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Smart Talk: Enabling Ideas to Take Flight

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Abstract
Academic conversations are spontaneous dialogues focusing on a topic, which allow relevant ideas to be built, challenged and negotiated. Literature suggests that such conversations are powerful learning engagements because through verbalising thoughts and listening reflectively to the contributions of others, knowledge is reinforced, if not extended. This enables new ideas to take flight. Unfortunately, the "how to" of such "smart talk" is not often taught at university, when in fact, it is the place where such discourse conventions are the expected norm.

The first part of our paper seeks to fill this gap in the pedagogical know-how of academic conversations. We propose the "unicycle wheel" as a pedagogical framework which scaffolds for our students the acquisition of academic discourse norms. Our students are guided to engage knowledge with academic curiosity, to critically reason, to clearly state their claims based on facts and not fallacies, and to have the courage to speak up with intellectual honesty – qualities that can extend to their subject-disciplines, further empowering them for the rigours of university learning.

The second part of our paper demonstrates how academic conversations can be taught in various contexts and reports on some of the student learning outcomes over a 12-week semester: one in an undergraduate course and another in a graduate course. The outcomes show that the "unicycle wheel" works to the extent that students practise integrating for themselves each component skill taught into a holistic habit of mind.

Key Words: teaching academic conversations, tertiary students, unicycle wheel

Introduction

Teo (2014), in his research project investigating the classroom discourse of pre-university students in Singapore, makes the point that students need to participate in more "substantive student talk" (p. 207) of a higher level of cognitive engagement if they are to develop into more "articulate, confident and effective communicators" (p.210) – essential qualities that constitute 21st century competences in the workplace and beyond. He also urges educators in tertiary institutions to promote a higher quality of student talk, where students are encouraged to clarify and substantiate their stand, as well as to formulate alternative perspectives or interpretations as they collaborate in knowledge-making.

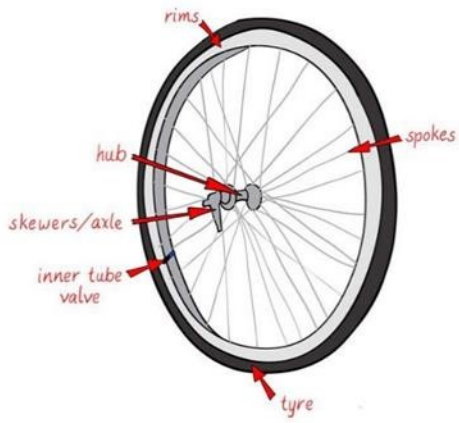
However, teaching tertiary students to speak up remains challenging for many teachers because making successful academic conversation is a highly complex and dynamic skill that commands several simultaneous processes – academic literacy, cognitive literacy and critical thinking dispositions – all activated rapidly in real-time. As Michaels, O'Connor and Resnick (2007) put it,

"teaching good knowledge using discursive methods is perhaps pedagogy's greatest challenge" (p.291).

The realities of the classroom also present themselves -- in such cases where, depending on their pre-university English learning experience, students may lack the language proficiency and/or confidence to speak up in front of a class. This is especially true for international students who may have learnt English as a second language or foreign language. At the same time, there are students more used to classroom cultures where knowledge is "fed" to them from prescribed readings and lectures, and hence the ability to raise questions towards established or authoritative knowledge is often lacking. They are reticent when it comes to identifying and questioning assumptions. Then there are students who are capable of questioning generalisations, but lacking in the etiquette of academic discussion – not knowing how to interrupt appropriately and graciously, how long to hold a turn when presenting their ideas, and/or how to invite their peers to co-construct knowledge together with them so that the conversation becomes fruitful. In short, the majority of students in university need help to be socialised into the discourse norms of the academic community (Duff 2010).

It is with the aim of teaching academic conversation skills to students with different proficiencies, abilities and personalities (sometimes all attending the same class) that motivated the authors to put together a theoretically-informed pedagogical framework – which we term the "unicycle wheel" – drawing together the teaching of academic literacy which we visualise to be at the hub, the scaffolding for acquisition of cognitive literacy which forms the rim and critical thinking dispositions that form the tyre. All three parts are interconnected by the radiating spokes of the wheel, which represent the different turns of academic conversations taking place. This visual representation of the unicycle wheel also captures the holistic teaching approach which we feel is necessary to do justice to the complexity and dynamicity of academic conversations. Our unicycle wheel is illustrated in Figure 1 below.

Figure 1. The "unicycle wheel ": pedagogical framework for teaching academic conversations.



In the first part of this paper, we will introduce the three components of our unicycle wheel that constitute the pedagogical processes which scaffold the students' learning. We intend the students to understand these three components and how to use them so that they can "ride" the unicycle wheel to converse academically on any given topic in their field of study or as part of a discussion of the educated layperson on any other topic. Metaphorically, they can maintain balance on the unicycle wheel and manoeuvre successfully forward only when they practise integrating for themselves each component skill taught into a holistic habit of mind.

Smart Talk – How We Teach Academic Conversations

1. Academic Literacy

Academic literacy involves, among other things, the ability to make distinctions between essential and non-essential information, fact and opinion, propositions and arguments; to know what counts as evidence for an argument, extrapolate from information by making inferences, and apply the information of its implications to other cases than the one at hand (Weideman 2014). This aspect of academic literacy is demonstrated in academic conversations where the interlocutors have the linguistic resources to be sensitive to how meanings are shaped in language (i.e., they must be familiar with the meta discursive norms).

Making available for our students a metalanguage (language about language) terminology list such as the one shown in Table 1, provides them with support in the linguistic resources to construct and deconstruct meanings.

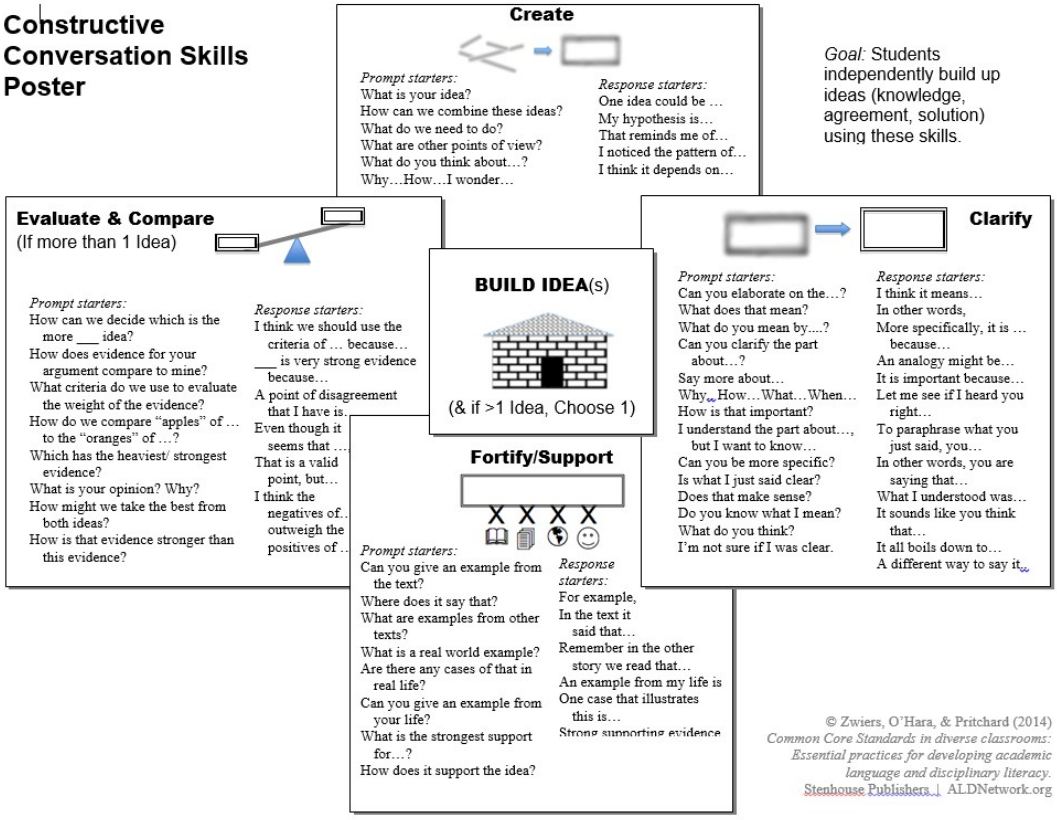
Table 1. Sample list of terminology for deconstructing arguments in academic conversations.

- Alternative views – Other interpretations of the same set of facts or points of information
- Authorial bias – The inclination or opinion that a writer or speaker has for a particular point of view.
- Evidence – Proof that supports a point of conclusion or line of argument. This may be data, observation, visual representation e.g., photographs or video, artefacts including fossils, books, antiques, etc.
- Generalizations – There are valid generalizations and invalid generalizations. A valid generalization is an overall statement describing a consistently observed pattern or trend in data or some other empirical evidence or social phenomenon. An invalid generalization is a statement purporting to describe a pattern or trend in data, other empirical evidence or social phenomenon that is based on insufficient sampling, lacking confirmatory evidence or using anecdotal evidence. Invalid generalizations contribute to a weak argument.
- Non sequitur – Latin for "does not follow from". Used to show that one point is illogical following from the point before.

However, it must be noted that with the provision of this resource, students should use these as tools to describe fallacies in academic conversations. Therefore, we designed lesson materials and activities for students to practice critical reasoning so that they had to apply the metalanguage to accomplish learning tasks. Rubrics, checklists for students and formative assessment marking descriptors were also aligned to assess if the metalanguage had been put to use (see Fisher and Frey 2009 for examples of constructive alignment of learning tasks and assessment formats).

At the same time, we recognise that students who are linguistically less proficient may need help because they may possess critical insights but lack the linguistic resources to ask for the clarification of claims, to present their evaluation of facts, or to offer alternative view-points. For them, we introduced linguistic frames for forming questions and making claims. Using visual aids with question-and-response stems (like the one presented in Table 2 below), we elicited from students different categories of questions that were likely to arise in academic conversations and had them contribute their own question stems.

Figure 2. Zwiers, O'Hara and Pritchard's (2014) question-and-response stems.



Sometimes, our students may have learnt the form of questioning-and-responding but not acquired the skills in conveying the subtler aspects of a non-confrontational, collaborative knowledge-building. For example, they might acknowledge the value of questions raised by peers but just as quickly jump into a robust defence of their pre-held stand. We found teacher feedback in such an instance was useful, and that it was necessary to model the discourse norms of academic etiquette of how to respectfully negotiate an idea when in disagreement. While debate does certainly have a place in academic discourse, students need to understand that academic conversation is primarily a process of bringing ideas to the table, sharing them, and shaping them while listening to the ideas of another person. In academic conversations, the goal is not in winning others over to their view-point but in collaborative learning (Zwiers & Crawford 2012, p.31).

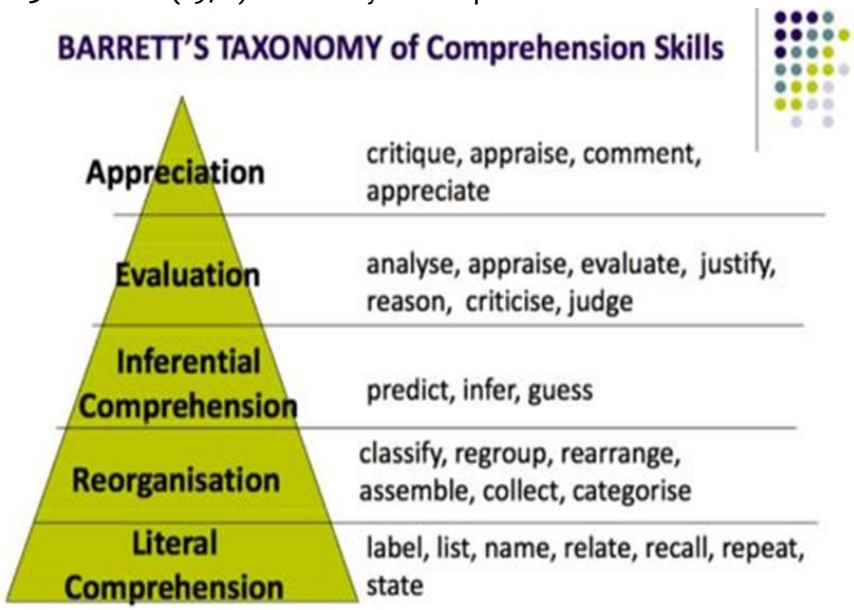
In other instances, students might politely listen to one another and then add on to what the previous speaker has expressed only to hijack the occasion for airing their own opinions. There might not be any strong attempt to stay focused on the topic or willingness to build on another's idea. Here is where students need to learn accountability to academic reasoning (Michaels, O'Connor and Resnick 2007, p.291) and once again, where teacher feedback and modelling need to come in.

2. Cognitive-literacy Scaffold

In academic conversation, possessing the ability to apply metalanguage and having the linguistic expressions to raise questions and voice responses have to be integrated with the ability to listen reflectively, probing deeper into received meaning and knowledge. However, the ability to ask probing questions may not come naturally to students who are more used to classroom traditions where the teacher is the sage on the stage. Notwithstanding, if students are introduced to a method which systematically teaches them to "mine" for meaning in language, they can be

coached to ask meaningful questions that will deepen their content understanding. Students will then be able to articulate quality of thought which goes beyond just retelling ideas.
We find Barrett's (1976) taxonomy of comprehension skills (Figure 3) to be a good scaffold by which to train students to go further and deeper in their understanding: from the first level of literal comprehension of ideas, to establishing if there are common themes/relations between issues at the second level; and going further to the third level, to infer for deep meaning; and finally at the fourth and fifth levels, where attempts are made to evaluate and critique based on a developing sensitivity to the language used.

Figure 3. Barrett's (1976) taxonomy of comprehension skills.



We applied Barrett's Taxonomy to guide students to come up with questions (and later to find their own responses) in accord with the five levels of comprehension skills. For example, in our context of helping students practise academic conversations by training them to question information sources as well as students' responses to the information received, we generated the following types of questions (see Table 2). By going through such question-eliciting exercises with the students, we helped them to achieve higher order thinking while practising academic conversations.

Table 2. Questions to mine comprehension levels.

Barrett's Taxonomy	Questioning information sources	Questioning our own responses to information received
Literal Comprehension (Retelling)	What is the source?	What claims are made?

Reorganisation (Establishing common relations)	Are there other sources saying similar things? Is there any other information from elsewhere that we can use to measure the veracity of this information?	Are there alternative points-of-view? If so, what might these be?
Inferential Comprehension (Going beyond the surface)	Is there an agenda for such information? What reasons or evidence is given in support? Are there any assumptions about beliefs or values? If so, what are they?	Are we judging the speaker's views fairly? What assumptions or beliefs or values are we using to assess the veracity of the speaker's claims?
Evaluation	What conclusions can we draw from this information source?	What is the basis of our conclusions?
Appreciation	What language clues are there to support our conclusions?	What language clues are there to support our conclusions?

3. Critical Thinking Dispositions

Concurrent with developing cognitive literacy to probe claims and assertions was the teaching of critical thinking dispositions to support students' acquisition of academic conversations. We hoped to nurture in our students, dispositions such as: having an open mind to be willing to elicit different points of view from others, being well informed in order to corroborate information in a synthesis, developing confidence in reasoning with academic honesty, and making hypotheses with imagination and creativity. Above all when they speak up, they need to make claims that are substantiated, having sifted facts from fallacies.

Ennis's Critical Thinking Framework (2001) was chosen to support the critical thinking dimension of students' academic conversation skills. Ennis, (2011) has a shortlist of ten essential critical thinking skills and dispositions. We used a slightly simplified form to inculcate in our students a systematic habit of mind.

- Being open-minded.
- Trying to be well informed.
- Identifying conclusions, reasons, and assumptions.
- Defining terms in a way appropriate for the context.
- Drawing conclusions when warranted, but with caution
- Judging the credibility of sources
- Asking appropriate clarifying questions.
- Judging the quality of an argument, including the acceptability of its reasons, assumptions, and evidence.
- Developing and defending a position on an issue.
- Planning experiments and judging experimental designs, (*imagination and creativity* – our interpretation in italics).

In teaching these dispositions to students, we adopted an experiential learning approach, where students were organised to do project work in groups so that they would experience the working out of their own thinking processes. At the end of the project work, they were led to critically reflect on the thinking processes they went through to complete the project, and then present to the class their own rubric for critical thinking as an expression of having internalised Ennis's taxonomy and having been able to adapt them to their own context or learning.

Students "Unicycling" in Class

Having introduced the "unicycle wheel" as the pedagogical framework representing our approach to teaching academic conversations in the first part of our paper, we now demonstrate how we applied it to two courses which we teach and also reflect on the learning outcomes achieved. The first is an undergraduate critical thinking course (taught by Gek Ling) and the other is a graduate English course (taught by Su Hwi).

The Communications Course for Computer Science Undergraduates

I (Gek Ling) teach the module "Critical Thinking in the Information Age" to undergraduate students at the School of Computing (SOC). The course aims at developing students' critical thinking skills in analysing written and spoken information from various digital media channels such as the world-wide web, social and mobile media. The learning that takes place involves helping students to practise "riding" the unicycle wheel – students need to speak up and speak out their thoughts, giving attention to evaluating assumptions and assertions, while also synthesizing different points of view so that they will be able to further articulate logically and with sound reasoning their own positions. It is in this way that the unicycle wheel turns and moves forward: from speaking with depth and critical reasoning – to processing through other points of view – arriving at more informed opinions – speaking out further to advance understanding and application, and so on as it goes.

The formative assessment I designed was for the teacher to monitor the quality of each student's "smart talk": in small groups of fours, students were to take turns to hold a panel discussion of 20-minutes in front of the entire class on a given topic (e.g., artificial intelligence) and then attend to an open question-and-answer session with the audience.

The students had to prepare for the panel discussion by reading around the topic and be ready to make their stand. They were also told the prompt for the discussion. In advance to the panel discussion, they had already been taught the linguistic frames for agreeing, disagreeing, clarifying, challenging and elaborating ideas. They had also been taught the meta-linguistic resources to deconstruct or critique each other's contributions, and been taught about how nonverbal communication played a part in expressing their interest and engagement in being attentive listeners who were intellectually curious. In short, the teacher would have taught them the qualities of academic conversational behaviour and etiquette. In the formative assessment, the teacher would be looking out for how well the individual student actually practises what has been taught.

Based on the performance of the students I taught, I observed that students mostly got on to a wobbly start riding the "unicycle wheel". They were able to present their own stand but were unable to advance down the road to further discussion because their synthesis skills in conversational exchange were lacking or they were just content with what they already knew about a topic and were not intellectually curious enough to learn what other students had learned about the same topic. In short, they were disinterested in building on their own or challenging

other students' knowledge and understanding. The evidence was in the quality of their talk – there was no rigor to negotiate for deeper meaning so as to draw more robust conclusions; to ask probing questions toward the aim of advancing ideas collaboratively; to help check/clarify another's stand and reasoning in order to draw out (rather than dismiss) the grain of knowledge from the chaff of unclear explanations.

Nonetheless, there was some qualitative evidence to show that some students are indeed beginning to be socialised into the target academic discourse conventions. Below is a reflection of one such student on the panel discussions:

"An ideal panel discussion should **generate spontaneous interaction** among panellists as well as between the panellists and the audience. Each of the panellists play an important role in making the panel discussion **engaging,** especially the facilitator, who plays the role of moderator by asking questions of panellists, ensuring all panellists have the opportunity to speak.

During the panel discussion, **although each panellist has his/her own stand, he/she still has to stay alert as he/she has to actively take down information about what other panellists suggest**. By doing so, not only are we **learning about new information and new facts,** we are also opening up opportunities to be more **open-minded to other points of view,** critically analysing each statement and asking for clarification if necessary. Having said that, **being well-prepared for the discussion by doing research is definitely a plus point to achieve a more engaging discussion.**

At the end of the panel discussion, the questions raised by the audience to the panellists are also essential to **clarify any lingering doubts and ask about potential issues that have yet to be addressed in the discussion**. All in all, panel discussions can be useful in helping us **develop the ability of problem solving** (through Q&As and active discussion) through assessing each viewpoint critically as well as allow us to present our viewpoint logically and in an organized manner."

Huang Xiayu, School of Computing, 2016
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The words highlighted in bold show that the student knows the different components that go into "smart talk": (i) the necessity of research (i.e., to be well informed) so that one can arrive at and make a stand, (ii) the techniques of being an open-minded and critical listener that embodies a disposition of inclusiveness of all panellists, and (iii) the skills that go into sound reasoning. In the corresponding terminology of Michaels, O'Connor and Resnick (2008), she is developing awareness that academic discourse has to be accountable to: (i) knowledge, (ii) community, and (iii) acceptable standards of reasoning.

On reflection, I feel that the pedagogical framework of the "unicycle wheel" helped to kick-start the students' learning schema in academic conversations; and regular, structured teacher feedback on their actual speaking performance helped somewhat improve their ability to advance a bit more steadily down the road towards "smart talk". However, there may be a need to reiterate the purpose behind "smart talk" (that it is the key mode of learning in the module) and then asking them to reflect and articulate regularly how they will integrate what is taught them to achieve goals of academic conversation (i.e., we structure an academic conversation about academic conversation skills with the students, giving them the opportunity to explore and practise for themselves discourse strategies they need that will be deemed appropriate for academic

conversations). At the same time, I noticed that not all students can successfully integrate language, cognitive-literacy and critical thinking skills within a short span of 12 weeks, and that it may be necessary for the teacher to help them practise skills associated with each of the component parts, one at a time. I also now recognise that students need quite a lot more meta discursive support (Lee and Tan 2016), which is also a point raised by Duff (2010), because socialisation into the norms of academic conversation is a complex process.

The Intermediate-level Graduate English Course

This course is aimed at supporting graduate students (both at the Masters and PhD level), from across the different disciplines in the university, to "level up" in their language proficiency so that they can cope with the academic literacy demands of their graduate programmes. Largely international students from abroad, their native language is not English and/or they had their undergraduate education in a language other than English. They had been admitted into our university based on an IELTS score of 6 for some faculties to 6.5 (or the equivalent TOEFL scores) for others.

Although the course mostly focused on the teaching of academic writing skills, the learning activities involved pair-learning and small group discussion, which could not be done without the students practising skills of academic conversation. I conducted a pre-course needs analysis survey with 94 students to find out the level of exposure they had to spoken academic discourse norms and found that 60% of the respondents did not know what they were. For many of them, preparation of the IELTS or TOEFL spoken tests was about the only time when they attempted to converse in English, and even then, their attempts were limited to topics they had predicted they would be tested on. Their past English learning experience had thus resulted in them lacking confidence to speak up in open-ended conversations.

To kick-start the process of initiating these students into academic conversations, I (Su Hwi) first worked with them to expand their academic discourse repertoire by using Zwiers, O'Hara and Prichard's (2014) question-and-response stems (see Figure 2). I also had to explicitly explain to them that questions raised in class were not meant to expose anyone's ignorance or to embarrass them but to clarify, elaborate, probe, challenge and build new ideas. They were also invited to come up with their own question stems to ask each other questions when they were doing pair-learning or group activities.

For many of the international students, this came as a new experience because they usually came from educational backgrounds which had socialised them into thinking that there could only be a close-ended "right" or "wrong" answer to questions. They now learnt instead that a collegiate classroom environment of mutual support of learning is encouraged/rewarded, and that they had to develop critical thinking dispositions of open-mindedness, undergirded with respectful enquiry and intellectual curiosity for what each student in class was doing in their respective specialised field of studies (as each class was made up of students from a variety of disciplines).

As part of assessed requirements of the course, each student was to write a 1000-1200-word paper which comprised a self-selected research topic from their discipline. It involved writing up the rationale for their choice of topic, the related literature review and the knowledge gap they sought to fill (i.e., only the introduction section of a research paper). After completing the paper, they were then required to give a 10-minute presentation to the class and then engage the audience in a question-and-answer session. To this end, pair-learning was used to first, help students peer

review their drafts, and then to rehearse their oral presentation with each other and provide each other feedback. The teacher's role was to provide a list of writing/speaking techniques that had already been taught in the previous English lessons to help each pair develop and refine their ideas.

Rather than have them give direct feedback to one another, each student formulated questions based on the provided list for the other student to consider how better to organise and express their ideas. This motivated the students asking the questions to revisit the writing/speaking techniques taught earlier. In turn, when the listener articulates a response, the reviewer then evaluates how the application of the writing/speaking techniques affect the specific and overall presentation of the ideas. The algorithmic sequence of probing – processing – evaluating leads to the next cycle of probing – processing – evaluating, which leads to a simple form of academic conversation skills being acquired.

What surprised me was that through such structured conversation, a good number of students became more attentive to detail, became bolder to ask clarifying questions, and could work out for themselves when and how to elaborate or summarise and synthesize key points. They thus showed greater audience awareness in both their writing and speaking. Although the students did not have content knowledge of their peers' area of specialised research, they somehow internalised the dynamics of academic conversation to help each other better express meaning and ideas. Frustration the international students sometimes encountered was when they lacked the language proficiency and meta-language to further their discussion – possibly a real challenge that only time and better thought-out language support can meet.

Conclusion

Essentially, our paper has used the visual representation of the "unicycle wheel" to depict our approach to teaching academic conversations that integrate academic literacy, cognitive literacy and critical thinking dispositions. Through needs analyses or formative assessments, the teacher can help students practise skills associated with each of the component parts, one at a time, working progressively towards holistic integration of all component parts eventually. We have also demonstrated that academic conversation can be a key mode of learning (as with the Communications Course for Computer Science Undergraduates) or a supportive tool (as with the Intermediate-level Graduate English Course) to aid students in the acquisition of language proficiency. As our reflections on our courses have shown, a semester of 12 weeks provides a good start for introducing students to academic conversations, and indeed an opportunity for students to mount the unicycle wheel. How we can better support them to stay continually motivated to practise "unicycling" -- and so socialise them into the academic discourse conventions – will be an area we look forward to exploring with colleagues in a community of practice.

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