

2 ESP at the Center of Program Design

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many unique courses would be needed? Who would be hired to teach these courses? How would the validity and reliability of learner grades be maintained across such a wide and varying range of courses? What would be the impact on human and materials resources? How much teacher training would be needed?

In this paper, I will first attempt to answer the above questions by re-examining the definitions of ESP given over the years, and considering their implications in a Japanese context. I will then address the concerns of ESP teachers, subject specialists, and administrators by proposing an ESP approach that is positioned not at the fringes of an English program, aimed at just a select number of advanced students in a small number of specialized disciplines, but at the center, providing the framework on which all courses are developed.

Introduction

Since its conception in the 1960s, the English for Specific Purposes (ESP) approach to language teaching and learning has long served as an alternative to general English approaches by directly addressing the needs of learners in a specific discourse community through grammar, lexis, register, study skills, discourse, and genre training. Unfortunately, in spite of the great efforts by many advocates of the approach, ESP is still largely misunderstood by the education community at large. The first problem is the word 'need'. Many teachers, for example, feel that their students need to learn basic grammar and vocabulary. Many learners, on the other hand, feel that they need to study English conversation skills, or strategies for improving their scores on general proficiency tests, such as the TOEIC¹, TOEFL², and EIKEN³. If these 'needs' become the foundation of an English course, is the teacher adopting an ESP approach? The second problem is the word 'specific'. How specific does the discourse community need to be? This leads to a further question: if a teacher does not know the characteristics of a specific discipline, is it possible to adopt an ESP approach?

Dudley-Evans & St. John (1998) describe an ESP practitioner (Swales, 1985) as someone who needs to perform the roles of (1) teacher, (2) collaborator, (3) researcher, (4) course designer, (5) materials provider, and (6) evaluator. For a small group of talented professionals, this may be possible, but is it really practical to ask the same of all ESP teachers? For designers and administrators of English programs, far more serious problems emerge: How

In Search of Learner Needs

The starting point of any ESP course is a kind of fortune-telling task, in the sense that we need to establish when, where, and how learners will use English in the future. In other words, the first job of an ESP practitioner is to establish learner needs (Johns, 1991). Hutchinson and Waters (1987) go further and consider learner needs to be the fundamental principle on which the ESP approach is based:

The foundation of all ESP is the simple question: Why does this learner need to learn a foreign language? From this question will flow a whole host of further questions, some of which will relate to the learners themselves, some to the nature of the language the learners will need to operate, some to the given learning context. But this whole analysis derives from and initial identified need on the part of the learner to learn a language. ESP, then, is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning. (p. 19)

Many ESP 'experts' make the mistake of ignoring the needs of the learner and instead rely simply on their knowledge of what the learners want to study. The result of this is the common misconception mentioned in the introduction.

Many teachers may feel that their learners need to learn basic grammar or vocabulary. However, this view often reflects more about their own wants for the classroom. Students, too, may want to study grammar, or English conversation skills, or strategies for improving their scores on general proficiency tests, in the belief that they will improve their chances of entering graduate school or finding a job. Even subject specialists, who claim that students need to read English research papers and make English presentations at graduate school, are often talking more about what they want students to do rather than what their students need to do to be successful. Indeed, they often contradict themselves by organizing laboratory seminars in which students rarely read papers or present in English.

To adopt a true ESP approach, the learner's real needs must be established. Interestingly, this issue was addressed in the very first issue of the ESP Journal in 1980. In Chambers' (1980) paper, he first talks about the confusion surrounding needs analysis, and even states that "the student is not the appropriate main source for data to establish the aims of a course" (p. 29). In his own model of needs analysis, Chambers discusses three essential elements: (1) needs, as determined by a target situation analysis (TSA), (2) constraints, which limit the attainment of those needs, and (3) intermediate objectives, which define the stages to attain those needs.

Since Chambers' 1980 paper, many ESP experts have proposed alternative and/or extended models for needs analysis. These include PSA (Present Situation Analysis) by Richterich and Chancerel (1980), PNA (Pedagogic Needs Analysis) by West (1998), as well as DA (Deficiency Analysis), SA (Strategy Analysis), and MA (Means Analysis), as reviewed by Songhori (2008). Clearly, defining the needs of learners is much more than simply asking them what they want to study using an in-class survey. Perhaps the clearest picture of needs analysis is given by Dudley-Evans & St. John (1998, p. 125), as shown in Figure 1.

Looking at this list, some teachers who are skeptical of ESP may conclude that they cannot adopt the ESP approach because their learners do not really have a need for English in the future. Rightly, they argue, many of their learners may not actually use English in the future except in very narrow contexts, such as asking directions during their one and only vacation to Hawaii, or understanding the dialogue in the English movies they rent each week.

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- A. professional information about the learners: the tasks and activities learners are/will be using English for - *target situation analysis and objective needs*
- B. personal information about the learners: factors which may affect the way they learn such as previous learning experiences, cultural information, reasons for attending the course and expectations of it, attitude to English - *wants, means, subjective needs*
- C. English language information about the learners: what their current skills and language use are - present situation analysis - which allows us to assess (D)
- D. the learners' lacks: the gap between (C) and (A) - *lacks*
- E. language learning information: effective ways of learning the skills and language in (D) - *learning needs*
- F. professional communication information about (A): knowledge of how language and skills are used in the target situation - *linguistic analysis, discourse analysis, genre analysis*
- G. what is wanted from the course
- H. information about the environment in which the course will be run - *means analysis*
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Figure 1. Information collected as part of needs analysis

On the other hand, it must be remembered that learner needs go beyond those that learners will immediately require on completion of the course. What ESP practitioners must also consider are the potential needs of learners, were they to become fully-fledged, and ultimately successful members of their discourse community. For example, although it is true that many Japanese scientists and engineers on entering companies will be sent to the sales department or factory floor and have little further need for English, some are eventually sent as managers to international divisions and are expected to work side-by-side with native speakers (Yamazaki, 2008). Others may stay within Japan but are still expected to conduct international quality research and present this at overseas conferences. Teachers must consider these potential needs as they design their courses. By only considering the eventual needs of previous graduates of a course, teachers may underestimate the real needs of their learners. As a result, the predictions they make about their learners' needs for English can often become self-fulfilling, i.e., without adequate preparation in English, learners will probably not need English later.

Of course, if the identified needs of a student do not correspond with his or her perceived needs (i.e., wants), then the learner is likely to have low motivation and perform poorly in class. Therefore, in addition to carrying out a needs analysis, ESP practitioners must work hard to explain to learners what these might be. In other words, they need to explain how learners might use English

in the future. One way to do this is by giving learners case studies on successful members in the learner's profession. Even more effective can be a case study of how a former student of the course has used English after graduation.

Defining ESP Content Specificity

Another important aspect of the ESP approach is subject specificity. A common misunderstanding about ESP is that teachers adopting the approach must understand the highly technical terminology and concepts of the target fields of the learners. Thus, one of the first questions that teachers new to the field of ESP ask is how much specialist knowledge they require.

When ESP began to grow in popularity in the 1960s, it was largely a product-based approach as illustrated by Barber's (1962) article "Some Measurable Characteristics of Modern Scientific Prose," which Swales (1985) describes as one of the earliest ESP studies. The common view at the time of Barber's paper is captured in the following quote by Halliday et. al (1964).

Every one of [the] specialized needs requires, before it can be met by appropriate teaching materials, detailed studies for restricted languages and special registers carried out on the basis of large samples of the language used by the particular persons concerned. It is perfectly possible to find out just what English is used in the operation of power stations in India: once this has been observed, recorded and analyzed, a teaching course to impart such language behavior can at last be devised with confidence and certainty. (p. 190)

Hutchinson and Waters (1987) make a similar point about the views of ESP in the 1960s.

In short, the view gained ground that the English needed by a particular group of learners could be identified by analysing the linguistic characteristics of their specialist area of work or study. 'Tell me what you need English for and I will tell you the English that you need' became the guiding principle of ESP. (p. 8)

We can see, therefore, that specialist knowledge was essential to the ESP practitioner when the approach was conceived. However, in later years ESP experts began to understand that learners needed not only specialist knowledge, but also the skills to acquire that knowledge. In other words, ESP also needed to focus on process. Hutchinson and Waters (1987) go so far as to define ESP in such terms,

ESP is not a matter of teaching 'specialised varieties' of English...ESP is not just a matter of Science words and grammar for Scientists, Hotel words and grammar for Hotel staff and so on... We need to distinguish, as Chomsky did with regard to grammar, between performance and competence, that is between what people actually do with the language and the range of knowledge and abilities which enables them to do it. (p. 18)

The modern understanding of ESP is that it should be both product and process-oriented, as reflected in the absolute characteristics in Dudley-Evans & St. John's (1998, p. 4) definition of ESP given in Figure 2.

1. Absolute Characteristics:

- ESP is designed to meet specific needs of the learner;
- ESP makes use of the underlying methodology and activities of the discipline it serves;
- ESP is centered on the language (grammar, lexis, register), skills, discourse and genres appropriate to these activities.

2. Variable Characteristics:

- ESP may be related to or designed for specific disciplines;
- ESP may use, in specific teaching situations, a different methodology from that of general English;
- ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be for learners at secondary school level;
- ESP is generally designed for intermediate or advanced students. Most ESP courses assume some basic knowledge of the language systems, but it can be used with beginners.

Figure 2. Definition of ESP

Dudley-Evans & St. John (1998, p. 8) also argue that the product aspect of ESP can be plotted on a continuum from general content to highly specialized content, and will largely depend on the age and experience of the learners. The result of this is the set of variable characteristics that appear as part of their definition (Figure 2). The continuum described by Dudley-Evans & St. John (1998) is shown graphically in Figure 3.

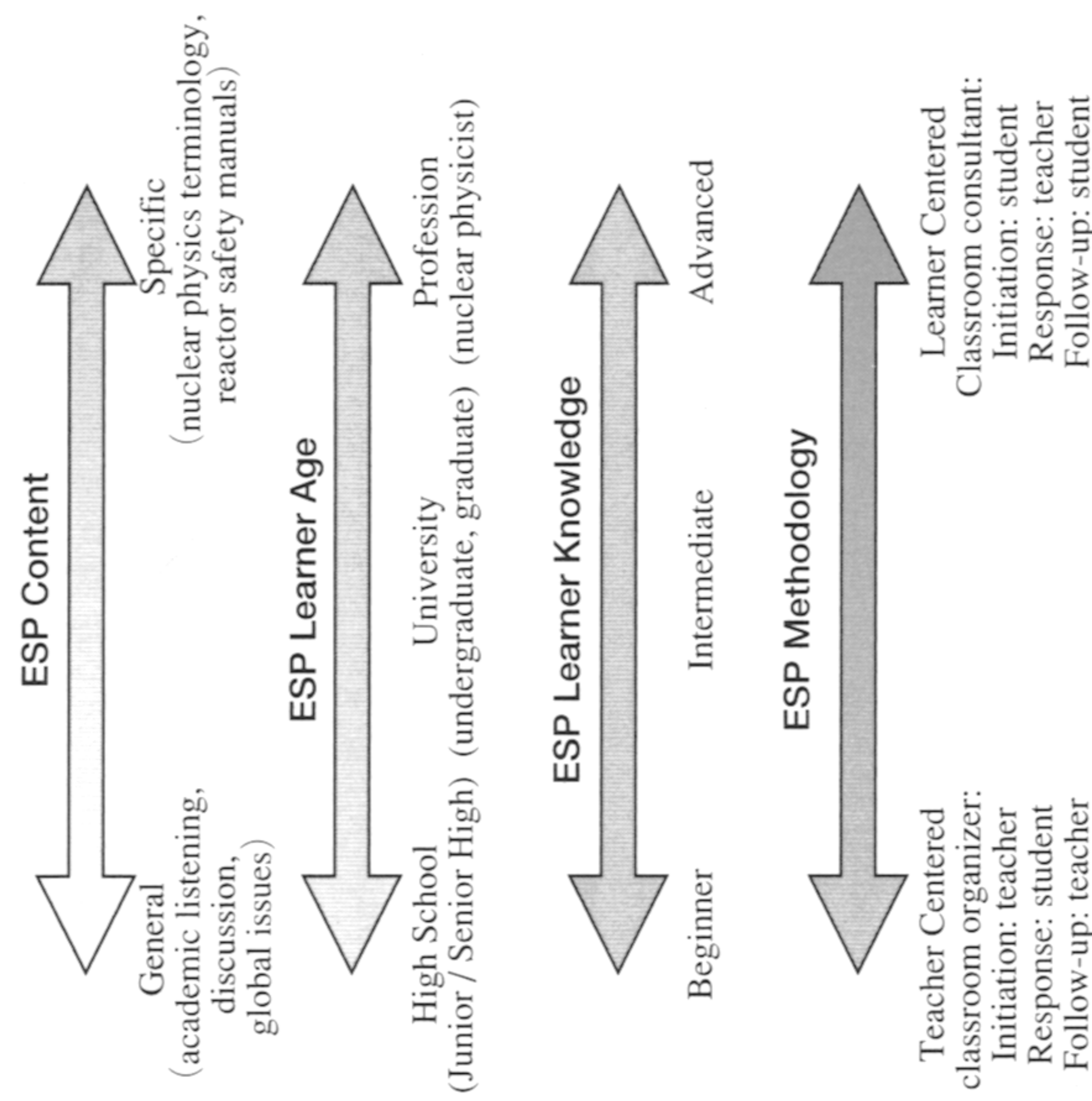


Figure 3. The ESP Specificity Continuum.

Clearly, most young university students without experience of conducting research are likely to find the highly specialized content and technical terminology of research articles beyond them. These learners would probably benefit more from a general explanation of paragraph and essay structure, and exposure to general academic or so-called semi-technical vocabulary (Nation, 2001). On the other hand, professional researchers in industry are likely to benefit more from a detailed account of how to write technical proposals and reports, and how to express specialist concepts in English.

This view also has implications for the methodology adopted by teachers of

ESP. Obviously, ESP practitioners with a background in applied linguistics, for example, cannot expect to conduct product-based ESP classes aimed at increasing the learners' understanding of complex specialized terminology in nuclear physics using a teacher-centered methodology. However, they can perhaps still focus on the products of ESP by adopting a more learner-centered approach. In such a context, the traditional "Initiation - Response - Feedback" model (Sinclair and Coulthard, 1975) with questions initiated by teachers, responded to by students, and followed up by the teacher, is likely to be reversed. In other words, questions will often be initiated by the learners themselves (e.g., "Do we need to start a title with an article?") and responded to by the teacher, with feedback given once again by the learners (see Figure 3).

In summary, teachers without specialist knowledge of the target field still have a valuable role in the ESP classroom if they choose suitable content that is determined based on their learners' age and knowledge, adopt a suitable classroom methodology (learner-centered vs. teacher-centered), and ultimately design effective materials and activities that meet their learners' needs.

Challenges to Implementing a Real-World ESP Program

Dudley-Evans and St. John's (1998) state that one of the biggest differences between ESP practitioners and teachers of English for General Purposes (EGP) is the multiple roles that they must adopt: 1) teacher, 2) collaborator, 3) researcher, 4) course designer, 5) materials provider, and 6) evaluator.

In an ideal world, undoubtedly collaboration between ESP practitioners and subject specialists would lead to an improved specification of course goals, materials, evaluation procedures, and ultimately success of an ESP course. Unfortunately, the reality at Japanese universities today is that subject specialists and ESP practitioners rarely have an opportunity to meet, let alone discuss issues, in course development. A further problem is that working in isolation and with pressures to teach increasing numbers of classes, attend more meetings, serve on more committees, go to more training sessions, and apply for more grants, ESP practitioners no longer have the time or resources to research the needs of their learners or even design course materials to meet these needs (although they may still have time to establish learner 'wants' through in-class

surveys). It is not surprising, therefore, that teachers will look initially for published ESP materials or shy away from teaching an ESP course altogether if these are not available. Compounding the problem is the simple fact that publishers cannot be expected to produce textbooks that cover the wide variety of needs of students at a typical university institution. Popular subjects, such as computer science, mechanical engineering, business, and medicine may be catered for. However, teachers working in other areas such as political science, architecture, and the humanities have few choices but to develop their own materials or give up on the idea of ESP altogether.

Another problem is deciding how students can and should be evaluated in terms of the specified goals of the ESP course. Without knowledge of the field and lacking the support of specialist faculty, ESP practitioners are in danger of making assumptions about students' usage of language that may be invalid. For example, teachers have been known to correct student grammar and vocabulary in their writing, which is perfectly acceptable in the target field. The same argument can be also made about the evaluation of the ESP course itself. How can ESP practitioners decide if a course meets the learners' goals and evaluate its overall success without the time and resources necessary to set up a valid and accurate assessment program?

Finally, a growing number of universities have recently started restructuring their English programs with coordinated courses taught by large numbers of part-time and visitor faculty. Within this environment, a further set of issues becomes important when considering if an ESP approach can be adopted. First, there are practical issues such as how many unique courses should be created and who should be hired to teach them. There are also issues concerning the validity and reliability of teacher grades, especially if each teacher has developed his or her own course and testing criteria. This problem leads to the issue of teacher training. If a program is to be coordinated centrally, faculty members are likely to need instruction and guidance on how to interpret course goals, manage classes, and evaluate learner performance.

Faced with the above difficulties, what has happened at Japanese universities in recent years has been a move away from ESP courses towards those that focus on strategies for passing general English proficiency tests. The intention here is that not all learners will end up needing ESP skills (see Section 2 for a

critique of this), and for those that do, more general skills can be supplemented later either through self-study or training by specialists in the research laboratory or company in-house training center. When ESP has not been abandoned, universities have often given over the responsibility of organizing and teaching the courses to subject specialists in individual departments. Clearly, subject specialists are able to provide valuable input when determining course goals, but the danger is how these goals are implemented in the classroom. As is the case with non-specialists attempting to teach specialist content, it is unreasonable to expect subject specialists with no training in language teaching to carry out effective ESP classes, beyond perhaps highly-specialized, teacher-centered, product-based instruction. They are probably even less likely to be able to provide adequate training to part-time and visiting faculty. Indeed, research has shown this to be exactly the case (Maleki, 2008).

Contrary to the direction taken by many Japanese universities today, I will demonstrate in the following section that ESP can still be implemented successfully if it is positioned not at the fringes of the English program, where it is usually aimed at just a select number of advanced students in a small number of specialized disciplines, but at the center of the English program, providing the framework on which all courses are developed. In this context, the job of teaching ESP classes would become largely the responsibility of part-time and visiting faculty, freeing full-time faculty to collaborate with the subject specialists and research the target field. With university funding and resources available to them, they would also be in a much better position to design courses and prepare (or even publish) materials for all program teachers, and more accurately evaluate the progress of learners across the program.

In the next section, a centralized ESP program will be described based on that currently being implemented in the Faculty of Science and Engineering at Waseda University, Tokyo. Although observers may argue that students at this university are some of the best in Japan and thus are a special case, I will argue the opposite view and suggest that a similar program can be adopted in all Japanese universities where there are dedicated faculty members with a passion for improving the learning experiences of their students.

Centralized ESP in a Japanese University Setting

Waseda University is one of the oldest private universities in Japan. Founded in 1882, it now consists of 17 faculties, 19 graduate schools, and a total of 57,413 students, 2,435 of which are from overseas.⁴ Within the university, the Faculty of Science and Engineering is one of the largest science and engineering faculties in Japan, with approximately 1,800 students in each year of its undergraduate program. Every year around 1,000 students progress to graduate school meaning that around 10,000 students are studying on campus each day.

From 2004, realizing the changing demographics of Japanese society and the need to strengthen its position as one of the leading universities in Asia, the university began implementing a series of changes to its faculty structure, research and educational facilities, and student learning programs. Under the banner of "Waseda is Changing," one of the central themes of the restructuring process was the globalization of its student body. By offering greater opportunities for students to study abroad and revising admission procedures to encourage more international students to study on campus, the university hoped that students would be better prepared to play central roles on the international stage.

Very early on in this restructuring process, the Faculty of Science and Engineering realized that its own English language program was suffering from major problems. First, a target situation analysis carried out in the early 2000s revealed what most would consider common knowledge, i.e., that students who went on to graduate school (the majority) were required to read and write English research articles, and also present their findings at international conferences. An informal present situation analysis carried out by subject specialists in their laboratories, however, revealed that few students had these skills. In addition, a subjective needs analysis of students through in-class surveys revealed that they had few expectations about course content, few reasons for attending courses (except to acquire the required credits for graduation), and a general lack of interest in the English program.

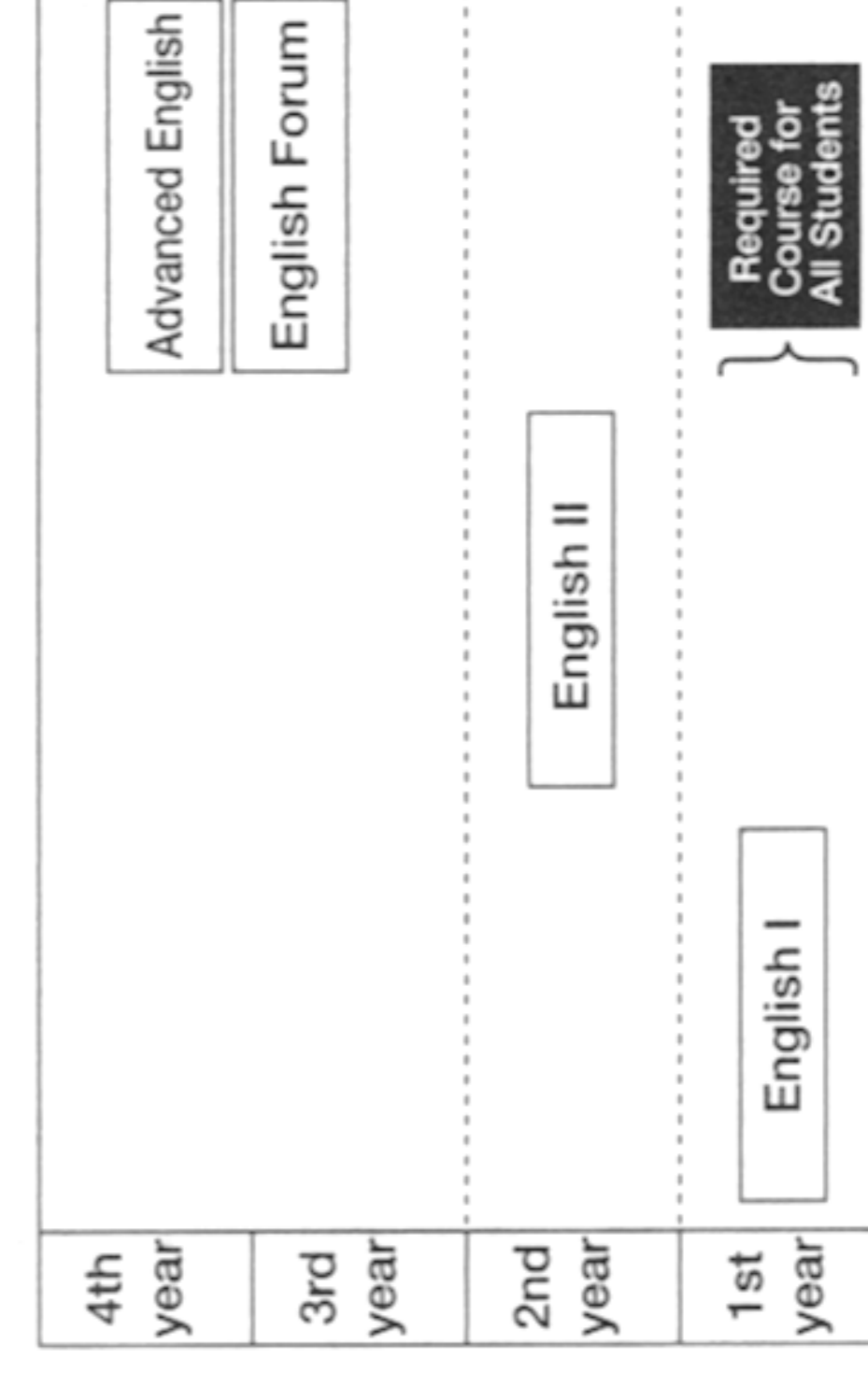
As is common in most Japanese universities, the English program at the time was uncoordinated, with almost all decisions regarding course goals, materials selections, and assessment procedures left to individual instructors to decide.

This complete freedom on the part of instructors resulted in widely varying interpretations of course titles. Students in a typical course entitled English I, for example, might be taught reading skills, listening skills, conversations skills, or even basic grammar structures, depending on the instructor assigned. In addition, the grading of students varied considerably between different instructors. As a result, students would inevitably elect courses based not on the content, but on which instructors were 'soft' or 'hard', and some entrepreneurial students even went so far as to sell guidebooks to freshman students on the grading patterns of instructors.

From 2004, the Faculty decided to address matters by creating a new Center for English Language Education in Science and Engineering (CELESE) with a directive to implement a new program that would ultimately develop a body of students that could perform successfully on the international stage. Staffed by newly hired tenured faculty members with backgrounds in applied linguistics, mathematics, physics, and linguistics, and with the full backing of specialist faculty, CELESE set about restructuring the entire English program with full implementation starting in 2007. Now, the CELESE program is possibly the largest fully-coordinated ESP program in Japan.

Figure 4 shows the programs implemented before and after 2004 at the faculty. Clearly, the first major change implemented by CELESE was to increase the number of required and elective courses. With a cap on the total number of classes that the Faculty could offer to students, these had to come from the existing pool of classes, and regrettably the result was that required second foreign language courses, such as German and French, were changed to an elective status and subsequently reduced in number.

Waseda University, Faculty of Science and Engineering English Program (Pre-2004)



Waseda University, Faculty of Science and Engineering English Program (2008)

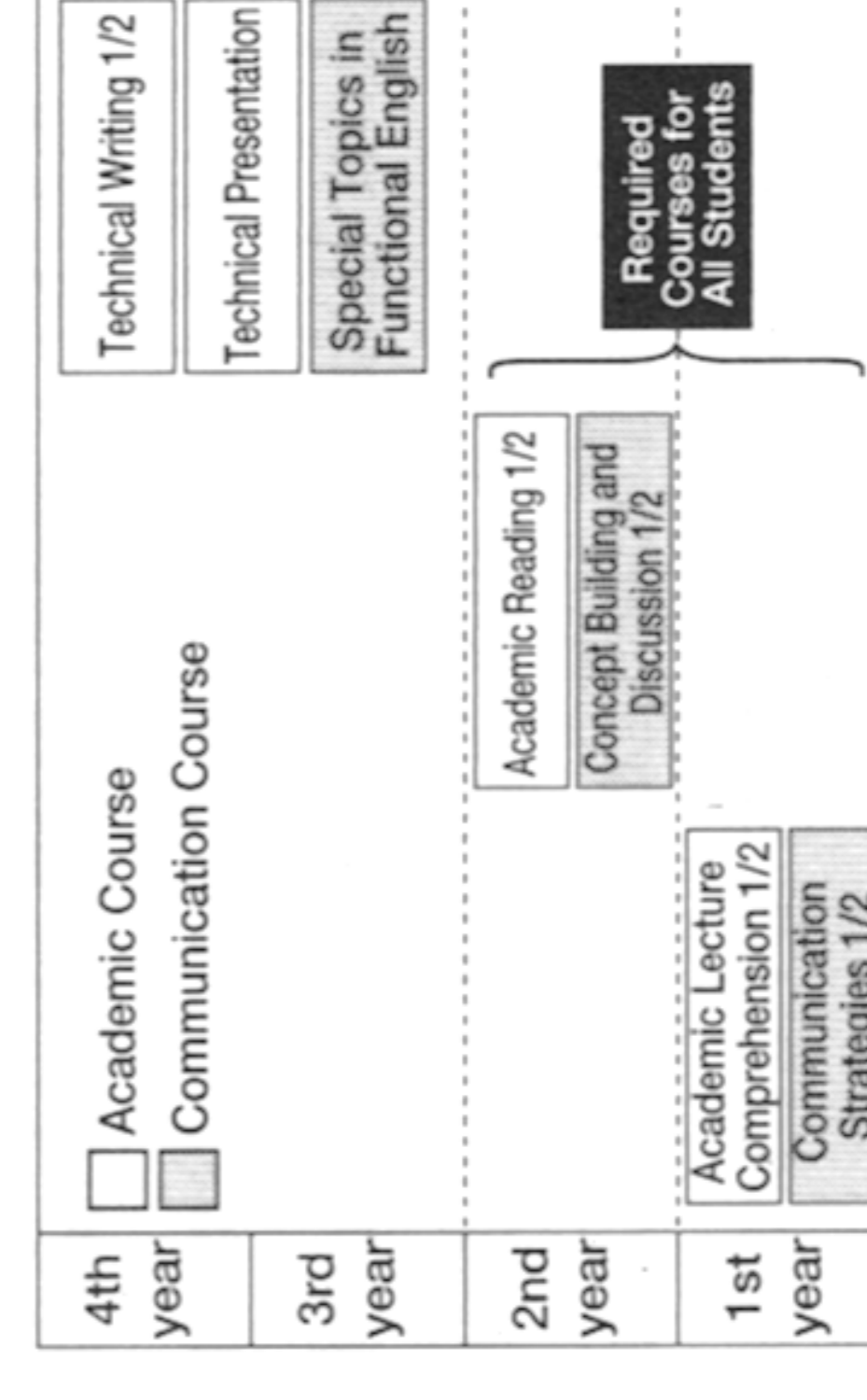


Figure 4. Overview of the Waseda University, Faculty of Science and Engineering English Program.

Another major change was to carefully coordinate the newly created courses in the CELESE program so that students could move over the four years from a high-school level to one that would enable them to perform as fully proficient researchers at graduate school, being able to read, write, and present research at an international level. To do this, two strands of the program were created. The first strand allows students to develop academic skills, such as lecture listening and note-taking skills, and technical writing and presentation skills. The second strand develops their communicative skills, such as discussion, debate, and negotiation skills. In addition, as shown in Appendix I, the goals of each course were clearly defined based on lists of 'Can Dos', which were then published on the CELESE website and in university course guides so that teachers and students would know what the courses were about.

Looking at Appendix 1, it can be seen that the new program adopts many of the concepts proposed by Dudley-Evans & St. John (1998). For example, first year courses have more general purpose ESP goals, such as "using different question types to obtain simple information" and "giving short, simple answers to prepared questions related to news reports" (Communication Strategies 1). Courses at this stage are teacher-centered and quite rigidly structured. Moving into the second year of the program, however, the courses become increasingly specialized and subsequently more learner-centered, as shown in the following goal of Academic Reading 1: "locate weaknesses in own reading skills and know how to improve them." In the third and fourth year courses, students begin to read, write, and present about their own specializations. As a result, the students take an even more central role in the classroom, where writing and presentation proposals are discussed in small peer groups with the teacher providing comments only when asked.

Another important aspect of the new program is the role taken by the full-time faculty of CELESE. As described in the previous section, nowadays it is unreasonable to expect teachers to not only teach, but also research the target field, collaborate with field specialists, design courses and materials for the classroom, and subsequently evaluate the learners' progress and the success of their course. Therefore, much of this work is carried out by full-time faculty in small working groups within the Center. The results are then relayed to classroom teachers (the part-time and visiting faculty) through the CELESE

website, e-mail notices, pre and post-semester tutorial sessions, and informal lunch meetings, where all parties can discuss what is and is not working well.

To ensure that students are graded reliably and fairly, detailed testing specifications and procedures are distributed to teachers by the CELESE faculty. Also, first year students take campus-wide standardized tests four times a year, as well as 'global standard' English proficiency tests three times a year. Second year students also take standardized in-class tests and two global English proficiency tests.

CELESE is comprised of only specialist English teaching faculty. However, subject specialists also play an important role in the organization of the program. First, representatives of the three schools in the faculty serve on the English management committee, which discusses large-scale planning issues as well as full-time faculty recruitment issues. It is here, for example, that a recent plan to create a full-scale graduate school English program was discussed and approved. In addition, the subject specialists work to include English content into their own department programs, thus providing students with a real, daily need for increasingly sophisticated English skills.

Although it is still too early to evaluate the success of the CELESE program, there are already encouraging signs that students are acquiring the skills targeted in each course. First year students, for example, show noticeable improvement in their academic listening and note-taking skills, to the degree that upper-level students at the end of the year can confidently listen to online lectures recorded at Massachusetts Institute of Technology (MIT)⁵, take notes, and then write three to five paragraph summaries of them. Second year students of the Concept Building and Discussion course show a dramatic improvement in their presentation and discussion skills, and the majority manage at the end of the year to present and write-up a report on a research project that they themselves have chosen, which includes citations, references, and a clear and logical organization. Third year students who take the Technical Writing and Technical Presentation courses continue to build on their second year skills, and can confidently write three to five page research papers that are of international conference proceedings quality, and give 5-10 minute English presentations on this research, again at an international conference level.

Summary and Conclusions

In this paper, I first explained that the term English for Specific Purposes (ESP) has often been confused by both proponents and skeptics of the approach, particularly in regard to two of its key concepts, 'learner needs' and 'subject specificity.' An investigation of ESP learner needs goes far beyond simply asking students what they want to study in class, and involves an analysis of the target situation analysis, objective needs, the wants, means, and subjective needs of learners, and a present situation analysis. We also need to understand learners' lacks and their learning needs. Much of this information can be gained from a linguistic analysis, discourse analysis, genre analysis, and means analysis. We must also consider what the *potential* needs of learners are. ESP is also not always specific. On the contrary, if learners are young and/or have little experience in the field, more general purpose ESP courses that are teacher-centered can be very effective. As the learners build the necessary skills then teachers can start to address more specific needs using a more learner-centered methodology.

Next, I explained some of the current challenges that face teachers thinking of adopting an ESP approach. I proposed that due to the growing responsibilities and workloads of modern English teachers, ESP can be more effective if it is positioned at the center of an English program providing the framework on which all courses are built and coordinated. The program currently implemented at the Faculty of Science and Engineering of Waseda University demonstrates that this proposal is not only practical but can lead to success.

In conclusion, I hope that the description of the program developed by the Center for English Language Education in Science and Engineering (CELESE) at Waseda University can serve as a useful guide for other Japanese institutions who are considering introducing the ESP approach to their students or planning to develop their current ESP programs in the future.

Notes

- 1 <http://www.toeic.or.jp/>
- 2 <http://www.ets.org/>
- 3 <http://www.steipeiken.org/>
- 4 <http://www.waseda.jp/eng/facts.html>
- 5 <http://ocw.mit.edu/OcwWeb/web/home/home/index.htm>

References

- Anthony, L. (1997) ESP: What does it mean? Retrieved December 18, 2008 from www.antlab.sci.waseda.ac.jp
- Barber, C.L. (1962) Some measurable characteristics of modern scientific prose. In J. M. Swales (Ed. 1985), *Episodes in ESP* (pp. 1-16). Cambridge: Cambridge University Press.
- Chambers, F. (1980) Reevaluation of needs analysis. *ESP Journal*, 1(1), 12-19.
- Dudley-Evans, T., & St. John, M. (1998) *Developments in ESP: A multi-disciplinary approach*. Cambridge: Cambridge University Press.
- Halliday, M. A. K., McIntosh, A., & Strevens, P. (1964) *The linguistic sciences and language teaching*. London: Longmans.
- Hutchinson, T., & Waters, A. (1987) *English for specific purposes: A learning-centred approach*. Cambridge: Cambridge University Press.
- Johns, A. (1991) English for specific purposes: Its history and contribution. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language* (pp. 67-77). Boston, MA: Heinle & Heinle.
- Maleki, A. (2008) ESP teaching: A matter of controversy. *English for Specific Purposes World*, 5 (7). Retrieved December 18, 2008 from www.esp-world.info
- Nation, I. S. P. (2001) *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Richterich, R., & Chancerel, J. (1980) *Identifying the needs of adults learning a foreign language*. Oxford: Pergamon Press.
- Sinclair, J. M., & Coulthard, M. (1975) *Towards an analysis of discourse: The English used by teachers and pupils*. London: Oxford University Press.
- Songhori, M. H. (2008) Introduction to needs analysis. *English for Specific Purposes World*, 4 (7). Retrieved December 18, 2008 from www.esp-world.info
- Swales, J. M. (1985) *Episodes in ESP: A source and reference book on the development of English for science and technology* (1st ed.). Oxford: Pergamon Institute of English.
- Trimble, L., Selinker, L., Tarone, E., & Hanzeli, V. E. (1981) *English for academic and technical purposes: Studies in honor of Louis Trimble*. Rowley, Mass: Newbury House Publishers.
- West, R. (1998, September) ESP: *State of the art. Plenary speech delivered at the Networking for ESP - An anti-conference*, Switzerland.
- Yamazaki, A. K. (2008) Analysis of communication functions of Japanese engineers working at manufacturing sites in English-speaking countries. *Proceedings of the Professional Communication Conference, 2008 (IPCC 2008)*, IEEE International, 1-7.

Appendix 1: Waseda University, Faculty of Science and Engineering English Program Overview

Course Name		'Can Do' List of Course Goals
Required	Academic Lecture Comprehension 1	<ul style="list-style-type: none"> understand 5-10 minute lectures in English take notes of sufficient detail to answer basic comprehension questions about the lecture content ask and answer simple questions about the lecture content read and understand short (1 page) articles related to the lecture content
Required	Academic Lecture Comprehension 2	<ul style="list-style-type: none"> understand 10-20 minute lectures in English take notes of sufficient detail to write a short summary of the lecture content ask and answer detailed questions about the lecture content read and understand long articles (1-5 pages) related to the lecture content
Required	Communication Strategies 1	<ul style="list-style-type: none"> listen to 2 or 3 news reports in English and understand the main points give short, simple answers to prepared questions related to the news report use different question types to obtain simple information form simple but well constructed sentences deliver prepared sentences with comprehensible pronunciation, speed, and intonation express opinions on a wide range of scientific and social issues orally
Required	Communication Strategies 2	<ul style="list-style-type: none"> listen to 2 or 3 news reports in English and understand the main and specific details give long, multiple clause answers to prepared and free questions related to the news report use various strategies to obtain simple and complex information construct long, complex sentences with ease express opinions on a wide range of scientific and social issues with comprehensible pronunciation, speed, and intonation with little preparation
Required	Academic Reading 1	<ul style="list-style-type: none"> understand the mechanics of the reading process locate weaknesses in the student's own reading skills and know how to improve these areas read and understand a limited range of academic texts apply several important reading strategies to extract information from academic texts
Required	Academic Reading 2	<ul style="list-style-type: none"> understand a variety of recent issues in science and engineering read and understand a wide range of academic texts apply a wide variety of reading strategies to understand academic texts at various levels of depth and complexity understand a variety of recent issues in science and engineering
Required	Concept Building and Discussion 1	<ul style="list-style-type: none"> use Internet and library resources to find information on a particular topic work in a group and negotiate simple problems with the assistance of the teacher present simple findings to an audience in well-formed sentences from a prepared script design and complete a feasible project within a small group prepare and deliver a convincing speech with near native-like pronunciation and intonation
Required	Concept Building and Discussion 2	<ul style="list-style-type: none"> organize ideas and conduct simple research using a variety of information resources work independently or in a group using problem solving and negotiating skills to solve issues related to a chosen topic present extended findings to an audience in well-formed sentences with a script write a short report of 2 or 3 well structured paragraphs on a chosen topic understand the importance of references, citations and avoidance of plagiarism design and complete a feasible project within a small group design and complete a feasible individual project

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Course Name		'Can Do' List of Course Goals
Elective	Technical Writing 1	<ul style="list-style-type: none"> understand the importance of English in the fields of science and engineering understand common problems associated with using technical vocabulary use effective strategies to learn technical vocabulary identify the audience, purpose, structure, style, and presentation of a technical text understand the structure of a typical technical research paper use micro and macro level reading strategies to understand research proposals and papers understand research journal "instructions for authors" sections write the title, introduction, methods, results, and discussion/conclusion sections of a research paper write simple and extended definitions explain methods and processes explain information in figures and tables know how to strengthen or weaken the interpretation of research finding through hedging understand the importance of references, citations, and avoidance of plagiarism follow common conventions for citing and referencing information in a research article
Elective	Technical Writing 2	<ul style="list-style-type: none"> understand the importance of English in the fields of science and engineering understand common problems associated with using technical vocabulary in specialist fields use effective strategies to learn technical vocabulary in specialist fields use text analysis tools to identify differences in the audience, purpose, structure, style, and presentation of technical texts in different fields identify the structure of technical research papers in specialist fields understand research journal "call for papers" and "instructions for authors" sections write the title, abstract, introduction, methods, results, discussion/conclusion sections of a research paper in a specialist field write simple and extended definitions. explain methods and processes explain information in figures and tables know how to strengthen or weaken the interpretation of research finding through hedging understand the importance of references, citations and avoidance of plagiarism follow common conventions for citing and referencing information in a research article
Elective	Technical Presentation	<ul style="list-style-type: none"> understand the importance of presentations and their inherent problems control nerves and deliver a presentation with confidence and authority design clear and attractive visual aids use popular presentation software packages identify the audience, purpose, organization, flow, style, and delivery of presentations deliver a presentation from a prepared speech or notes with comprehensible pronunciation and intonation use natural-sounding linking phrases and expressions when navigating and explaining presentation content understand how to deal with questions from the audience learn how to cite and reference presentation resources and data
Elective	Special Topics in Functional English	<ul style="list-style-type: none"> learn how to use English for specific, functional purposes, such as standardized test taking, basic mathematics, and MBA study

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