

## Capstone courses<sup>1</sup> across disciplines: an exploratory study of a pedagogical genre

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### Abstract

In higher education, capstone courses are defined as a High Impact Practices. However, in the current Canadian educational context, little is known about their nature, purpose and application. This study examines how capstone course instructors organize and communicate their understanding of the functions and purposes of capstone courses through their course syllabi. By using the English for Specific Purposes (ESP) rhetorical move/step genre analysis, which aims to identify communicative purpose(s), function(s), and patterns of texts, this study investigates the communicative categories, or “moves,” and lexical-grammatical features that distinguish capstone course syllabi from those of other courses.

*Keywords:* Capstone course; High Impact Practices (HIPs); Genre Analysis; ESP; Syllabi.

### Práticas de Alto Impacto entre disciplinas: um estudo exploratório de um gênero pedagógico

### Resumo

No ensino superior, cursos *Capstone* são definidos como Práticas de Alto Impacto. No entanto, no contexto educacional Canadense atual, pouco se sabe sobre sua natureza, propósito e aplicação. Este estudo examina como instrutores de práticas de alto impacto organizam e comunicam seu entendimento das funções e propósitos de tais práticas ao longo do currículo do curso. Ao usar o procedimento de análise de gênero de movimentos retóricos e passos, do Inglês para Fins Específicos (ESP), este estudo investiga as categorias comunicativas, ou “movimentos”, e características léxico-gramaticais que distinguem o currículo de práticas de alto impacto de outras práticas.

*Palavras-chave:* Curso *Capstone*; Práticas de Alto Impacto (PAI); Análise de gênero; ESP; Currículo.

## Introduction

The National Student Survey of Student Engagement (NSEE) reported that courses and programs that incorporated High Impact Practices (HIPs) increased students’ sense of achievement and engagement (NSEE, 2007). Studies have also shown that HIPs promote higher cognitive learning and development of college students including under-represented

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<sup>1</sup> The definition of Capstone Courses is present along the text.

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<sup>3</sup> *In memoriam:* **Flavia Renon** was an exceptionally generous and talented teacher, researcher, librarian, and scholar, who was undertaking research as a doctoral student in Applied Linguistics and Discourse Studies at Carleton University, Ottawa, Canada. She had made a life-long commitment to improving education, particularly in the practical implementation of programs that would help students navigate the transition from high school to post-secondary studies and from university to the workplace. She passed away suddenly on March 19, 2019, at the age of 55. This article is published to commemorate her.

populations (KILGO; SHEETS; PASCARELLA, 2015; SWANER; BROWNELL, 2008). For HIPs to be effective, it should 1) involve time and effort needs to be dedicated to meaningful tasks; 2) help students build significant relationships over time; 3) allow for rich feedback that needs to be provided to students; 4) provide students with an opportunity to experience a diversity of learning activities; 5) give the students opportunities to apply learning to new contexts, and, finally, 6) allow for reflection (KUH, 2008). For example, in one Canadian province, 45 universities and colleges signed a Strategic Mandate Agreement to ensure that students at these institutions participate in at least 2 HIPs by the time of graduation, a recommendation proposed by the NSSEE findings (NSSE, 2007; Ontario Ministry of Education, 2018).

According to KUH (2008), capstone courses are listed among one of ten high impact practice. Though there appears to be no consensus on the definition of the capstone course (SCHROETTER; WENDLER, 2007), usually such courses are broadly defined as “culminating” experiences “in which students are expected to integrate special studies with the major, and extend, critique, and apply knowledge gained in their major” (WAGENAAR, 1993, p.209). Capstone courses as HIPs are expected to encourage student engagement, and are often defined as courses that allow students to synthesize and integrate prior knowledge in novel situations. DUREL (1993) first referred to such courses as “a rite of passage,” based on their “capping” and “bridging” functions. A number of programs in higher education, in particular in the Science, Technology, Engineering, and Mathematics (STEM) and Business disciplines, are including capstone projects in the final year of undergraduate programs (SCHWERING, 2015). Their purpose is to prepare graduates for professional practice by creating learning opportunities that involve open-ended, practical projects which encourage critical thinking, communication skills and teamwork (BAYLES, 2016; LYNCH; GOOLD; BLAIN, 2004). In other words, they not only allow students to consolidate their prior experiences but also equip them with skills that facilitate the transition to post-graduate life.

To investigate the purpose(s) of these courses across disciplines LEE and LOTON (2017) conducted a study, whose findings aligned with many course goals cited above as well the development of student professional identity, agency, and personal engagement. Large scale studies were undertaken in the USA (HENSCHEID, 2000) and in Australia (LEE; LOTON, 2015) to uncover the nature of capstone curriculum in practice. Lee and Loton (2017), for example,

identified some principles of capstone course design that align with HIPs across the disciplines.

These principles include:

1. Integration and extension of learning
2. Authentic and contextualized experience
3. Challenging and complex scenarios
4. Student independence and agency
5. Concern with critical inquiry and creativity
6. Active public dissemination.

Not much is known about the nature of capstone projects in the current Canadian academic context or about how instructors structure, articulate and communicate elements of these courses through their course syllabi. In addition, given that multidisciplinary capstone courses are becoming more and more prevalent in higher education (RHEE *et al.*, 2014), understanding the similarities and differences between mono-disciplinary and multidisciplinary capstone courses as discursively realized through their course syllabi could facilitate curricular design for instructors collaborating on multidisciplinary capstone course.

Examining how instructors in various disciplines communicate their understanding of a capstone course through the structure and language use in capstone course syllabi could provide a better understanding of how the syllabus is enacted in the classroom and how it relates to the broader institutional context. To begin to develop such an understanding, this paper seeks answers to the following questions: How do instructors discursively represent capstone courses in their course syllabi, or, more specifically, which rhetorical structures are typical for course descriptions of capstone course syllabi? Which lexico-grammatical features are prevalent in capstone course syllabi?

### **Theoretical framework: English for Specific Purposes (ESP) genre approach, analysis, and pedagogy**

In contemporary genre studies, genres are understood as “typified acts of communication” (HYLAND, 2015, p. 32) recognized and valued by communities of their producers and users. Swales (1990), who pioneered the ESP genre analysis, defined genre as a

set of communicative events which share a communicative purpose(s) and function(s) and are produced and used by groups of people who use particular types of discourse (discourse communities). The notion of the communicative purpose of the syllabus is central to this study.

Shared communicative purposes and functions often lead to the development of conventionalized recognizable structures, which realize the purposes through the discourse in individual instantiations of genres, or texts. For the analysis of such structures, Swales (1990) proposed to identify meaningful segments of a text, which express a single communicative purpose, or moves, and further divide them into smaller steps, which express a communicative sub-purpose, subordinated to the overall purpose of the move. The functional move/step structure that emerges gave the name to this analytical approach, rhetorical move/step genre analysis. In a written text, the sequence of moves and steps, which may vary from one text to another, define the “prototypical” structure of the given genre that is recognized within a particular discourse community (FLOWERDEW; FOREST, 2009). Some moves may be required (obligatory), occurring in all instances, while others are optional, occurring in some cases. According to Kanoksilapatham’s (2005) criterion, a move is deemed obligatory if it occurs with a frequency 100% (i.e. in every text), optional if the occurrence ranges from 60-99%, and conventional if it occurs with a frequency below 60%. Moves may also vary in order; some may be embedded within others (SWALES, 1990). Once a conventionalized rhetorical structure of the genre is identified, typical lexico-grammatical features that occur within the same moves across the corpus of texts that serve as genre instantiations may be investigated.

Over the last few decades, ESP genre analysis has played a major role in genre studies and in the teaching of academic and professional writing (BHATIA, 1993; DUDLEY-EVANS; JOHN, 1998; SWALES, 1990). According to BHATIA (1991), the ESP approach not only provides an analytical form-function framework for the study of genre but also contributes to understanding how information is rhetorically structured in written genres, and allows for a more in-depth investigation of its communicative purpose (ASKEHAVE; SWALES, 2001). Recent ESP genre studies have taken a closer look at the relationship between moves/steps and their typical lexico-grammatical features (e.g., AFROS; SCHRYER, 2009; FLOWERDEW, 2016) such as, for example, “‘voice’ and stance (aka, persona, subject position)” (JOHNS *et al.*, 2006).

### Top down and bottom up approaches

Two approaches have been normally applied in ESP genre analysis to identify rhetorical moves: top down and bottom up. Top down approach starts with the examination of the global purpose of the genre through the literature and/or interviews with expert informants. Information obtained through these methods is then discussed in the light of the rhetorical move/step structure uncovered through the analysis (LIEUNGNAPAR; TODD, 2011). The identification of each move is, therefore, based on the communicative purpose or intention of the text.

The bottom-up approach views genre as content and function. Move identification is done through conventional linguistic features such as keywords in combination with verb phrases and themes. Lieungnapar and Todd (2011) found the bottom up approach to be more objective as it helps to uncover linguistic features that are related to rhetorical structures. The top down approach instead takes context into account. Given the nature of the research questions for this study as presented above, the bottom up approach is used.

### A look at genres in pedagogical contexts of higher education

Doolittle and Siudzinski (2020) observed that “Syllabus use in higher education instruction is ubiquitous, yet what actually constitutes a syllabus remains unclear.” In a study of academic syllabi, Leduc (2009) identified 16 items that are likely to appear in a syllabus based on a review of the literature. In his study, students ranked policies as the lowest in terms of value or usefulness, whereas course/learning objectives, assessment and readings ranked the highest. These are the elements that appear to be related to performance.

Based on a large-scale study of 1000 syllabi, Doolittle and Siudzinski (2010) defined a broader framework based on content from which to examine course syllabi. They identified four main elements typical of course syllabi: professor information, course information, grade information, policy information.

Bazerman (2004) views the classroom as being “constructed” by the interactions of academic genres such as syllabi that “flow” within and beyond the walls of the classroom. This

means that their communicative purposes and functions can be complex in nature. By investigating and understanding the rhetorical and discursive structures of these communicative acts, instructors can go beyond the how-to-approach of their curricular documents and begin to uncover and understand the effectiveness of these communicative texts and their impact on the audiences both inside and outside the classroom. Most academic ESP genre studies examine research articles, dissertations in addition to, more recently, genres that are not always “visible” to the public, occluded (SWALES, 1996), such as research proposals. The communicative function of syllabi, however, has received limited attention in the literature (THOMPSON, 2007).

### **The syllabi as an academic genre**

Educator Ken Bain (2004) described the syllabus as a “learning-focused document that communicates clearly and compellingly what students will gain from the course”. However, on closer examination, the syllabus is much more than a learner-centered checklist for students. It serves as a class management tool (SVINICKI; MCKEACHIE, 2014), a “contract” that outlines student/instructor responsibilities (RUMORE, 2016), a socialization tool that initiates students to academic discourse communities (SULIK; KEYS, 2014), and much more. In other words, more than often the syllabus addresses different audiences and contexts within and beyond the classroom. It serves several multifaceted and often conflicting functions that make syllabus construction a challenge (THOMPSON, 2007). In constructing a syllabus, instructors, for example, frequently are confronted by tensions that arise when trying to communicate authority through the expectations of the course while at the same time trying to create a positive tone to facilitate student engagement.

There has been a limited number of studies dedicated to the genre of course syllabi in higher education. The majority of such publications are dedicated to the syllabus analysis and design in English for Academic Purposes (EAP) and ESP courses (e.g., BRUCE, 2005; BAX, 2006; DAVIES, 1988). Only a few recent studies looked at the syllabus as a genre across the disciplines in higher education (e.g., AFROS; SCHRYER, 2009; GRAVES; HYLAND; SAMUELS, 2010). As a “master classroom genre,” Barwashi (2003, p. 119) finds that the syllabus allows instructors to

use a number of rhetorical strategies to communicate everything from course description, goals, and structure to institutional policies.

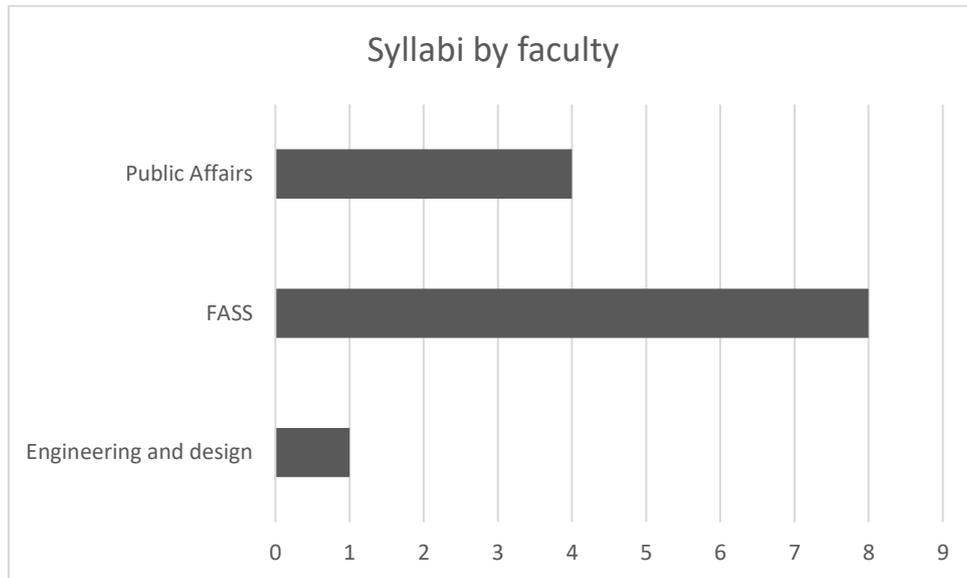
Some argue that the syllabus is a meta-genre in that it functions to organize and situate other genres and activities in the classroom (GILTROW, 2001; NEADERHISER, 2016). Bawarshi and Reiff (2010) describe how meta-genres “take the form of guidelines or manuals for how to produce and use genres” (p.94). In other words, the syllabus instructs users how to navigate the course, use various tools and resources, including assignments, as well as provides a shared vocabulary.

### **Research Data: Creating the research corpora**

Two syllabi corpora have been compiled for this small-scale study: one representing capstone courses and the other representing corresponding non-capstone courses. To protect institutional and individual confidentiality, the institution and course instructors are not identified in this paper, and each syllabus is assigned a case number.

The capstone course syllabi have been purposefully selected. Since the study is examining how instructors use the capstone course syllabus genre, only syllabi that are clearly identified as capstone have been selected for the capstone corpus. The science and humanities disciplines constitute underrepresented groups (Figure 1) among those from which capstone syllabi were collected because in these faculties, instructors either did not use the “capstone” designation for any of their courses or did not make their syllabi publicly available. The syllabi from those disciplines used other designation such as “honours paper” or “final project”. For this reason, these syllabi were not included in the corpus.

Figure 1: Distribution of syllabi by faculty



Source: the author

\*FASS – Faculty of Arts and Social Sciences

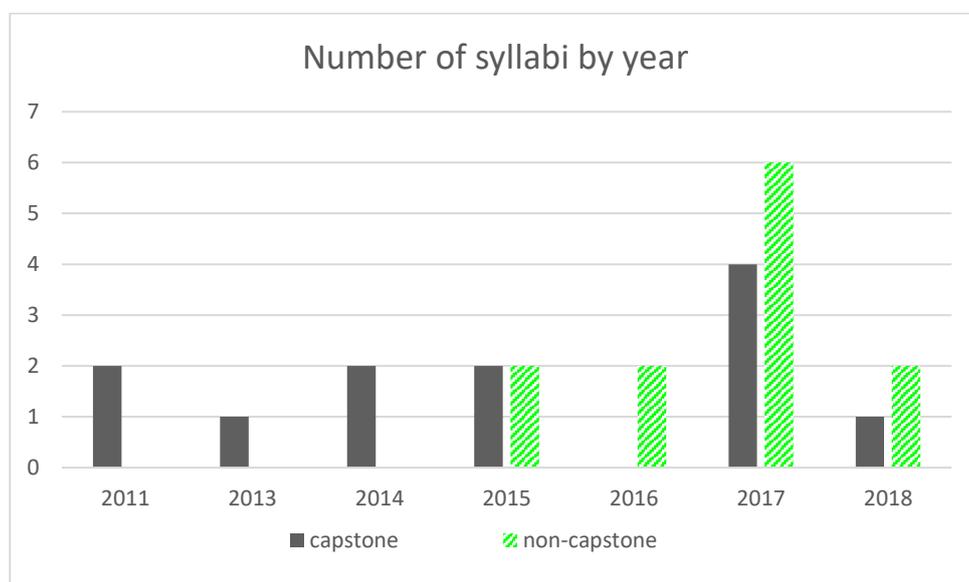
A number of engineering syllabi were excluded given their “distributed” and “multimodal” format. That is, rather than being in the traditional one document format, elements of the syllabi were made available in the form of Power Point presentations, and various handouts (project descriptions, groups work documentation, topic selection, evaluation) were available in separate documents on the departmental website. It is interesting to note that the engineering departments at this institution did not refer to the course as capstone course. However, at the institutional level, these courses were referred to as “capstone” courses or projects in the university news items and institutional planning documents. Overall, one capstone course syllabus per discipline has been included in the corpus.

For the non-capstone course corpus, syllabi have been selected to match, for comparative purposes, the capstone corpus syllabi based on similar disciplines and program year. For example, if a capstone course syllabus for geography has been selected, a syllabus for a non-capstone course in geography for the same program level have been included in the non-capstone corpora.

A total of 13 syllabi have been collected for each of the two corpora. The syllabi selected are all openly available through the institutional website and internet, and, because a significant number of instructors do not openly share their course syllabi, the corpora size in this study is limited (cf. FLOWERDEW, 2004).

Capstone course syllabi were compared to non-capstone course syllabi from the same program/level to increase trustworthiness of findings. As openly available capstone course syllabi proved to be challenging to find, the range for capstone course syllabi by year (2011 – 2018) is much wider than that for non-capstone courses (2015-2018) (FIGURE 2).

Figure 2: Syllabi distribution by year in research corpora



Source: the author

All courses were offered over one term. Only one capstone course was a two-term course (fall/winter). The syllabi represent either fourth year (undergraduate) or master level (graduate) courses.

All the syllabi in the corpora were analyzed using the rhetorical move/step analysis (SWALES, 1990). Further, since the course description and the learning outcomes sections in the syllabus are the two sections that are almost always included in course syllabi (HAUHART; GRAHE, 2015), these two sections collected from all the syllabi in the corpora have been

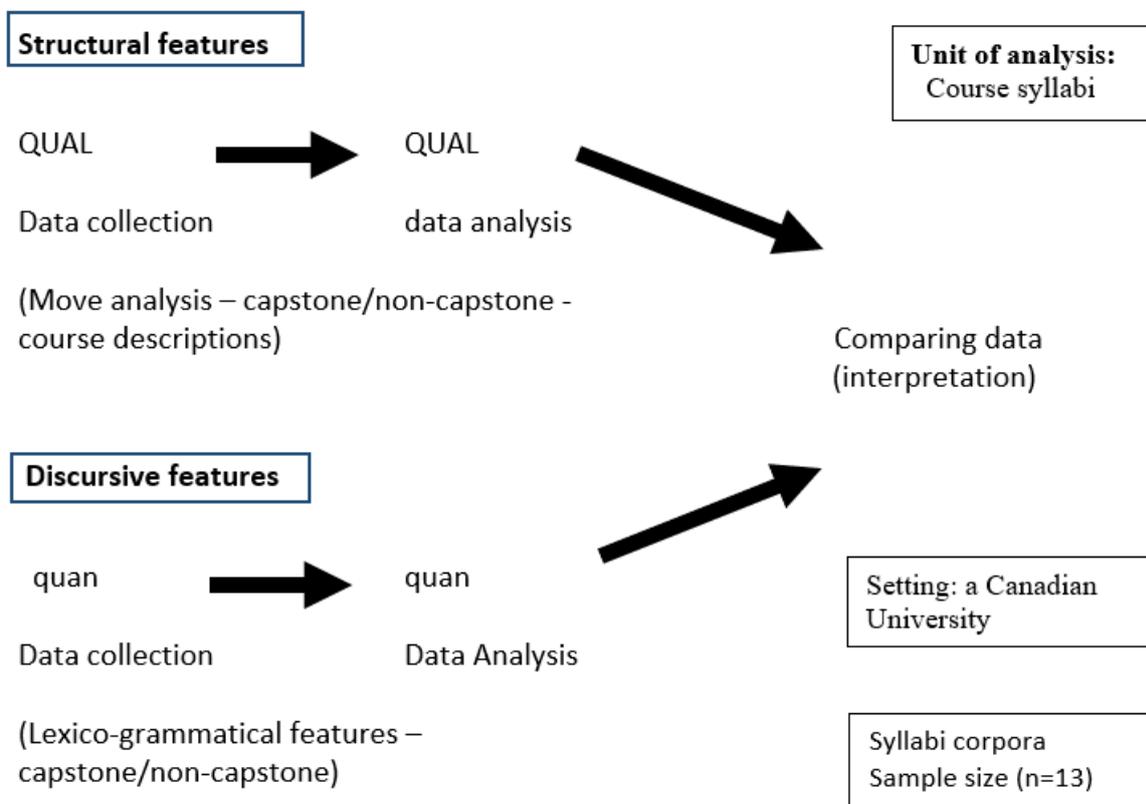
subjected to a separate genre analysis, and the emergent rhetorical structure compared to that of the similar sections in the syllabi of non-capstone courses.

## Methods

### Research Design

The mixed methods methodology is defined as “research in which the investigator collects and analyzes data, integrates the findings and draws inferences using both qualitative and quantitative approaches or methods in a single study” (TASHAKKORI; CRESWELL, 2007, p. 4). This study adopts a concurrent mixed methods design in which both quantitative and qualitative data, based on the research questions, are collected and analyzed concurrently. Since the study is looking at overlapping but different perspectives on the same phenomenon (GREENE; CARACELLI; GRAHAM, 1989), that is, how instructors represent purposes and functions of capstone courses through the rhetorical move/step structure and lexical-grammatical features of course syllabi, the complementarity (GOLIN-KLIES, 2014) elements of the mixed methods methodology are well suited for this purpose (see Figure 3 for research design of the study).

Figure 3: Mixed-methods research design



Source: the author

### Methods of analysis

All syllabi in the two corpora were analyzed using the ESP rhetorical move/step analysis (SWALES, 1990). In addition, to further understand how instructors discursively construct capstone course syllabi, a number of lexico-grammatical features were examined in both capstone and non-capstone course syllabi corpora, and the results compared. The features included the frequency of words related to capstone courses, calculated by using the Antconc software (ANTHONY, 2019), as well as textual features that express stance and voice, action verbs, and learning outcome verbs. Stance, for example, was examined through the analysis of the use of personal pronouns (we, you, your) and modal verbs (can, could, would, should) to uncover how instructors discursively constructed their relationship to their students (e.g., authority/power versus persuasive discourse) (cf. HYLAND; GUINDA, 2012). Action verb use

related to Blooms taxonomy was also analyzed to identify the linguistic expression of the cognitive level related to student learning. The learning outcome verbs for capstone and non-capstone courses were categorized according to action verbs listed in Bloom's Revised Taxonomy six cognitive domain levels: remembering (I), understanding (II), applying (III), analyzing (IV), evaluating (V) and creating (VI) (KRATHWOHL, 2002), and frequencies of their use compared.

### Research Trustworthiness

Ensuring the trustworthiness of the data analysis is critical (MORSE, 2002). For this reason, inter-rater reliability was assessed: an experienced coder was enlisted to conduct a move/step analysis of the course description sections in the syllabi corpora. An intra-rater approach was also employed: the researcher conducted a second move analysis a week after the original coding to ensure consistency. The data from the capstone course syllabi corpus were compared with the data from non-capstone course syllabi corpus in order to further triangulate the findings.

### Findings and Discussion

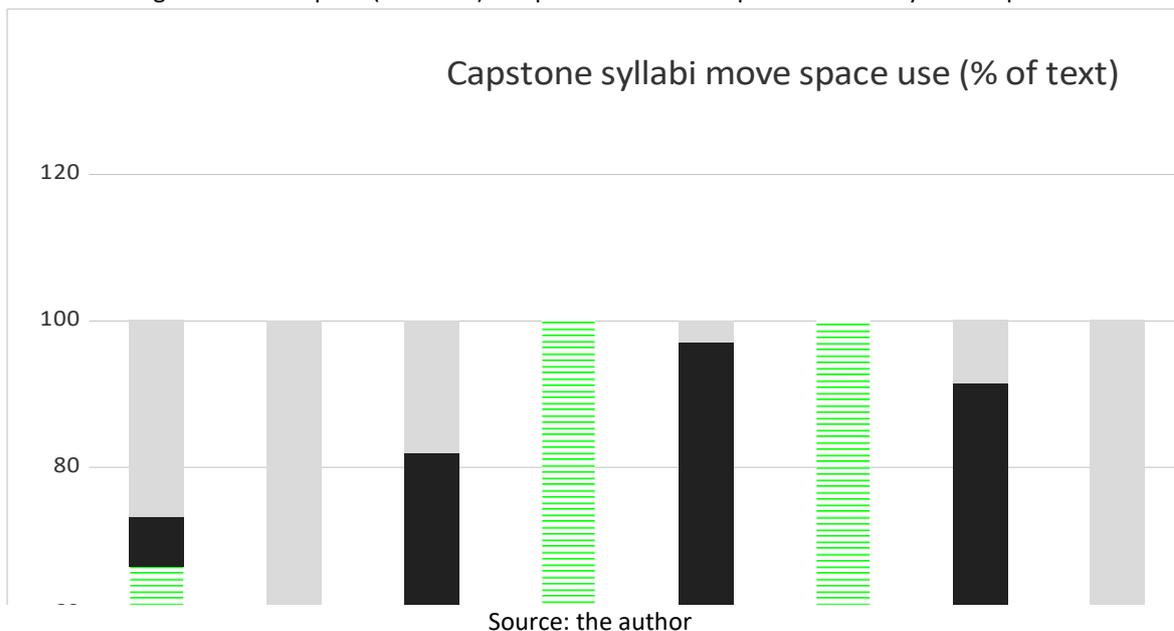
#### Moves

Once the move/step analysis of the corpora had been completed, the Doolittle and Siudzinski (2010) content-driven framework was used as a starting point from which to examine the overall structure of the syllabi. Based on the bottom up approach discussed above, the following moves were identified in capstone course syllabi:

- M1 Situating the course
- M2 Describing the course
- M3 Assessing student learning
- M4 Defining the course project
- M5 Institutionalizing the course

Since the study aims to examine the unique structural features (if any) of the capstone course outlines, an analysis of the occurrence of the identified moves was conducted. One move was identified as being unique to capstone course syllabi: “defining the course project” (M4) (see FIGURE 4). These findings agrees with Houhart and Grahe’s (2015) observation that in many instances capstone course syllabi include a separate section outlining capstone/course project which is a distinct feature of many of the capstone courses. In addition, we observed that in many cases, a significant amount of text in the syllabus is dedicated to this move (10 – 50%), where at the higher end of the scale we find the disciplines of business, economics, and public affairs (see Cases 5, 2, 3, 7 in Figure 3). Most capstone course syllabi with the exception of two also included a discussion of course/academic policies.

Figure 4: Move space (% of text) use per move in the capstone course syllabi corpus



**Instructor stance: modals and pronoun use**

Modals are markers of stance which can signal how an instructor relates to students in their course. When capstone course syllabi modal frequencies were compared to those of non-capstone course, no significant differences were found except in a few instances. For example, the verb “should,” which signals an obligation and authority on the part of the instructor,

appeared to be used almost twice as frequently in capstone course syllabi compared to non-capstone. The frequent use of “should” (obligation) could be attributed to the contractual nature of syllabus. The term “students” appeared in 50% of the course descriptions of the capstone course syllabi, while in non-capstone course syllabi, the “student” or “students” designations were prevalent in 31% of syllabi. This results could be attributed to the nature of capstone courses that required in many instances completion of a group project (77%). This third person prevalence could also be explained by the other target audiences for this document such as departmental heads. Other capstone course syllabi instructors signaled their stance through the use of the pronouns “you” and “we” and corresponding possessive pronouns “your” and “our,” in some instances within the same syllabi, perhaps as a strategy used by the instructor to incite both ownership (you) and engagement (we) on the part of students. Barwashi (2003) attributes these incongruences in voice to the tension that arises from the writer (in this case the instructor) who struggles on one hand with the contractual nature of the syllabi (you/obligation) while on the other hand tries to create a welcoming learning-centered environment (we/supporting role). Only two syllabi used an impersonal scholarly stance, that is, by neither using pronoun designations or referring to any particular audience. This was the case of a non-capstone course syllabi in economics and finance (MBA), which, on closer examination appeared to be content driven rather than student learning-centered. The non-capstone course syllabi used the “we” designation with the same frequency as those for the capstone courses. The use of “you/your” is more prevalent in capstone course syllabi. This could perhaps be attributed in many instances to the presence of the open-ended, self-directed nature of the capstone course projects that require students to take ownership of their work. Conducting a follow up study that includes instructor interviews would provide a better understanding of the decisions related to these communicative choices.

### **Capstone course syllabi structure and discourse: a look at course descriptions and learning outcomes**

The moves were defined by using the bottom up approach, that is, by looking at lexical features of the course description syllabus sections as described by Lieungnapar and Todd (2011).

Table 1: Move/step analysis of the course description syllabi sections

Move	Move/Step labelling	Frequency of occurrence	
		Capstone	Non-capstone
<b>M1</b>	Identifying the nature of the course S1 Defining the course type S2 Describing its characteristics S3 Stating prior competencies	61%	56%
<b>M2</b>	Situating the course content S1 Introducing the course topic S2 Contextualizing the course topic S3 Describing the course structure	61%	80%
<b>M3</b>	Defining the student's role S1 Describing the learning objectives S2 Outlining students' expectations	92%	24%
<b>M4</b>	Defining the value of the course S1 Outlining benefits S2 Identifying future opportunities	23%	23%
<b>M5</b>	Identifying student support S1 Defining instructor's role S2 Describing institutional support opportunities	8%	0%

Source: the author

For capstone syllabi, moves M1, M2, M3 were found to be optional whereas M4 is conventional. The highest ranking move is defining student role (M3). In capstone syllabi, for move 1 (S1 and S2), the instructor, in most cases, identifies the course as a capstone course and describes the features of this type of course (Table 1).

For non-capstone syllabi, course description appears to focus mainly on course content (M2 – 80% of syllabi). M1 (nature of course) is a conventional move.

Table 2 Inter-rater reliability: assessment of capstone course syllabi course descriptions

Case	Agreement (%)
1	100.00
2	60.00
3	75.00
4	100.00
5	100.00
6	100.00
7	100.00
8	100.00
9	100.00
10	80.00
11	100.00
12	80.00
13	100.00

Source: the author

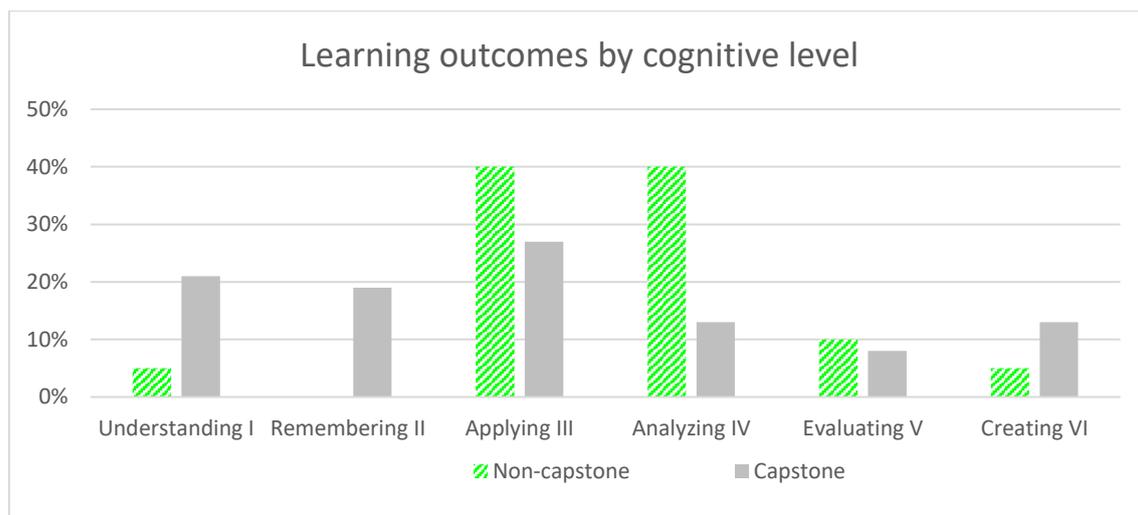
The inter-rater coding revealed that both the researcher and experienced ESP coder coded similarly except in a few cases (see Table 2). The differences occurred in the lengthier course descriptions. In each of these instances, the more experience coder identified one or to additional moves (i.e., better acuity and experience to note subtle nuances in text). Overall inter-rater reliability is acceptable (91.9).

### **Action verbs in learning outcomes: Bloom’s taxonomy and higher level thinking**

According to Lee and Loton (2019), capstone courses allow students to engage in higher cognitive level thinking through activities such as collaborative, open-ended projects. They also allow students to consolidate knowledge and skills learned throughout their degree programme.

To uncover whether these features are prevalent in capstone syllabi, the frequency of Bloom’s action verbs in the learning outcomes was measured in both capstone and non-capstone syllabi.

Figure 5: Course syllabi learning outcomes by action verb category for capstone and non-capstone courses



Source: the author

The findings presented in FIGURE 5 indicate that capstone course instructors use lower cognitive level verbs (i.e., understanding, remembering) in addition to higher cognitive level verbs. One possible explanation could relate to the nature of the capstone course that requires students to recall and apply knowledge acquired in previous courses in their respective programs and use it in a novel way in a project setting. It was not surprising, however, to notice a higher frequency of level VI cognitive verbs related to the act of creating since capstone projects by definition require students to problem solve in novel situations. Non-capstone fourth year and graduate courses provide more normal distribution where mid-range applying (IV) and analyzing (V) reported the highest frequencies (see FIGURE 5). Remembering (II) rates low most likely since in these courses based on the extensive reading lists, new concepts and knowledge is introduced. However, it was surprising not to find “evaluating” and “creating” to rate higher, especially in the non-capstone graduate course syllabi, as these cognitive skills relate to graduate attributes (GREEN; HAMMER; STAR, 2009). A follow-up study using a larger corpus of course syllabi supported by interviews with instructors and students could better help confirm and explain this possible trend.

## Comparative analysis of capstone and non-capstone course syllabi

Though disciplinary variation and the relatively small corpora limit generalization that can be made on the basis of this exploratory study, it nevertheless has revealed some interesting finds. The move analysis of the syllabi uncovered that there is a significant portion of the capstone course syllabi that is dedicated to a project element (e.g., project description, project management). Capstone syllabi score high on Move 3, “students’ role in the course” (TABLE 1), followed by Move 1 which describes the nature of the course and the course content. Instructors, therefore, find it important to communicate that their course is a capstone course and describe its nature. The course descriptions of non-capstone courses appear to mostly describe course content (Move 2).

The capstone course syllabi considered in this study appear to use an engaging stance, in particular, when it comes to the use of personal pronoun “you” and the possessive “your”, and use a higher occurrence of the term “students” than non-capstone course syllabi. Given that the reviewed capstone courses involve open-ended team projects, having students take ownership of their work is important.

However, a number of elements do not seem to be accounted for as part of the syllabi genre analysis. A recent shift of the syllabus to a contractual document (KAUFFMAN, 2014) has created some lexico-grammatical consistencies in the syllabi as the policy sections are frequently inspired by or “borrowed” from institutionally mandated regulations. This “borrowing” of entire sections may serve as an explanation of some of the inconsistencies in stance found, in particular, in the capstone course syllabi (e.g., the use of “we/you”). Conducting a lexico-grammatical analysis of each section of the syllabi helps uncover these inconsistencies between, for example, the policy section, which were written by someone else and then transplanted by the instructors into their syllabi and other sections, written by the instructors themselves. In genre studies, such borrowings from other texts are referred to as intertextuality (i.e., how a text contains evidence of other texts) (BAZERMAN, 2004); however, in course syllabi, such borrowings are not performed of the instructor’s volition but rather are institutionally mandated.

The study also uncovered some differences in the cognitive level verbs used in the learning outcomes sections. Fink's taxonomy (2003) of significant learning experiences is more comprehensive than Bloom's as it looks not only at critical thinking and creative thinking skills but also at human dimension skills (e.g., "caring") and metacognitive skills, all of which are relevant to capstone courses (STANNY, 2016). Capstone courses as HIPs are expected to engage students not only cognitively but also at other levels such as affect. It would be worth examining other active verb use in course syllabi and other course generated texts.

### Conclusion

Capstone courses as HIPs represent a unique and rich learning opportunities for students to consolidate their learning and transition beyond their undergraduate and graduate studies. Effectively communicating the nature, purpose and pedagogical elements of such courses within the classroom and beyond could facilitate a better understanding of the value of this learning experience. ESP genre approach is practical and useful for the analysis of such powerful metagenre as the course syllabus. It may be useful to provide workshops that would allow course instructors have the opportunity to apply ESP analysis as a way to take stock of how they purposefully communicate with their students and other institutional stakeholders through written pedagogical genres such as the course syllabus. In other words, genre analysis can play an important role in instructional design and curriculum design across disciplines.

This exploratory study has served as but a brief foray into examining how capstone courses are discursively realized in course syllabi. The study has uncovered some rhetorical and lexico-grammatical features characteristic of capstone course syllabi, no substantial differences between capstone and non-capstone course syllabi have been identified. These study outcomes may be attributed to diverse understandings of the nature and purpose of capstone courses by instructors. Further studies are needed to establish if there are any differences in discursive realization of the purposes of capstone vs. non-capstone course syllabi.

### Limitations and implications for future research

The study has used two small corpora of disciplinary capstone and non-capstone course syllabi, with one syllabus representing each discipline. Internal variability within the corpora may not have allowed for patterns/trends to emerge from the limited data. A more comprehensive study that restricts data to a particular discipline and uses a larger corpus could provide more meaningful outcomes.

The syllabus, as a metagenre, does not operate in isolation. The current study does not account for the role of the classroom or institutional context. Factors such as how the syllabus is presented in class on the first day and how it is contextualized and further articulated in the Learning Management System (LMS) can provide important information for a larger-scale study. By extending the study to include other classroom genres governed by the syllabus, such as assignment sheets, capstone project reports, and so on, and by looking at the connections between instructors', students', and university administrators' discursive constructions of the communicative purpose(s) of the syllabi, instructional design, and course deliverables and outcomes could further help us understand how these genres relate to each other and how they provide insight into the nature of capstone courses. More importantly, such a study may help administrators at the institutional level as well as instructors in the classroom to develop a deeper understanding of what constitutes a capstone course.

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