Chapter 7
Case Study 2, Hong Kong: Oral Presentations—Stories Behind Students' Use of PowerPoint

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1 Background

As the number of students entering higher education continues growing worldwide, and the number of ESL/EFL students studying via the medium of English in Asia grows (Miller, 2014), there is a continuing debate on the best ways to evaluate these students' learning—in terms of both content and communicative abilities. Recently, apart from the traditional demands on academic written English, oral presentations have also been placed under scrutiny, as these have been increasingly valued as a significant way to make interpersonal, academic, and professional ideas more accessible to a wide audience (Barrett & Liu, 2016). However, this complex oral academic/professional event remains poorly understood (Kobayashi, 2016), as good language skills, in themselves, do not necessarily guarantee a good academic/professional presentation (Morita, 2000). Therefore, the use of semiotic sources (e.g., images, videos, figures) has been given increasing attention in recent research studies (e.g., Rowley-Jolivet, 2015). Typically, as PowerPoint has become a must-have artificial counterpart to support an oral presentation, the question arises as to how our students can take advantage of PowerPoint to reinforce the intelligibility of their academic/professional talks.

The case study discussed here is set in Hong Kong, a city that promotes a policy of "Bi-literacy (Written: Chinese and English) and Tri-lingualism (Spoken: Cantonese, English and Mandarin)" (两文三语) in its schools and universities. According to the Hong Kong Education Bureau (2021), around twenty-five percent of secondary schools in Hong Kong use English as the medium of instruction and 8 of the 11 universities have an English-medium policy. That means that seventy-five percent of students in secondary school study in Cantonese and as such may not be as well

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prepared for their tertiary education as the other students, in terms of their English linguistic competence.

Similar to western tertiary institutions, an oral presentation has become a crucial academic convention and assessment tool in Hong Kong universities. Students encounter different degrees of challenges during their presentations: unfamiliarity with oral academic practices, difficulty in conveying meaning about technical subjects to a non-technical audience, and insufficient English language proficiency (Evans & Green, 2007). Since PowerPoint has become almost a "ritual" within students' presentations, it is valuable to gain more insights upon good practices of how students go about designing and preparing their PowerPoint slides, and how they try to use them during their presentations. This may help tutors teach students how to make their presentations more effective and engaging.

While it is valuable to look at how professionals handle their presentations (e.g., Querol-Julián & Fortanet-Gómez, 2012; Rowley-Jolivet, 2015), and it is tempting to simply make a list of the "do's" and "don'ts" of how to present information (e.g., maintain eye contact with your audience, speak clearly, do not have too many slides, and do not move through the slides too quickly), bottom-up observations of students' practices when preparing and presenting may inform our pedagogy on making such oral presentations while using technology more effective.

As one part of an ongoing research project, this case study employs a mixed-method research design and refers to social semiotic analysis to explore what features students make use of when using PowerPoint as a technological tool during their technical presentations. The goals of this case study are: first, understand the features of students' PowerPoint slides in developing their professional presentations; second, based on findings from the students' experiences provide tutors and students with some principles of effective PowerPoint design for academic/professional oral presentations. The overarching question leading this case study is: *What aspects of PowerPoint do students use in their technical presentations?*

2 Case Study

2.1 Participants

Nine Hong Kong tertiary science students (21–23 years old) whose first language is Cantonese and one native-English speaking language tutor voluntarily participated in this research project. Due to space limitations, I report on only one of the student participants: Vin. This student attended a Chinese medium school and technical college before coming onto an engineering degree program at an English-medium university. Vin commented that he was not confident of his English language skills and the class tutor commented that Vin was an intermediate level proficiency student. Notwithstanding his lack of confidence in his language skills, Vin was a friendly

student and tried his best to use the communication skills he had and was a willing participant in the research project into oral presentations.

2.2 Project Description

The students were taking an undergraduate *English for Engineering* course. According to the course coordinator, this course tries to develop students' language proficiency which may be useful in their professional careers. That is, the course aims at developing students' critical thinking, and oral communicative and written skills necessary for effective academic and workplace communication as professional engineers. It provides students with ample opportunities to develop their professional identity through simulated real-life professional or academic scenarios (e.g., holding company meetings and writing a project design blueprint). The course did cover some aspects of good oral presentation skills (e.g., speak clearly, keep to the time allocation), though due to the heavy course content these were only briefly mentioned. In this course, the technical group presentation task accounts for twenty percent of students' final grade. Therefore, it is considered a high stakes task which can significantly affect the students' overall GPA score. Within the first two lessons, students are guided by the tutor to form project groups of four to five. After that, the tutor posts several technical topics (e.g., problems caused by landfills; the need for a new drone technology for surveillance purposes; the need to improve the design of mobile phones for elderly users) for each group to choose from for their project task and students decide their individual roles within the engineering project (i.e., leader, design engineer, sales engineer, technical engineer) based on their personal preferences and specialty. They then work together as a project team to investigate a scenario and prepare a technical presentation.

During the technical presentation, each student in the team has 10 min to present the part of the project for which he/she is responsible. The overall structure of the technical group seminar presentation follows IMRD (Introduction, Methodology, Result, Discussion), a classic research paradigm of STEM (Science, Technology, Engineering, and Mathematics), and students are expected to consider the following themes:

- *The real-life problem*: nature of the problem, people affected by the problem, what needs to be done to solve the problem, etc.;
- *The technology (solution to the problem)*: some basic conceptual or theoretical background of the technology, the hardware, software, or equipment needed to support the technology;
- *Limitations of the technology*: some major problems associated with the technology that may limit its use and how these problems may be overcome; and

- *Experience of the engineering firm*: e.g., types of solutions developed using the technology, projects completed, clients served, types of services provided (Student's Handbook of English for Engineering: 2018).

While this assigned presentation task does not directly instruct students to use PowerPoint, the students' other experiences of attending content lectures where the professor uses PowerPoint, and their previous use of PowerPoint in other presentations lead students to rely on this technological tool during their oral presentation in this course.

2.3 Data Collection and Analysis

A mixed-method approach was employed with this case study. Questionnaires and surveys that ask students' learning history and language proficiency were collected and semi-structured group interviews of students' perceptions on oral academic and technical presentations were conducted. The students' presentations were video recorded and analyzed by the researcher for features of a good or weak presentation. Then, the processes students engaged with while editing their PowerPoint presentations were screen-recorded and used with a think-aloud protocol between student and researcher (a process where students orally report decisions they took during making their PowerPoint slides) to answer the researcher's questions. To further justify the researcher's and students' interpretations of their use of PowerPoint, students were asked, in follow-up individual interviews after their presentations, to examine and reflect on their use of PowerPoint during their actual performance.

A social semiotic analytical approach was adopted with the data collected. Such a framework enables us to explain correlations between meaning makers and the use of multimodal resources by taking into account the context/moment where the meaning-making process occurs (Morgan, 2006). To enhance the validity of the analysis, this study was triangulated by (1) interpreting students' own use and reflections of PowerPoint, (2) comments made during group and individual semi-structured interviews and (3) the researcher's analysis of videotapes of the presentation.

3 Results

In this section, I present some of the data collected from the focal participant, which he gave me permission to reproduce here, in order to present a view of the features he considered important when preparing his PowerPoint slides. As there is only one case study in this paper, some of the observations tend to be of a more speculative nature.

Before reporting the findings, it is important to point out three contextual factors of the presentation task. This is because the social semiotic approach on which

the analysis is based takes into account potential relations between the context and meaning-making decisions.

The first point is the nature of the course *English for Engineering*. Since this course focuses on language learning within an academic/professional context, it can stimulate students to focus more on their English language use and development. The nine focal students in the study also agreed with this point and commented that they were highly aware of the focus of the course and tried to be more careful of their language use throughout their presentation tasks than they would be in a disciplinary course.

The second point is the nature of the presentation. Since the presentations were grounded on a simulated professional scenario, students also needed to negotiate their student identity and virtual professional identity (e.g., team leader, technical engineer, or sales engineer). Consequentially, their understanding of their "professional" identity was also a factor they tried to take into consideration during their oral performance.

The third point was the background of the audience, as this can have an influence on a presenter's decision-making and how information is presented (Rowley-Jolivet, 2004). In the course, neither students nor the instructor was experts in the technical topics used for the projects, and particularly, the English language tutor was not from a science or engineering discipline. Therefore, this means that a balance between technical information and intelligibility features had to be taken into account for the success of the presentation.

Now we turn to the features from one student participant and examine how he prepared for his talk about drone technology and then how he reflected on his performance and his use of PowerPoint.

3.1 Pictures and Diagrams

Except for the introduction slide, the student's slides were composed of text plus images/photographs/videos/diagrams (see examples in Fig. 1). These modal sources were specifically used for illustrative purposes, typically when it comes to technical concepts.

Within Vin's second slide (Fig. 2) that introduces "client–server architecture," he presented information with a tree-like diagram. Within the diagram, several cartoon-like images of a laptop, a drone, and the cloud entitled Internet, correspondingly represent the server, the admin control panel, drones, Internet, and drones; arrows are used to show the correlation among these elements within the system. This complex interface of photographs, diagrams, and text needed a lot of attention from the audience while Vin explained the concepts.

Vin clearly tried to situate himself as a technical engineer who could explain slide 2 intelligibly. He sought to use the diagrams as supporting materials for his presentation through visualizing particular complex technical concepts into corresponding images. This corroborates with the claim that different types of mode

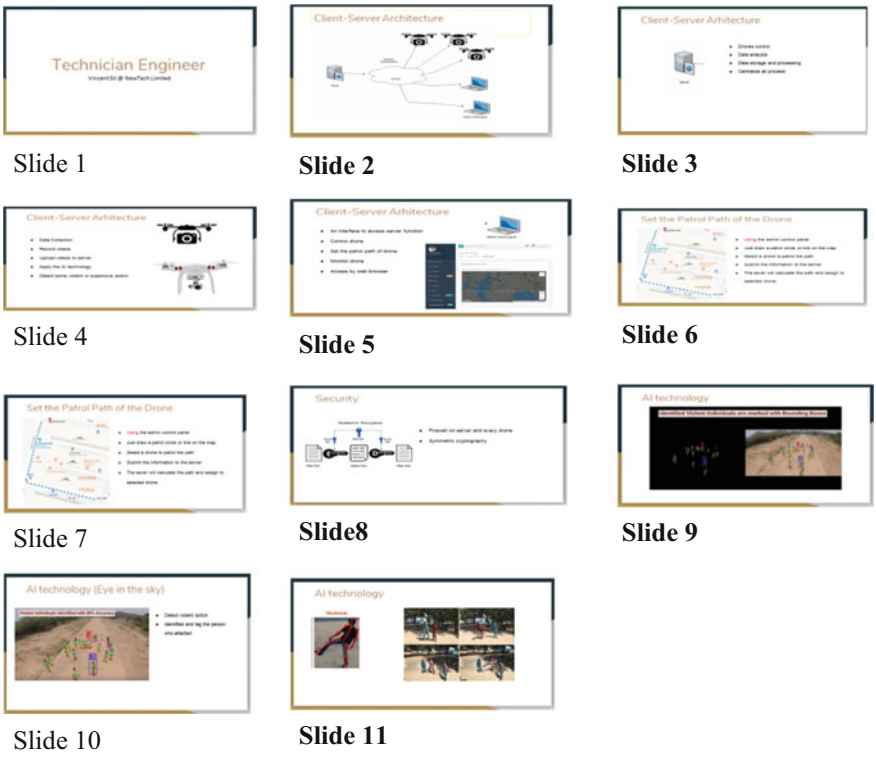
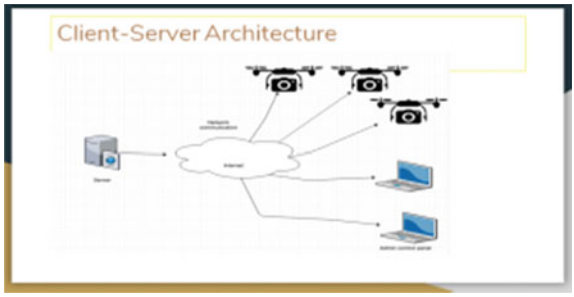


Fig. 1 Vin's (10-min presentation) PowerPoint slides

Fig. 2 Vin's 2nd slide



(written language and images) serve different purposes: written language is responsible for linear and sequential relationships (i.e., illustrates an event logically from beginning to end) while images/diagrams help with understanding ideas visually (Hafner, 2014).

In contrast to Vin's multimodal approach in most of his slides, we can also observe how the overuse of visuals can lead to problems. For instance, in Vin's slide 11 there

was little textual information and he relied on five pictures here. During this part of the presentation Vin commented that:

> *First, I think if I put a lot of text on it, it will be very difficult to understand, so I just find some picture of the… how the computer detect your movement…I found that it will analyze through the skeleton…so the computer can analyze your movement accurately, so I add the picture here so people will know what I mean…* . (Vin: individual interview)

However, according to the videotape of Vin's presentation, when Vin made reference to this slide he did not direct the audience's attention to any of the pictures. Instead, he talked off-script and the pictures served simply as visuals. This may be due to the fact that Vin was not reading from a script and he missed out on reporting some of the points that he had prepared earlier.

While Huckin and Olsen (1983) believe that more visuals on the slide equal to a more interpersonal presentation, we may notice that only using images and graphs can be unproductive, particularly when the students try to discuss technical and complex concepts. When a student is not an expert in the area of presentation a more controlled and balanced use of multimedia sources, texts, and bullet points may be needed.

3.2 Use of Bullet Points

Very often, bullet points are used to bring up and elaborate key aspects within students' slides. The use of bullet points was a feature of Vin's presentation slides. However, the overall language structure and register of his bullet points lacked consistency and accuracy. In a post-presentation interview with the class instructor, he mentioned that in Vin's presentation there was sometimes a lack of coherence between the texts and points on the slides. For instance, some bullet points were complete sentences and so the audience received a clear idea about the information presented, this, though, was followed by bullet points of short phrases or only one word, and the audience had to guess the intended meaning (as indicated in post presentation interviews with the audience). These unsystematic bullet points also involved eye-catching errors: no punctuation, and gross grammatical errors. For example, among the five bullet points within Vin's 6th slide (Fig. 3), three short sentences, one verb-noun phrase, and one complete sentence were used; and there were no punctuations for either short or complete sentences. Short phrases like "using the admin control panel," and a discourse marker "just" may be appropriate when speaking but not when presented as a written text. Such inconsistency of his PowerPoints is interesting considering that he spent approximately 4 h preparing his slides. This probably means that the student used most of his time thinking about the content of this slide, and not so much on how the information could be presented clearly.

With respect to such varied linguistic structures of those bullet points, Vin commented that he tried to simplify them by drawing on his limited linguistic resources and tried to keep things simple. In contrast to this comment, Vin also

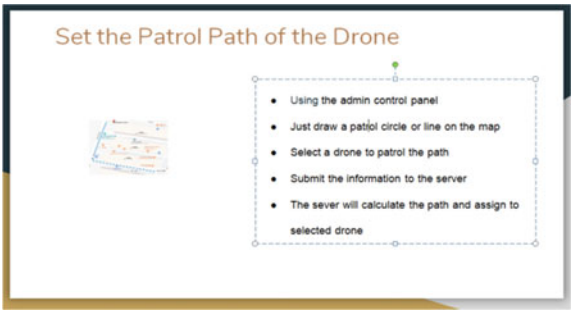


Fig. 3 Vin's 6th slide

said that he simply copied texts from the script he had prepared for his presentation, without noticing any inconsistency, or errors, in the bullet point design. This direct copying and pasting can result in a mixture of written and spoken registers across the slides. While some may argue that a presentation is mainly a spoken event, the language on a slide is written form and has to, in many aspects, conform to the conventions of writing. This point was not appreciated by many of the students in this study most of whom seemed to be unaware of how to maintain consistency of their written language register and language accuracy on their PowerPoint (teacher observation).

3.3 Pictures and Texts

Generally, we find that effective usage of visuals in science presentations follows specific systems: we expect to first see familiar and known substances (either written or pictorial) on the left side and then the right side of unknown or specific particulars (Rowley-Jolivet, 2002). Across the 26 slides made by the nine students, texts and images were interchangeably positioned for either general or specific representation of ideas.

Although previously we have pointed out the potential negative effect of having a slide only filled with pictures as Vin proceeded onto his 11th slide (which led him to forget some important information), Vin did take into account his audience and creatively adopted the general-specific rule within the design of his 11th slide. The 11th slide (Fig. 4) reflects how he managed to use pictures of the human skeleton to logically talk about how technology can be applied to identify violent actions. On the left side is one amplified image in which a male is tagged with several red lines based on the human's skeletal structures; the word "skeleton" in red is placed at the top of the picture. Within the four small pictures on the right, several males are tagged with red and green lines under skeletal structures, performing different fighting actions (e.g., punching, kicking) against each other: the amplified picture on the left side provides a technical umbrella for the other four on the right side, then the right specifies how violent actions appear under the spectrum of Artificial

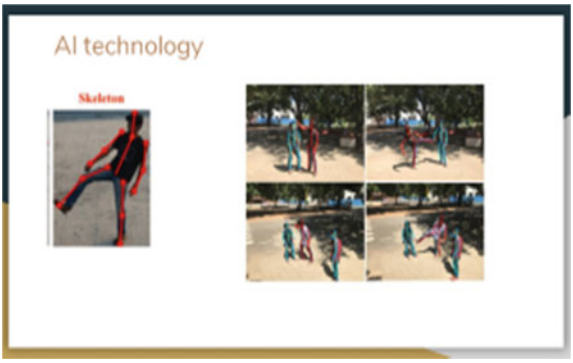


Fig. 4 Vin's 11th slide

Fig. 5 Vin's 5th slide

Intelligence (AI) technology. Vin mentioned that the reason why he chose images over texts in this slide is that pictures are easier to understand than texts and that the use of four different pictures helps specify examples of violent actions to the audience. From Vin's recall, we notice how he dealt with the 11th slide in his actual performance (i.e., presenting without referring to those pictures) needs improvement, and his awareness of the burden that written text may have on his presentation gave credibility to his use of pictures.

However, not all Vin's slides represented such mindfulness. In his 5th slide (Fig. 5) introducing how the client–server architecture appears and how it works, five bullet points, which were directly copied from Vin's written script, were presented on the left of the slide:

- *An Interface to access server function*
- *Control drone*
- *Set the patrol path of drone*
- *Montior drone*
- *Access by web browser*.

On the right side, there hung an animated image of a laptop attached to a short phrase Admin control panel. Below was a web browser image of the control panel. While Vin mentioned that these two pictures on the right side were used to decipher simple ideas in bullet points, they (i.e., cartoon-like laptop, browser of the control panel) would have been more appropriate to be on the left side since they are more familiar to the audience than written technical points.

From these examples, we notice that designing PowerPoint is a rather complicated process since it involves considerable decision-making and negotiation of professional/academic identity. We need to consider the potential audiences' background knowledge and try to achieve a selective summary. Effective use of visuals on the PowerPoint can significantly compensate for a speakers' weak oral skills when communicating their ideas (Rowley-Jolivet, 2002). In the case presented here, due to the student's immature understanding of the technical field, and how to use his academic/professional English language proficiency, he would have benefitted more if there had been a pedagogical focus on how to make use of PowerPoints in a professional context, and their complementary nature to spoken texts, in the course.

4 Pedagogical Principles

While pedagogical focus significantly varies from English for Specific Purposes (ESP) courses to disciplinary courses, the pedagogical principles of how to use PowerPoint when making a presentation can share some common ground. Based on the single case study above, and observations by the teacher and researcher, five pedagogical principles are presented:

(a) *Disciplinary practice and PowerPoint design*: more detailed guidelines should be given to students on how to present like a professional in a discipline. More active communication between English language teachers and disciplinary teachers is recommended in order to establish disciplinary patterns of how such information is usually presented via PowerPoint.

(b) *Summary skills*: posting heavy texts and long sentences on PowerPoint can be confusing for the audience. Therefore, it is important that students learn how to summarize their information so that it is focused and relevant to their talk. One suggestion may be to identify 3 or 4 key aspects for each slide, and then present them as short phrases or sentences. This would help students make decisions about what is and what is not important in their presentation.

(c) *Use of texts*: students need to be aware of logical reading habits in English: from left to right, from general to particular, from familiar to unfamiliar. Tutors of ESP courses can bring these reading strategies to the students' attention and make them aware that they need to follow established reading conventions with their PowerPoint slides.

(d) *Use of visuals*: it needs to be clear to the audience why the presenter is using visuals in the PowerPoint slides. The speaker has to decide if he is going to

make direct reference to the visuals, or if they only serve to illustrate a point made being made orally. Alternatively, a visual may simply be to maintain the interest of the audience and have no direct meaning to the information presented.

(e) *Language accuracy and PowerPoint*: inaccurate language use and inconsistent language register on PowerPoint can be problematic for the audience and shift the focus of the presentation away from the content. Criteria related to language use and register should be more clearly stated in assessment and used to raise learners' awareness of: consistency of the way information is presented (sentences vs phrases vs words), typos, use of punctuations, grammar, and proper use of technical terms.

Tutors often spend considerable time teaching the format of good writing skills in an ESP course, for example, how to write a good lab report, but little or no time is given to how to organize information on PowerPoint. As the importance of oral academic and professional presentations is increasingly valued worldwide, and PowerPoint is the most used technological tool during students' presentations, it is perhaps time that we reevaluate how we prepare students to make use of technology for this important performance skill for the success of their academic learning and future professional career.

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