**Cross-faculty Cooperation in an ESP Course: Issues Arising in the COVID Pandemic**

Sarah Carmichael[1], Kam Yin Wu [2] and Anita Au[3]

[1] Center for Language Education, The Hong Kong University of Science and Technology

[2] Center for Language Education, The Hong Kong University of Science and Technology

[3] Center for Language Education, The Hong Kong University of Science and Technology

Undergraduate students at the Hong Kong University of Science and Technology (HKUST) are required to take 12 credits of English. For students in the School of Engineering, the final three credits are discipline-specific courses, tailored to the needs of each department, which are offered in their third or fourth year of study. This paper investigates the effect of the COVID pandemic in 2020 on the effectiveness of language instruction and cross-faculty cooperation in one of these courses: a year 3 course offered to students of Mechanical and Aerospace Engineering (MAE). More specifically, we wanted to see whether disruptions to the synchronisation of language and content instruction, and the lack of opportunities for regular in-person cross-faculty communication influenced the effectiveness of language instruction.

We investigate the following questions:

- Did the increased time gap between language instruction and the application of those skills have an impact on student performance?

In previous iterations of the course, Center for Language Education (CLE) and MAE faculty developed a shared understanding of the desired content, format and language for an undergraduate laboratory report in regular face-to-face meetings. In 2020, however, all communication moved on-line and there was also a change of leadership for both the MAE laboratory course and the CLE English course. The usual training workshop for language assessment given by CLE faculty to the MAE teaching assistants who would grade the laboratory reports was conducted on-line only in Spring 2020. In Spring 2021 there was another leadership change in both the CLE and MAE courses, and this time neither side organised a workshop. This led us to consider:

- What (if any) effects did the lack of face-to-face cross-faculty communication and the change in course leadership have on the effectiveness of teaching?

In addressing these research questions, our objective was to examine the extent to which disruptions to the synchronisation of language and content instruction, and the lack of opportunities for regular in-person cross-faculty communication influenced the effectiveness of language instruction.

**Context**

Our first research question investigates the effect of the time gap between instruction in lab report writing and application of the instruction due to delays and changes in the engineering laboratory sessions. The usual practice is for MAE students to take a three-credit, discipline-specific English course at the same time as their laboratory course. The first 5 weeks of the English course focuses on laboratory report writing. The students start their experiments and write reports in their laboratory course from five weeks into the semester. In response to rising numbers of COVID cases in the community, the Hong Kong University of Science and Technology moved all classroom teaching on-line in Spring semester 2020.

Preparations to move online took place at short notice and organising laboratory sessions in the Faculties of Science and Engineering, where students work in small groups to perform experiments together, was particularly challenging. The laboratory course for Mechanical and Aerospace Engineering (MAE) in 2020 repeatedly delayed the student experiments, hoping for a swift return to face-to-face instruction. The students eventually had to do "virtual labs" in the summer of 2020, where they viewed teaching assistants performing the experiments via Zoom, using the data from these experiments to write laboratory reports. In 2021, the MAE faculty organised a mix of real and virtual lab sessions for students which were held in the usual time period in the Spring semester. MAE faculty reported that a number of laboratory reports from the 2020 cohort were very badly written. Students from this cohort also expressed a great deal of anxiety to their language teachers about the uncertainty of when they would be able to do their lab work.

Our second research question concerns Interdisciplinary teacher collaboration, which is the "collective action undertaken by English and content area teachers to address the needs of English language learners" (Pawan & Ortloff, 2011, p. 464). Dudley-Evans and St. John (1998) identify three main modes of collaboration:

| Cooperation | Collaboration | Team teaching |
|---|---|---|
| Language teachers learn conceptual and discoursal framework from content specialists | Content specialists work more directly with language teachers outside the classroom in planning courses, assessing tasks, or providing materials. Three possibilities:<br><br>• Teach language preparing students for subsequent specialized class<br><br>• Teach a specific skill using material produced by the specialists<br><br>• Use language class as an adjunct class to the content course | Content and language teachers work together in the same classroom to instruct students on tasks required in their disciplinary contexts |

*Figure 1 Dudley-Evans and St. John's (1998) model of collaboration*

Cooperation requires the least from the subject faculty, while team teaching requires commitment and consistency from both sides. Discipline-specific English courses for the School of Engineering at HKUST mainly follow the cooperation mode. Subject faculty act as informants but the writing and delivery of the course is undertaken by language educators. Just as Hyland (2017) found at the University of Hong Kong, this model has worked well at HKUST and positive relationships have been maintained with subject faculty.

The course that the CLE developed for MAE students is something of a hybrid. The bulk of the course operates in "cooperation" mode, but the first 5 weeks of instruction serve as an adjunct to an MAE laboratory course. MAE faculty give lectures about the theories behind the laboratory experiments while in the English course students are taught how to write laboratory reports. Input material for the laboratory report writing comes from MAE who supply sample reports and a laboratory manual, which the course developers use to create learning activities. CLE faculty give formative feedback on short writing exercises by students in the first 5 weeks. Then students start

conducting experiments and writing laboratory reports, graded by the teaching assistants. The first 5 weeks of the course thus require more collaboration with the subject faculty. The model of collaboration adopted is summarized in Figure 2:
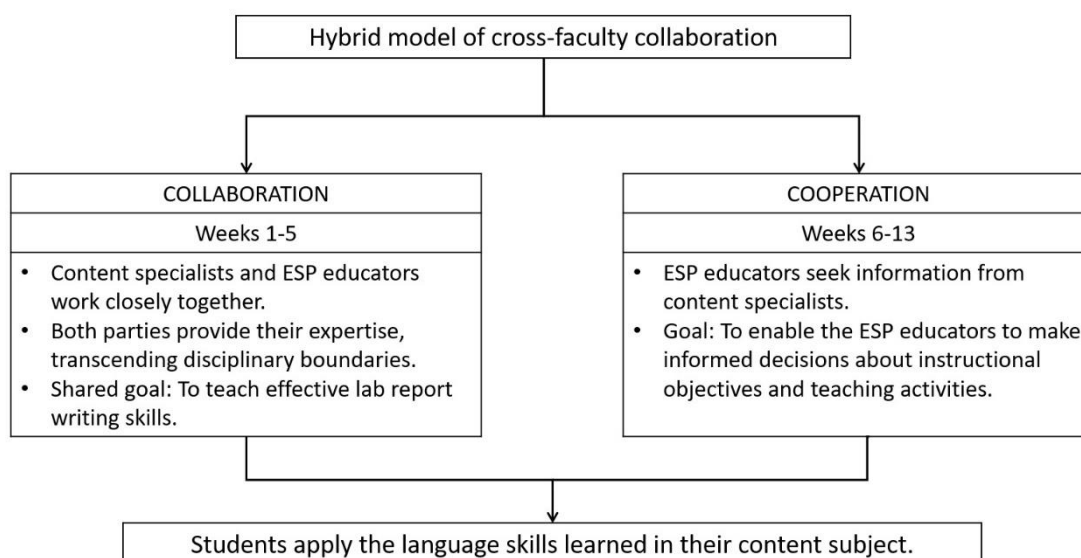


```
┌──────────────────────────────────────────────────┐
│         Hybrid model of cross-faculty collaboration │
└──────────────────────────────────────────────────┘
```

| COLLABORATION | COOPERATION |
|---|---|
| Weeks 1-5 | Weeks 6-13 |
| • Content specialists and ESP educators work closely together.<br>• Both parties provide their expertise, transcending disciplinary boundaries.<br>• Shared goal: To teach effective lab report writing skills. | • ESP educators seek information from content specialists.<br>• Goal: To enable the ESP educators to make informed decisions about instructional objectives and teaching activities. |

Students apply the language skills learned in their content subject.

*Figure 2 The model of teacher collaboration adopted*

The success of such collaborations is dependent on various factors. One of these is mutual respect from both sides, avoiding what Raimes (1991) has described as the "Butler stance" in which the language educators offer whatever support the faculty deem appropriate. In our negotiations with the subject faculty, it was clear that the 5-week adjunct component to the laboratory courses was a non-negotiable feature. MAE felt strongly that teaching of laboratory report writing should be completed as close as possible to the time when students were required to write reports of their experiments. The literature on learning transfer supports the MAE faculty's view to some extent. In a review of research on language transfer, James (2014) found convincing evidence for "near transfer" (Perkins and Salomon, 1994) between similar tasks in similar situations, in close chronology, and which involve the application of familiar and routine strategies.

The view of the CLE faculty is that our 4000-level courses should prepare students for their future professional career and/or further study rather than focusing narrowly on the needs of one subject course. It may be more difficult to identify "far transfer", but even though James' (2014) review found less convincing evidence for longer term transfer of skills, he still suggests practical techniques for fostering this, such as asking students to learn general principles, to think analogically and to consider how they could apply what they learn to other settings. In fact, HKUST expects every graduate to possess "high-end, transferable competencies, including … communications skills" (Hong Kong University of Science and Technology, 2009-12). Clearly HKUST believes that it is possible for the CLE to teach students communication skills which build competencies which they can transfer to a variety of communication contexts after graduation. The MAE faculty were happy for the CLE to adopt a rather different approach for the rest of the course. It is not clear whether this was driven by respect or indifference.

Wingate (2018) claims that close collaboration between subject specialists and language educators is highly effective in enhancing students' academic literacy development and that this collaborative work needs to involve reading and analysis of target discourses, and not just the final written product. The approach taken by the CLE in teaching laboratory report writing was to ask students to read and analyze different student examples of reports, identifying the discourse features of the various sections of the report, and then practice writing short pieces. Formative feedback from language educators focusses on language appropriacy, coherence and form. The subject specialists had no input into this process apart from supplying some of the input materials.  In the subject course, students write 4 individual laboratory reports based on their experiments. There are 160 students in the cohort, producing a total of 640 reports. MAE would probably be happy for CLE faculty to mark these reports for language but CLE teachers simply do not have the time. Grading is done by teaching assistants: PHD students in the department.

Wingate believes that the most suitable teachers of academic literacy are subject specialists, with the language educator providing training to the subject faculty in the development of academic

literacy skills in the discipline (2018). As Hyland (2017) points out, close collaboration is dependent on the continued involvement and support of individuals on both sides and is highly vulnerable to changes in personnel and policies. Wingate identifies a course on developing academic literacy skills in the discipline in a teacher training program for new faculty as her most promising project (2018). Novice faculty were reported to be more receptive to incorporating such work into their disciplinary teaching than more well-established faculty. In our case, the involvement of the subject department is confined to grading the language element of the reports, with the leaders of the CLE course conducting a training workshop with the teaching assistants on how to evaluate this element of the reports.

**The Study**

To address our first research question, the researchers conducted a qualitative textual analysis of 9 laboratory reports from each year (18 in total) to investigate whether there was a notable difference in the quality of the reports written by the 2020 and 2021 cohorts. For each cohort, we requested 3 samples of what the department graded as *high, medium* and *low* reports. The researchers graded these reports individually to see if they met the expected CLE language requirements and then compared their grades for each paper, resolving disagreement through discussion where necessary.

Semi-structured interviews with seven students were also conducted. These students were from the 2020 cohort and gave their consent to participate in the study. The interviews were conducted via Zoom in Cantonese and were recorded with the permission of the students. The following questions were asked to find out more about the students' learning experience:

- How many lab reports did you write for your lab course?

- When did you write the lab reports?

- Were the labs real labs or virtual labs?

- Which aspects of the lab report lessons were useful when you were writing up your lab reports?

- Were any of the lab report lessons not useful?

To investigate our second research question, the leader of the CLE course held an informal meeting with the professor in charge of the laboratory course to share our initial findings and discuss how cooperation between the two units could be made more effective.

## Findings

### Analysis of Lab Report Samples

We found that the "good" reports and "bad" reports shared certain features and found no notable differences between the reports from 2020 and 2021 in this small sample.

| Common features of good reports | Common features of bad reports |
|---|---|
| • Include all the structural elements taught in the language class<br><br>• Highly analytical and coherent<br><br>• Data is presented clearly and explained in detail<br><br>• Graphics often customised e.g. photos or self-created graphics, correctly labelled and formatted<br><br>• Highly accurate language use and appropriate technical academic style. | • Include nearly all the structural elements taught in the language class<br><br>• Rather descriptive with superficial discussion of data, tend to be rather short.<br><br>• Some copying or mechanical transformations from the lab manual<br><br>• Graphics copied from lab manual, may not be properly formatted or labelled<br><br>• Language may be very inaccurate or inappropriately simple. |

*Figure 3 Common features of good and bad lab reports*

### Grading of the Reports

The language educators' judgement of samples as "good", "medium" or "bad" was the same as that of the teaching assistants, so on a broad level, our judgement was well-aligned. During the meeting with the professor however, the CLE course leader discovered that a new grading scheme for the laboratory reports had been introduced, which the teaching assistants were asked to use. This was the first time we knew of the change, and students did not have access to the scheme or any rubrics

before they submitted their reports. The section on language assessed only surface features: grammatical and lexical errors and mistakes in formatting. Marks were deducted for faulty or missing elements, rather than crediting students for what they did well. This scheme did not align well with the criteria used by CLE teachers to give formative feedback in our practice writing exercises, which focused on appropriacy of language use in the specialized discourse of a laboratory report.

**Student Interviews (translated from Cantonese)**

The students did not think that being unable to take the content course immediately after the ESP course had a negative effect on their performance. As one student said in his interview:

> *It was okay for me [that the two courses were not offered at the same time]. When I was attending [the language course], I had the habit of saving all the teaching materials on my computer. This helped me. Plus the course content was not particularly difficult to master. So I handled the situation by revising my notes before I wrote the lab report assignments…. I got a good grade because I followed all the guidelines.*

The other students interviewed also agreed that the time-lapse between the writing input given in the language class and the lab sessions did not have a particular impact on their performance. However, some students still preferred the two courses to be offered at the same time. As another student put it:

> *I reviewed my language class notes before writing the lab reports, and this worked for me. After reviewing my notes, I remembered what I had learned from the language class. So this was okay. But I myself prefer finishing the language course first before taking the lab course because other courses that we need to take also require us to write lab reports, so it's useful to learn the relevant writing skills earlier. It's easy for students to forget things if the two courses do not take place at the same time.*

**Discussion**

Our findings indicate that the 2020 cohort did not perform less well in the writing of their laboratory reports than the 2021 cohort, despite the greater time gap between language instruction and the writing of the reports. **"**Just in time" instruction has been considered the ideal arrangement by the subject faculty but the longer time-gap between instruction and writing of the reports in 2020 did not seem to have a notable impact on students. Perhaps as the subject course leader was new to the role in 2020, he did not have sufficient knowledge to compare with previous cohorts?

While timing of instruction turned out to be a non-issue, lack of timely communication between the subject faculty and the CLE faculty was a problem.  Existing problematic elements in the collaboration became more prominent. There had never really been any attempt to discuss with the subject faculty what we understood by "Technical Communication": academic literacy and language in the discipline. The new grading scheme revealed that the subject faculty thought that grammar, word form and formatting were "language" while the other elements such as language appropriacy and coherence were not included in the grading scheme.  Yet the broad alignment between our assessment of the report samples and the teaching assistants' grading may indicate that these other elements were implicitly taken into account by the graders though they were not explicitly included in the grading scheme.

Using teaching assistants to do the grading is understandable, given the quantity of reports, but also problematic. Most of them are PHD candidates from the Chinese mainland and though they know very well what a laboratory report should include, they may never have had to write a laboratory report in English in their own undergraduate studies. The teaching assistants tend to change every year so there is little chance to accumulate knowledge and expertise in grading reports. The marking of student writing also tends to be seen as a demanding yet tedious lower-status academic task (Tuck, 2016) and there may be little incentive to develop expertise.  With 160 students taking the course, these two or three assistants have to grade around 640 reports per semester, with language being just one of the grading criteria. It is understandable that the professor would want to make grading simple

and transparent for the teaching assistants, but the new grading scheme meant that the feedback from the CLE and the subject faculty was not well-aligned.

This small-scale study found no notable differences in student performance when the time gap was increased between language instruction in report writing and the application of those skills in a lab report for the department. This suggests that the two courses do not necessarily need to be corequisites, though it seems desirable that the language course should precede the lab course as a pre-requisite if the co-requisite requirement is removed.

Language educators need to work with the subject faculty to better align assessment practices and to develop a shared understanding of what is meant by academic literacy in the discipline. As teaching assistants are the report graders in this case, the language teachers should try to give them support. The previous practice of a regular workshop with the teaching assistants has been revived so that the language educators can work with the subject department to help them to develop a way of giving summative feedback on the reports which better aligns with the CLE's formative feedback on the writing practice exercises.

Gaps in communication between the language educators and the subject faculty were due to a change of personnel running both courses: a recurring problem when work with the subject faculty involves close collaboration. The disruption of the pandemic exacerbated existing problems. Hyland (2017), reviewing five years of interdisciplinary collaboration at the University of Hong Kong, found that the most problematic issue had been how to maintain relationships with colleagues from the subject faculties. Wingate (2018) persuasively argues for the effectiveness of close collaboration between language educators and subject faculty. But this requires consistency of personnel and commitment to working together: factors which may not be present in many situations. This small-scale study is a reminder of how vulnerable such collaboration is when faced with a change in circumstances, and the importance in such situations of maintaining communication.

**References**

Dudley-Evans, T., & St. John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge University Press.

Hong Kong University of Science and Technology. (2009-2012). University Common Core Program: ABC LIVE – Attributes of HKUST graduates. https://uce.ust.hk/web/about/about_goal_abclive.html

Hyland, K. (2017). English in the disciplines: Arguments for specificity. *ESP Today*, *5*(1), 5–23*.*

James, M. A. (2006). Transfer of learning from a university content-based EAP course. *TESOL Quarterly*, *4*, 783–806.

James, M. A. (2014). Learning transfer in English-for-academic-purposes contexts: A systematic review of research. *Journal of English for Academic Purposes*, *14*, 1–13.

Pawan, F., & Ortloff, J. H. (2011). Sustaining collaboration: English-as-a-second-language, and content-area teachers. *Teaching and Teacher Education, 27*, 463-471.

Perkins, D. N., & Salomon, G. (1994). Transfer of learning. In T. Husen & T. N. Postlethwaite (Eds.), *The International Encyclopaedia of Education* (2nd ed., vol. 11, pp. 6452–6457). Pergamon.

Raimes, A. (1991). Instructional balance: From theories to practices in the teaching of writing. In J. Alatis (Ed.), *Georgetown University Roundtable on Language and Linguistics* (pp. 238-249). Georgetown University Press.

Tuck, J. (2016). 'That ain't going to get you a professorship': Discourses of writing and the positioning of academics' work with student writers in UK higher education. *Studies in Higher Education*, *41*(9), 1612–26.

Wingate, U. (2018) Academic literacy across the curriculum: Towards a collaborative instructional approach*. Language Teaching, 51*(3), 349–364.