The Development of Critical Thinking in English Academic Writing Courses at the University of Tokyo

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1. Introduction

Critical thinking (defined roughly for now as the disposition to approach problems in a reasoned, flexible, self-aware style) is, and ought to be, a key education goal of higher education institutions. Universities whose students are assumed to possess higher-than-average cognitive skills, such as the University of Tokyo, cannot assume that the same is true when it comes to critical thinking. It is known that there is a poor correlation between critical thinking habits and general cognitive ability (Stanovich & West, 2007). The tendency to pay attention selectively to evidence favouring an existing point of view, otherwise known as confirmation bias, is thought to substantially undermine critical thought (Nickerson, 1998). Confirmation bias is a prevalent bias with deleterious effects on academic inquiry. The disposition to actively seek out evidence against one's current beliefs is as valuable as it is rare both in academia and society at large. With social media platforms apparently facilitating the creation of "filter bubbles" (see Bozdag and van den Hoven, 2015), this disposition may be becoming even more critical for the well-functioning of democratic societies.

There is limited evidence that the typical undergraduate experience substantially improves critical thinking (Butchart et al., 2009; Arum & Roksa 2011; however, see Huber & Kuncel 2016 for a rosier picture). Science students may be particularly badly served in some respects, compared to humanities students. Bailin (2002) notes that critical thinking in science education is often equated with the mastery of procedural skills (such as evaluating data, synthesizing information, etc). The problem

with this conception of critical thinking, as she notes, is that any such procedure can be carried out in an uncritical way. In addition, undergraduate science students are given fewer tasks that require them to evaluate evidence for themselves.

Although critical thinking is clearly in the background when writing courses are designed, it is rarely mentioned as a goal in formal course descriptions, especially in L2 contexts. This is an unfortunate omission, in our view. There is good reason to suppose that the kinds of activities that writing students engage in – investigating a phenomenon, weighing evidence, justifying opinions and providing peer feedback – do in fact favourably affect their critical thinking habits of mind. Further, because writing courses are very unusual in this respect in the context of general education courses, a special responsibility attaches to writing programs. Because we are able to include critical thinking as a core goal of the course, we owe it to the students to do so.

For both compulsory first-year English academic writing courses at Komaba – ALESS (Active Learning of English for Science Students) and ALESA (Active Learning of English for Students of the Arts) – the main activity is the construction of a written argument in the English academic format. Though the courses are part of the compulsory English language curriculum, as academic writing courses they take on the spirit of academic writing courses in an L1 context, in giving non-trivial weighting to evidence and reasoning. Beyond the standard of written English, instructors therefore also engage with the standard of argumentation. This is not straight-forward: Is a terrible argument written in good English preferable, for our purposes, to a good argument expressed in mediocre English? An added difficulty is that students are encouraged to follow their own interests, so very often the position being argued involves a level of information beyond the specialist knowledge of the instructor. In this situation how is it possible to give consistent guidance on the quality of argumentation even if it is desirable? In this paper we give a couple of positive approaches to this question.

For most writing students, developing a more critical and self-reflective disposition to what they read, write and think is an achievable goal, although expectations have to be moderate and are difficult to measure. Given the activities (selecting a topic,

conducting research, supporting a position and engaging in peer-review, and writing a 1,500 word research essay) of our writing courses, it is reasonable to hope that these young, first year students will finish the semester as more 'critical beings' (Barnett, 1997) than when they began it. In what follows we discuss some of the senses in which ALESS and ALESA students are engaged as critical thinkers. We begin with a characterisation of critical thinking as we understand it.

2. What is Critical Thinking?

Critical thinking is not simply the ability to properly deduce conclusions from premises. It is a general approach to thinking that, though we know it when we see it, has been difficult to characterize in an enlightening way. In 1987 the American Philosophical Association commissioned a report that attempted to gauge the opinions of teachers of critical thinking courses across American universities. Peter Facione's "Delphi Report" (1987), which continues to be influential, contains a consensus statement incorporating a description of the "ideal critical thinker" (p. 2):

> The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit.

Even before (Dewey, 1933; Young, 1980; Ennis, 1987), but especially since the Delphi Report, an abundance of scholarship has proliferated advocating the development of critical thinking skills and dispositions at the secondary and tertiary levels irrespective of academic discipline or cultural setting. It is crucial to understand, though, as critics of teaching critical thinking have highlighted (Atkinson, 1997; Bailin, Case, Coombs & Daniels, 1999), that simply presenting students with a set of critical thinking skills or practices with the expectation that they will be able

to effectively apply these practices across all academic and non-academic contexts is overly ambitious.

A core component of critical thought, identified by psychologist Jonathan Baron and much discussed in the literature, is known as Active, Open-Minded Thinking. Baron defines it as:

> [T]he willingness to search actively for evidence against one's favoured beliefs, plans or goals and to weigh such evidence fairly when it is available. (Baron, quoted in Butchart, et al., 2009)

Active, Open-Minded Thinking is not so much a skill as a disposition, which is why it is not correlated with other tests of intellectual ability. Highly intelligent, knowledgeable people are also prone to be unwilling to adequately scrutinize their pet theories. This tendency, known as confirmation bias, or "myside bias", is something that writing courses provide ample opportunities to combat.

3. Critical Thinking in the second language writing classroom

A range of factors, some arguably cultural (Song, 2015), others personal and situational, can impede the wide application of critical thinking dispositions; subject knowledge, subject domain, language proficiency and cultural background can all influence how students develop as critical beings inside and outside the classroom. In our case, given that students in the ALESS and ALESA programs are first year Japanese students writing in a foreign language, subject knowledge, language proficiency and cultural background are three factors for the instructor to consider.

By "cultural background", we do not refer to the dubious, not to say orientalist, idea that East Asian cultures are less hospitable to critical thought than "Western" cultures. As Stapleton (2002) has shown, this idea belongs in the same waste basket as others which take an East/West opposition as a starting point. However, culture does affect how critical thoughts are expressed, and social practices surrounding critical engagement with others. A teacher with minimal social awareness can and should

adapt to differences in these respects rather than assume that critical thinking rises above social realities in its expression.

It is more difficult to disagree, question, and reason in a second language, but there are advantages as well. Research suggests that people are less prone to fallacious reasoning when they think in a second language (Keysar et al., 2012), and are less prone to confirmation bias when reading difficult texts (Hernandez and Preston, 2013). In addition, using a new language is in some ways a blank slate of social practice. Because the social practices embedded in a "native" language are not as present in a new language, they are equally a lesser impediment to learning new practices. Students can "play" with different ways of expressing disagreement and be less afraid of causing offence. The second language writing teacher can be explicit about techniques of disagreeing, something usually left implicit. This also introduces a metacognitive awareness that ideally feeds back into first-language practice.

In humanities writing courses, such as ALESA, it can be challenging to convince students of the need to foster a sense of criticality towards texts, ideas, arguments, others and themselves. Students are encouraged to write about a topic they are interested in, and already know that for any view they hold, there is a possible contrary view. Students who quickly pick up the "genre" of academic writing know that they are expected to acknowledge this possibility, but their first attempt to do so is normally rather mechanical. Part of the role of a writing instructor is to encourage students to go beyond the rehearsal of arguments to and fro, and to take the contrary view seriously. To the extent that students take this extra step, the result can often be confusion or cynicism; the feeling that every position is as good as any other. If an open-minded disposition is a core component of critical thought, the shift to becoming a more critical thinker does entail a shift in the direction of reduced certainty in one's opinions. Insofar as the topic at issue is controversial and important enough to be considered "political", recent evidence suggests that our opinions are tied up with our sense of self (Kaplan, Gimbel and Harris, 2016). Is there not a danger, in the persistent questioning and challenging of ideas, accepted facts and common-sense beliefs, that our foundations will be shaken, leading to a feeling of destabilization and even discomfort? Ideally, per-

haps yes. The discomfort of uncertainty is, we think, a real phenomenon that writing instructors should treat as a waypoint on route to the eventual goal of becoming comfortable with that uncertainty. If critical thinking involves not just the application of reasoning based on principles of "clarity, accuracy, precision, relevance, depth, breadth, logic, significance and fairness" (Paul & Elder, 2007), but also a self-reflective, self-questioning disposition, then a sense of destabilization and even discomfort needs to be encouraged.

In the case of ALESS, for science students, there are different problems. In this course, students design and conduct an experiment as a precursor to writing it up as a paper in a common scientific style. Ideally, students should approach their experiment not as a chance to confirm their theory but as a chance to put it to the test. Here we also insist that students take seriously the possibility that they might be wrong; for example, that their result could be the product of a flawed experimental design and not a reflection of reality. This flows partly from the fact that good science papers embody active, open-minded thinking. Students recognise this relatively easily in our experience, at least theoretically, but nevertheless are often attached to their hypotheses as a matter of personal pride. While knowing that it could be wrong, they take the experiment as a chance to show that it is correct, often to the extent that when the results suggest otherwise, the experiment is regarded as a "failure". This attitude is bound to exacerbate confirmation bias. Instructors guide students toward a more positive attitude to negative results, but this is not made easier by publishing realities in the sciences, where negative results are often regarded as unpublishable (Fanelli, 2011).

In both courses there are other opportunities to engage students' self-reflection with regard to the ideas they are writing about. Sometimes an ordinary point of English hides a critical thinking component. For example, a language module taught late in the semester deals with hedging. Hedging is the practice of expressing appropriate caution in one's statements. In preference to a statement such as "The results demonstrate the truth of our hypothesis", it is more common, depending on the case, to use "The results seem to support our hypothesis". Many students have an initial tendency to use the first, un-hedged, statement in the belief that a strong conclusion is better. To get this

point of English right, students need to pay attention to something that they might well not otherwise, namely the strength of the relation between their actual evidence and their conclusion.

The extensive use of peer feedback is a further source of critical thinking development. This learning technique, employed in both the ALESS and ALESA courses, can foster a heightened self-criticality. Although there is evidence that peer feedback in itself is not necessarily beneficial (Xie, Ke and Sharman, 2008, 2010), provided that sufficient time and guidance are given (e.g. detailed explanation of its purpose, and also a clear and concise feedback form), when student writing is exposed to critical scrutiny by peers there is an opportunity to interrogate assumptions, consider possible objections, highlight weaknesses in argumentation and simply broaden perspectives. Because the language of the essays and discussion is English, significant time must be allotted for this activity to be beneficial. What makes this activity so useful is that it forces students to engage in a kind of 'metacognitive monitoring' (Halpern, 1999) whereby they reflect on how and why they have come to think the way they do on an issue, and why they have not considered their position differently. Ultimately they are made more aware of their thinking process, which in turn can produce positive outcomes for their development inside and outside of academia. Either critical questioning pushes students to provide more credible (quantitatively or qualitatively) evidence and research to strengthen their position, or they become less secure in their position and correct this by considering the complexity of multiple viewpoints.

Yet it is not only metacognitive awareness that students are building during peer-feedback. Essential meta-affective strategies are at work as well (Millman, 1988). When one's argument is challenged, flaws in logic are exposed, or strong counter-evidence is introduced, a certain degree of control over one's emotions is required. Students invest time, effort and care into developing their research essays, and when the reliability or accuracy of this product is critiqued by their classmates, naturally a range of emotional responses may follow: anger, humiliation, resentment, shame, denial, irritation, among others. Eliminating emotion from critical engagement is impossible, as any researcher who has had their manuscript excoriated by peer-reviewers can attest. It is important to experience having one's ideas chal-

lenged in a productive and encouraging space, and to practice responding appropriately without anger or stubbornness. It is possible the criticism could lead to a solid rebuttal, thereby strengthening the analysis—or certainty in the original position may be shaken, potentially generating a more multi-perspectival, complex piece of scholarship.

That discomfort and destabilization can be highly productive for learning is hardly a *fait accompli* for students or educators. Motivation is clearly a key factor for students in terms of how much time and effort they invest in their studies, and few people feel motivated by having their ideas, argumentation and evidence challenged and questioned by a peer. However, when properly framed as a critical thinking exercise meant to enhance, broaden and deepen one's writing, it seems most students are open to defending, or even modifying, their positions as a result of peer-feedback.

Some have proposed that Japanese university students are less likely to be productively critical of peers due their Confucian cultural background and adherence to maintaining group harmony (Atkinson, 1997; Mack-Cozzo, 2002). However, as other studies suggest (Stapleton, 2001; McKinley, 2013; Allen, 2015), Japanese students *are* quite capable and willing to engage critically with peers if a) they have some level of familiarity with subject content; and b) the purpose of critical thinking is not simply an exercise in expressing disagreement. With respect to the first point, instructors can either provide students with topics about which they are likely to have some prior knowledge, or instructors may allow students to choose their own topics in order to increase the likelihood that students think critically in their writing and when providing peer-feedback (Stapleton, 2001). Regarding the second point on critical thought and disagreement, we see little reason to assent to the generalization that "Western argument style of critical reasoning … is adversarial and aggressive" (Song, 2015). In fact, productive and motivating critical thinking in both student writing and peer-feedback need not be aggressive nor adversarial, and disagreement need not be the aim. This is as true for Western as it is for Eastern contexts. In all contexts, peer feedback is best framed as a way of helping and improving the partner's writing. What is essential is that students see the goal of peer-review as an indispensible

component of intellectual development, whereby one is forced to tighten or augment argumentation, or take into consideration the validity of multiple perspectives.

4. Clarity of Thought and the "Quality Practice" Hypothesis

Clarity of thought is one of the critical thinking ideals which perhaps coincides most closely with the linguistic pedagogical goals of an L2 academic writing course. Developing the ability to express one's thoughts clearly in English is an obvious objective for such a course. But if a student has no clear thoughts on a topic, no amount of language proficiency can magically facilitate the expression of clear meaning. Here we are reminded of Orwell's (1946) insistence on clarity in written expression because of its link to clarity of thought.

Ironically, Orwell's recommendation to avoid common expressions, because they shortcut the need to think about what one is saying, runs against advice often given to EFL learners: to make use of common "chunks" of language as a method of building natural sentences more easily. This seems to be an unavoidable balancing act for the L2 writing class. But the most useful chunks in question are often those expressions which are less specific to the writer's particular thoughts: expressions like "In this paper I argue…", "It may be objected that…", and so on: sign posts and transitions. The more substantial the thought, the less useful common expressions are liable to be, without running afoul of Orwell's concern that common expressions can push out original and clear thought.

Writing and thinking clearly are both matters of practice, though, even in one's native language. In a foreign language, the nature of the practice is especially important and in this respect the fact that the writing model used in our science writing class (the IMRD model) is a very restrictive one turns out to be an advantage. Tim van Gelder, an early developer of the use of argument maps in the teaching of critical thinking, has shown that critical thinking skills can be effectively improved through the use of "quality practice" (van Gelder, 2001). Quality Practice, otherwise known as "deliberate practice" is a technical term describing practice which is motivated, guided, scaffolded and

graduated. In other words, students engaged in quality practice of X have as their goal the improvement of their skills in X; have access to help in improving those skills; at the beginning, certain kinds of mistakes are ruled out by the nature of the exercises; and the task difficulty increases over time.

It is interesting that the IMRD model itself provides an approximation of quality practice in the technical sense. In peer review sessions, students are asked to explain their projects to their classmates. Unclear thinking, as well as bad English is ideally picked up at this point, and certainly students see clear explanation as part of their goal. At first, the arguments are relatively simple - why the topic is interesting, and so on. The chain of reasoning that leads to the experiment tends also to be fairly straightforward, though less so. This provides a kind of scaffolding which hopefully prepares students for the final section, the Discussion section, which is the most difficult to write because it requires students to bring together all the previous sections in a kind of "master argument".

5. Conclusion

We do not propose here to have offered anything like a definitive list of the ways in which English academic writing courses at Komaba develop the critical thinking dispositions of their students. Nor have we tried to offer a definition of what critical thinking is, though we would like to suggest that an actively open-minded attitude is, at the very least, an important component of what it takes to be a critical thinker. In different educational contexts, it may be more appropriate to emphasise other aspects of critical thinking. In our context, the context of a top-tier university, the development of active open-minded habits of thought is especially important. Many of our students will go on to become leaders, and leaders who do not actively seek opposing points of view can more easily shut them out. Here we echo John Stuart Mill (1859):

> In the case of any person whose judgment is really deserving of confidence, how has it become so? Because he has kept his mind open to criticism of his opinions and conduct. Because it has been his practice to listen to all that could be

> said against him; to profit by as much of it as was just, and expound to himself, and upon occasion to others, the fallacy of what was fallacious. Because he has felt, that the only way in which a human being can make some approach to knowing the whole of a subject, is by hearing what can be said about it by persons of every variety of opinion, and studying all modes in which it can be looked at by every character of mind. No wise man ever acquired his wisdom in any mode but this; nor is it in the nature of human intellect to become wise in any other manner. (Mill, 1859, Chapter 2)

We hope to develop wise leaders in this sense. We do not pretend to take on the whole burden of critical thinking education at Komaba. In different ways, we are confident that students are developing as critical thinkers through other courses as well. But we do think that writing courses, even in a second language, have a special role to play in this respect, and we hope in the above to be given a sense of how this could be true.

Refereces

Allen, D. (2015). Personal and procedural factors in peer feedback: A survey study. *Komaba Journal of English Education, 6*(4).

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

Atkinson, D. (1997). A critical approach to critical thinking. *TESOL Quarterly, 31*(7), 71–94.

Bailin, S. (2002). Critical thinking and science education. *Science & Education, 11*(4), 361–375.

Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999). Common misconceptions of critical thinking. *Journal of Curriculum Studies, 31*(3), 269–283.

Barnett, R. (1997). *Higher education: A critical business*. Buckingham, UK: Society for Research into Higher Education & Open University Press.

Baron, J. (2001). *Thinking and Deciding* (3rd Edition). Cambridge: Cambridge University Press.

Bozdag, E., & van den Hoven, J. (2015). Breaking the filter bubble: democracy and design. *Ethics and Information Technology, 17*(4), 249–265.

Butchart, S., Forster, D., Gold, I., Bigelow, J., Korb, K., Oppy, G., et al. (2009).

Improving critical thinking using web based argument mapping exercises with automated feedback. *Australasian Journal of Educational Technology, 25*(2), 268–291.

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston: D. C. Health.

Ennis, R. H. (1985). Goals for a critical thinking curriculum. In A. L. Costa (Ed.), *Developing minds: A resource book for teaching thinking*. Alexandria, VA: Association for Supervision and Curriculum Development.

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In J. B. Baron & R. J. Sternberg (Eds.), *Teaching thinking skills: Theory and practice*, New York: Freeman, 9–26.

Facione, P. A. (1987) *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction*. Millbrae, CA: The California Academic Press.

Fanelli, D. (2011). Negative results are disappearing from most disciplines and countries. *Scientometrics, 90*(3), 891–904.

Halpern, D. (1999). Teaching for critical thinking: Helping college students develop the skills and dispositions of a critical thinker. *New Directions for Teaching and Learning*. 80, 69–74.

Hernandez, I., & Preston, J. L. (2013). Disfluency disrupts the confirmation bias. *Journal of Experimental Social Psychology, 49*(1), 178–182.

Huber, C. R., & Kuncel, N. R. (2016). Does College Teach Critical Thinking? A Meta-Analysis. *Review of Educational Research 86*(2), 431–468.

Kaplan, J. T., Gimbel, S. I., & Harris, S. (2016). Neural correlates of maintaining one's political beliefs in the face of counterevidence. *Scientific Reports, 6*, 39589.

Keysar, B., Hayakawa, S. L., & An, S. G. (2012). The foreign-language effect thinking in a foreign tongue reduces decision biases. *Psychological science, 23*(6), 661–668.

Mack-Cozzo, J. B. (2002). If you think we have problems … Japan's inferior university system. *American Enterprise, 13*(6), 46–47.

McKinley, J. (2013). Displaying critical thinking in EFL academic writing: A discussion of Japanese to English contrastive rhetoric. *RELC Journal*, 44(2), 195–208.

Mill, J. S. (1859). *On Liberty*. London: J. W. Parker and Son.

Millman, A. B. (1988). Critical thinking attitudes: A framework for the issues. *Informal Logic*, 10(1), 45–50.

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises, *Review of General Psychology 2*(2), 175–220.

Orwell, G. (1946). Politics and the English Language. *Horizon, 13*(76), 252–265.

Paul, R. & Elder, L. (2007). *Critical thinking competency standards. Standards, principles, performance indicators, and outcomes with a critical thinking master rubric.* Dillon Beach: Foundation for Critical Thinking Press.

Song, X. (2015). Critical thinking and pedagogical implications for higher

education. *East Asia,* (November).
Stanovich, K. E. & West, R. F. (2007) Natural myside bias is independent of cognitive ability. *Thinking and Reasoning 13*(3), 225–247.
Stapleton, P. (2001). Assessing critical thinking in the writing of Japanese university students. Insights about assumptions and content familiarity. *Written Communication, 18*(4). 506- 548.
Stapleton, P. (2002). Critical thinking in Japanese L2 writing: Rethinking tired constructs. *ELT Journal, 56*(3), 250–257.
van Gelder, T. (2001). How to improve critical thinking using educational technology. Meeting at the crossroads. *Proceedings of the Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education* (ASCILITE 2001). Melbourne.
Xie, Y., Ke, F., & Sharma, P. (2008). The effect of peer feedback for blogging on college students' reflective learning processes. *The Internet and Higher Education, 11*(1), 18–25.
Xie, Y., Ke, F., & Sharma, P. (2010). The effects of peer-interaction styles in team blogs on students' cognitive thinking and blog participation. *Journal of Educational Computing Research, 42*(4), 459–479.
Young, R. E. (Ed.). (1980). *Fostering critical thinking. New Directions for teaching and learning*. San Francisco: Jossey-Bass.