



ORIGINAL PAPER

Mastering Speaking Skills for Technical Students

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Abstract:

In the globalised world of the present, proficient communication skills are mandatory for technical students and professionals in order to succeed. As they grow from students into professionals, they soon realize that knowledge of a foreign language needs to be corroborated with increased accuracy and grasp of communicative conventions, organisational culture and business etiquette. The current paper seeks to investigate which aspects of business conventions might be useful for technical students to master so as to increase speaking power and improve communicative achievement in their future interaction with clients, peers and management structures as part of a technical organisation conducting business worldwide. Additionally, the paper will provide some practical techniques by means of which students can be helped to overcome their fear of speaking in public in English on a variety of technical topics pertaining to their job.

Keywords: *English for Specific Purposes, Post-Communist language trends, technical English, transactional Speaking skills.*

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Introduction

Globalisation following the post-communist period has brought about unprecedented access to the international world of business, thus creating a wide range of jobs in the technical field. Be it in production or in computer technology, students can gain easy access into a profession provided they master English to pair up with their respective professional skills. Technical English may seem daunting and job interviews carried out in English are often dreaded as they stir up all the linguistic competence into spoken production and students often fear their English may not be up to the challenge. Additionally, the challenge to impress an employer enough to select one from a large pool of equally competent peers depends on how well one transacts during the spoken interaction with the employer. In the academic world and beyond it, speaking in English plays a pivotal role in receiving and disseminating a wide range of knowledge from academic sessions such as seminars and conferences with international participation (Bahar, A. K., & Latif, I. 2019), in obtaining information from technical documents written in English and using it to solve discuss technical issues, in making formal or informal presentations and technology reviews, to offer or receive clarification from the academic community and professional peers, to generate personal interpretations of the data and corroborate it with additional data etc.

The Development of Speaking Skills

Speaking skills are regarded as some the hardest skills to be taught among EFL learners due to the complexity of the micro skills they entail such as pronunciation, vocabulary, grammar, coherence and fluency (Bahar, A. K. 2013, Zareie, 2014). Technical English increases the challenge with the need to explain, refine and clarify hyper-specialised concepts with the above mentioned micro skills. The development of speaking will rely heavily on establishing the nature of speaking in a formal or semiformal discussion with peers or superiors as well as on the complexity of independent verbal communication during job interviews, meetings, presentations etc. Therefore, transactional speaking skills are often part and parcel with what needs to be taught to academic students as it offers measurable and manageable results and it is this skill set that will help students in general and technical students in particular to cope with difficulties regarding group discussions and interviews in their future jobs after graduating from the university.

Speaking as a transaction relates to a situation where the focus is on what is being said or done (Richards, 2015) as opposed to interactional speaking aimed at creating and maintaining relationships. Transactional language presents the advantage that it involves shorter turns, simpler and more predictable or manageable language, and can have a more manageable as well as measurable result. According to Bahar (2014), there are at least two types of transactional speaking skills, namely **discussion** and **interview**, which we will be enlarging upon later on with examples of how they can be used to enhance technical English speaking skills. The aim of developing transactional speaking skills during technical classes is that of mastering:

- casual as well as professional conversations,
- transactional functions in formal and occupational talk such as asking about and rendering job descriptions,
- creating and receiving messages through direct interaction,
- describing how technologies work,

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- expressing ideas about technical concepts and needs,
- giving instructions and action on them,
- asking for and offering opinions,
- making recommendations
- reacting with approval or disagreement on technical issues.

Additionally, the applicative aims of teaching transactional speaking skill are to render the students able to compare and contrast concepts and technologies, to find and describe technical solutions, to negotiate during disagreements and to disseminate or to retrieve data related to professional circumstances. When teachers embark on a mission to teach so as to develop **speaking**, defined as „*the productive oral skill that consists of producing systematic verbal utterance to convey meaning*” (Nunan, 2003:48), what they will be trying to achieve is to get students to:

- Produce the English speech sounds and sound patterns;
- Use word and sentence stress, intonation patterns and the rhythm of the target language;
- Select appropriate words and sentences to match the current setting, audience, situation and subject matter;
- Organize their thoughts in a meaningful and logical sequence;
- Use language as a means of expressing values and judgments;
- Use the language quickly and confidently with few unnatural pauses, which are referred to as fluency. (Nunan, 2003:49)

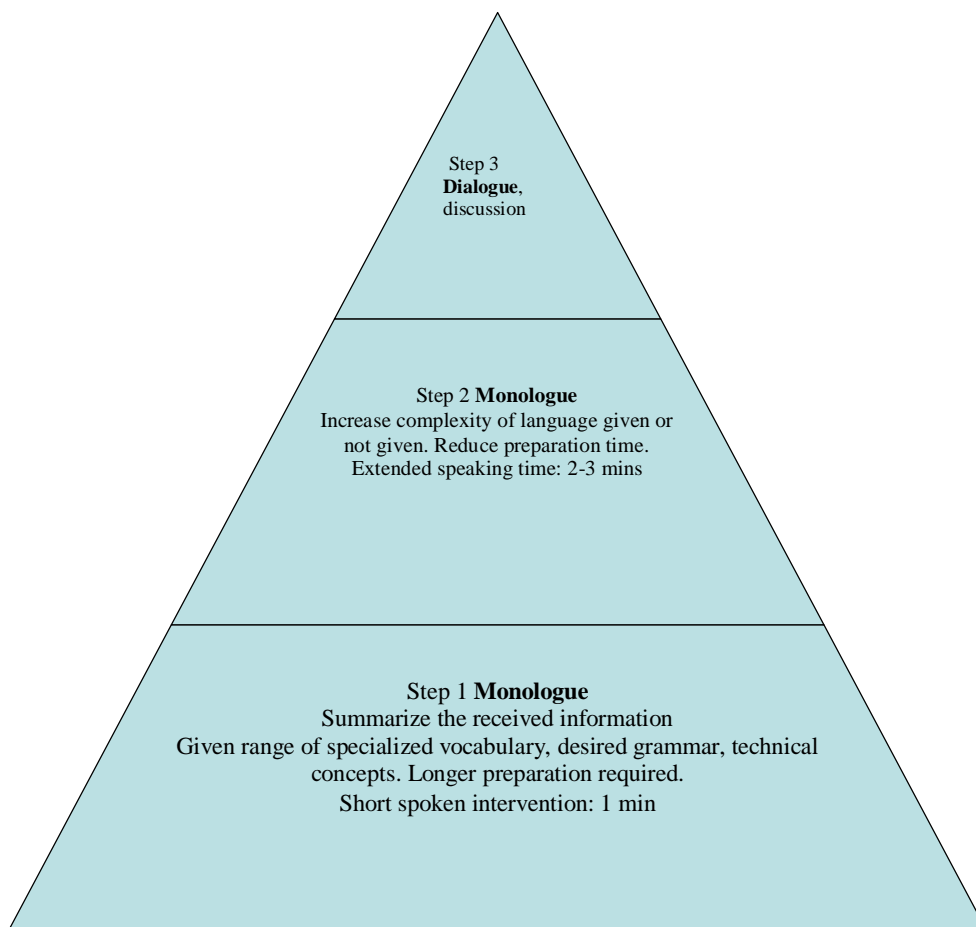
During technical English classes, all the afore-mentioned outcomes are to be developed within discussion lines that are prevalent in the students’ area of specialisation. Apart from what general English classes will focus on for the improvement of speaking skills, what can help to ensure the optimal development of technical speaking skills are the following:

- **Setting up the environment** for speaking with proper language input (vocabulary, concepts, grammar etc.)
- Teaching students **to prepare for the speaking activities** so as to harness what they have learnt and put it to good use while adapting the speaking output to their own level of competence,
- **Overcoming nervousness** and stage fright through exposure to controllable interactions through speaking gradually expanding into uncontrollable speaking situations.

According to Rivers (1968:160) students in a foreign language class, be it general or for specific purposes, are not likely to learn to speak fluently merely by hearing speech, although this is vital in getting them acquainted to the desired forms and complexity of the code. Listening, as a passive skill, provides much desired exposure to knowledge that can soon be internalised by students. Nonetheless, nothing activates speaking skills more than speaking practice. Thus, teachers will need to provide the students with multiple opportunities to practice their speaking skills actively and make sure they feel prepared for it. Hence the importance of gradual and controlled exposure to speaking activities which will provide the much needed time and learning strategy that will enable students to become independent speakers. Students feel prepared for the speaking task when they gain confidence in their ability to speak. This type of confidence is not merely encouragement through pep talk as this is prone to failure in cases of extremely emotional students. Confidence to speak can, though, be built through **preparation** and **gradual exposure** to an increasingly difficult level of

complexity. A practical way by means of which can help to develop competence as well as confidence in students is described in the following strategy. After students are exposed to written or listening input on a particular technical content, with selected vocabulary and given grammar sequences, the student is asked to summarize the received information so as to make use of the provided vocabulary and grammar in a short spoken intervention. The following stages will expand the complexity of the given items and harness them into more spoken interventions without a speaking partner (monologue), with the subsequent included in the next stage for developing extended peer interaction (dialogue, discussion, interview).

Figure 1. Step by step strategy to increase speech complexity



Moreover, teachers will rely heavily on imagination in devising teaching activities which provoke the student to use the learnt language in a personal interpretation, to use specialised vocabulary creatively to explain a technical concept, to

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adapt the level of complexity of their L1 thinking to their level of English competence, i.e. teach students to simplify their production output to manageable L2 sequences. As Brown (2000:7) correctly points out, *teaching means guiding and facilitating learning, enabling the learner to learn, setting the conditions for learning*. In other words, proficient teaching can render learning easy and autonomous through its function as facilitator rather than governor of leaning. This endeavour represents a complex web of teaching style adaptation, strategy, approach, methods and classroom technique which can make the learning process effortless and fun, gradually independent and effective.

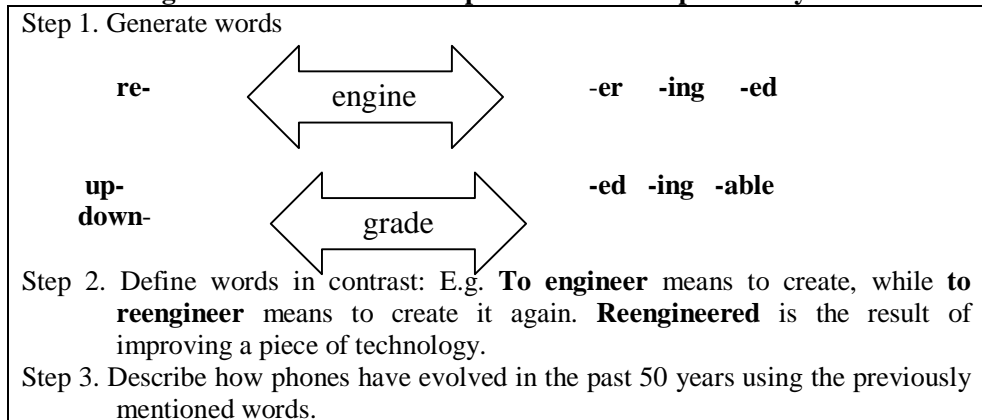
Application of Principles of Teaching Speaking to Technical English Classes

Brown (1994b:268-270) mentioned seven principles for teaching speaking upon which we shall try to enlarge in their adaptation to technical English teaching:

1. Focus on both fluency and accuracy.

Most of the times, during technical speaking, students will focus on rendering scientific content with a range of specialised vocabulary and with an eye on conceptual validity. Students start speaking and get carried away in the attempt to explain, clarify or refine a technical concept to the detriment of grammatical accuracy. How does the teacher intervene to get them back on track? Well, they don't. At least not during the actual speaking. They can devise pre-speaking activities in which to include the syntactic and lexical structures that are desirable and they can offer feedback in the post-speaking discussion. Intervention during speaking hinders confidence and creates confusion in the speaker's mind as they lose track of what they wanted to say. However, with carefully planned lessons paired with teaching intuition of what may go wrong in terms of accuracy and carefully devised pre-speaking strategies, students should develop a learning style that will render their speaking production both fluent as well as accurate. Additionally, teachers should accustom students to making good use of every teaching opportunities and incorporate them in short speaking tasks. For example, let us imagine a vocabulary lesson on prefix and suffix derivation during which students learn to obtain derived words (nouns, adjectives, verbs), followed by a short brainstorming speaking activity in which the teacher writes a root and some suffixes on the blackboard and students generate word families together with their contrasted definitions. Derivation patterns soon become replication templates that enable students to generate derived words with increased accuracy.

Figure 2: Use of derivation patterns to develop accuracy



After generating and defining the obtained words, students are asked to make a 1 minute speech about the concept in which to include all the words they previously generated. Thus, teacher may check for problems in assigning words in the lexical category they belong (such as using adjectives in noun positions etc.) and may address the problems in the feedback section.

2. **Provide intrinsically motivating techniques.**

Technical students are aware they will need English in their future professions but the acknowledgement of need is not necessarily motivating when they feel progress is slow and study routines need readjustment. Extrinsic motivation needs to be paired with language courses that cater to their level of competence in order for students to feel they can take the course and be successful at learning. As Ryan and Deci (2000:55) point out, *“the most basic distinction is between intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome.”*

The challenge for teachers is to adapt technical English courses to satisfy the needs and capabilities of a heterogeneous group of students. This can be achieved (though with great difficulty and a lot of preparation) if tasks display an increasing level of difficulty as the lesson unfolds. Additionally, a fair and objective evaluation of students' levels of competence is needed. Ideally, students' levels should not differ more than one level on the CEFR scale (E.g. A1 and A2, A2 and B1 etc). What teachers can do to boost confidence and make learning fun and motivating is to create differentiated tasks for students of varying levels. For instance, after watching a technical video/tutorial/experiment, students of lower levels may be asked to provide answers to a list of questions handed out beforehand or create their own list of questions to ask the scientists in the video, while more advanced students may be asked to make inferences, state what they would do next, how they might apply that specific scientific knowledge depicted in the video etc. Thus all students feel they are making a contribution and that they have a voice that matters, they feel validated and valued for the products of their mind and this builds intrinsic motivation.

3. **Encourage the use of authentic language.**

The Internet provides unlimited resources of videos, audio, text and visuals that teachers may use to input authentic production examples that students will later build their speech on. Working in a globalised labour market will entail understanding a variety of accents and replying accordingly, carrying out transactions and negotiations on technical subjects in manners similar to what they have been exposed to while learning. Therefore, authentic language input is essential to the development of speaking styles that abide by the desired conventions of the technical field they are preparing for. For instance, technical professionals are often faced with challenges such as navigating through unclear instructions for which they will either need to ask further of questions, roughly approximate the missing information, or rephrase it for clarification and ask for confirmation. As these challenges are part and parcel of the technical field, students need to learn to cope with these imperfections and do what they can with what they have. Hence the need for authentic language input that will empower them with the right skillset they will use as future technical professionals.

4. **Provide appropriate feedback and correction.**

As discussed above, teachers should (by means of observation) anticipate areas that are prone to mistakes or conceptual errors and prevent their occurrence by including structured activities prior to speaking, and offer feedback and correction post-speaking.

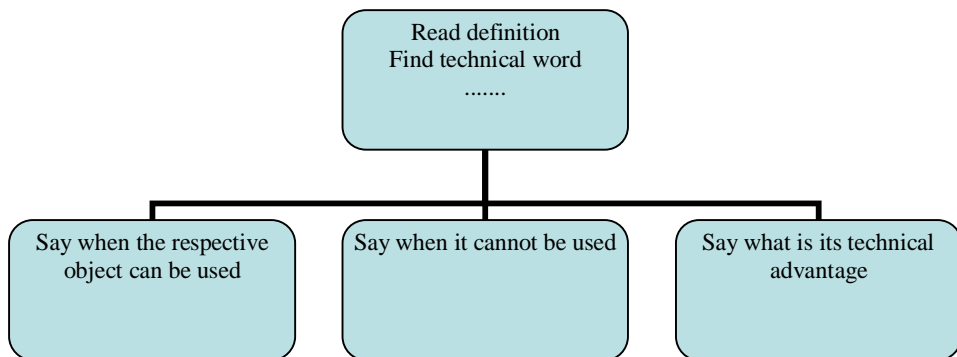
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5. Capitalize on the natural relationship between speaking and listening.

This principle can be easily put into practice by the use of audio or videos on a variety of interesting technical topics, offering precious language input and debate issues that can be the starting point for the development of the speaking activities. On the basis of the listening input (corroborated with visual input in videos) the speaking tasks may target technical vocabulary, derivation, compounds and conversion, language sequences, complex syntactic structures, verbal tenses and reported speech, as well as a number of business strategies such as negotiating etc. that students are prompted to use in their own speech after being exposed to similar templates during the listening activities.

In Brown's view (1994:179) there are numerous activities in teaching speaking that can ensure success: the use of games, role-plays and simulations, situational drama, individual and team projects, interviews, brainstorming activities, filling in information gaps, crossword puzzles, problem-solving exercises and decision-making scenarios, opinions exchange. Though some may seem arid in generating speech, they can be used creatively by the teacher to create an opportunity for oral interaction. For instance a crossword puzzle exercise can be extended after completion into speaking by a request that the student use the word that they have just discovered into a sequence of short oral statements, as can be seen in the diagram below:

Figure 3: Using crossword puzzle results to elicit speaking



6. Give students opportunities to initiate oral communication.

Verbal interaction in the classroom is generally limited to what the teacher will allow. In other words, students speak when invited and refrain from uncalled for interventions. Teachers should encourage speaking opportunities through collaborative work, by reducing teacher speaking time and increasing student speaking time, by asking eliciting questions that invite students to provide more information, by using visuals that prompt students to speak.

7. Encourage the development of speaking strategies.

Students often complain of their lack of speaking practice and often voice out the need to speak more. Teachers can encourage students to develop individual speaking strategies outside the classroom by providing lists of technical topics for monologues that students can do on a daily basis at home. These may include:

- role plays on technical profession cues (*Imagine you are working as a.....*);
- descriptions of technical experiments or projects they have witnessed at school;

- choosing an object in their room and describe functioning principle, materials, usefulness, size etc.;
- comparing and contrasting objects in the room with a view on function, material, technology etc.;
- descriptions of safety procedures in a given scenario;
- making oral presentations on a given structure about basic technical issues;
- verbal diaries that should include language items that students need to practise etc.

Additionally, students should be encouraged to record their speeches, play them, think about what they might say differently and repeat the process. The end result should demonstrate a definite improvement in accuracy and fluency. Also, students need to research the desired pronunciation of challenging technical words, create word maps that they can use in their speech, start individual speech with simple statements, then repeat with gradually increasing complexity and continue until the result is satisfactory.

Further Speaking Boosting Approaches

As Richard (2001:67) points out, teaching strategies should derive from an examination of learners' language protocols, a close observation of the learners' introspections and manifestations, case studies and diary studies, classroom observations, and experimental studies. In ESP terms, these teaching strategies can incorporate a number of the examples suggested below, conceived to enhance observation while activating technical speaking skills:

a) **Experiments.** Though not typically used during English classes, Technical English classes can make good use of them. Some experiments can be introduced through watching YouTube videos of an experiment (passive- Listening for gist), followed by a subsequent active listening task: solving a language task (technical vocabulary matching with definitions, grammar-giving instructions with the Imperative-Beginner level-or using the present subjunctive after impersonal directive constructions-advanced). After the preparatory listening tasks, students are moved into a second stage of guided speaking- the teacher provided a set of language sequences to be used in a short spoken summary of the video. The third stage, independent speaking, may consist of the task in which students describe an experiment adapted to their technical interests. During the spoken description, they should refer to materials needed, techniques and work procedures, input data and expected results, optimization strategies for experiment success, expected challenges etc.

b) **Case studies.** Input can be provided in the form of a reading or listening activity (as described above) that describes a case study relevant to the students' technical interests. The summary of the case study can be in the form of a diagram provided by the teacher on the basis of which students are asked to speak for a certain number of minutes (depending on their proficiency and case complexity). The diagram should contain the bare minimum of information and students should be asked that during the speaking activity they include the missing information and/or any relevant details that have intentionally been left out. Teachers can thus observe their students' *modus operandi*, the inner workings of their competence and offer post-speaking feedback to incorporate these observations.

c) **Technical Diaries.** Technical students are often involved in a number of technical projects for various academic subjects (technical drawing, Computer aided design, programming, mechanics etc. English teachers should encourage them to harness these opportunities by writing a diary page describing how they carried out the

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respective project. For their speaking assignment, students are encouraged to create a presentation based on that diary (including pictures, prompts etc.), in which they disseminate to the class what they did exactly, how they completed the project, what were the challenges and how they overcame them etc. Alternatively, students may be asked to create a diagram based on which they can freely describe how they carried out the respective project. Thus the teacher can observe any conceptual or language competence shortcomings which they can later harness in their teaching.

Nonetheless, as pointed out by Bălănescu (2022:37) in discussing teaching as a form of development of intercultural skills, “*it is virtually impossible for teachers to predict the knowledge that learners will need in their interaction with other people (...) Learners need to prepare themselves for the unexpected and be ready to deal with uncertainty and even ambiguity. As a result, teachers should seek to develop learners’ skills of observation and discovery*”. As necessary as observations skills are for teachers, students should also be encouraged to deepen their observation capacity and listen genuinely before they verbally react to a situation, interlocutor’s cue etc.

Sweetland (2008) analyses **Inquiry-based teaching** as a pedagogical approach that encourages students to deepen their understanding of academic content by investigating, asking and answering questions. Arousing curiosity and harnessing it is a valuable component in developing students’ independence and self-accountability during the learning process. Also referred to as **problem-based teaching**, this approach places students’ inquisitiveness at the center of the syllabus, and encourages research capabilities alongside the acquisition of knowledge and understanding of content. It will definitely enhance linguistic creativity through the engagement of the student in their own learning as they pursue their natural curiosity and discover a number of related concepts as they investigate and inquire about a specific one. And, as any intelligent person enjoys a challenging investigation, students perceive problem-based teaching as entertaining and confidence boosting. How can this approach be harnessed to encourage speaking, particularly of a technical nature? Here are some ways:

- a) Teacher provides the problem, students ask the questions, research the solutions, analyse them thoroughly and make decisions based on what has been negotiated, explored and
- b) Teacher provides the conceptual questions, stirs up opinions, controversy, debate, argumented views.

Example: teacher asks/prompts these questions onto a wall to initiate a lesson about **Materials Technology**-from finished product to molecular level:

What is the role of man in the Universe?

How do we relate to our planet? Are we making a difference to it?

Are we using Earths resources wisely?

How wasteful are you personally? Are you using your resources wisely?

Conclusion

There are a multitude of opportunities for teachers to re-centre the focus of Technical English classes so as to enhance their students’ ability to verbally interact during ESP classes and make use these skills in their professional lives. As demonstrated above, the same principles of teaching speaking that teachers use in a general English class, can be adapted to transition into technical English classes. A student-focused approach relying on close observation and creativity will provide teachers with the much needed tools to plan and deliver useful and entertaining classes that genuinely get students talking.

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