From Patient's Bedside to English Classroom: An ESP Course for Clinical Training

Ling Shi, Robin D. Corcos and Anne M. Storey,
The University of Hong Kong

Abstract

This paper describes an ESP course run by the English Centre at the University of Hong Kong (HKU) to help prepare medical students for their junior clerkship. The junior clerkship is scheduled in the third year and gives medical students the first opportunity to apply the knowledge they have acquired from textbooks, lectures, dissecting rooms, and problem-based learning group discussions of hypothetical cases, to the diagnosis and treatment of living patients. The training takes place in the hospital ward at the bedside of the patients, where students take and present the patient's case history, conduct a physical examination, and hypothesise as to possible diagnoses. Since the patients are mostly local Cantonese speakers while the medium of instruction is English, students have to interview the patients in Cantonese, and then, in English, report and discuss the case immediately, under the supervision of the tutor.

In order to develop an English course to enhance students' performance in this context, we observed and video- or audio-taped six one-hour ward teaching sessions with the support of medical staff in the Department of Surgery. We then analysed the discourse carefully to identify the language areas that appeared to be problematic in the students' learning of clinical medicine. Based on this analysis, we developed a course which runs over six consecutive weeks in a single one-and-half-hour session per week. The aim of the course could be described in global terms as `raising the learners' awareness, through exposure and practice, of the communicative demands of learning in a clinical setting'. Within this broadly specified aim, we are, however, able to focus on specific discourse functions including reporting case histories describing anatomical locations, and explaining the procedures of physical examinations. Evaluations by students indicate that the course has addressed their specific needs and helped them to prepare for their clinical training.

Introduction

The University of Hong Kong (HKU) is an English medium university where all lectures and classes, except some in the Chinese Department, are conducted in English. The English Centre at HKU runs English for Specific Purposes (ESP) enhancement courses for first-year students of all faculties. These English courses, either English for Academic Purposes or English for Professional Purposes, are custom designed for each faculty. The English courses for the Medical Faculty are designed to meet the special needs of students in their content studies. Since the courses began, the length and content have been changed due to changes in the medical curriculum. At present, the Centre provides two courses for first-year students. The first course (16 hours in the first semester) focuses on medical terminology, and the second course (9 hours in the second semester) on oral communication skills for the Junior Clerkship. The former was designed for students in their very first semester at university when they are introduced to the vocabulary of the basic disciplines of pre-clinical learning: anatomy, physiology, and biochemistry. The latter was designed to help

students prepare for learning on the hospital ward after these foundation courses. Each course is evaluated by students every year and revised accordingly. We also communicate with the Medical Faculty at the end of the year, summarising the results of student evaluations and soliciting feedback for our revised curriculum.

Student Needs Analysis

The enrolment in the Medical Faculty each year at HKU is around 175, the majority of students being male. Unlike medical studies in countries such as the United States the medical curriculum in Hong Kong is an undergraduate degree course. The medical students are selected on the basis of their having achieved relatively high grades in secondary school subjects including an Advanced-Level English examination. With a slight variation each year, about 95% of the students are from local secondary schools in Hong Kong, and the rest from overseas. However, though a few students have been educated in English-speaking countries, (not necessarily a guarantee of proficiency), and most in English medium schools in Hong Kong, some have experienced a secondary education where the medium of instruction was mostly Chinese, with very little exposure to spoken English.

There are various ways to assess the needs of students when developing a curriculum, including the use of instruments such as questionnaires, proficiency tests, interviews, diaries, etc. We chose, for our course on communication in clinical training, to observe and video tape students' bedside performance in ward teaching. We observed eight ward-teaching sessions in 1997 with the support of clinical teaching staff in the Department of Surgery at a hospital in Hong Kong. Of the eight sessions we observed, we videotaped five and audiotaped one, all with the consent of the patients. Each session lasted for an hour, producing a total of six hours of data. In the six sessions we observed, there were four to five students in each group, all being native speakers of Cantonese. Five tutors conducted the six sessions; four were native speakers of Cantonese and one was a native speaker of English.

We transcribed all six video- and audio-recorded sessions, trying to retain on paper the verbatim performance of the speakers including e.g., grammar errors, interruptions, repetitions, pauses, and unfinished utterances. We used the data first to calculate the words and turn length of the speakers in order to understand the overall structure of the interactions. We found, not surprisingly, that it was the tutors who dominated the talking. In terms of the number of words spoken by tutors and students, the former contributed in the ratio of 3:1 as against the latter, while the patient's input was insignificant (the mean number (M) of words per session were 5,027, 1634, and 302 respectively). The data also indicated that while students and tutors took a more or less equal number of turns (180 and 181 respectively), those of the tutor tended to be three times as long as those of the students (M of 27 as against 9 words per turn). A more detailed examination of the tutors' turns revealed a preponderance of wh-question forms (i.e. questions related to what, why, when etc.) (M of 96 questions in each session). These findings show that ward teaching is a highly interactive but largely tutor-led process. Working from our analysis of how tutors dominated the interaction by the frequency and format of their questions, we identified a few broadly specified language functions that students would need in the process of transforming their cognitive learning into applied clinical skills. Looking more closely at these functions, we then identified a number of important language skills, such as the ability to match register and addressee appropriately in both Cantonese and English as students talked to the patient and the tutor. We also noted the importance of the ability to use verb tenses accurately when reciting the chronology of a case, and the ability to use appropriate terminology and adverbials to describe examination techniques, and the location and pathology of internal organs.

First of all, a close analysis of tutors' questions showed that one particular linguistic need of students participating in this process is the ability to use appropriate colloquial and technical

terms. As they interview the patient in everyday Cantonese and then report the case to the tutor in technical English, students need to be able to match the addressee with the appropriate terms across two languages. The following example illustrates the situation. We have highlighted the tutor's questions that guide the students towards a re-interpretation of the information in technical terms:

Student 1: … His present complaint is irregularity in passing the stool.

Tutor : … **So what is the chief complaint? Can you phrase it in a very professional way?**

Student 1: Change of bowel habit.

Tutor: **… For how long?**

Student 1: For about a month.

Tutor: … All right. … The chief complaint is change of bowel habit for month. …

Student 1: … He had some blood mixed with his stools…

Tutor: **Again, in professional terms, what do you call it?**

All Students: …

Tutor: There is per rectal bleeding. …

In the above example, the tutor's interventions, 'What is the chief complaint? Can you phrase it in a very professional way?' 'Again, in professional terms, what do you call it?' guide the student towards making the connection between textbook knowledge (in technical language) and the patient's report of symptoms (in colloquial language). This is one of the many examples of such moves in our data. Like the student in the above example, many students were frequently at a loss when trying to make the connection. Though we are not sure whether this was because of deficiencies in their language repertoire (e.g. an inability to retrieve the right medical term), or whether it was due to their having failed to retrieve their textbook knowledge, it is clearly a circumstance where language and cognitive learning are closely tied together. We believe that, with language tasks focusing on making connections between everyday and technical terms, we can raise students' awareness of what is required and prepare them for similar situations.

Another student need apparent from the student-tutor discourse is the ability to recite the chronology of a case. The sequence of events in the patient's story is important as it provides important diagnostic clues. However, the data in our study shows that lack of chronological precision is another major problem that students face in clinical training. This, as the following example illustrates, is sometimes caused by inappropriate tense usage:

Student 2: He is an alcohol drinker and he has drink alcohol for…

Tutor: **For how many years?**

Student 2: About thirty years

Tutor: **Is he still drinking?**

Student 2: No.

Tutor: **When did he stop? After coming to the hospital?**

Student 2: Ten years ago.

The student in the above example clearly had problems re-telling the patient's story as he used present tenses to report the drinking habits of the patient, which lasted for thirty years but ended ten years prior to the report. There are numerous such examples of unclear chronology due to tense errors in the present data, indicating, we believe, at least one critical language need that our course would have to address.

A third need that we identified in our data was the ability to describe locations and procedures on physical examination. Students begin by examining the patient's body using the techniques of percussion, (tapping in order to determine relative tissue densities and hence organ locations), auscultation (using a stethoscope to locate and identify the sounds of moving gases and liquids) and palpation (using the hands to determine organ locations, etc. by feel). They then report their findings, with the tutor guiding them through questioning, in terms of precise descriptions of clinically relevant phenomena. The following extract from a discussion about a patient with cancer of the stomach illustrates the difficulties students have in dealing with these demands:

Tutor: What about the kidney? …

Student: It's on the lower part of the abdomen and … on the back side … above the…

Tutor: What do you call these two regions?

Student: Above the crest of the pelvis…

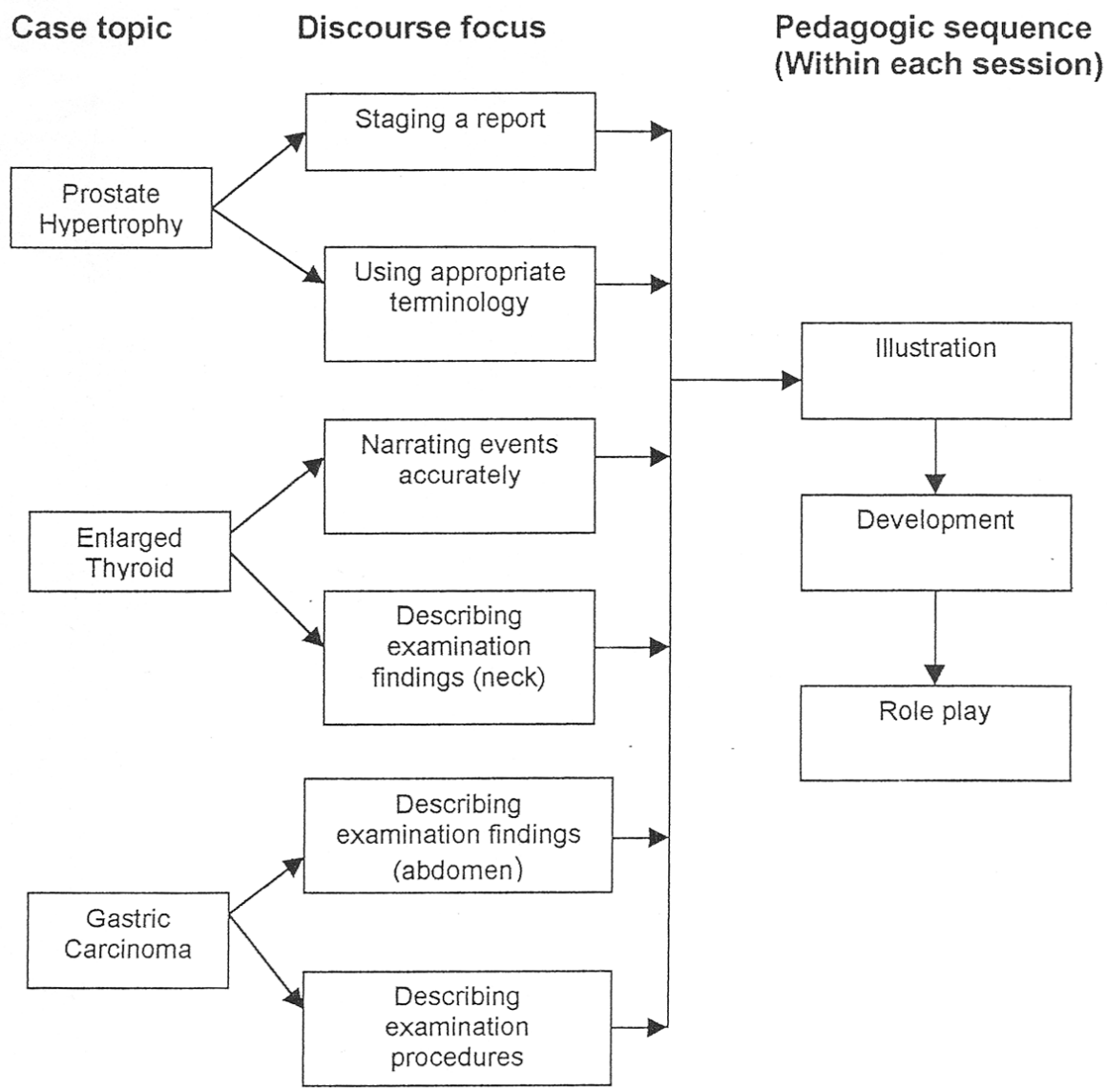
Tutor: No.

Like the student in this example, who only produced imprecise answers, many other students were observed to lack descriptive terms to convey the shape, sounds, consistency, direction of movement, and other attributes of both normal and diseased tissues. We, therefore, identified this as an important language skill that students need for better performance in their clinical training.

Course Description

The course starts with an overview, which draws on several different content areas to illustrate the overall structure and elements of communication in clinical learning and the various roles that the participants play in it. The specification for the rest of the course, as Figure 1 shows, consists of three major components, case topic, discourse focus, and pedagogic sequence. Broadly speaking, the first two of these components determine the linguistic and topical content of the course, i.e. the `what' element, and the last describes the `how' in terms of teaching. We will describe each of these elements and exemplify the last, pedagogic sequence, with selections from the course materials.

Figure 1: Clinical communication course structure



Case Topics

Three case topics, prostate hypertrophy, enlarged thyroid, and gastric carcinoma make up the medical content of the course. These topics were not selected according to any particular pedagogic criteria (e.g. informational complexity, topic familiarity), but rather according to fortuitous considerations of what we had video taped, and how typical the sessions were of problems that we had noticed across the whole collection of our data. They were also chosen on the basis of the sound and visual quality of the segments.

Discourse Focus

The choice of the six discourse foci, one in each session, was made primarily on the basis of a preliminary analysis of all our data to determine what seemed to be the most critical problems. Once these selections had been made, we looked through the transcripts for particularly salient examples and then checked that the video segments were of sufficient quality for classroom use.

In order to ensure that as many functions as possible were covered within the limited time available, each session, with the exception of those concerned with the reporting of examination findings of different cases, focused on a different function. Further aids in our selection process were the many textbooks on clinical communication that set out the moves expected of trainees in a clinical setting. However, we found that there was considerable divergence between textbook accounts of an ideal model of a case history presentation and the kind of highly interactive discourse structure that we found was characteristic of our data. Nevertheless, the textbook accounts served to confirm that we had identified important functions in our data.

Pedagogic Sequence

We opted for a sequence of three pedagogic moves in each two-hour session, illustration, development, and role-play. Each move may consist of a single task or a string of related tasks. The aim is to take students through a fairly conventional learning sequence, beginning with a task or tasks aimed at activating relevant medical knowledge and raising awareness of the overall discourse structure and communication problems. At the development stage a series of tasks provides more controlled practice on a single, broadly specified, function. Finally, at the role-play stage, students have an opportunity to rehearse a broad repertoire of clinical learning discourse functions in a relatively uncontrolled and authentic context.

Illustration

The tasks shown below are taken from three different sessions of the course. Like other tasks at this stage they all share the objective of orienting the students to the clinical topic dealt with in each video extract and to the functions that are salient or problematic in the discourse. They vary considerably in their level of focus from global comprehension of the video sequence to, for example, appropriate usage of specific lexico-grammatical items.

In the case of the first example task, the objective is to make students aware of the need for precision when presenting signs and symptoms to the tutor. A secondary objective is to orient students to the topical content of the segment:

> Example Task 1: You are going to watch the first part of a ward teaching session on video. In the video you will see a student presenting a case report at the bedside of a patient. Watch how the student reports the present complaint and note the main points with your partner and discuss:
>
> * what you think might be causing the pain
>
> * whether the report is sufficiently detailed

The objective of the second task is to activate students' knowledge of thyroid problems and to focus their attention on the need for precision and coherence in chronicling the sequence of events that has led up to the patient's admission:

> Example Task 2: Watch the video of a student reporting the case history of a thyroid patient. As you do so, make notes of the main events and then, in small groups, discuss the chronology of the patient's complaint:
>
> 1.
>
> most recent event: _____

2.

five years ago: _____

etc.

Task 3 is intended to activate the students' knowledge of clinical examination techniques and the reporting of findings. It focuses the students' attention on what typically is included when reporting the findings of a clinical examination.

Example Task 3: Watch the video and complete the missing information in the table by making notes on the examination of each of the organs shown.

Figure 2: Example Task 3

	PALPATION		**PERCUSSION**	**Characteristics of abnormal organ**
	LOCATION	**MOVEMENT**		
SPLEEN	-Deep - In left hypochondriac region - In left upper quadrant - In left upper quadrant (T) - Can't get below it - Can't get above it because it's behind the rib cage			-May enlarge to right lower quadrant in cases of malaria, etc
KIDNEY			-Usually dull	- Maybe resonant if bowel is floating on top of it
LIVER	- Lower border is palpable - Right upper quadrant Etc		- Upper border is covered by ribs Etc	
URINARY BLADDER		- Will not move on respiration		- Can be felt if enlarged

Development

At the development stage of the pedagogic sequence there are two objectives. The first of these is to focus in greater detail on the linguistic realisations of problematic or important functions exemplified in the video sequences. Task 4 exemplifies the objective. Rather than being based on a video sequence, it utilises a section of transcript in which the tutor models a complete anatomical description of the location of the liver. The aim here is to focus students' attention on the elements that such a description would be expected to include, e.g. movement on respiration, and the language by means of which the function `describing the locations of organs in the abdomen' is realized.

Example Task 4: Read quickly through the transcript of the video you have just watched. Choose one of the phrases in italics to fill each space:

S1: so it's dull to percussion … does it move down with respiration …

S2: yes …

T1: yes … that's what you want to tell me ok … so the liver is in [11] *the right upper quadrant ƒ in the epigastric region ƒ* of the abdomen …ok it moves [12] *down ƒ upwards* (in respiration … I can get [13] *below ƒ above ƒ* it … I can't get [14] *below ƒ above ƒ* it and it's dull to percussion … alright …so what about the spleen … can you tell me about the spleen …

S3: the spleen is on the left hypochondriacal region …

T1: yes.

…

(Abbreviations: S1 = Student 1; S2 = Student 2; S3 = Student 3; T1 = Tutor Doctor)

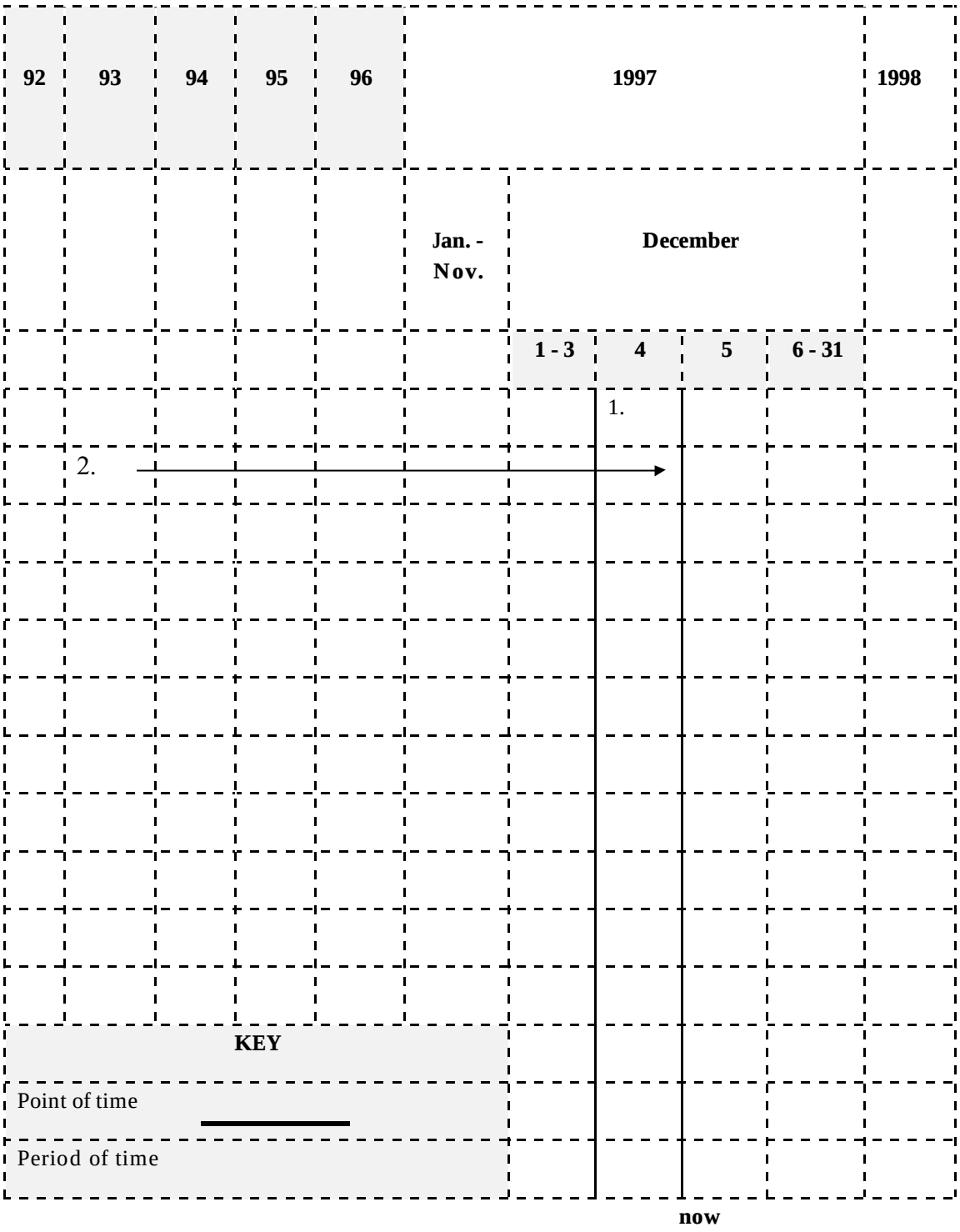
The other objective at the developmental stage is to provide opportunities for students to practise, in limited contexts, functions that they should earlier have recognised as presenting difficulties. Some of the tasks are based directly on the video sequences. For example, students might be asked to re-enact an exchange that they have just watched on video. Other tasks are related to the video only in terms of their functional rather than their informational content. For example, where a video sequence shows students having difficulty describing locations of organs in the abdominal region, they might be set an information gap `describe and draw' task based on that region. Most of the tasks we have developed are adapted from those used in communicative approaches to language teaching. Some of them, e.g. `describe and draw', `listen and draw' lend themselves well to controlled forms of practice in communicating the kinds of concrete phenomena that need to be described in clinical medicine.

Task 5 is an example. It is apparent from the video that students had difficulties in giving a clear account of the chronology of the patient's symptoms (See Appendix A for a transcript of a student's report). These difficulties stemmed from inappropriate tense choices and from a lack of relational time markers. Working from the video, the students are asked to represent the events in diagrammatic form and then, with the focus on the need for formal and semantic accuracy, to represent each event in the history in the form of a written sentence. Feedback from the teacher could be based on a handout or transparency of the transcript.

Example Task 5. Watch the video of a student reporting a case history of a thyroid patient. While you are watching, note down the tense errors in the student's report. Then put the following information of the case into the table provided and write it out below in sentence form. The first two are done for you as examples.

1. chief complaint	2. tremors, palpitation, and sweating	3. blood test
4. medication	5. the swelling enlarged	6. dysphagia
7. problems with solid food	8. dyspnea	9. change in weight
10. feeling hungry	11. other prescriptions and previous surgery	

Figure 3: Example Task 5



1. The chief complaint is swelling in the neck.
2. She started to have tremors, palpitation, and sweating four years ago.

   She has had tremors, palpitation, and sweating for four years. / She has been having...

Role-play

The aim at this stage of the pedagogic sequence is to give students an opportunity to rehearse all of the functions they have previously practised in more controlled contexts. The tasks aim to create, as far as possible, interactions that are authentic replicas of the ward teaching situation. The first type of role-play activity is relatively more controlled than the others in terms of informational input and discourse sequencing. In the example below, a diagnosis of appendicitis, the `student' is provided with a checklist of questions commonly used to explore abdominal complaints. Use of the checklist can be made more challenging, by providing only the base forms of lexical items (See Appendix B). This approach is appropriate for students who need to practise the selection of appropriate tense forms and their accurate production. The value of the question sheet lies in its function as a kind of cognitive scaffolding for the student in the sense that the order and grouping of the questions foreshadow the structure of the case report. The questions are asked in English, although in the hospital this would normally be done in the student's and patient's common native language, i.e. Cantonese. We believe that the practice of asking questions in English helps students prepare for their later recital of the case to the tutor.

The two students playing the roles of the tutor and the patient have information sheets that describe the signs and symptoms of the complaint in medical language (see Appendix C). Obviously they both have to process quite a large amount of information so prior preparation is essential if the role-play is to be undertaken with any degree of fluency. Instructions for the activity are as follows:

> Example Task 6:
>
> Work in groups of three. Your teacher will give you the information you each need for this task. Your roles and tasks are as follows:
>
> TUTOR: You know what the patient's problem is and you have a full clinical description of it. Ask / Answer the student's questions **only** about findings **on examination**, but use your imagination to supply as much detail as possible. If the student presents information that is vague or appears not to be leading anywhere, prompt him with simple questions.
>
> PATIENT: You have a full clinical description of the symptoms and signs of your problem, in medical language. Answer the student's questions about **symptoms** in ordinary, every-day language. Use your imagination to supply precise details but give only enough information to answer the question.
>
> STUDENT: You have a set of questions, some of which you might want to ask the patient. Work through these questions. Ask the teacher for findings on examination. Make brief notes of the answers.
>
> **Step 2:**
>
> STUDENT: Change places with a `student' in another group. Recite your case history to your new group.

The second type of uncontrolled activity is conducted in groups and is based on input in the form of a transcript of a simulated rather than an authentic doctor-patient dialogue. Although the dialogue includes exchanges that are strongly indicative of a particular diagnosis, no such diagnosis is given. In this kind of activity, students need to be able to perceive the significance, in medical terms, of the information supplied by the patient in layman's language. Task 7 is an example:

Example Task 7: [Assuming a class of 15]
Work in three groups of five. Each group will be given an interview between a doctor and a patient with a thyroid problem (See Appendix D for a part of a sample interview). Organise the information and prepare to present a case report.

As Task 7 illustrates, the activity starts with three groups, each discussing a different case with similar medical problems. Each group will select one representative to present the case history to the rest of the class and to offer a diagnosis. Alternatively, the class may re-form into groups of three, with students each reporting his/her case from the previous group to the current one. Both formats will involve students in the complex task of restructuring the dialogue as a coherent narrative while at the same time highlighting those events that point towards the various possible diagnoses. The presentations (and the earlier larger group discussions) can be made more interactive, and thus more proximate to the discourse of ward teaching. This demands that the teacher or one or two designated students have familiarised themselves with the medical dimensions of the case.

The third type of uncontrolled activity involves input in the form of a narrative in a mix of lay and medical language. It also differs from the second type in that information is supplied to the students cumulatively, i.e. in stages, requiring them to formulate and amend diagnostic hypotheses as their information about the patient increases. They are, furthermore, required to draw on their own resources of medical knowledge as they move towards a diagnosis at each stage.

The activity can be run in a number of different ways but is usually managed in four stages. In the first three stages, small groups of two or three students discuss their findings, guided by the questions below each narrative. Extra information is given as students move from one stage to another. When the diagnosis has been given in the fourth stage, one member of the group is asked to present the whole case, including the patient's history, to the rest of the class.

The format for this activity is somewhat different from the highly interactive teaching sessions in the hospital in that the students' presentations are given without interruption. However, if teachers have familiarised themselves with the anatomy and physiology pertinent to the problem they can, at the discussion stage, circulate among the groups interjecting questions and comment, very much as would the medical tutors. The presentations become much less of a ritual and can be more highly interactive if each group has been working on a different problem so that the information presented to the rest of the class is new. However, audience involvement can also be enhanced if at least one group, as audience, has been given the complete medical background to one of the cases being presented. They can then intervene to correct errors or omissions.

Example Task 8: The case of Mr. Wong (Adapted from Moore, 1992, p. 238)

Stage 1. At work in the office today, Mr. Wong felt a slight pain between the ribs and hip bone. This gradually increased until it was so severe it brought tears to his eyes. The pain comes and goes but seems to be moving towards the groin. A colleague brought him to hospital.

Write down 2 or 3 possible causes of the man's problem.

What would you do next?

$----------

Stage 2. During the physical examination the physician noted some tenderness and guarding in the right lower quadrant. While palpating the tender area as deeply as

possible, he suddenly removed his hand and instead of wincing Mr. Wong seemed relieved that the probing had stopped.

What other lab tests do you need to do?

$----------

Stage 3. When asked to produce a urine sample, Mr. Wong said that urination was difficult and painful. The nurse reported that the urine sample contained blood. The radiologist reported that a small calcified object, compatible with a uric acid stone, was visible in the region of the inferior end of the right ureter.

What is the next course of action?

How would you do this?

$----------

Stage 4. The diagnosis is that Mr. Wong has a ureteric calculus in the superior end of the right ureter. In your report make sure that you include the answers to the following:

What probably caused the patient's initial attack of excruciating pain?

Explain the intermittent occurrence of pain and why the pain moved from one place to another.

Distinguishing Feature of the Course

The present course aims to practise and develop key language skills required by the application of cognitive learning in clinical training. Its main distinguishing feature is the use of authentic student performance data to meet the special needs of students. This feature is derived from our need for an ESP course for clinical training. Prior to developing the course, we had some difficulties finding ESP textbooks that would be suitable for our students. Relevant textbooks are extremely scarce despite a general recognition of a need in a wide variety of contexts to enhance the English language proficiency of non-native speaking medical students. (Chia, Johnson, Chia, & Olive, 1999; Chur-Hansen, & Vernon-Roberts, 1998; Eggly, Musial, & Smulowitz, 1999; Hayes, & Farnill, 1993; Mpofu,Lanphear, Stewart, Das, Ridding, & Dunn, 1998; O'Hanlon, Winefield, Zhejka, & Chur-Hansen, 1995). The few textbooks we did find were difficult to adapt to the needs of our students. For example, *Medically Speaking* (Sandler, 1982) and *English in Medicine* (Glendinning, & Holmstrom, 1987) are multi-skill textbooks focusing on history taking and making diagnoses in clinical settings. However, both books use imaginary cases in a British ESL context, which we think is inappropriate for our EFL students.

We then reviewed the literature for expert insights into developing ESP courses for clinical training. There have been a few studies that have resulted in English courses for overseas doctors, medical or pharmacy students. All of these courses rely on some sort of authentic data related to the clinical practice in which students are involved, such as professional case conference recordings (Allwright, & Allwright, 1977), video recordings of doctor-patient communication (Candlin, Bruton, Leather, & Woods, 1981; Farnill, Todisco, Hayes, & Bartlett, 1997), or professional tapes developed by pharmaceutical companies (Graham, & Beardsley,

1986). However, none of the discourse protagonists are student and tutor, which made their curricula unsuitable for our purposes.

The implication for us, therefore, was that we would have to collect our own performance data and attempt to use it not only as a basis for needs analysis but also as in-class material. While this approach is relatively cost-effective, it also has the advantage of presenting the authentic context of use in an immediate way, as well as involving students in the analysis of the interactions and, to some extent, in the selection of discourse focus. They can also identify with the protagonists, in whose shoes they are already standing. All of these factors serve to enhance the motivation of the students to engage with the course rather than seeing it as an imposition divorced from their own concerns and experience.

Implications

Use of Needs Analysis Data as In-class Materials

Our course has relied heavily on the video data we collected in the course of our investigation into students' needs. The two main advantages of doing this are that a high degree of authenticity can be achieved and, where time is a constraint, course designers can avoid the need to reconstruct the context of use by means of specially written dialogues, etc. Of course, the requirements of the needs analyst and the course designer/ teacher, even if they are the same person in different roles, are not always congruent. The needs analyst can usually work with video footage that has relatively poor sound quality because s/he can re-wind endlessly until s/he can piece together what was said. In the classroom, however, it can be frustrating for students and teachers to work with poor sound quality. This is especially so when the objective is not to comprehend a poor quality video recording but rather to be aware of certain discourse features and topics before moving on to more productive practice tasks.

Our experience suggests that having the protagonists wear clip-on microphones, feeding through a distribution box to the camera can ensure good sound quality. Flat mikes (sometimes called table mikes) also work well if positioned correctly. Shotgun, or directional, mikes attached to the camera, are intended to pick up only the voice of the speaker at which they are pointed so they rarely work well in multi-party discourse when turn exchanges happen rapidly. A further disadvantage of directional mikes is that it is often necessary to point the camera at inanimate objects that are the topic of the discourse, in order to capture the complete context. Finally, it is important to have a camera operator who can use the zoom and other controls in such a way as to create footage that a materials writer and teacher could usefully exploit. This requires a sixth sense for what will work pedagogically and an ability to respond quickly to a rapidly changing situation.

Adaptation of General English Teaching Techniques

There is sometimes a tendency to see ESP and General English as watertight compartments. However, some segments of our course, particularly those oriented to more controlled forms of practice, drew heavily on communicative techniques developed in the area of general English teaching. Many of these techniques lend themselves well to specific genres and when developing materials we frequently gained inspiration from teacher resource books containing, for example, ready-made information gap tasks that we could adapt to our purpose. The only caveat is that the relatively heavy informational and lexical load in ESP may require that students be allowed more preparation and completion time for the tasks than would be the case in a general English context.

Support for Teachers in Subject Area

One other perennial problem in ESP course design and teaching is the designers' and teachers' lack of specific subject knowledge. However, it became apparent from the transcripts that this was not as intractable a problem as we had initially believed. Fortunately, we had access to a wide range of textbooks on anatomy, physiology and clinical medicine (as well as some excellent web sites, e.g. Merck.com) and we found, that with the help of a good medical dictionary, it was not difficult to understand the context, at least in terms of what the students were required to do. There was obviously a case for easing our informational load by restricting the whole course to a single clinical case but we felt that this would probably have been at the expense of student engagement with the learning process. This is because, although our focus was primarily on communication, we knew that our particular students would also value any enhancement of their medical knowledge that might occur as a by-product. Our experience suggests that focusing on a few topics, within which the pedagogic aims can nevertheless be fulfilled, means that English teachers can usually master the relatively small amount of specific knowledge necessary for the language tasks.

A related issue that we had to deal with has been the extent to which notes for teachers would provide support in terms of background knowledge. In the event, we decided that the notes would be restricted to suggested answers where these were predictable and to suggestions for managing the activity. As far as specific medical knowledge was concerned, e.g. concerning the clinical manifestations of hypothyroidism or gastric carcinoma, it would be up to the teachers to brief themselves to the extent they felt necessary by consulting textbooks. Some teachers have gone to great lengths to acquire the requisite knowledge.

Authenticity of Tasks

There are obviously limitations on the extent to which authenticity of classroom tasks, such as role-play, can be achieved in this particular teaching/learning situation. The first limitation is with respect to the other two participants, the tutor and the patient. The `real life' tutor is an expert who is able to activate abstract or textbook knowledge and synthesise this knowledge with years of practical experience in the solution of problems, in this case the making of a diagnosis. In the hospital, as the student moves towards his/her diagnosis, the tutor will make frequent interruptions to keep the student on track. However, in the language classroom, the student playing the role of the tutor has no such practical experience. All s/he has is the textbook information on the role card and the `answer' in the form of the most likely diagnosis. The problem in the case of the patient is similar. S/he too has information about his/her complaint which is specified in medical terms and s/he has the difficult task of translating this into the language used by a layperson to describe his/her complaint to the doctor.

Conclusion

Our experience provides an example of how student performance data can be incorporated into the development of teaching materials. We have also attempted to show how course designers and teachers can overcome their lack of familiarity with the content area by limiting the number of topics and focusing on key language functions that can be recycled across topics. In other words, we believe that this approach not only enhances students' ability to negotiate these particular case-types with medical tutors but also equips them with skills that can be transferred to other cases.

The use of authentic video footage in the classroom also promotes students' attendance to the cognitive learning process. Students are thus able to see for themselves how skilled language use

can promote diagnostic thinking skills. The English language training program thereby becomes, in the view of the students, an integral part of their clinical training.

Acknowledgment

We would thank the patients, students, and tutors who allowed us to observe and video-/audio-tape the ward teaching sessions and K. H. Poon for collecting and transcribing the data. We would also thank our colleagues David Churchill, Elaine Martyn, Helen Flegel, and Lai Kun Tse for their valuable feedback on the course materials and Lai Kun Tse for her comments on an earlier version of the paper.

References

Allwright, J., & Allwright, R. (1977). An approach to the teaching of medical English. In S. Holden (Ed.), *English for specific purposes* (pp. 58-62). Modern English Publications.

Berkow, R. (Ed.) (1987). *The Merck Manual of Diagnosis and Therapy* (15th Edition). Rahway. NJ: Merck Sharp & Dohme Research Laboratories.

Candlin, C.N., Bruton, C.J., Leather, J.H., & Woods, E.G. (1981). Designing modular materials for communicative language learning; An example: Doctor-patient communication skills. In L. Selinker, E. Tarone, E., & V. Hanzeli (Eds.), *English for academic and technical purposes: Studies in honor of Louis Trimble* (pp. 105-33). Rowley, MA: Newbury House.

Chia, H. U., Johnson, R. Chia, H. L., & Olive, F. (1999). English for college students in Taiwan: A study of perceptions of English needs in a medical context. *English for Specific Purposes, 18*, 107-19.

Chur-Hansen, A., & Vernon-Roberts, J. (1998). Clinical teachers' perceptions of medical students' English language proficiency. *Medical Education, 32*, 351-6.

Eggly, S., Musial, J., & Smulowitz, J. (1999). The relationship between English language proficiency and success as a medical resident. *English for Specific Purposes, 18*, 201-8.

Farnill, D., Todisco, F., Hayes, S. C., & Bartlett, D. (1997). Videotaped interviewing of non-English speakers: Training for medical students with volunteer clients. *Medical Education, 31*, 87-93.

Glendinning, E., & Holmstrom, B. (1987). *English in medicine*. Cambridge: Cambridge University Press.

Graham, J., & Beardsley, R.S. (1986). English for specific purposes: Content, language, and communication in a pharmacy course model. *TESOL Quarterly, 20*, 227-45.

Hayes, S.C., & Farnill, D. (1993) Medical training and English language proficiency. *Medical Education, 27*, 6-14.

Moore, K.L. (1992). *Clinically oriented anatomy*. Third edition. Baltimore, MD: Williams & Wilkins.

Mpofu, D.F.S., Lanphear, F., Stewart, T., Das, M. Ridding, P., & Dunn, E. (1998). Facility with the English language and problem-based learning group interaction: Findings from an Arabic setting. *Medical Education, 32*, 479-485.

O'Hanlon, A., Winefield, H., Hejka, E., & Chur-Hansen, A. (1995). Initial responses of first year medical students to problem-based learning in a behavior science course: Role of language background and course content. *Medical Education 29*, 198-204.

Sandler, P. (1982). *Medically speaking*. BBC: London.

Appendices

Appendix A. Transcript for Example Task 5

Student: Our patient Mrs X is … who is … twenty nine years old and her chief complaint is … swelling … in her neck, the neck region. The symptoms started … four years ago and she had a tremor palpitation and also sweating. And … she when she went to the doctor for physical examination … about her first pregnancy and she told the doctor about all these symptoms. After a blood test…, it is confirmed it was confirmed that … something wrong about the thyroid. And she was on medication … during this four years. About one and half years ago… I'm sorry, … at that time she didn't notice about any swelling in the neck, only the symptoms. At about one and half years ago, … the swelling enlarge and constitutional symptoms happened and she complain of dysphagia, … also… dyspnoea on when lying down . … She cannot also she also can tolerate the solid food. The dyspnoea only arrive occasionally when she lie down . … She has she had not little change in weight. She said that her appetite did not change. However, she felt hungry quickly after the meal. … Besides the medication taking for her thyroid, she did not has other prescription, and no previous surgery done . … She has two daughters with … his her husband, also two daughters. She said that her grandfather also has thyroid problem.

Appendix B. `Student's' checklist

Before performing an abdominal assessment, take a detailed history. Begin with the patient's chief complaint, which may be related to pain, GI distress, or another problem. Use the following questions as a guide.

Pain history

Pain / abdomen? describe ? dull? throbbing? fiery?

often / pain? occur / intermittent? constant?

what / relieve? what / worsen?

Also questions in the following areas:

GI and related medical history, General medical history, Family history, Psychosocial history

Appendix C: Information of Symptoms and Signs

(For`patient' and `tutor' on an appendicitis case)

(Taken from The Merck Manual of Diagnosis and Therapy 15th Edition, 1987)

Typical symptoms and signs of acute appendicitis appear in 50% of patients; they consist of sudden onset of epigastric or periumbilical pain followed by brief nausea and vomiting and, after a few hours, shifting of pain to the right lower quadrant. Direct tenderness in the right lower quadrant, rebound tenderness felt in the right lower quadrant, localized pain on cough, low-grade fever (rectal temperature 37.7 to 38.3C [100 to 101F]) and leukocytosis (12,000 to 15,000/L) characterize the syndrome. …

Appendix D. Interview with a 30-year-old Female Patient

Doctor: So you noticed this swelling in your neck a couple of years ago, did you?

Patient: Yes, and then I got these quick heart beats … kind of fluttering …

Doctor: At the same time as the swelling came up?

Patient: Yes

Doctor: How about your weight?

Patient: Well, I lost a bit - a few pounds - but it came right back when I got pregnant.

Doctor: And after the baby? You lost it again?

Patient: Yes, even though I felt hungry all the time and just stuffed myself.

Doctor: Did you feel tired?

Patient: All the time - but the funny thing was, I just couldn't sleep.

…