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Getting Closer to Authenticity in the Course of Technical English: Task-Based Instruction and TED Talks

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Abstract

Authentic materials, if appropriate to the learning situation, might turn the classroom environment into a more engaging place, where motivation might be generated through the performance of meaningful tasks. This article describes how a Text-Based Instruction approach can provide the basis for the design of an ESP syllabus based on relevant, varied and engaging tasks to enhance authentic language use among engineering undergraduates. The design of these tasks mainly draws on TED Talks that are specifically technological and connected to engineering undergraduates, as the talks develop novel and thought-provoking ideas which are interesting and personally meaningful and relate to different engineering fields. These tasks are specially designed to enable students to carry out a process of talk deconstruction through the analysis of distinct discourse and linguistic features specific to the spoken genre of TED Talks. This analysis ultimately aims at the eventual construction of students' oral presentations. Oral presentations can be conceived as an activity that approximates the real world and future workplace of engineering undergraduates, and in consequence, promotes students' instrumental motivation.

Keywords: text-based instruction, authenticity, TED Talks, ESP syllabus

1. Introduction

Globalisation has brought the need to communicate in foreign languages to the fore, and the ability to be fluent in at least two languages has rapidly become a basic need for everyone (Graddol, 2006). English is widely acknowledged as the global language. The extent of its geographical diffusion; the extensive cultural diversity of its speakers; the wide and diverse domains in which it is found, and the vast number of purposes it serves, are compelling reasons to consider English, the "international language" (Dewey, 2007).

The role of English in the field of engineering has also been on the increase to the point that nowadays, it is looked upon as a "must-have" basic educational skill. 21st century engineers, as Bhattachayya notes (2013: 344), are expected to demonstrate mastery of a great number of interdisciplinary and interpersonal competencies (e.g. critical thinking, decision making, teamwork and communication skills). Engineers, who are commonly assumed to be technically proficient and to exhibit creativeness and inventiveness, are expected to master the distinct skills which comprise a foreign language: reading, writing, listening and speaking. Scientific papers and journals are, for the most part, written in English. The competitive global workplace also requires engineers to communicate effectively with their counterparts across the globe. Accordingly, they are expected to have proficient communication skills which allow them to understand and disseminate technical information to a specialised and non-specialised public.

Knowledge of technical vocabulary is also relevant for engineering undergraduates. Extensive vocabulary can be regarded as a stepping stone to different language skills. A rich vocabulary will allow students to read journals and articles more quickly and easily. Skilled readers are likely to write their technical assignments with greater ease, as they have gained input through reading. Likewise, a broad vocabulary will help students express their ideas in a more concise manner.

Designing an ESP course should prioritise the development of language skills through relevant tasks about personally meaningful topics that confront students with simulation of the types of tasks they will be required to perform in specific occupational and educational settings.

2. Authentic Materials and Tasks

The terms authenticity and authentic in educational contexts have given rise to considerable debate in the last few decades. Authenticity is regarded to be quite a controversial term, as it is assumed that what might be authentic to one student might not be for another. Further, authenticity, as Gilmore notes (2007: 98), can be assigned to the text, the participants, the social and cultural context, the purposes the communication follows, or a combination of these factors. Widdowson (1979) questions the authenticity of materials when these "have been removed from the contexts where they naturally occur" (Belcher, 2009: 9).

In the absence of total authenticity in the language classroom it seems, therefore, more suitable to focus attention on the purposes served by the materials that have been chosen to provide some communicative authenticity in class, and on the tasks that simulate real-life communicative events and familiarise students with tasks in which they might be involved in real-life situations. Students' positive responses to materials is also relevant when one debates the role of authenticity in the language classroom, as they can regard real material as a springboard to their own integration with, and understanding of the target culture (Mishan, 2005). Among the various meanings that researchers in the field of authenticity associate to this concept (Bachan, 1991; Breen, 1989; Morrow, 1977; Little, Devitt, & Singleton; Kramsch, 1993), the present study adheres to Morrow's definition (1977: 13), who refers to authenticity in the following terms:

> An authentic text is a stretch of real language, produced by a real speaker or writer for a real audience and designed to convey a real message of some sort.

The use of TED Talks in an ESP course to design meaningful tasks, as proposed in the present article, can be regarded as providing the course with the three core characteristics in Morrow's definition. These online talks are real speeches, produced by leading experts on a wide range of fields for a real audience and designed to transmit thought-provoking ideas in a persuasive and compelling manner.

3. Using Authentic Materials to Ignite ESP Students' Motivation

The potential of authentic materials to motivate L2 learners has been widely researched over the last three decades (Hill, 1984; Gilmore, 2007, 2009, 2011; González, 1990; Henry, 2013; Little & Singleton, 1991; Mishan, 2005; Peacok, 1997). The general assumption is that authentic materials have inherent motivating value, as these might be regarded as communicating a message instead of targeting language (Gilmore, 2007). Additionally, authentic materials, if properly selected by the lecturer to meet the students' needs, might also be intrinsically motivating.

Students' self-efficacy and self-confidence might increase if they are challenged to deal with input they have not been taught before. Students might realise that the use of authentic materials reduces the authenticity gap between the English they learn in the classroom and the English the outside world demands of them. This discrepancy, therefore, might encourage them to devote more time and effort to learning the L2.

One commonly accepted distinction in motivation theories; namely the *intrinsic/extrinsic* motivation construct (Deci & Ryan, 1985) takes on special relevance when one debates the concept of authenticity. Arguably, the provision of attractive and relevant tasks where opportunities for personal expression are generated (i.e. classroom oral presentations and blogs), and where students are free to choose the topic that will be developed in these tasks, are factors that are likely to enhance their perceived autonomy and competence. These factors might lead to L2 interest, to inherent satisfaction and ultimately, to an increased level of L2 intrinsic motivation.

Lately, the influence of authenticity on students' motivation has been researched in relation to the authenticity of learners' experiences (Dörnyei & Kurbanyiova, 2014; Henry, 2013, 2018; Ushioda, 2011). In order to promote students' motivation, authenticity has to be guaranteed both inside and outside learning settings. Learners' perception of authenticity is related to Zimmerman's (1998) concept of *transportable identities*, which relates to a person's singular personal features, which he or she transports from one circumstance to another (i.e. likes and dislikes, sex, age, personal preferences). The ESP practitioner, as Dörniyei, Henry and Muir note (2016: 113) is, therefore, challenged to "create a better 'fit' between learning activities and learner identities" so that learners, as Unshioda contends (2011: 204), realise that there is a "sense of continuity between what they learn and do in the classroom, and who they are and what they are interested in doing in their lives outside the classroom".

4. Designing Tasks From Authentic Materials

The role of ESP practitioners when dealing with authentic materials is quite challenging, as they must take decisions related to the "applicability and adaptability" of authentic input (Dumitrescu, 2000). Regarding applicability, the lecturer has to consider whether the materials address students' needs in relation to their academic and professional domains. Adaptability refers to the way a text can support the design and

manipulation of a task in an easy way. One important challenge, therefore, is to find authentic materials that are sufficiently applicable and adaptable.

Another important criterion that ESP practitioners must consider whenever they take on the role of course designers is the extent to which authentic materials are specific in terms of language and content. Specificity is an issue that gains special relevance in different ESP contexts, as different ESP disciplines contain examples of language that are exclusively characteristic in specific fields. Regarding the specificity of content, ESP courses can either be general ESP courses that will meet the demands of an ample range of students and purposes, or more specific courses (i.e. content-based courses). ESP practitioners, therefore, should not lose sight of the fact that fulfilling students' specific needs with authentic materials that are relevant for their future academic and workplace environments might also extensively engage students in the L2 learning process. Furthermore, the ESP practitioner, when involved in the process of course design, has to carefully consider the best ways to exploit the authentic material in order to create resourceful and achievable tasks capable of meeting students' expectations.

The role of ESP practitioners is also frequently called into question when they become course designers in charge of creating motivating tasks capable of drawing students' attention to language features, and to vocabulary sufficiently useful to help learners integrate into the target community. When dealing with different language skills (i.e. reading, writing, speaking and listening), the ESP practitioner must also consider how to approach them so that students can get extensive learning benefits. The reading skill, for instance, can be practised using a bottom-up type of processing (i.e. moving from the smallest unit in the text to the general meaning of the text), or top-down processing (i.e. from whole texts to smaller units) (Woodrow, 2018: 37).

Regarding the speaking skill, technology is increasingly found these days in the ESP classroom and becomes a valuable tool to develop students' oral presentation skills. The plethora of websites now offering oral presentations by experts in a great variety of fields illustrates this trend. The key challenge for teachers is to design approaches to learning and teaching that draw on technology and that explicitly instruct students in the affordances and constraints of different modes. These approaches to learning must involve a focus on linguistic features, audio and visual choices (Rowley-Jolivet, 2002).

The writing skill can be developed using a product approach (i.e. the focus is on the technical aspects and the accuracy of the final text) or a process approach (i.e. involving multiple drafts of the same writing). Finally, in the listening skill, the focus can be on extracting details, main ideas or global understanding. Likewise, listening tasks have been traditionally designed for listening for details and main ideas and for inferring, predicting and listening selectively (Vandergrift & Goh, 2012).

The four skills certainly play an important role in any ESP course, and the creation of a syllabus that incorporates tasks that focus on these skills involves serious considerations if, after all, the ultimate goal is to tailor materials and design tasks to meet students' needs and interests. One of these considerations has to do with the level of challenge and support provided by the tasks (Mariani, 1997). Mariani classifies tasks according to the level of challenge and the support they involve. The combinations of these two factors originate distinct learning outcomes, as Figure 1 outlines.

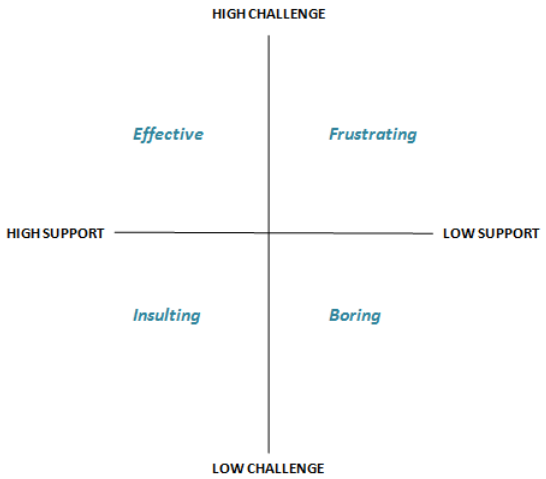

Figure 1. Mariani's framework of types of challenge/support patterns (1997: 4)

Mariani's framework might be quite significant for the ESP practitioner, as this illustrates what each different pattern entails in terms of student engagement in classroom tasks and the support that lecturers, tasks, and classmates provide during task performance. As Figure 1 shows, students are more likely to develop effective learning and be more engaged in the learning process whenever tasks are quite challenging and students are supported by any of the elements mentioned above. In accordance to this framework, the process of task design might lead teachers to consider important issues that concern the degree of support each of the tasks offers and the specific features that provide students with sufficient challenges while making the tasks achievable.

5. Technology- a Valuable Source for ESP Course Designers

Technology enhances the possibilities for students to have authentic language input in the language classroom so that their communicative needs might be fulfilled. Technology has also paved the way for the incorporation of situational practice in the ESP classroom. Nowadays, online lectures and courses constitute a major teaching and learning resource in scientific and technical fields, the field of Engineering being a case in point. Some of the institutions that offer video recordings of lectures are MIT (the Massachusetts Institute of Technology) and its OCW (Open Courseware), and Yale's Open Courses website. Massive Open Online Courses or MOOCs have become additional resources teachers and learners frequently resort to. These are freely accessible and open-licensed short courses that meet high academic standards, and are offered fully online. The benefits of lectures and courses in digital format are numerous. Among these is the flexibility afforded to students who can regard these courses or lectures as an 'out-of-school' experience, allowing them to set their own pace and view them repeatedly (Crawford, 2016: 66). ESP practitioners might also consider online TED Talks as challenging tools and optimal artefacts of visual media that allow students to produce information and to emulate the way skilful personalities from a wide range of fields disseminate knowledge.

The *affordance* of technology is extensive, as it is applicable both in the ESP classroom and as an essential tool to enhance learners' independent language learning outside the classroom. Technology, therefore, imposes itself upon the ESP landscape, and teachers have no choice but to learn how different technologies work, and how to handle the limitless amount of varied and authentic materials that one can find outside the classroom. The immeasurable and unrestricted information that the internet displays inevitably leads teachers to reconsider old questions that have been long asked by ESP researchers. Thus, to select texts or technological tools one should recall some questions that Dudley-Evans and St. John previously considered regarding the selection of reading texts and course material: Who chooses? / What is chosen? (Dudley-Evans & St. John, 1998: 99) and what do you need/want from the course? (Ibid: 127).

To this regard, it might be useful to carefully consider criteria that numerous ESP researchers establish to evaluate the appropriateness of online sources. Chan (2009: 126), for instance, includes three criteria; namely, authenticity, suitability and credibility. Woodrow (2018: 81), specifies that in order to include authentic online materials in the ESP course, it is necessary to pay attention to audience (i.e. the intended audience of the text), authority (i.e. the writer of the text or the speaker should be a leading expert in the field) and currency (i.e. the writer or spoken text should be up-to-date).

6. The Language Learning Experience of TED

TED Talks, dealing with a wide range of topics given by speakers on the cutting edge of their fields of expertise, might constitute another example of authentic material that can contribute to making language teaching more meaningful and interesting. These talks provide students with a rich source of input that can help them notice and familiarise themselves with an extensive range of discourse features.

The transcriptions of TED Talks, always provided on the website (www.ted.com), offer students authentic language delivered by skilful people in different areas of expertise. These talks can offer the ESP course models of English speeches that are genuine and pertinent to their engineering degrees and can direct students to relevant lexico-grammatical and discourse features used in spoken texts. In this way they can see how experienced speakers succeed in communicating thought-provoking ideas in a compelling way.

The use of TED Talks as learning tools in the classroom offers numerous ways to teach and practice various skills in an ESP course. Regarding the reading skill, the TED website provides the transcript for every talk, and teachers can consider the possibility of allowing students to listen to the talk in class while reading the transcript. This approach to fostering fluency has been demonstrated to be beneficial for gaining reading speed and word recognition accuracy (Borras & Lafayette, 1994; Winke, Gass, & Sydorenko, 2010). Drawing on these talks, the ESP practitioner can design activities that involve diverse reading techniques such as scanning and skimming.

TED Talks offer students authentic models of communication. TED teaches how to communicate by linking

different modes (i.e. the visual, gestural, verbal, written and spatial) to technological production. Students construct communication when they attentively observe and make meaning from this ensemble of modes which are beyond the verbal. TED talks might also give rise to different tasks that entail some type of critical multimodal analysis, by which students can study the aptness of modes and ask themselves why the speaker says something visually and not verbally, or which mode is best for which purpose?

In relation to students' writing assignments, TED Talks might provide them with a source of new ideas. The technological topic discussed in a talk can function as a catalyst that motivates students to dive into the topic. They could then trace their ideas back to the particular TED Talk that engaged them, and continue to research, discover, and complete their assignments.

Finally, TED Talks can be used in the classroom as whole texts to implement a Text-Based Instruction (TBI) approach, as the last section of this article shall demonstrate. The transcriptions of the talks can provide the ESP practitioner with authentic spoken language, around which achievable, attractive and varied tasks can be developed. With this purpose in mind, the ESP practitioner can design tasks that allow students to identify and notice (Schmidt, 1990; Skehan, 1998) distinguishing discourse features at the level of the whole speech, and grammatical and lexical features at the level of the clause (Richards & Rodgers, 2015: 205). If they are able to notice relevant features of the public speech genre, as encapsulated in TED Talks, students might come closer to understanding how people communicate novel ideas and complex concepts in different disciplines, and they might be motivated to give compelling classroom oral presentations at the end of the semester. A distal goal such as giving a classroom oral presentation can be split into different proximal goals or task-related goals. This is conducive to students gaining mastery in the different aspects that allow them to develop different skills and help to, as Ushioda notes, (2014: 45) "engage in processes of self-evaluation, planning and monitoring and thus develop their metacognitive awareness and metacognitive skills through which they come to manage and regulate their learning".

7. The Text-Based Instruction Approach in the ESP Course

The following section focuses on the description of one lesson plan that can be implemented in the course of technical English taken by engineering undergraduates at the Technical University of Cartagena (Murcia, Spain). The course syllabus is designed drawing on both a specific technical English course book and on supplementary material composed of eight different TED Talks. The talks that the lecturer has chosen deal with different engineering fields (i.e. robotics, water technology, electricity, materials, mechanical engineering, among others) and they contribute to complementing the unit introduced in the course book. The purpose, as a whole, is to develop different language skills for significant communication through these talks. The main assumption is that these online talks can provide engineering undergraduates with a considerable amount of rich input and they have great potential to be used differently to develop students' communicative competence.

The tasks outlined below have been specially designed to raise students' awareness of the ample range or discourse and lexical features that shaped these talks. Arguably, this consciousness-raising may lead students to develop their overall communicative competence, as they gradually learn the "organizational features underlying the organization" of these spoken texts (Richards & Rodgers, 2015: 203). The talks undergo, therefore, a process of deconstruction, by which students become analysts through the fulfilment of different tasks intended to help them notice distinguishing features in the genre of public speech. These short-term goals may contribute to the long-term goal that entails students constructing their own classroom presentations in a similar fashion as those in TED.

The 11 tasks that follow below (for a detailed description of the tasks, refer to Appendix 1), have been developed for the unit on the engineering field of mechanics. The TED Talk "The cheap all-terrain wheelchair" given by MIT professor Amos Winter is the talk around which these tasks have been designed. The 11 tasks are classified into four different categories: (1) Before you watch and listen to the talk, (2) Watch and listen to the talk, (3) Read the talk, (4) After you listen, watch and read the talk. Each different category has a specific goal related to the development of specific linguistic and discourse features. A short description of these tasks follows.

1) Before you listen and watch the talk

The first group of tasks (i.e. tasks A and B) is intended both to arouse students' interest in the topic the talk develops and to encourage students to anticipate what they are going to watch and listen to in the talk. Students might resort to their background knowledge in the specific field of engineering the talk deals with. As Gilmore notes (2009: 6), these types of tasks "help students develop schemas and scripts for the scenes they are about to watch, which can support, or scaffold learning".

TASK A – Warming up. This task has been designed so that students can infer the content of the talk they are about to watch. Students read the title of the TED Talk and the brief information about the speaker, and answer three different questions as a first approach to the topic related to wheelchairs.

TASK B – Predict. Students make predictions about the content they will find in the talk. This task is intended to awaken students' interest in the topic. Students can express their background knowledge of the mechanics involved in wheelchairs. The lecturer, in turn, assesses students' knowledge about the discourse of this specific subject and evaluates whether they will be able to cope with the talk and whether comprehension should be facilitated to a certain extent.

2) Watch and listen to the talk

The second group of tasks (i.e. tasks C, D) requires students to get the gist of the TED Talk. The visuals the talk includes might, at this stage, play a relevant role in enhancing and supporting students' comprehension. Teachers should encourage students to accept incomplete comprehension.

TASK C - Listen and watch to get the gist. Students watch the TED Talk. The main objective of this task is to check whether students have got the gist of the talk. To this aim, students have to choose the gist sentences that best describe the process of manufacturing an all-terrain wheelchair.

TASK D – Give reasons. This task includes more detailed comprehension questions where students have to provide more elaborate answers to develop "effective processing strategies" (Gilmore, 2009: 6).

3) Read the TED Talk

The three tasks that compose the third group are specifically designed to help students both learn and expand linguistic features and realise how the talk reflects the context of their use. To complete these tasks, the talk transcription is available to students so that they can write on them and take notes on specific linguistic and discourse features. Reading the transcripts to complete these tasks might help students add the missing information from the talk.

TASK E – Read for detail. This task involves students scanning the transcript of the talk to find detailed information in order to answer six different questions. The minute of the talk where they can find the required information can be provided to make the task more dynamic.

TASK F – Learn new phrasal verbs. Students have to scan the transcript of the talk to complete the phrasal verbs in the four different sentences. This task has been designed to expose students to the fact that native speakers frequently resort to the use of phrasal verbs to communicate, as these add spontaneity to their speeches. Students, therefore, might be more motivated to learn these correctly if they realise phrasal verbs are frequently used in order to sound natural in both everyday and academic conversations.

TASK G – Enrich your vocabulary. This task entails the scanning of the transcript to learn new technical vocabulary through guessing from context. Meaning-focused input through reading and listening is one of the four strands Nation (2007) proposes to give balanced vocabulary instruction. Once students know the meaning of each different term, they combine these technical words with their definitions.

4) After you listen, watch and read the TED Talk

The fourth set of tasks involves students enhancing their speaking skills and developing critical thinking skills through higher order thinking tasks by analysing, evaluating and discussing relevant engineering processes and ideas in pairs or in groups. These tasks, as a whole, promote real communication and demand more critical thinking than previous tasks, as they use language at a much deeper level.

TASK H – Think critically: evaluate and discuss. After having watched the TED Talk "The all-terrain wheelchair", where the speaker succinctly detailed the information his team needed to design the wheelchair, students might find it easier to complete this task, which requires them to detail the types of design information needed to manufacture a new car. Students work in pairs and must look critically at information provided in the Internet. At a later stage, they elaborate and present the information they gathered in the classroom.

TASK I – Think critically: from the drawing board to production. Students work in pairs and find information about the different specifications of the steps entailed in the car manufacturing business. Applying the background knowledge they possess as future engineers might facilitate the performance of this task.

TASK J – Think critically: Analysis of the verbal and non-verbal modes in the talk. This task requires students to make a multimodal analysis of the different modes that the speaker uses throughout the talk to create meaning making. This task is relevant to initiating, developing and enhancing students' multimodal literacy. In this

particular TED Talk, the speaker explains complex mechanical engineering concepts which are hard to describe verbally through a combination of words and images. Complex engineering concepts can be presented to the audience by showing and telling.

TASK K – Think critically. Analyse the talk in terms of patterns of cohesion. Students analyse an excerpt of the talk in terms of patterns of cohesion (i.e. reference, lexical cohesion, conjunction, substitution and ellipsis) in order to notice the range of discourse features the speaker uses to tie meanings together in the talk, making the whole talk cohesive and "giving it unity of texture" (Paltridge, 2012: 113)

The completion of the 11 tasks is followed by a list of all the linguistic and discourse objectives the design of the tasks aimed towards. Students carry out a short self-assessment to evaluate whether they have achieved the goals the design of the tasks purported.

8. Conclusion

An ESP syllabus that includes different types of sources (i.e. course book and supplementary authentic materials) may more easily link the classroom learning experience to students' future identities. The ESP practitioner has the demanding role of bridging this gap, since he/she is in the position to provide opportunities for choice where students' creativity is exploited, and possibilities for engagement with and connection to students' experiences are frequent through topics with implicit personal, academic and career relevance.

TED Talks might turn the L2 classroom into a pleasant experience, where the exchange and sharing of ideas might be fostered and where meaningful and varied tasks are designed from these online talks in order to fulfil students' full spectrum of language needs. Students get educational benefits by sharing and discussing ideas, and by arguing for or against them, as well as by noticing how experienced TED speakers masterfully transmit inventiveness through the verbal mode (i.e. linguistic and discourse features) and nonverbal modes (visuals, gesture, proxemics).

In this environment, the ESP practitioner still remains the key figure responsible for bridging classroom learning experiences to students' future identities by providing them with opportunities where they have to think critically while developing their communicative competences. TED might work as a source of knowledge dissemination, while learning takes place in an entertaining way.

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Appendix A: Tasks for the engineering field of mechanics

BEFORE YOU LISTEN AND WATCH THE TALK

'This project worked well because we engaged all the stakeholders that buy into this project and are important to consider in bringing the technology from inception of an idea through innovation, validation, commercialization and dissemination' (Amos Winter).

TED TALK: The cheap all-terrain wheelchair

A. WARMING UP. Read the title of the talk and the information about the TED speaker and answer the questions below.

AMOS WINTER Mechanical Engineer

Amos Winter is an Assistant Professor in the Department of Mechanical Engineering at MIT. He is the Director of the Global Engineering and Research (GEAR) Lab, which focuses on the union of mechanical design theory and user-centered product design to create simple, elegant technological solutions for use in highly constrained environments. Prof. Winter is the principal designer of the Leveraged Freedom Chair (LFC), an all-terrain wheelchair designed for developing countries that was a winner of a 2010 R&D 100 award and was named one of the Wall Street Journal's top innovations in 2011.

1. What kind of terrains might an all-terrain wheelchair go through?
2. Which type of stakeholders should be considered in every type of engineering project?
3. What are the 'constrained elements' Mr Winter might have considered before manufacturing his wheelchair

B. PREDICT. Read the topics below and predict with a partner those you think the talk will include:

1. _____ how the all-terrain wheelchair was built
2. _____ where the all-terrain wheelchair was tested

3. _____ why Mr Winter decided to become a mechanical engineer
4. _____ how many all-terrain wheelchairs have been sold

WATCH AND LISTEN TO THE TALK

C. LISTEN AND WATCH TO GET THE GIST. Check [✓] the phrases that best describe the project of designing and manufacturing the all-terrain wheelchair.

1. _____ it was easy and cheap to build
2. _____ it is specially designed for disabled people in developing countries
3._____ only a minority of people can afford to buy one
4._____ the constraints of the design helped to innovate
5. _____ the design did not take into account the end-user

D. GIVE REASONS. Explain why the following words and expressions are quite significant words in the TED Talk.

1. Levers
2. Tanzania, Kenya, Vietnam
3. Constraints
4. End-user
5. Stakeholder
6. Higher-income-buyer
7. Rough terrains

READ THE TALK

E. READ FOR DETAILS. Read the transcription of the Talk and answer these questions:

1. **(1:31**) Why is the mountain bike good for the author's project?
2. **(4:12)** What makes this wheelchair so affordable?
3. **(5:21)** Briefly explain which three points contributed to the success of Mr Winter's project?
4. **(6:05)** Why didn't the project have enough success in 2008? What were the measures taken to achieve greater success?
5. **(8:17)** Why is the end user a key stakeholder in any project?
6. **(9:24)** What does 'the magic' involve?

F. LEARN NEW PHRASAL VERBS. Throughout the talk the speaker often resorts to phrasal verbs conferring spontaneity to his speech. Have a look at the text and complete these sentences with the appropriate adverb or preposition.

1. And what stood _____ _____ me is that there was not a device available that was designed for rural areas.
2. So the mechanism itself can be very simple and composed _____ bicycle parts you can get anywhere in the world.
3. We ended _____ with a new product, a new product that is an innovation.
4. We teamed ____ with the largest disability organization in the world, Jaipur Foot.

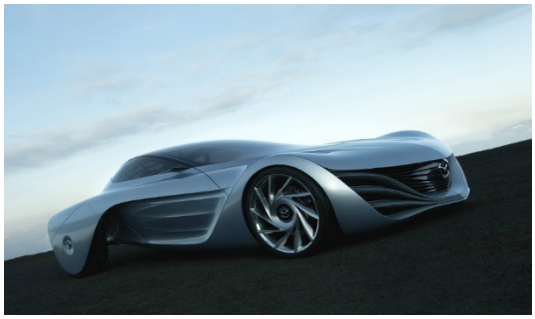
G. ENRICH YOUR VOCABULARY. Find the meaning of the following terms from the TED TALK and write each word next to its definition

GRAB	**CONSTRAINT**	**HIGH-END VERSION**	**ROUGH**	**TORQUE**	**GEAR**
HIGH-INCOME BUYERS		**END-USER**	**STAKEHOLDER**	**APPURTENANCES**	

1. _____ (n) accessories, equipment
2. _____ (n) automobile transmission level
3. _____ (n) causing rotation
4. _____ (n) a person or group that has an investment or interest in something
5. _____ (n) consumer
6. _____ (n) with a higher than average income
7. _____ (phrase) technically sophisticated
8. _____ (n) difficulty
9. _____ (v) to take hold of
10. _____ (adj.) having an uneven surface

AFTER YOU LISTEN, WATCH AND READ

H. THINK CRITICALLY: Evaluate and discuss. In pairs, discuss what is meant by design process. What are the different types of design information needed to manufacture a new car?



I. THINK CRITICALLY: From the drawing board to production. These are the steps car manufacturers go through. Analyse and discuss with a partner the specifications each of these steps might involve:

1. Planning and specifications
2. Concept design
3. Test car
4. Final design

J. THINK CRITICALLY: Analysis of verbal and non-verbal modes in the talk. Work with a partner and analyse the different modes that have contributed to meaning making in this talk.

1. **Visuals**. Are the visuals in this talk meaningful? Do they enhance the content of the talk? Were they designed effectively?

2. **Language**. Were the sentences short and easy to understand? Was technical jargon or unnecessarily complex language used?

3. **Gesture.** Does the speaker make any type of gesture (hand/finger gesture to emphasize the words better)?

4. **Visuals**. Did the speaker use visuals in the talk? Did they enhance the verbal mode?

5. **Facial expression.** Does the speaker resort to any type of facial expression to emphasize his speech (head tilting, nodding, frowning)?

6. **Eye contact**. Does the speaker use eye contact to connect with the audience and appear confident?

7. **Proxemics**. Does the speaker remain static throughout the speech or does he move on stage to emphasise relevant concepts and ideas?

8. **Intangibles**. How did the speech make you feel? Were there any original ideas or techniques? Would you recommend this talk?

K. THINK CRITICALLY: Think critically: Analyse the talk in terms of patterns of cohesion. Read attentively the following excerpts of the talk and check [✓] the patterns of cohesion the speaker uses to create a coherent talk:

> And the context I'm talking about is where you need to have a product that is less than 200 dollars. And this ideal product would also be able to go about five kilometers a day so you could get to your job, get to school, and do it on many, many different types of terrain. But when you get home or want to go indoors at your work, it's got to be small enough and maneuverable enough to use inside. And furthermore, if you want it to last a long time out in rural areas, it has to be repairable using the local tools, materials and knowledge in those contexts. So the real crux of the problem here is, how do you make a system that's a simple device but gives you a large mechanical advantage? How do you make a mountain bike for your arms that doesn't have the mountain bike cost and complexity?

__ reference	__ repetition	__ synonymy	__ antonymy
__ collocation	__ lexical bundle	__ conjunctions	__ substitution

LOOK BACK

Assess your progress in this unit. Tick [✓] the statements which are true:

Now, I am able to

understand content rich material related to the field of mechanics

analyse the different stages in the design of a product

analyse the contributing role of different modes in a talk beyond the verbal

listen and read well enough to understand most of the talk

evaluate required information in the design process of a product

I understand the meanings of words and terms related to the field of mechanics and construction

Circle those you know. Underline those you need to learn:

appurtenance	**leverage**
high-end version	**go back to the drawing board**
manufacturers	**test on a field trial**
stakeholder	**end-users**
user-cantered design	**performance**
high gear	**torque**
rough terrain	**grab a lever**
manoeuvrable	**physical disability**
faster rotational speed	**doorknob**