit covers four major modules: reading, writing, listening, and speaking.

The reading section focuses on skills related to reading university textbooks and to a lesser extent dictionaries and journals. Some of the reading skills covered include reading for the main idea and details, identifying the purpose and structure of a text, predicting the content of a text from visual information, and annotating a text with margin notes. Reading sections include excerpts of authentic academic text, which are largely taken from introductory textbooks and dictionaries published by Oxford.

In the first six units, the writing sections focus on generic essay writing skills such as generating ideas, topic sentences, introductions, and conclusions. The last six units focus on essay types, such as comparison, argument, and cause and effect. Writing exercises are based on reading and listening passages. Some of the specific writing skills covered in the textbook include understanding essay titles, analyzing and writing topic sentences, linking ideas coherently, writing an outline, and using cause and effect language.

The listening section of the textbook centres around listening to theme-based lectures. Note-taking skills are a consistent focus throughout the textbook. Other skills covered include listening for main ideas, recognizing referencing language, and recognizing different perspectives in an interview.

The speaking section covers typical academic speaking tasks such as seminars, tutorials, presentations, and informal discussions. The particular skills involved in the speaking sections include asking and answering questions, evaluating presentation guidelines, responding to requests for future details, and presenting visual information.

In addition to the four major modules, each unit also contains a vocabulary section focusing on vocabulary-learning strategies such as working out the meaning of

unknown words, building word families through suffixes, understanding the meanings of prefixes, and using preposition phrases.

Each of the four major modules contains one or two tasks that have been explicitly labelled as critical thinking (see Table 3).  Each critical thinking task includes as part of its label the critical thinking activity or skill involved in the task.  These include evaluating learning styles, connecting words and ideas, reflecting on reading strategies, discussing the influence of the media, and discussing personality types.  The *Oxford EAP* (de Chazal & McCarter, 2012b) teacher's manual defines critical thinking as skepticism towards reading material, assumption hunting, making connections, and evaluating based on criteria.  In addition, the manual states that a key characteristic of critical thinking exercises is that they are "unkeyable" in that responses are subjective and open to multiple answers  (de Chazal & McCarter, 2012b, p. 7).

Table 3

*Oxford EAP: Upper-Intermediate Analysis of Critical Thinking Tasks (Units 1 – 12)*

| Unit # | Theme | Module | Critical Thinking Skill |
|---|---|---|---|
| 1 | Education | Reading | Evaluating learning styles |
| | | | Connecting words and ideas |
| 1 | Education | Writing | Evaluating your plan |
| 1 | Education | Listening | Predicting the content of a lecture |
| | | | Discussing study-related skills |
| 1 | Education | Speaking | Responding to an opinion |
| 2 | Systems | Reading | Discussing reading strategies |
| | | | Reflecting on reading strategies |
| 2 | Systems | Writing | Using diagrams and data |
| 2 | Systems | Listening | Predicting the content of a lecture |
| | | | Reviewing note-taking techniques |
| 2 | Systems | Speaking | Discussing presentation skills |
| 3 | Communication | Reading | Discussing the impact of the media |
| 3 | Communication | Writing | Analyzing paragraph structure |
| | | | Analyzing topic sentences |
| 3 | Communication | Listening | Identifying a lecture theme |
| | | | Analyzing values and attitudes |
| 3 | Communication | Speaking | Discussing the influence of the media |
| 4 | Order | Reading | Discussing consumer behaviour |
| | | | Evaluating the content of text |
| 4 | Order | Writing | Evaluating an introduction |
| 4 | Order | Listening | Evaluating classification systems |
| 4 | Order | Speaking | Evaluating presentation guidelines |
| | | | Evaluating presentation styles |
| 5 | Intelligence | Reading | Expressing stance |
| 5 | Intelligence | Writing | Evaluating a conclusion |
| 5 | Intelligence | Listening | Discussing lecture strategies |
| | | | Evaluating a lecture extract |
| 5 | Intelligence | Speaking | Selecting feedback areas |
| 6 | Change | Reading | - |
| 6 | Change | Writing | Understanding types of process |
| | | | Evaluating your writing |
| 6 | Change | Listening | Discussing the content of a lecture |
| 6 | Change | Speaking | Evaluating poster displays |

| | | | |
|---|---|---|---|
| 7 | Culture | Reading | Evaluating definitions |
| | | | Discussing cultures |
| 7 | Culture | Writing | Generating ideas |
| 7 | Culture | Listening | Reading to prepare for a lecture |
| | | | Evaluating advantages of preparing |
| 7 | Culture | Speaking | Discussing personality types |
| 8 | Interpretation | Reading | Differentiating fact from opinion |
| | | | Using different perspectives |
| 8 | Interpretation | Writing | Evaluating student essays |
| 8 | Interpretation | Listening | Predicting perspectives |
| | | | Responding to perspective and stance |
| 8 | Interpretation | Speaking | Accessing informal discussions |
| | | | Reflecting on a discussion |
| 9 | Persuasion | Reading | Evaluating voting systems |
| | | | Evaluating the main argument |
| | | | Using conditional structures |
| 9 | Persuasion | Writing | Organizing ideas |
| | | | Evaluating an argument essay |
| 9 | Persuasion | Listening | Discussing teamwork |
| 9 | Persuasion | Speaking | Categorizing and evaluating skills |
| | | | Evaluating the main argument |
| 10 | Connect | Reading | Using diagrams |
| 10 | Connect | Writing | - |
| 10 | Connect | Listening | Connecting different disciplines |
| | | | Discussing evidence |
| 10 | Connect | Speaking | - |
| 11 | Technology | Reading | Discussing evaluation |
| 11 | Technology | Writing | Evaluating problems and solutions |
| | | | Evaluating a problem-solution essay |
| 11 | Technology | Listening | Recognizing analysis and evaluation |
| | | | Evaluating summaries |
| 11 | Technology | Speaking | Evaluating presentations |
| 12 | Independence | Reading | Discussing evaluations |
| | | | Evaluating annotations |
| 12 | Independence | Writing | Developing independence |
| 12 | Independence | Listening | - |
| 12 | Independence | Speaking | Evaluating qualities |

**Procedures[2]**

  As background to the study, a list of codes relating to critical thinking approaches was identified and defined based on the critical thinking literature.  Then, a preliminary exploratory analysis of the two textbooks was conducted (Creswell, 2012).  Three units in each book were read several times in order to gain familiarity with the content while pertinent ideas were recorded in memos.  Next, the first round of coding was undertaken of the exercises labelled as critical thinking in the three units of each textbook.  This first round aimed to apply as many of the provisional concept codes as possible to the data.  This was followed by a second and third round of coding that involved making changes to the initial codes as well as inductively creating new codes grounded in the data.  This resulted in the identification of several concept codes unrelated to the three approaches to critical thinking drawn from the literature.  Codes that appeared multiple times throughout the sampled units were then clustered to develop themes grounded in the three critical thinking categories outlined in the *Critical Thinking Matrix* (Table 1).  The approaches employed in the two textbooks were then compared against each other as well as against the literature on EAP and critical thinking.  A multilayered discussion of these themes drawing on findings from the two textbooks, as well issues identified in the literature review, forms the bulk of the findings and discussion section of this study (Creswell, 2012).  *It is important to note that in each of the sampled textbooks, only*

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[2] Because no human participants were involved in this research, no approval from the University Research Ethics Board was required.

*exercises that were labelled by the publisher as critical thinking in the respective units were considered for analysis* (see Appendixes E and F for samples of coded exercises).

To ensure the reliability of the content analysis of the textbooks, interrater reliability procedures were undertaken. A second coder was trained on the meaning and application of the codes. The second coder then proceeded to code a sample of the analyzed data through consensus coding. These coded data were then compared with the previously coded data for degrees of similarity or difference. Cohen's Kappa was applied to the coded data resulting from the two coders, using SPSS version 25. Coding was deemed reliable, based on the results: the Kappa Measure of Agreement value was .83 with a significance of $p < .000$. According to Peat (as cited in Pallant, 2007), a value of above .8 represents good agreement (p. 228). The results of the hit or miss analysis were 84% (21 hits) agreement and 16% (4 misses) disagreement. According to Miles and Huberman (as cited in Creswell, 2009, p. 191), agreement of at least 80% is considered "good qualitative reliability."

**Sampling Method**

Given that the aim of this qualitative study was to understand the central phenomenon of critical thinking in EAP textbooks through information-rich samples, purposeful sampling was used rather than random sampling, where the aim is generalizing to a population (Creswell, 2012). The particular purposeful sampling strategy used was typical sampling, which is used when "the researcher studies a person or site that is 'typical' to those unfamiliar with the situation" (Creswell, 2012, p. 208). Although this study did not seek generalizable findings, it aimed for findings that were at least somewhat illustrative of typical EAP textbooks. Therefore, the textbook sample

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was selected based on the criteria of global popularity (J. Fox, personal communication,

May 9, 2018). The sample size was limited to two upper-intermediate level EAP

textbooks. The small sample size was in order to ensure in-depth analysis and an

accurate representation of the complexity of the phenomenon, thereby avoiding

superficial analyses (Creswell, 2012). Moreover, three units were selected from each

textbook, the second unit, a middle unit, and the last. Since the *Pathways 3* textbook

selected included reading and writing skills only, while *Oxford EAP* also included

listening and speaking, the analysis of *Oxford EAP* was limited to the reading and writing

modules. In order to maximize the opportunities to compare the two textbooks against

each other, upper-intermediate level textbooks were selected for both series and the

analysis focused on the skills of reading and writing.

**Analysis**

In *Pathways 3*, the data that was analyzed included student text, which refers to any

text found in the student editions under the labels *Critical Thinking* or *CT Focus*. In *Oxford*

*EAP,* the analysis focused exclusively on data under the label *Critical Thinking*. The unit

of analysis in both books was the individual critical thinking sub-sections found throughout

the sampled units. Given the exploratory aim of this study, it was deemed appropriate to

limit analysis to sections of the text that were explicitly labelled *Critical Thinking* within

the unit.

Drawing on critical thinking features mentioned in the literature, a provisional list

of concept codes was developed. These codes represented concepts constitutive of the

informal logic, epistemological, and critical pedagogy approaches to critical thinking vis-

à-vis reasoning, knowledge, and society.  In the following section, the concept codes, which constitute the analytical framework of this study, are described.

**Literature-Based Codes**

The review of the literature revealed four significant concepts related to reasoning: *generalizable abilities, explicit instruction, subject-specific reasoning,* and *dialectical thinking.*  The first two concepts relate to the informal logic approach, the third concept relates to the epistemological approach, and the final concept, dialectical thinking, is shared by both the epistemological and critical pedagogy approaches. Generalizable abilities refer to the specific critical thinking abilities Ennis (1987) identifies in his taxonomy.  Related to his notion of generalizable abilities is the idea that such abilities can be taught explicitly.  Subject-specific reasoning refers to the epistemology, or what counts as a good reason, of a particular discipline.  McPeck (1981) juxtaposes the usefulness of this type of reasoning with the barrenness of the general critical thinking abilities of Ennis's (1987) taxonomy.  Dialectical thinking refers to the critical pedagogy approaches' alternative to the generalizable abilities of the informal logic approach and the disciplinary reasoning of the epistemological approach. Dialectical thinking is essentially thinking that negotiates competing perspectives on an issue, or thinking within more than one competing perspective (Paul, Elder, & Bartell, 1997).  These four concepts were used in the present study to analyze the critical thinking exercises in *Pathways 3: Reading, Writing, and Critical Thinking* and *Oxford EAP: Upper-Intermediate.*

A review of the literature revealed seven concept codes related to various attitudes and positions vis-à-vis knowledge among the three approaches.  The informal logic

approach sometimes views knowledge as a *placeholder* and often suggests that *subject-specific mastery is unnecessary* for the correct assessing of arguments, hence the idea of everyday issues.  The epistemological approach to critical thinking, on the other hand, views *deep knowledge* of a subject as being both sufficient and necessary for critical thinking.  Deep knowledge, and the *subject-specific reasoning* that it entails, is required in order to evaluate the propositions in an argument and to construct new arguments (i.e. discovery).  A second strand in the epistemological approach to critical thinking promotes the notion of relativism of knowledge and the need for *multiple perspectives* on a given issue in order to truly understand and assess it.  Therefore, what is paramount is one's worldview, rather than the internal coherence of an argument, in determining the relative strength of a conclusion.  The critical pedagogy approach to critical thinking gives primacy to *dialogical thinking* about controversial social issues where multiple perspectives are negotiated.

Society represents a third category of concept codes used to analyze the critical thinking exercises in the sampled textbooks.  This category pertains to the critical pedagogy approach and somewhat to the epistemological approach.  It appears to be dismissed by the informal logic approach.  The epistemological  approach to critical thinking, as understood by Paul and Elder (2016) rather than McPeck (1981), argues that critical thinking entails a *socio-critical* attitude*;* that is, checking one's egocentrism and sociocentrism.  Put differently, critical thinking is about being critical of oneself and one's social and cultural values.  The critical pedagogy approach goes further by stipulating instruction that *challenges the status quo* and promotes *ideological*

*detoxification* by explicitly rejecting oppressive liberal capitalist attitudes and values.

See Table 4 for a summary of these codes.

Table 4

*Literature-Based Concept Codes*

| Category | Concept | Definition | Citation |
|---|---|---|---|
| Reasoning | 1. Generalizable abilities | Any specific ability identified by Ennis (see Appendix A) | Ennis (1987) |
| | 2. Explicit instruction | Explanation or modeling of a specific ability | Ennis (1989) |
| | 3. Subject-specific reasoning | Thinking related to a specific discipline | McPeck (1981) |
| | 4. Dialectical thinking | Thinking within more than one competing perspective (debate and discussion not necessary) | Paul, Elder, & Bartell (1997) |
| Knowledge | 5. Dialogical thinking | Debating assumptions of arguments | Gieve (1998) |
| | 6. Knowledge as placeholder | Content is only to practice a generalizable skill or ability | Ennis (1989) |
| | 7. Mastery unnecessary | Deep knowledge is unnecessary to complete task | Ennis (2016) |
| | 8. Deep knowledge | Deep subject knowledge required to complete task | McPeck (1981) |
| | 9. Relativism | Views regarding a matter differ from person to person or situation to situation | Moon (2008) |
| | 10. Multiple perspectives | Different views (not necessarily competing) regarding an issue | Paul & Elder (2016) |
| | 11. Controversial social issues | Topics with multiple hotly debated positions | Benesch (1999) |
| Society | 12. Socio-critical | Being critical of one's socio-cultural values | Paul & Elder (2016) |
| | 13. Ideological detoxification | Explicitly rejecting oppressive attitudes and values | Brookfield (2015) |
| | 14. Challenging status quo | Questioning normal ways of behaving and thinking | Giroux (1994) |

*Note.* To see the relationship between the codes and the critical thinking approaches see Table 1.

**Sample-Based Codes**

As the aim of this study was to explore critical thinking approaches, rather than strictly imposing a narrow normative understanding of critical thinking on the textbooks, a *sample-based* category was also included in the analytical framework. This category involved critical thinking aspects that did not comfortably fit with the major critical thinking approaches (i.e. literature-based concept codes), and which were taken from the textbooks during or after the first and subsequent rounds of coding. These new codes included concepts that were identified as critical thinking by the sampled textbooks but not the literature reviewed in this study. The codes included the following: *literal level, language skill, higher order thinking, study skills,* and *personal reflection.* Literal level refers to exercises targeting learners' literal-level comprehension of information rendered explicitly in the reading passages. The language skills code refers to exercises targeting learners' knowledge of basic grammatical structures such adverb clauses. The higher order thinking code refers to exercises targeting learners' ability to employ the skills of analysis, synthesis, and evaluation outside of problem solving and argument analysis contexts. The code study skills refers to skills related to effective study habits, such as organization and independence. Personal reflection refers to exercises eliciting learners' personal experience or putative familiarity, as opposed to textbook provided material, vis-à-vis a given issue. See Table 5 for a summary of these codes.

Table 5

*Sample-based Concept Codes*

| Concept | Definition |
| --- | --- |
| 1. Literal level | Surface level understanding of a passage |
| 2. Language skills | Skills related to grammar |
| 3. Higher order thinking | Related to analysis, synthesis, and evaluation, namely Bloom's Taxonomy (see Appendix B) , but not related to specific skills mentioned in Ennis's taxonomy (see Appendix A) |
| 4. Study skills | General academic skills |
| 5. Personal reflection | Considering an issue based on personal experience or familiarity not based on information offered in textbook |

Chapter 3 offered a detailed description of the research method used in this study by describing the materials, procedures, and analytical tools.  In Chapter 4, the major findings of the textbook analysis will be described along with a discussion of these findings in relation to key issues in critical thinking and EAP, which were identified in Chapter 2, Literature Review.

**Chapter Four: Findings & Discussion**

This chapter will begin by describing the major findings of the analysis of

*Pathways 3* and *Oxford EAP* in relation to three major approaches to critical thinking:

*informal logic*, *epistemological*, and *critical pedagogy*, and in particular, the position of

these approaches vis-à-vis *reasoning*, *knowledge,* and *society* (see Table 1).  The

description of the findings will be followed by a discussion organized around three major

themes, drawn from the literature, which have been labelled as follows: *luscious, round*

*and meaningless* (following Fowler, 1922 ); *the trivial pursuit theory of knowledge*

(following McPeck, 1994)*;* and *accommodationist critical thinking* (following Benesch,

2001)*.*

**Findings**

In addressing the research question, namely, *to what extent are the approaches to*

*critical thinking in popular EAP textbooks related to the major approaches to critical*

*thinking in the theoretical literature,* a description of the approaches to critical thinking in

the sampled EAP textbooks will be provided.  This is an essential step to determining the

relationship between critical thinking in the theoretical literature (see Table 1) and in two

EAP textbooks (see Tables 6 and 7).

The tables below (Tables 6 and 7) display the findings of the analysis of *Pathways*

*3* and *Oxford EAP*, respectively.  The tables display the number of instances of 19

concept codes (14 literature-based and five sample-based) in each of the sampled units of

the two textbooks.  The literature-based concept codes have been organized based on the

major critical thinking characteristic they most closely approximate, namely, reasoning,

knowledge, and society.  The relationship between the literature-based concept codes and the major critical thinking approaches is illustrated in Table 1.  See Tables 4 and 5 for a succinct definition of each code.

Table 6

*Coding Results: Pathways 3: Reading, Writing, and Critical Thinking (Units 2, 5, 10)*

| Category | Concept Code | Unit 2 | Unit 5 | Unit 10 | Total |
|---|---|---|---|---|---|
| Reasoning | 1.  Generalizable abilities | 1 | 3 | 4 | 8 |
| | 2.  Explicit instruction | 2 | 1 | 1 | 4 |
| | 3.  Subject-specific reasoning | - | - | - | - |
| | 4.  Dialectical thinking | - | 2 | - | 2 |
| Knowledge | 5.  Dialogical thinking | - | 2 | - | 2 |
| | 6.  Knowledge as placeholder | 3 | 4 | 1 | 8 |
| | 7.  Mastery unnecessary | - | 2 | - | 2 |
| | 8.  Deep knowledge | - | - | - | - |
| | 9.  Relativism | - | 1 | - | 1 |
| | 10.  Multiple perspectives | - | - | - | - |
| | 11.  Controversial social issues | - | - | - | - |
| Society | 12.  Socio-critical | - | 2 | - | 2 |
| | 13.  Ideological detoxification | - | - | - | - |
| | 14.  Challenging status quo | - | - | - | - |
| Sampled-based codes | 15.  Literal level | 1 | - | 1 | 2 |
| | 16.  Language skill | - | - | 2 | 2 |
| | 17.  Higher order thinking | 5 | 4 | 4 | 13 |
| | 18.  Study skills | - | - | - | - |
| | 19.  Personal reflection | - | 2 | - | 2 |
| Total | | 12 | 23 | 13 | 48 |

Table 7

*Coding Results: Oxford EAP: Upper-Intermediate, Reading and Writing Modules (Units 2, 7, 12)*

| Categories | Concept Codes | Unit 2 | Unit 7 | Unit 12 | Total |
|---|---|---|---|---|---|
| Reasoning | 1. Generalizable abilities | 2 | 3 | 1 | 6 |
| | 2. Explicit instruction | - | - | - | - |
| | 3. Subject-specific reasoning | - | - | - | - |
| | 4. Dialectical thinking | 2 | 3 | 2 | 7 |
| Knowledge | 5. Dialogical thinking | 3 | 3 | 2 | 8 |
| | 6. Knowledge as Placeholder | - | - | 1 | 1 |
| | 7. Mastery unnecessary | 1 | 1 | - | 2 |
| | 8. Deep knowledge | - | - | - | - |
| | 9. Relativism | - | - | - | - |
| | 10. Multiple perspectives | - | - | - | - |
| | 11. Controversial social issues | - | - | - | - |
| Society | 12. Socio-critical | - | 2 | 1 | 3 |
| | 13. Ideological detoxification | - | - | - | - |
| | 14. Challenging status quo | - | - | - | - |
| Sampled-based codes | 15. Literal level | - | - | - | - |
| | 16. Language skill | - | - | - | - |
| | 17. Higher order thinking | - | 3 | 2 | 5 |
| | 18. Study skills | 1 | 1 | 2 | 4 |
| | 19. Personal reflection | 3 | 3 | 2 | 8 |
| Total | | 12 | 19 | 13 | 44 |

**Reasoning**

An analysis of critical thinking exercises in three units in *Pathways 3: Reading, Writing, and Critical Thinking* revealed:

- eight exercises related to generalizable abilities,

- four related to explicit instruction,

- two related to dialectical thinking, and

- no exercises related to subject-specific epistemology.

The *generalizable abilities* (Ennis, 1987) that were targeted included *distinguishing facts from speculations, analyzing the premises of an argument, evaluating an argument,* and *making inferences (or induction).* For example, one critical thinking exercise targeting argument analysis required learners to sort the advantages and disadvantages of geotourism and traditional tourism, respectively. Explicit instruction related to the generalizable abilities mentioned above was in the form of definitions and descriptions. For example, the ability to distinguish facts from opinions was taught explicitly through a definition of speculation as well as a list of words that indicate a fact or speculation. This was followed by an exercise that targeted dialectical thinking by requiring learners to consider opposing views on geotourism and traditional tourism.

An analysis of critical thinking exercises in the reading and writing modules in three units of *Oxford EAP: Upper-Intermediate* revealed:

- six exercises targeting *generalizable abilities*

- seven targeting *dialectical thinking,* and

- no exercises related to *explicit instruction* or *subject-specific reasoning.*

The *generalizable abilities* in *Oxford EAP* included *judging value statements* and *writing and evaluating definitions*. An example of the former ability was found in an exercise requiring learners to determine their level of agreement with statements related to reading strategies. Dialectical thinking played a significant role in many of the critical thinking exercises that were analyzed, as learners were frequently required to discuss their judgments of value statements in groups in order to compare answers and evaluate reasons.

Generalizable abilities played a prominent role in the critical thinking exercises in both *Pathways 3* and *Oxford EAP*. However, there was a significant difference in the variety of abilities targeted in the various exercises as is evident from the above analysis. This finding confirms that of Ramanathan and Kaplan (1996) that "there appears to be little agreement between these textbooks as to which specific skills [i.e. generalizable abilities] comprise critical thinking" (p. 235). Moreover, the few generalizable abilities that were targeted in *Oxford EAP,* such as judging value judgments, were never accompanied by explicit instructions. On the other hand, *Oxford EAP* included many more exercises targeting dialectical thinking. Both *Pathways 3* and *Oxford EAP* lacked exercises targeting subject-specific epistemology, or what counts as a good reason in a particular discipline (McPeck, 1981). The lack of such exercises is rather unsurprising considering that these textbooks are apparently designed for use in EGAP courses. There was also a significant difference between the two textbooks in the role of background knowledge in the application of generalizable abilities.

**Knowledge**

An analysis of critical thinking exercises in three units in *Pathways 3: Reading, Writing, and Critical Thinking* revealed:

- two exercises that required dialogical thinking;

- eight exercise where knowledge was treated as a placeholder; and

- two exercises that seemed to indicate that mastery of knowledge was unnecessary

One example (p. 100) of a dialogic exercise asked learners to discuss their level of agreement with arguments made in the textbook for geotourism and against traditional tourism. This was followed by a discussion among learners of potential arguments for traditional tourism and against geotourism. The preponderant view in *Pathways 3* towards the role of knowledge in critical thinking appears to be that it is either a *placeholder* or that *mastery of it is unnecessary*. For example, one exercise (p. 30) treating knowledge as a placeholder required learners to read statements about detection technology and distinguish fact from speculation. However, an understanding of ideas related to detection technology in the given statements was unnecessary for completing the critical thinking exercises. Learners were arguably able to determine whether a statement was a fact or speculation solely based on the presence of specific lexical items such as *absolutely*, *clear*, and *definitely* for facts and *argue*, *may*, and *claim* for speculations. An exercise that suggests mastery of knowledge is unnecessary was found in the writing module of Unit 5 on the theme of *The Business of Tourism* (p. 112). After analyzing a three-paragraph student essay on the adverse effects of increased tourism on the northwest coast of California, learners were required to determine whether there was

enough support in the body paragraphs for the thesis, namely, that "increased tourism will weaken the local economy and damage the natural beauty of the beaches and the forests" (p. 112). Although this exercise, as well as the accompanying student essay, followed two reading passages and a video on the benefits of geotourism and the harms of traditional tourism, learners had arguably not been provided with sufficient background information regarding the tourism industry or the natural habitat in northwest California to be able to assess critically the writer's thesis. Therefore, requiring learners to judge the strength of such a complex argument despite potentially insufficient background knowledge is indicative of the informal logic approach's attitude that mastery of subject-specific knowledge is unnecessary for the assessing of everyday issues (McPeck, 1984). Again, considering the EGAP orientation of *Pathways 3*, such a finding is rather unsurprising as it is unlikely that subject-specific knowledge may be developed without sustained content.

An analysis of critical thinking exercises in reading and writing modules in three units of *Oxford EAP: Upper-Intermediate* revealed:

- eight exercises required dialogical thinking;

- one exercise where knowledge was deemed to be a *placeholder*; and

- two exercises, which implied that subject-specific *mastery is unnecessary*.

Discussing views and arriving at conclusions through dialogical thinking were prominent features of the sampled exercises in *Oxford EAP*. Dialogues generally took the form of group discussions about learners' views about a particular value judgment. For example, one exercise required learners to discuss their level of agreement with statements "about

how people respond to other people and situations in their lives" (p. 186). While there were examples of knowledge being treated as a placeholder and implications that subject-specific mastery of knowledge is unnecessary, these did not seem to figure prominently in the textbook. The lack of such concepts is likely because the sampled exercises were generally independent of the subject-specific knowledge contained in the reading passages. For example, the critical thinking exercise in the reading module of Unit 2 was related to reading strategies, while the following reading passage was about the trophic levels in food chains. Likewise, in Unit 7, the sampled exercise in the reading module targeted evaluating definitions of culture, while the reading passage that followed was about specific examples of cultural practices.

Pathways 3 and Oxford EAP represent two distinct approaches to the issue of subject-specific background knowledge and critical thinking. While the critical thinking exercises in Pathways 3 were largely based on thinking about specific content mentioned in reading passages preceding the exercises, Oxford EAP seemed to avoid the issue of background knowledge altogether by premising critical thinking exercises on learners' personal opinions, or reflective judgments, about value statements. As such, critical thinking exercises were usually mentioned before the reading rather than after, as was the case with Pathways 3. Both textbooks appear to shirk the epistemological approach to background knowledge. Thus, the textbooks' critical thinking exercises were not based on thorough disciplinary knowledge, but on fragmentary knowledge or personal reflection.

**Society**

An analysis of exercises labelled critical thinking in three units in *Pathways 3* revealed two exercises deemed to be *socio-critical*. The analysis, however, did not detect any exercises targeting *ideological detoxification* or *challenging the status quo*, two important concepts in the critical pedagogy approach to critical thinking (see [Critical Thinking section](#)). For example, one critical thinking exercise required learners to judge how well or poorly managed the tourist destinations in their locality are. A second critical thinking exercise required learners to make inferences related to the cultural self-determination of Australian Aboriginals vis-à-vis tourists and tourism.

An analysis of critical thinking exercises in the reading and writing modules in three units of *Oxford EAP* revealed three exercises deemed to be socio-critical. Again, there were no instances of ideological detoxification or challenging the status quo. For example, one exercise required learners to examine definitions of culture and then to discuss their personal definitions of culture. Another exercise required learners to evaluate and discuss value statements regarding the behaviour and attitudes of cultural groups vis-à-vis poverty, business, social interaction, punctuality, etc.

Both *Pathways 3* and *Oxford EAP* shirked the agenda of socio-political (i.e. neo-Marxist) transformation, which is the foundation of the critical pedagogy approach to critical thinking.

The above description of the research findings delineated the preponderant approaches to critical thinking in two EAP textbooks, and, therefore, was an essential step towards answering the overall research question. Grounded in these findings, the following section will provide a comprehensive response to this study's overall research

question, namely, *to what extent are the approaches to critical thinking in popular EAP textbooks related to the major approaches to critical thinking in the theoretical literature?*

## Discussion

As noted at the beginning of this chapter, three central themes emerge from the findings reported in this study.

- *luscious, round and meaningless;*

- *the trivial pursuit theory of knowledge;* and

- *accommodationist critical thinking.*

### Luscious, Round, and Meaningless

Borrowing an expression used by Fowler (1922) to describe the usage of the progressive shibboleth of *creative*, the first theme was labelled *Luscious, round, and meaningless,* in other words, aesthetically appealing, but semantically empty. This phrase accentuates the loose application of the term critical thinking evidenced in the textbook analysis. This loose application arguably stems from the misalignment of critical thinking approaches in EAP textbooks with the theoretical literature. In other words, the textbooks labelled as critical thinking, skills that were not labelled as such in the theoretical literature, particularly Ennis's Taxonomy (1987). Such discrepancies stretch the semantic parameters of critical thinking, to the verge of rendering it meaningless.

The three approaches to critical thinking discussed in this study, namely, informal logic, epistemological, and critical pedagogy, have variously demarcated what constitutes

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critical thinking and by implication what does not.  Grounded in these demarcations, top-down concept codes were developed, which together encapsulate the significant characteristics of critical thinking found in each of the three major approaches (see Tables 6).  However, the critical thinking exercises in *Pathways 3* and *Oxford EAP* went beyond the literature-based concept codes (see Table 7); therefore, they did not align completely with either of the major critical thinking approaches.  Consequently, exercises related to *literal level comprehension, language skills, higher order thinking, study skills,* and *personal reflection*, generally not considered to be critical thinking in the theoretical literature (see Critical Thinking Research section), but labelled as such in the textbooks, were identified in one or both of the sampled textbooks a total of 36 times.

An example of a purported critical thinking exercise targeting literal level reading comprehension was found in Unit 2 (p. 40) of *Pathways 3*.  As per the label, this exercise ostensibly targeted the skill of inferring attitude by requiring students to discuss questions about an author's intentionality.  However, a closer examination revealed that the answers to the questions were explicitly mentioned in the reading passage, thereby targeting literal level understanding rather than inferencing.  Bringing to light this instance of mislabelling is important because literal level reading comprehension has not been identified as critical thinking in the theoretical literature (e.g. D'Angelo, 1971).

An example of a purported critical thinking exercise targeting language skills, namely grammar, was found in Unit 10 (p. 220) of *Pathways 3*.  This exercise targeted the ability to identify the various purposes for the use of adverbials.  Students were required to examine first the adverb clauses and phrases underlined in a previous exercise and then to identify the purpose (i.e. when, why, or how) of the adverbials in relation to

the main clause.  Although this exercise was labelled as *Critical thinking, Identifying*

*purpose,* it is questionable whether this exercise targeted the generalizable critical

thinking ability to infer purpose, which Ennis (1987) refers to under the heading "Making

material inferences"  in the context of an argument, and which includes inferences about

assumptions and attitudes.  Moreover, it is unclear how this exercise related to critical

thinking any more than a similar exercise labelled only as *Identifying adverbial phrases*,

which was found later in the same unit (p. 227).  As such, by stretching the notion of

inferring purpose, beyond the parameters stated in the critical thinking literature (e.g.

Ennis, 1987), an otherwise grammar exercise (i.e. language skill) was arguably

mislabeled critical thinking by the publisher.

Exercises targeting study skills appeared four times in *Oxford EAP*.  These

exercises include *identifying reading strategies* (p. 24), *analyzing an essay title* in order

to *generate ideas* about possible topics (p. 109), *annotating a paragraph* (p. 189), and

*creating an action plan* for improving academic writing skills (p. 194).  These purported

critical thinking abilities appear to be far removed from those delineated by Ennis (1987).

Rather than reflecting a critical thinking approach, these exercises more appropriately

reflect the study skills approach to EAP, which presupposes a standard set of discrete

skills related to academic communication (Storch et al., 2016).

Many of the critical thinking exercises that were analyzed in *Pathways 3* and

*Oxford EAP* appear to have conflated critical thinking and the upper cognitive domains of

Bloom's Taxonomy (Bloom et al., 1956), namely, analysis, synthesis, and evaluation (see

Appendix B).  A total of 18 exercises in both textbooks were identified as belonging to

this category, with 13 in *Pathways 3* alone.  As indicated by Ennis (1987), Bloom's

hierarchy of cognitive skills is much too vague and lacking in criteria to be useful as a

critical thinking approach.  Moreover, as also indicated by Ennis's critical thinking

taxonomy, not all instances of analysis, synthesis, and evaluation may be considered as

critical thinking.  Instead, it is when these cognitive skills are used in the context of

problem-solving and argument analysis, and when the goal is deciding on what to believe

or do, that it may be considered critical thinking.  However, the EAP textbooks, which

were analyzed for the present study, had arguably used these skills outside of problem-

solving and argument analysis contexts and were devoid of the goal of "deciding what to

believe or do" (Ennis, 1987, p. 10).  For example, in one purported critical thinking

exercise in *Oxford EAP* (p. 189), learners were required to work in pairs and share their

annotated paragraphs.  Learners then evaluated the effectiveness of their annotations

based on three criteria.  Such an exercise is clearly removed from the context of argument

analysis.  Likewise, in another critical thinking exercise (p. 194), learners evaluated their

action plan.  These exercises are indicative of the cognitive skill of evaluation as it

appears in Bloom's Taxonomy, rather than evaluation as it appears in Ennis's taxonomy.

The cognitive skill of synthesizing was conflated with critical thinking quite

frequently in *Pathways 3*.  For example, in one exercise (p. 32) learners used information

gathered from the article *Tech Detectives* and the video *Columbus DNA* to answer the

question, "How has technology allowed us to discover things that we could not know

before?"  Similar exercises targeting the broad skill of synthesizing appeared throughout

the book.  Likewise, the skill of analysis was conflated with critical thinking in *Pathways

3*.  For example, one exercise (p. 229) required learners to apply the skill of analyzing

narratives for basic elements, namely, perspective (i.e. first, second, third person),

conflict, plot, and resolution, to a reading passage in the unit. A similar exercise later in the unit (p. 232) required learners to apply the skill of essay analysis to a narrative essay by identifying the thesis statement, main character, setting, conflict, plot, summary statement, and resolution.

The above observations suggest that many of the purported generalizable critical thinking abilities targeted in *Pathways 3* and *Oxford EAP* depart significantly from those abilities mentioned in the literature, namely, in Ennis's (1987) taxonomy of critical thinking. The conflating of critical thinking and Bloom's Taxonomy is also found in several recent empirical studies of critical thinking in ESL or EAP textbooks (e.g. Gordani, 2010; Mizbani & Chalack, 2017; Ulum, 2016). On the other hand, the conflating of language and study skills and critical thinking has not been addressed in previous studies of critical thinking in ESL or EAP textbooks (e.g. Azizi & Talebinejad, 2012; Birjandi & Alizadeh, 2013; Ramanathan & Kaplan, 1996; Sobkowiak, 2016; Talebinezhad & Matou, 2012). This gap is likely due to a conceptual limitation in these studies' top-down coding analysis wherein critical thinking exercises were identified based on a fixed framework rather than what the textbooks themselves identified as critical thinking.

These instances of mislabeling exercises as critical thinking, and thereby misaligning with the major critical thinking approaches in the theoretical literature, provide grist for the anti-textbook argument that textbooks writing often invites material that is commercially viable rather than theoretically valid, leading to the overrepresentation of writers' intuition in textbook development (Harwood, 2005). In other words, by mislabeling exercises, the number of purported critical thinking exercises

multiply, thereby giving a false impression (to potential buyers) of the frequency of such exercises in the textbook.[3]

**Trivial Pursuit Theory of Knowledge**

A chief criticism of the informal logic approach to critical thinking is that it relies too heavily on generalizable abilities at the expense of subject-specific knowledge (McPeck, 1981).  This dilemma has been characterized as the trivial pursuit theory of knowledge (McPeck, 1994).  In other words, arguments may be evaluated, and problems may be solved, despite a lack of subject-specific knowledge, so long as one has expertise in generalizable abilities (i.e. informal logic).  What this has amounted to is the simplification of everyday problems and the promotion of "superficial opinion masquerading as profound insight into complex public issues" (McPeck, 1982, p. 222).

Some of the critical thinking exercises in *Pathways 3* and *Oxford EAP* appear to support the trivial pursuit theory of knowledge by either oversimplifying complex social issues, such as the socio-cultural ramifications of the tourism industry, or overly relying on learners' putative background knowledge.  While the former phenomenon has been observed in an earlier textbook analysis study (Ramanathan & Kaplan, 1996), the latter has not.  However, this latter approach of exclusively depending on learners' prior knowledge does appear to resemble the pedagogical approach used by Galetcaia and Thiessen (2010).  Following Atkinson (1997), the researchers assert that because critical

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[3] It is important to mention that this discussion of mislabeling exercises has no bearing on the importance of particular skills to language learners or the appropriateness of including such exercises in EAP textbooks.  Instead, the scope of this discussion is limited to whether such exercises constitute critical thinking exercises.

thinking, particularly as expressed in academic writing, is social practice, students cannot be initiated into it through explicit instruction, but rather, through a cognitive apprenticeship model where students learn critical thinking through guided engagement with it in motivating real-world contexts.  In a similar fashion to Galetcaia and Thiessen's (2010) pedagogical approach, the exercises in *Oxford EAP* seem to be focused on inducting learners into the social practice of critical thinking, rather than instructing them explicitly on using critical thinking skills in academic contexts.  This cognitive apprenticeship approach may explain the lack of explicit instruction, as well as academic content, accompanying critical thinking exercises in *Oxford EAP*.

It appears that the trivial pursuit theory of knowledge is unavoidable in general EAP textbooks inasmuch as these textbooks are organized around several disparate themes (see Tables 2 and 3).  While there have been attempts at offering sustained-content within a general EAP context (e.g. Liaw, 2007; Pally, 1997; Yang & Gamble, 2013), it is difficult to conceive of how a general EAP textbook that can deliver the deep subject-specific knowledge, which according to McPeck (1981) is essential for critical thinking about complex social issues.

This quandary over subject specificity represents a general-specific debate (general vs. subject specific critical thinking) within a general-specific debate (i.e. EGAP vs. ESAP).  Therefore, it might be useful to understand the issue of subject-specific background knowledge and critical thinking in relation to the debate in EAP, both of which have been highlighted in Chapter 2, Literature Review.  In particular, two manifestations of the trivial pursuit theory of knowledge in *Pathways 3* and *Oxford EAP* seems to support a key argument in favour of specific EAP (ESAP), namely, the

argument that the meanings of language forms are highly contextualized; therefore, "what counts as a convincing argument… is managed for a particular audience" (Hyland, 2016, p. 21).  This statement corresponds to McPeck's (1982) assertion that the "straightforward [subject-specific] semantic dimension of the assessment of statements and arguments… is the most important for critical thinking" (p. 220).  Therefore, the generalizable critical thinking abilities taught in *Pathways 3* and *Oxford EAP* may fail to transfer to other academic contexts inasmuch as learners are ill-equipped with discipline-specific semantic knowledge.

**Accommodationist Critical Thinking**

Critical pedagogues within EAP/ESL (e.g. Benesch 2001, Canagarajah, 2005; Pennycook, 1999) and without (e.g. Freire, 2000; Giroux, 1994) view critical thinking not so much as a repertoire of cognitive abilities (i.e. informal logic approach) or mastery of disciplinary knowledge (i.e. epistemological  approach), but as a particular stance towards  power inequalities and social injustices.  Thus, in the critical pedagogy perspective, critical thinking becomes thinking that is critical of the status quo.  This type of critical thinking is often practiced in the classroom through dialectical class discussions of controversial socio-political issues.  This transformative agenda is evident in some of the empirical research in critical thinking in EAP (e.g. Benesch, 1999; Pally, 1997; Thompson, 2002).  In addition, it is evident in the freshman composition textbooks studied in Ramanathan and Kaplan (1996).  In the latter study, the researchers argued that such an approach is problematic as it assumes of students a certain level of (Western) cultural knowledge, which may be lacking.

The analysis of *Pathways 3* and *Oxford EAP* revealed slightly different results under the category of society.  Although both textbooks seemed to avoid explicit efforts towards ideological detoxification, the critical thinking exercises in *Pathways 3* indicated a greater openness towards the assumptions of critical pedagogy.  This is not indicated by the skills or explicit instruction found in the textbook but by some of the discussion topics.  For example, Unit 5, *The Business of Tourism,* included two readings and a student essay, which were critical of the socio-economic exploitation of developing countries by large tourism companies.  These readings served as the background knowledge for several critical thinking exercises related to argument analysis and evaluation.  However, it appears that these critical thinking exercises, despite their ideological insinuations, fall short of the transformative agenda of critical pedagogues.  In other words, these exercises fall short of questioning the socio-political edifice behind certain prevailing trends.  This shortcoming also confirms Barnett's (as cited in Moon, 2008) assertion that critical thinking in tertiary education serves an instrumental agenda of creating a useful workforce rather than ameliorating learners' self-development.

The above discussion would indicate that EAP textbooks suffer a similar disposition towards accommodation that some critical pedagogues would claim of EAP (e.g. Benesch, 2001).  As such, it indicates that the critical thinking approaches used in EAP textbooks are concerned with induction into rather than the transformation of the *canons* of academic genres.  From a Kuhnian perspective, this dilemma would appear to reiterate the oxymoron inherent in the critical thinking textbook: Textbooks function to further entrench *normal science*, or the status quo of knowledge in a given field (Apple, 1992; Bondi, 2016; Kuhn, 1970; Myers, 1992), whereas critical thinking—according to

critical pedagogues—is about challenging and transforming this very status quo (Benesch 2001, Canagarajah, 2005; Freire, 2000; Giroux, 1994; Pennycook, 1999).  Viewing critical thinking in EAP textbooks from these two lenses, namely, critical pedagogy and Kuhnian, would seem to add to Harwood's (2005) list of anti-textbook criticisms a fifth criticism: EAP textbooks are incapable of teaching critical thinking insofar as they represent officially sanctioned knowledge.

**Chapter Five: Conclusion**

This study aimed to determine the relationship between critical thinking approaches in two EAP textbooks and the theoretical literature on critical thinking. To this end, concept codes relating to the significant characteristics of three prominent critical thinking approaches, and supported by a review of the critical thinking literature, were developed and then used to analyze sample units from the *Pathways 3* and *Oxford EAP* textbook series. Although this analysis revealed many instances of overlap between critical thinking in the EAP textbooks and critical thinking in the theoretical literature, this was overshadowed by a significant number of discrepancies between the two. The significance of both these observations was discussed in relation to the critical thinking literature as well as the EAP literature. In addressing this study's overall question, it appears that there is an uneasy relationship betwixt critical thinking approaches in the literature and the sampled EAP textbooks.

The key points addressed in the Discussion section were the following:

- the EAP textbooks' misalignment with critical thinking approaches in the theoretical literature bolstered the anti-textbook argument that EAP textbooks lack a scholarly basis (Harwood, 2005);

- the lack of concern for disciplinary knowledge and reasoning by favouring generalizable abilities and downplaying the importance of mastery of knowledge, when viewed in light of McPeck's (1994) trivial pursuit theory of knowledge, would seem to support the argument for ESAP (Chapman, 2001); and

- the apparent absence of an agenda of socio-political transformation, from the critical pedagogy perspective (e.g. Benesch, 2001), would indicate that EAP textbooks perpetuate accommodationist ideology insofar as critical thinking exercises *unquestioningly* induct learners to postsecondary institutional norms and practices.

**Limitations**

As may be expected of a textbook analysis research of this nature, a number of limitations should be acknowledged.  Firstly, the top-down critical thinking concept codes, despite being derived from the scholarly literature, were not validated by critical thinking experts.  Secondly, the sample size was rather small; a larger sample size could have included additional EAP textbooks with an explicit critical thinking focus, such as *Critical Reading: English for Academic Purposes* (Pattison, 2015) and the *Learning English for Academic Purposes (LEAP)* series (Beatty & Williams, 2012).  A third limitation relates to the sampling method.  Longitudinal sampling method may have revealed important differences between textbooks over a span of several decades (Pingel, 2010).  A fourth limitation is that the textbook analysis focused almost entirely on exercises that were labelled critical thinking rather than all exercises in the sampled units.  As such, it is possible that an analysis of *all* exercises would have revealed another picture of critical thinking different from that which was presented above.  Lastly, it may be said that findings from textbook analysis research offer an inherently narrow understanding of what is happening in classrooms. While textbooks give an idea of what is intended to happen in classrooms, they cannot tell the whole story (Cortazzi & Jin,

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1996).  Therefore, critical thinking approaches in textbooks should be viewed in relation to EAP teachers' and students' understandings of critical thinking.

**Implications**

With these limitations in mind, the findings of this research indicate several implications for both EAP research and practice.  Firstly, EAP textbooks should seek to align the abilities targeted in critical thinking exercises with those identified in the theoretical literature, thereby strengthening their scholarly credibility and checking the alleged overrepresentation of writers' intuition in textbook development (Harwood, 2005).  In both *Pathways 3* and *Oxford EAP*, this alignment may at least partially be achieved by scrupulously relabeling critical thinking exercises that do not target the critical thinking abilities identified in the critical thinking literature (e.g. Ennis, 1987). As such, those exercises more properly related to literal level understanding, language and study skills, higher order thinking (i.e. Bloom's Taxonomy), and personal reflection, should be labelled accordingly.  This relabeling would offset the apparent tendency in *Pathways 3* and *Oxford EAP* to assimilate rather than integrate critical thinking to the underlying EAP pedagogical approach informing the textbook series, namely study skills and academic socialization (Storch et al., 2016).

A second implication is that the issue of general and specific EAP should be reconsidered in light of the research on the role of subject-specific knowledge and critical thinking.  As indicated by the literature review, the general-specific debate in EAP has centred mainly on the broader issue of knowledge transfer vis-à-vis the discrete skills and features of language (Hyland, 2016) rather than critical thinking skills.  If McPeck (1981) is not mistaken in his assertion that critical thinking "can only be taught as part of a

specific subject and never in isolation" (p.158), then the two EAP textbooks that have been examined, by evidently targeting an EGAP rather than an ESAP audience, are ineffective in promoting the transfer of critical thinking skills inasmuch as the textbooks lack subject-specific instruction (Bensley, 2011) and apparently subscribe to a dubious "common core hypothesis" (Bloor & Bloor, 1986, as cited in Flowerdew & Peacock, 2001a, p. 16) vis-à-vis critical thinking. Therefore, the overrepresentation of generalizable critical thinking abilities at the expense of disciplinary reasoning indicates that further research is warranted on the matter of integrating subject-specific epistemology in ESAP textbooks towards promoting the transfer of critical thinking beyond EAP courses.

A third implication is that EAP textbooks should consider the role of cultural critique and socio-political transformation in relation to critical thinking exercises. From the critical pedagogy perspective, the EAP textbooks examined in this study, by betraying a lack of interest in the agenda of critical pedagogy, support accommodationist ideology (Benesch, 1993). Therefore, the integration of the critical pedagogy approach to critical thinking into EAP textbooks may enhance students' awareness of contemporary socio-political injustices and promote the deconstructing of knowledge and facts rather than seeking to identify them (Giroux, 1994). More practically, such an approach entails that the content of EAP textbooks is more explicitly concerned with ideological detoxification (Brookfield, 2015). Such changes would help to align EAP textbooks with CEAP.

Following several critical thinking researchers' efforts towards a unified conceptualization of critical thinking (e.g. Bailin, et al., 1999; Fasko, 2003; Halonen, as cited in Fasko, 2003; Moon, 2008), a final implication is that EAP researchers and

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practitioners, particularly in EGAP contexts where comparable EAP textbook series are used, should strive to develop a more comprehensive and dynamic approach to critical thinking. Such an approach would attempt to addresses debates within the scholarly literature on critical thinking while upholding the principles of EAP (e.g. Hyland, 2016). Furthermore, such an approach would be *holistic* inasmuch as it borrows features from all three major critical thinking approaches, and it would be *dynamic* insofar as it addresses the context-specific exigencies of the EAP classroom vis-à-vis the student, the teacher, and the material. Such an approach may be predicated on the following four heuristic assumptions regarding critical thinking, which are based on the informal logic, epistemological, and critical pedagogy approaches:

1) generalizable critical thinking abilities exist (Ennis, 1987; Paul & Elder, 2016),

2) the focus of instruction should be disciplinary knowledge taught through discussion and debate (McPeck, 1981, 1990b),

3) the goals of critical thinking should be broadening learners' worldview (Paul & Elder, 2016), and

4) bringing about greater social-justice through transformation (Benesch, 2001).

However, in order that a holistic approach to critical thinking is well integrated into the exigencies of EAP classrooms that use textbook series similar to those sampled in this study, the following three assumptions vis-à-vis EAP textbooks should be considered:

1) the critical thinking labels should be scrutinized,

2) the background knowledge required to complete critical thinking exercises may be lacking, and

3) exercises may fail to promote learners' critical engagement with the status quo.

The critical thinking lessons developed by Pally (1997), and to a lesser extent Yang and Gamble (2013) and Thompson (2002), may serve as useful models towards developing an EAP-centred, *holistic-dynamic* approach.

The present dearth of empirical studies of critical thinking in EAP warrants further research into two areas: how feasible and effective might a holistic-dynamic approach be, particularly, from a transfer perspective; and how such an approach may best be implemented, *if at all*, in various EAP contexts, including EGAP and ESAP. However, given the interplay between teachers, students, and materials (Allwright, as cited in Hutchinson & Torres, 1994, p. 317) such research must necessarily address other issues, not the least of which, is the classroom level challenges faced by EAP practitioners and students.

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Appendix A

Ennis's Taxonomy of Critical Thinking Abilities

Adapted from Ennis (2011, p. 2-4)

**1. *Focus on a question:***
a. Identify or formulate a question
b. Identify or formulate criteria for judging possible answers
c. Keep the question and situation in mind

**2. *Analyze arguments:***
a. Identify conclusions
b. Identify reasons or premises
c. Ascribe or identify simple assumptions (see also ability 10)
e. Identify and handle irrelevance
e. See the structure of an argument
f. Summarize

**3. *Ask and answer clarification and/or challenge questions, such as:***
a. Why?
b. What is your main point?
c. What do you mean by that?
d. What would be an example?
e. What would not be an example (though close to being one)?
f. How does that apply to this case (describe a case, which appears to be a counterexample)?
g. What difference does it make?
h. What are the facts?
i. Is this what you are saying:_____?
j. Would you say more about that?

**4. *Judge the credibility of a source. Major criteria (but not necessary conditions):***
a. Expertise
b. Lack of conflict of interest
c. Agreement with other sources
d. Reputation
e. Use of established procedures
f. Known risk to reputation
g. Ability to give reasons
h. Careful habits

**5. *Observe, and judge observation reports. Major criteria (but not necessary conditions, except for the first):***

a. Minimal inferring involved

b. Short time interval between observation and report

c. Report by the observer, rather than someone else (that is, the report is not hearsay)

d. Provision of records

e. Corroboration

f. Possibility of corroboration

g. Good access

h. Competent employment of technology, if technology applies

i. Satisfaction by observer (and reporter, if a different person) of the credibility criteria in Ability # 4

**6. *Deduce, and judge deduction:***

a. Class logic

b. Conditional logic

c. Interpretation of logical terminology, including

(1) Negation and double negation

(2) Necessary and sufficient condition language

(3) Such words as "only", "if and only if", "or", "some", "unless", and "not both"

d. Qualified deductive reasoning

**7. *Make material inferences (roughly "induction"):***

a. To generalizations.

Broad considerations:

(1) Typicality of data, including valid sampling where appropriate

(2) Volume of instances

(3) Conformity of instances to generalization

(4) Having a principled way of dealing with outliers

b. To explanatory hypotheses:

(1) Major types of explanatory conclusions and hypotheses:

(a) Specific and general causal claims (b) Claims about the beliefs and attitudes of people

(c) Interpretation of authors' intended meanings

(d) Historical claims that certain things happened (including criminal accusations)

(e) Reported definitions

(f) Claims that some proposition is an unstated, but used, reason

(2) Characteristic investigative activities (a) Designing experiments, including planning to control variables

(b) Seeking evidence and counterevidence, including statistical significance

(c) Seeking other possible explanations (3) Criteria, the first four being essential, the fifth being desirable

(a) The proposed conclusion would explain or help explain the evidence

(b) The proposed conclusion is consistent with all known facts

(c) Competitive alternative explanations are inconsistent with facts

(d) A competent sincere effort has been made to find supporting and opposing data, and alternative hypotheses

(e) The proposed conclusion seems plausible and simple, fitting into the broader picture

**8. *Make and judge value judgments***
Important factors:
a. Background facts
b. Consequences of accepting or rejecting the judgment
c. Prima facie application of acceptable principles
d. Alternatives
e. Balancing, weighing, deciding

**9. *Define terms and judge definitions, using appropriate criteria***
a. Definition form. (1) Synonym (2) Classification (3) Range (4) Equivalent-expression (5) Operational (6) Example and non-example
b. Definitional functions (acts) (1) Report a meaning (criteria: the five for an explanatory hypothesis) (2) Stipulate a meaning (criteria: convenience, consistency, avoidance of impact equivocation) (3) Express a position on an issue (positional definitions, including "programmatic" and "persuasive" definitions)
c. Content of the definition d. Identifying and handling equivocation

**10. *Attribute unstated assumptions (an ability that belongs under both basic clarification (2b) and inference (7b1f)***
a. Pejorative flavor (dubiousness or falsity): commonly but not always associated to some degree with the different types.
b. Types: (1) Presuppositions (required for a proposition to make sense) (2) Needed assumptions (needed by the reasoning to be at its strongest, but not logically necessary

**11. *Consider and reason from premises, reasons, assumptions, positions, and other propositions* with which they disagree or about which they are in doubt, without letting the disagreement or doubt interfere with their thinking ("suppositional thinking")**

**12. *Integrate the dispositions and other abilities in making and defending a decision***

**13. *Proceed in an orderly manner appropriate to the situation:***
a. Follow problem solving steps
b. Monitor their own thinking
c. Employ a reasonable critical thinking checklist

**14. *Be sensitive to the feelings, level of knowledge, and degree of sophistication of others***

**15. *Employ appropriate rhetorical strategies in discussion and presentation (oral and written), including employing and reacting to "fallacy" labels in an appropriate manner.***

Appendix B

Bloom's Taxonomy of Educational Objectives (Analysis, Synthesis, and Evaluation)

Adapted from Bloom, et. al, (1956 p. 205-207)

I.    **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. Such analyses are intended to clarify the communication, to indicate how the communication is organized, and the way in which it manages to convey its effects, as well as its basis and arrangement.

      a.  ANALYSIS OF ELEMENTS: Identification of the elements included in a communication.
         *The ability to recognize unstated assumptions.
         *Skill in distinguishing facts from hypotheses.

      b.  ANALYSES OF RELATIONSHIPS: The connections and interactions between elements and parts of a communication.
         *Ability to check the consistency of hypotheses with given information and assumptions.
         *Skill in comprehending the interrelationships among the ideas in a passage.

      c.  ANALYSIS OF ORGANIZATIONAL PRINCIPLES: The organization, systematic arrangement, and structure which hold the communication together. This includes the "explicit" as well as "implicit" structure. It includes the bases, necessary arrangement, and the mechanics which make the communication a unit.
         *The ability to recognize form and pattern in literary or artistic works as a means of understanding their meaning.
         *Ability to recognize the general techniques used in persuasive materials, such as advertising, propaganda, etc.

II.   **SYNTHESIS:** The putting together of elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc., and arranging and combining them in such a way as to constitute a pattern or structure not clearly there before.

      a.  PRODUCTION OF A UNIQUE COMMUNICATION The development of a communication in which the writer or speaker attempts to convey ideas, feelings, and/or experiences to others.

*Skill in writing, using an excellent organization of ideas and statements.
*Ability to tell a personal experience effectively.

b. PRODUCTION OF A PLAN, OR PROPOSED SET OF OPERATIONS The development of a plan of work or the proposal of a plan of operations. The plan should satisfy requirements of the task which may be given to the student or which he may develop for himself.
*Ability to propose ways of testing hypotheses.
*Ability to plan a unit of instruction for a particular teaching situation.

c. DERIVATION OF A SET OF ABSTRACT RELATIONS The development or a set of abstract relations either to classify or explain particular data phenomena, or the deduction of propositions and relations from a set of basic propositions or symbolic representations.
*Ability to formulate appropriate hypotheses based upon an analysis of factors involved, and to modify such hypotheses in the light of new factors and considerations.
*Ability to make mathematical discoveries and generalizations

III. **EVALUATION** Judgments about the value of material and methods for given purposes. Quantitative and qualitative judgments about the extent to which material and methods satisfy criteria. Use of a standard of appraisal. The criteria may be those determined by the student or those which are given to him.

a. JUDGMENTS IN TERMS OF INTERNAL EVIDENCE Evaluation of the accuracy of a communication from such evidence as logical accuracy, consistency, and other internal criteria. *Judging by internal standards, the ability to assess general probability of accuracy in reporting facts from the care given to exactness of statement, documentation, proof, etc. *The ability to indicate logical fallacies in arguments.

b. JUDGMENTS IN TERMS OF EXTERNAL CRITERIA Evaluation of material with reference to selected or remembered criteria. *The comparison of major theories, generalizations, and facts about particular cultures. *Judging by external standards, the ability to compare a work with the highest known standards in its field-- especially with other works of recognized excellence

Appendix C

*Pathways 3: Reading, Writing, and Critical Thinking* Critical Thinking Exercises (Unit 5, pp. 100, 108, 110, 112)

**CT Focus**

Writers often contrast the advantages of an idea that they are arguing for with the disadvantages of an alternative. **Showing the drawbacks of an alternative idea** can strengthen a writer's argument.

**C | Critical Thinking: Analyzing an Argument.** Look at the list of advantages and disadvantages provided in the reading and write each letter (a–f) in the correct place on the lines below.

a. enhances local areas by creating tourist attractions that focus on or preserve the environment and/or historic buildings

b. people spend money that doesn't go to local communities

c. people support the local economy by buying locally made products, eating in local restaurants and staying in local hotels

d. people don't learn about the local culture

e. development (such as large hotels) can ruin natural areas and threaten marine life and wildlife

f. people meet local residents and learn about the cultures of the places they visit

Advantages of Geotourism: _____

Disadvantages of Traditional Tourism: _____

**D | Critical Thinking: Evaluating an Argument.** Discuss these questions in a small group.

1. Do you agree with Tourtellot's arguments regarding geotourism vs. traditional tourism? Can you think of any possible disadvantages of geotourism? Might traditional tourism have any advantages?

2. Which tourist places where you live are well managed or badly managed? Why do you think?

**E | Critical Thinking: Making Inferences.** Discuss the questions with a partner.

1. What message is Anangu Tours giving to tourists by conducting tours in the local language?

2. Why might the Anangu people believe climbing Uluru is against Tjukurpa?

**F | Critical Thinking: Synthesizing.** Discuss how each program in "Geotourism in Action" follows Jonathan Tourtellot's definition of geotourism on page 98.

**G | Discussing Ideas.** Are there things tourists do in your country that local people find disrespectful? Why? Discuss in a small group.

**D | Critical Thinking: Analyzing.** Read the paragraph below about an ecotourism success story. Some information is missing from this paragraph. Match the writer's research notes with a reader's questions about the paragraph. Then rewrite the paragraph, adding the information from the notes.

_____ How did the community benefit?          __c__ How much has disappeared? _____

Kakum National Park, located in the Upper Guinean Rainforest of West Africa, offers one example of the direct benefits of ecotourism. According to the organization Conservation International (CI), much of this rainforest has disappeared. •_____ CI partnered to raise money to make the park more attractive to tourists. •_____ The community benefited as a result of the project. | Afterwards, there were many more visitors to the park. •

_____ How many more visitors were there?

_____ Who did they partner with? _____

_____ How did they make the park more attractive to tourists? _____

**Research notes on Kakum National Park**

a. fewer than 1000 visitors in 1991; 90,000 in 2000

b. local people did the work; the project used local materials

c. more than 80 percent of rainforest has disappeared; cause: deforestation

d. 1990s: CI partnered with various national and international organizations; got money

e. built visitor's center, wildlife exhibitions, restaurants, shops, camping facilities, a special walkway (takes visitors through treetops of rainforest)

**C | Critical Thinking: Analyzing.** Work with a partner. Read the student's essay about the effects of increased tourism in an area of California. Then follow the steps to analyze the paragraphs.

The northwestern coast of California is a very attractive travel destination. Increasing numbers of tourists are visiting this area to hike in the redwood forests and along the white sand beaches. As a result, people who live in this area are very concerned about the effects of mass tourism. Local residents are worried that the increased tourism will weaken the local economy and damage the natural beauty of the beaches and the forests.

If tourists stay at big chain hotels instead of smaller local hotels, and eat only at chain restaurants, then the money they spend for food and lodging goes to businesses that are probably not locally owned. If smaller locally owned businesses aren't successful, they are less able to hire local employees. Consequently, local businesses do not benefit from the increased tourism. In this way, traditional mass tourism can weaken the local economy.

Another effect of increased tourism in the northwestern coast is the destruction of the natural beauty of the beaches and the forest. If too many people visit an area, they can ruin it. They leave garbage everywhere. Garbage makes an area look unattractive, and it also harms the local wildlife. In addition, if companies build chain hotels and restaurants on the beach or in the forest, they will have to remove trees, rocks, and other natural features. If mass tourism is not managed well, it will destroy the local economy, ruin the natural beauty of the area, cause pollution, and harm wildlife.

**Step 1** Underline the thesis statement.

**Step 2** Circle the two reasons in the thesis statement that support the writer's position or opinion on the topic.

**Step 3** Underline the topic sentences in the two body paragraphs.

**Step 4** Circle the key words in each topic sentence that match the key words in the thesis statement.

**Step 5** In the first body paragraph, check (✔) sentences that answer possible reader questions about the main idea of the paragraph. Then do the same for the second paragraph.

**Step 6** Does the writer provide enough support for their position? Are there any other questions a reader might have?

Appendix D

*Oxford EAP: Upper-Intermediate* Critical Thinking Exercises (Unit 7, pp. 104, 108, 109)

## TASK 1 Critical thinking – evaluating definitions

1 Read the three definitions of *culture* and decide which one you prefer, and why.

(1) Culture may be defined as the combination of a number of different but related phenomena, from the observation of people's attitudes, clothing, language, and religion through to their typical behaviour patterns.

2 Culture can be seen as an expression of individuality that emerges from collective and societal norms.

3 Culture varies within and between nations, and comprises a general and identifiable mix of characteristics such as appearance, behaviour, and language.

2 Work in groups. Decide which of the following characteristics you would include in your own definition of *culture*. Add any further characteristics.

attitudes    clothes / dress    ethnicity    language    education    religion    behaviour    diet

3 Write your definition of *culture*, including your selected characteristics from 2. Present your definition to the class, and give reasons for your selection.

## TASK 6 Critical thinking – discussing cultures

1 Look again at the observations about similarities and differences in Tasks 3.1 and 4.1. In pairs, discuss the extent to which you agree with each idea. Give reasons and examples.

2 Prepare a short comparison and contrast of two cultures you are familiar with. Follow the stages below.

1 Decide on the two cultures, including how specific they are, e.g. Latin / South American / Spanish.

2 Decide on two particular aspects, e.g. behaviour, diet.

3 Make notes on the main ideas, including specific examples to illustrate your main points.

3 Work in groups and take turns to present your ideas. Discuss the extent to which you agree.

# TASK 1 Critical thinking - generating ideas

1 Look at the essay title below and select two perspectives from which to compare the careers, e.g. *financial, economic*.

> **TITLE:** *A career in business differs from a career in teaching in several key respects. Compare and contrast these two careers from two different perspectives. How might this comparison influence your own chosen career?*

2 Decide whether each item below relates best to a business career or a teaching career. Try to add at least two additional points to the list. What perspectives (e.g. *financial*) can you use to organize the points?

1 the satisfaction of creating jobs
2 the personal satisfaction of helping children / young people
3 the personal satisfaction of generating wealth in society
4 an opportunity to influence young people's lives
5 an opportunity to travel
6 an impact on society

Coded Data: *Pathways 3: Reading, Writing, and Critical Thinking* (p. 30)

**LESSON A   UNDERSTANDING THE READING**

**A | Identifying Main Ideas.** Which technologies were used in each investigation? Check (✓) the correct columns in the chart below for items 1–3.

| | Leech Solves Robbery Case in Australia | Plant Helps Solve Murder Case in Arizona | Who Killed the Iceman? |
|---|---|---|---|
| 1. X-rays | | | ✓ |
| 2. CT imaging | | | ✓ |
| 3. DNA | ✓ | ✓ | ✓ |
| 4. What evidence gave investigators useful information about the crime? | a *A leech* filled with *blood from the robber* | *DNA from the seed* from a palo verde tree | *An arrowhead in* the Iceman's shoulder; a full *stomach* |

**B | Identifying Key Details.** What evidence was useful to investigators? Complete item 4 in the chart above with information from the reading passage.

*[handwritten margin notes: abilities, explicit instruction, objective truth, Knowledge, philosophical, PHILOSOPHICAL]*

*[handwritten right margin: ① Phil, DEF]*

**CT Focus:** Distinguishing Fact from Speculation

A **speculation** is an opinion or a guess based on incomplete information. To **distinguish fact from speculation**, look for key words. These words usually indicate a fact: *absolutely, clear, definitely, discover, know, prove, show*. These words usually indicate a speculation: *argue, believe, could, may, might, claim, likely/unlikely, opinion, perhaps, probably, speculate, theory*.

**Critical Thinking: Distinguishing Fact from Speculation.** Read these statements about the reading passage. Write **F** for *fact* or **S** for *speculation* next to each one. Circle the words that support your answers.

*[handwritten: Keyword/literal text]*

1. __S__ The detectives (speculated) that the leech (could have) attached itself to one of the robbers.

2. __F__ Analysis (proved) that the truck had (definitely) been to the crime scene.

3. __S__ (Perhaps) the most (likely theory) is that the Iceman was fleeing an earlier battle, but thought he was safe at the moment of his murder.

4. __F__ Wounds on the Iceman's body have made it (clear) he died a violent death. *[handwritten: literal]*

5. __S__ It is (unlikely) he sustained [the wound] in his final days.

*[handwritten: text, ✓]*

**D | Speculating.** What do investigators think probably happened to the Iceman? Do you agree? Can you think of other interpretations of the evidence? Discuss your answers with a partner.

*[handwritten circled note: Philosoph + Def subject specific reasoning]*

Coded Data: *Oxford EAP: Upper-Intermediate* (p. 24)

## 2A Reading Textbooks (1)

When you read an academic text, it is not always necessary to understand every word – often the most important thing is to be able to recognize the information which is most useful to you. Visuals such as diagrams and pictures can help in the recognition and processing of key factual information. In particular, they can help you to predict the content of a text. Diagrams are also useful in extracting and recording relationships between key pieces of information in a text. In texts containing factual information, you will often find typical sentence structures for defining and describing key information. It is important to be able to recognize these, and use them in your own writing.

*[handwritten: Mash]*

**This module covers:**
- Understanding and extracting key factual information in a text
- Recognizing and writing definitions
- Summarizing key factual information in a text

### TASK 1 Critical thinking – discussing reading strategies

*[handwritten: Study skill ED]*

1 Look at the diagrams showing different reading strategies. Which one represents the way you normally read a text in English? *[handwritten: 14 reflection]*
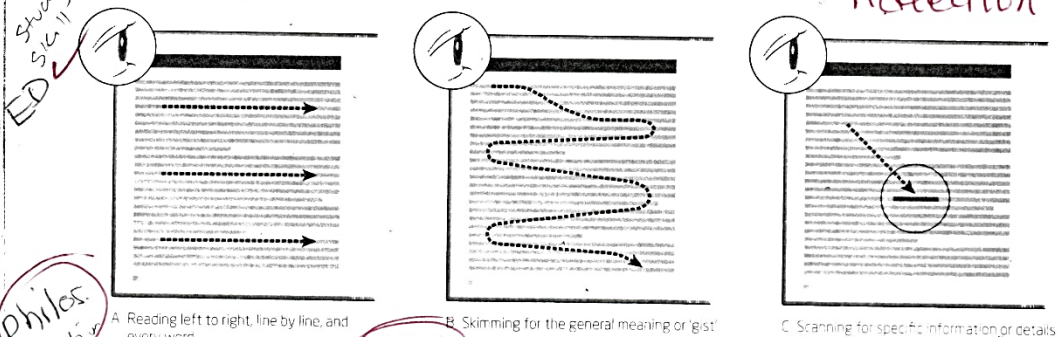
A Reading left to right, line by line, and every word    B Skimming for the general meaning or 'gist'    C Scanning for specific information or details

*[handwritten: Philos. tech]*

2 When would you use each of these strategies, and why? *[handwritten: 15   self generalizable reflection]*

3 Which of the following statements do you agree with? Work in groups and compare your answers.
1 The title can help you with the general content and organization of a text. *[handwritten: SKILL Ed]*
2 To understand a text completely, you must read every word. *[handwritten: Ed logic]*
3 You can skim a text using just the 'content words'. *[handwritten: Ed]*
4 If you know the purpose of a text, it helps you to read more efficiently. *[handwritten: SKILL]*
5 Efficient readers jump around a text and do not always start at the beginning. *[handwritten: PHL]*

*[handwritten left margin: Phil dialect]*

**INDEPENDENT STUDY**
To read efficiently, you need to be able to find your way around a text using a range of strategies.
▸ Which strategy or strategies do you use to read newspapers? *[handwritten: SKILL]*

### TASK 2 Predicting the content of a text

1 Look at the title of the text and the pictures on page 025. *[handwritten: → EDucative: Skill/logic]*
  1 How do the pictures relate to the title *Links in the food chain*? *[handwritten: Ed]*
  2 Can you identify any relationships between the different species shown in the pictures? *[handwritten: Synthesis – meta (Philosophic)]*
  3 Predict at least four points that might be included in the text. *[handwritten: Ed]*
2 Skim the text and check your answers to 1. *[handwritten: Ed]*