Critical thinking in EAP: a brief guide for teachers

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Executive Summary

- Critical thinking is as essential in 21st-century workplaces as it is in the 21st-century university. English for Academic Purposes (EAP), which aims to prepare students to study in English-medium universities, must address students' ability to use English critically so that they can participate effectively in tertiary study.

- EAP students need to develop both critical thinking skills, and a disposition towards critical thinking.

- Critical thinking in EAP is realised in two ways: thinking *about* the language (analysing how English is used to express ideas); and thinking *through* the language (participating actively in using the language to explore and present ideas and arguments).

- Although the genres used to express critical thinking tend to be culture-specific and discipline-specific, critical thinking is basically a universal skill. EAP students need to further develop their critical thinking skills, and learn how to participate in a range of academic genres as both readers and writers. Critical thinking and academic language learning go hand in hand: they are mutually supportive.

- Teachers can use a wide range of thinking tools to help their students develop critical thinking skills and dispositions. In particular, Bloom's taxonomy of thinking skills is a useful framework to assist EAP teachers to incorporate critical thinking into their classes.

- Although teachers may face barriers to teaching critical thinking, there are ways to overcome these barriers. The paper also gives suggestions for how to assess critical thinking in EAP and proposes a number of activities to stimulate critical thinking in EAP classrooms.

Introduction

EAP aims to prepare students for the language and learning demands of study in higher education. Crucial among these demands is the need for critical thinking.

Universities worldwide include critical thinking prominently among the graduate attributes that they aim to engender. However, critical thinking is not a clearly defined concept and many teachers are unsure how to operationalise it in their classrooms (Li 2016). Ennis (2015, p.32) gives an often-cited definition:

> 'Critical thinking is reasonable, reflective thinking that is focused on deciding what to believe or do'

Similarly, Vardi (2013, p.1) proposes that critical thinking is:

> '… a process of reasoning aimed at coming to a sound, justifiable decision, conclusion or judgement'.

These definitions fit well with the broad aim of higher education – to prepare graduates to participate

constructively in social life – which involves decision-making at both a personal and professional level. For example, an engineer may need to decide how wide the span of a bridge should be; a teacher may need to decide how best to present a new concept to the class; an accountant may need to decide how to present the financial situation of a company most usefully. Whether as workers, as citizens, or as members of communities and families, critical thinking helps us to make sound decisions.

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Higher education aims to empower graduates to make context-sensitive, ethical, well-informed decisions in their field of expertise, as well as in everyday life. One of the roles of EAP teachers is therefore to prepare students to become active critical thinkers as they embark on their tertiary study

Why is critical thinking important?

Critical thinking has long been a goal of higher education, but the imperative for critical thinking has become more pressing in modern times due to a number of factors:

Globalisation means that we encounter many different ways of thinking, and different value systems, on a daily basis. We are challenged constantly to decide how to position ourselves in an increasingly complex and dynamic world.

The information revolution means that knowledge is now at our fingertips, but how reliable is all of the information that we can access so readily?

Modernity comes with rapid change. Information is constantly being overtaken by new research that challenges us to accept or decline new practices and adapt dynamically to new ways of thinking and working.

Technology and connectivity is bringing new ways of constructing, presenting and sharing knowledge, and increases the pace of change in our private lives as well as in our working lives. Artificial intelligence is changing the nature of work and requiring practitioners to be ever more inventive and digitally creative.

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*(See The Cambridge Life Competencies Framework https://languageresearch.cambridge.org/clc)

These are the skills that are increasingly valued by employers (World Economic Forum 2018) and also in higher education. EAP teachers can lay the groundwork for their students to succeed in such an environment.

Approaches to critical thinking

Critical thinking has been approached through many different lenses: for example, as logic, as argumentation, as 'reflective thinking' and as metacognition (thinking about thinking). Among the plethora of approaches to critical thinking, Davies and Barnett (2015) have identified three main threads, which can be summarised as:

- critical thinking as reflective thinking skills
- critical thinking as dispositions
- critical thinking as critical pedagogy.

Critical thinking as reflective thinking skills

The most widely used framework for thinking skills is Bloom's taxonomy of thinking skills (Bloom 1956). These skills are commonly represented as a pyramid, with understanding and remembering as the foundation. Critical thinking cannot exist in a vacuum, so accessing and understanding content – sound and reliable knowledge about a particular topic – is essential. This is the first challenge for non-native speakers when reading.

Further, higher-order thinking enables students to apply, analyse and evaluate information, and on this basis to reason and to create new ideas and knowledge. Bloom's taxonomy, and the thinking verbs associated with each skill, can provide EAP teachers with a 'toolkit' to support their incorporation of critical thinking into their classrooms.

In particular, teachers can use Bloom's framework to enhance their use of questions in the classroom (Defianty & Wilson 2019) as a basis for task creation in the four macro skills, and as a basis for assessment rubrics.
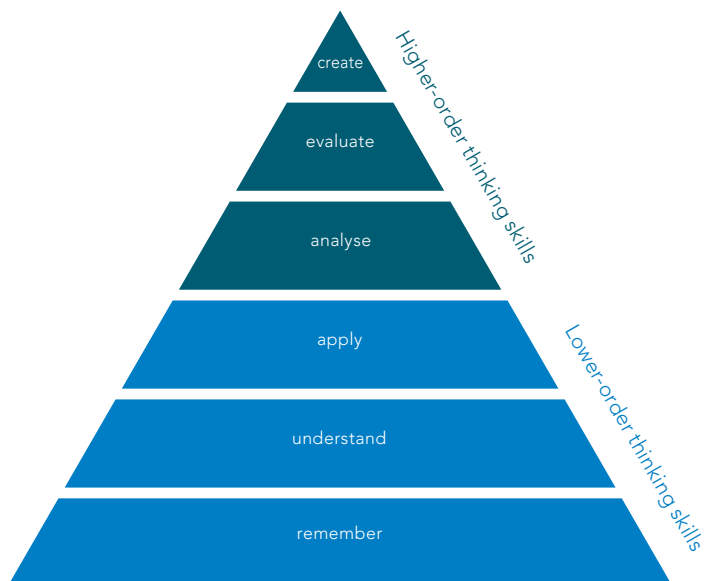
create	synthesise, design, compose
evaluate	assess advantages and flaws, prioritise, choose, justify
analyse	explain, examine, deconstruct, identify assumptions and implications

apply	compare/contrast, exemplify, classify, solve, illustrate
understand	describe, translate, distinguish fact and opinion, remember, identify main ideas, eg. stated reasons, causes, problems
remember	retell, summarise

Figure 1: Bloom's taxonomy of thinking skills

Critical thinking as dispositions

The literature on critical thinking insists that students need more than skills: they need to understand the value of critical thinking and have an interest in and enthusiasm for applying it. While the skills of critical thinking can be expressly taught, dispositions need to be modelled and nurtured so that students increasingly adopt an identity as critical thinkers. Students can be better motivated to participate in critical thinking on topics that they can relate to and if they are given adequate scaffolding. This will allow them to experience the intrinsic rewards of critical thinking.

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The characteristics of critical thinkers include:

- a desire to be well-informed
- curiosity
- open-mindedness
- tolerance of ambiguity
- integrity (taking an ethical position)
- respect for alternative viewpoints
- creativity
- responsibility.

Critical thinking as critical pedagogy

Some authors on critical thinking in EAP, such as Pennycook (1997) and Benesch (2009), have argued that critical thinking involves analysing and resisting the effects of power and oppression in society. These authors often view critical thinking through the lens of paradigms such as feminism, neocolonialism and neoliberalism. EAP teachers need to be aware of the cultural and religious contexts in which they are working and to be sensitive in these areas. Nevertheless, it is arguably the responsibility of EAP teachers to push their students to think and question beyond their comfort zone, and to engage with issues in the modern world (Wallace 2003).

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Some FAQs about critical thinking

Is critical thinking culture-specific?

Some authors, such as Ballard and Clanchy (1988) and Atkinson (1997), have argued that critical thinking is a particularly Western concept, unfamiliar to many international students in Anglophone universities. However, Bloom's thinking skills are universal skills that can be applied by all human beings. Increasingly, these are skills that are valued in education systems worldwide (Li 2016). What varies across socio-historical contexts is the extent to which these skills are overtly privileged in education (Bali 2015), and the culturally-specific genres which are used to embody critical thinking. In some religious and political contexts, critical thinking may be strongly encouraged, yet the topics available for discussion may be proscribed. EAP teachers need to be sensitive to such constraints.

Is critical thinking discipline-specific?

Some authors, such as McPeck (1981), have argued that critical thinking is not transferable between disciplines. Others, such as Moore (2011), confirm that critical thinking skills are generalisable, although they emerge differently in different disciplines. For example, disciplines vary in terms of:

- what kind of questions are asked
- how arguments are presented
- what is valued as evidence
- how sources are incorporated
- how authorial voice is expressed.

Science, for example, which is characteristically focused on cause and effect ('What leads to what?'), used to be taught as 'facts' and written up in a totally objective voice. This tradition is beginning to change and authors can now take a more prominent position in some scientific texts. At university, science students need to be aware that knowledge is rapidly developing and that 'facts' are open to challenge. An alert, questioning mind is essential.

Helping students to identify ways of 'doing' critical thinking in different disciplines is one way to foster a critical thinking mindset.

Is critical thinking teachable?

If critical thinking is a matter of 'dispositions', it could be argued that critical thinking is a personal quality that cannot be taught – perhaps critical thinkers are born, not made. However, Bloom's framework and numerous other 'tools' of critical thinking make it possible to expressly teach critical thinking practices. For example, in teaching students about a particular genre of academic writing, we can empower students with a useful tool or format for critical thinking. A note of caution: if teachers present such critical thinking tools as a set of simple 'rules' or 'recipes', they risk reifying the rules and limiting thinking rather than enabling it.

Harwood and Hadley (2004) argue that the balance between skills and dispositions can be achieved by taking an approach they call 'critical pragmatism', using the tools of critical thinking, such as genre analysis, to realise a critical, reflective position.

Other tools of critical thinking which can be useful in EAP include:

- de Bono's six thinking hats
- Luke's 'four resources' for critical literacy (Luke 2000)
- argument mapping (for example, Dwyer et al. 2014)
- debating (for example, Wilson & Maldoni 2008)
- Nosich's SEE-I (State, Elaborate, Exemplify, Illustrate) (Nosich 2009)
- Project Zero's 'thinking routines' and visible thinking tools (Project Zero 2016).

Does critical thinking apply only at more advanced levels?

EAP classes take place in many different contexts, from high school classrooms through to language support for doctoral students. At every level, critical thinking is essential. Students are usually aware of this, but need overt instruction so that they can see how to apply it (Manalo et al. 2015).

Implementing critical thinking in EAP

Critical thinking is essential to teaching EAP not only because the goal of EAP is to prepare students for higher education, but also because critical thinking has been shown to improve language learning and use, that is, to enhance meaning-making (Bagheri 2015; Yang & Gamble 2013). In fact, language skills and thinking skills are mutually reinforcing.

Critical thinking should be woven through every lesson and every activity in EAP as part of the fabric of what we do.

Critical thinking can be applied in EAP, both in terms of thinking *about* the language itself and in using the language as a medium for thinking about other content, i.e. thinking *through* the language.

Thinking ABOUT the language

A useful way of thinking about language development in EAP is to think of our students as language explorers, delving into how academic language is used and for what purpose. Bloom's taxonomy of thinking skills can be used to explore academic English at multiple levels:

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LINGUISTIC LEVEL	POSSIBLE CRITICAL THINKING QUESTIONS
Vocabulary	Can you **explain** the meaning and connotations of particular words? How do close synonyms **compare** in meaning? What is the **implication** of particular word choices? Which words would you **choose** for a different audience?
Sentence-level grammar	How are particular grammatical structures **applied** in this text – for what **purpose** and with what **effect**? What other grammatical choices are available? Can you **justify** the use of this particular grammatical form? Can you **compare** the use of grammatical forms in different disciplines and different genres and **explain** their purpose?
Discourse	Can you **analyse** how this text is structured and **explain** why? How do similar genres **compare** across and within disciplines? How are citations used to **synthesise** ideas in different disciplines? How would you **evaluate** the evidence that is used in this text? How would you **evaluate** the arguments presented in this text?

Table 1: Applying Bloom's taxonomy of thinking skills to analyse text in EAP

Thinking THROUGH the language

Critical thinking – and academic language – cannot be taught without content. While the language itself is one form of content, students need to put their skills and dispositions into practice in a variety of content-rich contexts.

> ## Students need to put their skills and dispositions into practice in a variety of content-rich contexts.

As students are often grouped in heterogeneous classes of mixed academic aspirations, choosing content can pose challenges for EAP teachers: Which topics? Which disciplines? Which genres? EAP textbooks usually solve this conundrum by tackling a wide range of general content material, using a variety of texts drawn from radio broadcasts and magazine articles, for example. While such texts can afford opportunities for critical reflection, they do not offer the most appropriate models of academic discourse. So, at more advanced levels of EAP, students need to be challenged with authentic academic sources, such as journal articles and textbook chapters, and be expected to write within the expectations of their chosen disciplines. Examples of authentic student writing are particularly useful as models of embodied critical thinking.

Students will be motivated and engaged by topics which are close to their interests and meaningful in their lives, so it is good to encourage them to choose their own material (even if they select material which is very challenging).

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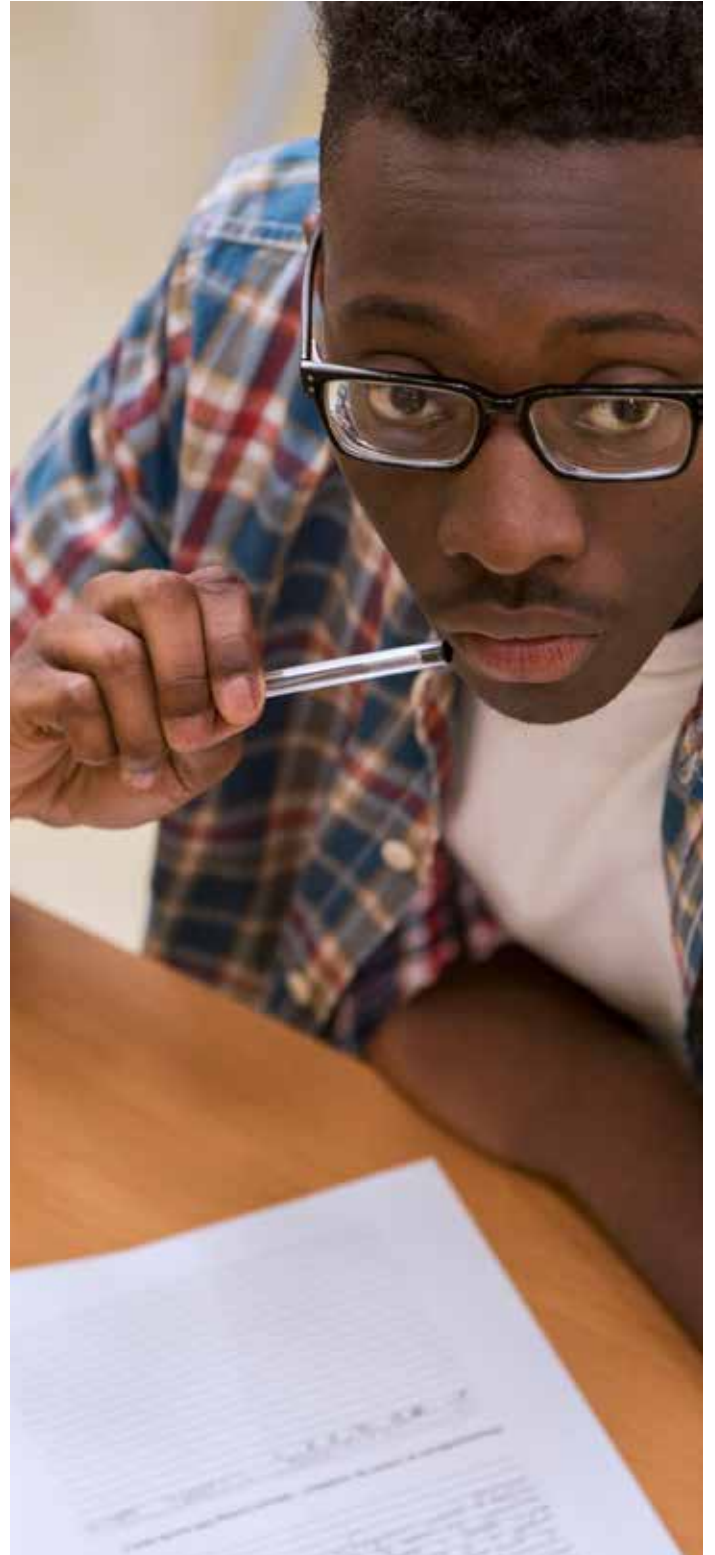
Critical thinking in academic reading and listening

Critical thinking in reading and listening can be understood as a three-stage process, though these stages are not necessarily discrete or linear.

Understanding text

At the most basic level, students need encouragement to listen carefully to what the text is saying. This in itself is a huge challenge for non-native speakers faced with academic texts. EAP teachers are keenly aware of this challenge, but the ability to read with understanding can be taken for granted by university lecturers (and our students will not have us by their side to help them in the future). Our students also need plenty of practice and advice in knowing *what* to read, how to locate appropriate and reliable sources, and how to sift through the myriad of available material for the most suitable texts to use for their academic purposes.

Engaging with text

EAP teachers also need to encourage their students to engage critically with the author's meanings: relating the author's text to what they already know, evaluating the author's arguments, and potentially making shifts in their own position. Teachers need to challenge their students to participate in active dialogue with the text: asking questions of the text, making links, examining the author's reasoning and probing the author's viewpoint.

Externalising from text

Finally, an important and sometimes overlooked part of the critical reading or listening process is to externalise meanings from the text. By voicing and reflecting on their understandings from the text (perhaps in writing, in speaking with others, in making notes, or merely in what Vygotsky (1987) calls 'inner speech') students can begin to participate in the discourse of their discipline.

Throughout this critical reading process, students are learning to appropriate academic language, as well as to extend their own understanding of the topic.
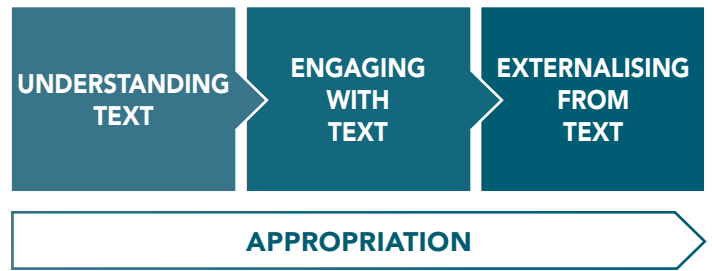

Figure 2: A model of critical thinking in EAP reading

UNDERSTANDING TEXT

Reading for understanding

Working hard to 'hear' the author's arguments and points of view

ENGAGING WITH TEXT

Relating meanings to other texts and your own prior knowledge

Listening for bias, assumption, stance, inference

Constructing and 'owning' new meanings

Examining previously-held views

Considering implications

EXTERNALISING FROM TEXT

Making notes – including both summaries and reflections

Talking/writing about the texts

Using the text to present your own position

Synthesising from a range of texts

Critical thinking in academic writing and speaking

The ability to express ideas and arguments clearly, logically and reflectively is a fundamental aspect of critical thinking. It is through writing and speaking that students both develop and express their critical thinking.

Teachers need to provide careful scaffolding so that students can develop sub-skills such as summarising, comparing two similar texts, linking ideas in an argument and so on. This scaffolding includes the language of critical thinking, for example, transition markers which make thinking visible (e.g. *One reason why...*, *On the other hand*, *Nevertheless*) and attitude markers (e.g. *Interestingly…*, *Without doubt*). Students also need to know how reasoning is organised within texts of different academic genres, for example, the difference between inductive and deductive development of ideas. Generic text structures, such as the 'compare-and-contrast essay', and the 'scientific lab report' can contribute to such scaffolding but should be introduced as a springboard, not a straitjacket.

The genres of academic writing in the 21st century are highly dynamic. The traditional academic essay is giving way to new modes of expressing critical thinking. EAP teachers need to foster their students' sense of audience and purpose in their writing, and introduce new genres for expressing critical thinking, such as:

- blogging
- wiki building
- articles for magazines
- flyers
- reflective journals.

International students are often less prepared for critical speaking than for critical writing. EAP teachers should encourage students to make in-class presentations that are rich in critical thinking and stimulate their audience to think critically too. Pair and group work can become more vibrant when students are engaged in thinking critically about their topic. In addition, EAP students, like university students, can be asked to present podcasts, debates, role-plays, and simulations. These should be assessed not just on the quantity of participation but on the quality of critical thinking that they demonstrate.

Challenges and barriers in teaching critical thinking

Teachers may perceive critical thinking as unfamiliar, too challenging, or even inappropriate given their traditional roles and teaching contexts. However, such barriers can be overcome if teachers adopt a critical thinking orientation as part of their everyday practice. The table below suggests potential barriers and how they can be surmounted.

WHAT IS THE BARRIER?	HOW CAN TEACHERS OVERCOME IT?
A transmission approach to learning Some learners (and some teachers) still regard teaching as transmitting a body of knowledge. They view knowledge as static and quantifiable, and distrust moves towards critical thinking. They may be accustomed to showing respect for their teachers and for knowledge itself (Gunawardena & Petraki 2014). When institutions or heads of departments take this view, teachers' attempts to teach critical thinking can be thwarted. Similarly, students who are accustomed to this view can be very resistant to change.	Usually, resistance is a result of lack of tradition, experience or awareness. Teachers should therefore clearly explain the need for critical thinking and scaffold their learners carefully in order to build their confidence and ability.
A lack of materials Although there are now good, general EAP texts which teach critical thinking, teachers may lack materials that are relevant to their students' needs, interests and disciplines.	Engaging topics with relevance to students' own interests are essential. Difficult texts can be made accessible by using simple, do-able tasks as an introduction. Teachers may like to use the textbook as a starting point, and then locate more relevant local materials. Students can also be asked to find their own sources – with some scaffolding. Choice can stimulate motivation and lead to greater autonomy.
Disciplinary differences Teachers may not be aware of the ways in which critical thinking is realised in disciplines with which they are unfamiliar.	A pragmatic way of resolving this is to train students themselves to become language explorers so that they can learn to identify how critical thinking is 'done' in their own field. What kind of questions are asked? What kind of evidence is used? How do writers engage with readers? Academics from the disciplines can be called upon as informants. EAP at tertiary level is often embedded within the context of the discipline itself (Maldoni 2018).
Cultural sensitivities In some contexts, there may be political, historical or cultural constraints on critical thinking. While it is arguably the teacher's role to disturb students' prejudices and received ideas, care has to be taken not to cause distress. Students may be alienated by teachers who challenge them too far (Wilson 2016).	Choose topics and questions which will surprise and challenge your students. Better still, encourage the students to propose their own questions and themes on topics which concern them.
Teachers' perceived role English language teachers may believe it is their role to teach English, not critical thinking.	Language learning and critical thinking are mutually enhancing. In fact, academic English is, in essence, critical English. Critical thinking enhances language learning at every level and vice versa (Bagheri 2015). EAP teachers must be teachers of critical thinking as well as language teachers.
Time-poor, device-rich millennials Our students lead intensely busy lives, many of them fitting in part-time jobs, family responsibilities and social lives around their studies. As 'digital natives' they tend to skim rather than read, and 'snatch' information from the internet and from social media.	EAP teachers need to work with the changing behaviour patterns of young people and the technologies they use, challenging and inspiring them to take a deeper approach to knowledge.

Five characteristics of a critical-thinking classroom in EAP

To overcome the barriers listed, and inspire students to develop critical thinking skills and dispositions, EAP classrooms should be interactive, vibrant, authentic, explicit and scaffolded.
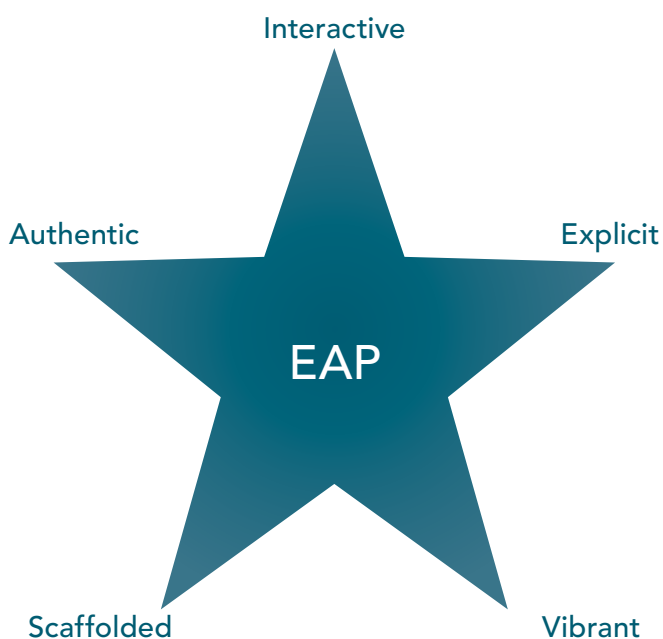

Figure 3: The critical-thinking classroom in EAP

Interactive classrooms allow students to participate in critical thinking. Students need to build confidence to raise questions, voice ideas and participate in dialogue. This means freeing up the traditional role of the teacher as 'the sage on the stage' to allow more opportunities for student participation. A critical-thinking classroom depends on genuine, higher-order questions – questions which challenge but are answerable (Li 2011; Defianty & Wilson 2019) and which come from the students as well as the teacher. Group work and think-pair-share activities can provide non-threatening, supported opportunities for students to practise critical thinking.

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Vibrant, stimulating materials and tasks with plenty of visual and multimedia support, using material from multiple sources, help to capture the enthusiasm of 'digital natives'. Engagement is essential for critical thinking to emerge, so classrooms need to be dynamic spaces in which students are keen to participate. Emotions are not necessarily a barrier to critical thinking, and can play an important role in enhancing motivation (Nosich 2009).

Authentic materials, dealing with real-life cases that are close to students' lives, interests and future studies are another key feature of critical thinking classrooms. Ideally, all four macro skills are deployed, so that students get the opportunity to conduct research, read critically, discuss the relevant issues and present their reasoning in both written and spoken form.

Explicit presentation and practice of critical thinking skills has been shown to be beneficial to students' development of critical thinking (Abrami et al. 2008). This does not mean that critical thinking should be taught independently of other courses. Rather, critical thinking needs to infuse every aspect of the EAP course and to be made overt, so that students become increasingly conscious of their thinking processes.

Scaffolded tasks, which require students to think critically, are characterised by both high challenge and high support (Wilson & Devereux 2014). Scaffolding theory suggests that students should be challenged with demanding tasks, but given good support in order to achieve them. They need clear explanation of what is expected and practice in the sub-skills needed. They need feedback along the way, and may need some support in their L1 in order to succeed.

Assessing critical thinking in EAP

As a key learning objective of EAP, critical thinking must be overtly assessed.

Task objectives should state the critical thinking skills that students are expected to develop.

Clearly stated rubrics can enable students to peer- and/or self-assess for formative purposes, while also enabling teachers to undertake fair and reasonable summative assessment. Well-designed rubrics can also contribute to course evaluation, as they will allow teachers and administrators to see how well students have been able to meet the course objectives (Hohmann & Grillo 2014).

For example, a marking rubric for an integrated project requiring research, reading, discussion and writing, could look something like the one in Figure 4.

CRITICAL THINKING PRACTICES	DEGREE OF CRITICAL THINKING		
	rudimentary	satisfactory	advanced
Has identified relevant, appropriate and reliable sources for the task			
Shows understanding of source texts by succinctly summarising ideas and attributing them			
Engages thoughtfully with ideas from the source texts			
Synthesises ideas from a range of source texts			
Presents a clearly reasoned, engaging oral account of the topic, challenging the audience with new insights			
Presents a well-reasoned, coherent argument in the written paper			
Generates insightful conclusions about the topic and recognises implications			
Takes a responsible, ethical and feasible position			

Figure 4: Example of a marking rubric for critical thinking

Some suggested activities for teaching critical thinking in EAP

Assign substantial, challenging and integrated macro tasks that entail research, reading, discussion and presentation in spoken and written form. For example:

- create an online magazine, examining issues of current importance

- organise a mini-conference

- organise a debating competition with students from another class

- create a podcast on a topical issue (in the students' own field of interest).

Let your students choose their own topics for research, design their own critical questions and locate their own source materials (with support from their teacher).

Get in touch with similar students in a different country for a Skype debate on an issue of current significance. Questions can be prepared beforehand, on the basis of critical reading and discussion. Follow up with letters and reports, or an essay on the topic.

Analyse the use of academic referencing in two different disciplines using authentic student essays (or journal articles, if you are working at an advanced level). Discuss *why* references are used in different ways, not just how the form differs.

Compare the way in which the same topic is presented in different genres, for example, health advice on exercise regimes presented in a teen magazine, on a government health website and in an academic journal article. Note the differences, discuss why these differences occur and evaluate the reliability of the information. Then, create a flyer for first year university students.

Find contrasting articles on a topic of interest to your students (or a single article embodying different points of view). Have them identify arguments for and against by taking notes, evaluate those arguments and add more of their own. Divide them into groups for and against the topic and let them rehearse their arguments. In facing rows, have one student put forward an argument from their team. The next student from the opposite team must refute the argument and present a new point from their side, and so on. Later, with further scaffolding, the students can develop a for-and-against essay.

Watch a short documentary on a topic of interest to your students. Analyse the purpose of the documentary, the assumptions made by it, the point of view expressed, the kind of evidence presented and any biases underpinning the presentation. Follow up with further reading and research. Have students write a position paper as a result.

Suggestions for further reading

Most recent EAP course books now include a focus on critical thinking. For example:

Adams, K., Baker, L., Brinks Lockwood, R., Dimond-Bayir, S., Jordan, N., Kennedy, A., Lansford, L., Lewis, M., O'Neill, R., Ostowska, S., Peterson, S., Russell, K., Sowton, C., Wastebrook, C., White, N., & Williams, J. (2018). *Prism*. Cambridge: Cambridge University Press.

Adams, K., Ostrowska, S., Lewis, M., O'Neill, R., & Baker, L. (2018). *Prism Reading*. Cambridge: Cambridge University Press.

Adams, K., Baker, L., Brinks Lockwood, R., Dimond-Bayir, S., Jordan, N., Kennedy, A., Lansford, L., Lewis, M., O'Neill, R., Ostowska, S., Pathare, E., Pathare, G., Peterson, S., Russell, K., Sowton, C., Wastebrook, C., White, N., & Williams, J. *Unlock* (2nd ed.). Cambridge: Cambridge University Press.

Useful texts for teaching critical thinking at upper intermediate and advanced levels include:

Cottrell, S. (2005). *Critical thinking skills: Developing effective analysis and argument*. Basingstoke: Palgrave Macmillan.

Fisher, A. (2011). *Critical thinking: An introduction* (2nd ed.). Cambridge: Cambridge University Press.

Vardi, I. (2013). *Developing students' critical thinking in the higher education class*. Milperra: Higher Education Research and Development Society of Australasia.

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