

A Case Study of Knowledge Enhancement in Undergraduate Interpreter Training Courses in Taiwan

Gracie Peng

Interpreting has now become one of the top career choices for university foreign language majors. In addition to the increasing number of Departments of Interpretation at the postgraduate level globally, interpretation training at the undergraduate level (UG) has also become extremely popular in more than 100 language departments in Taiwanese universities. The purposes of undergraduate Interpreting courses differ slightly among institutions, but many are taught for the sake of enhancing students' foreign language skills. In addition to students' limited proficiency even in foreign languages they may be majoring in, there is also the problem of a lack of general knowledge on their part. Of course, the pressure on undergraduate Interpretation majors will only increase as they encounter less familiar theories that may be important in the field of Interpretation. However, the lack of general knowledge and how it can be remedied for young trainee interpreters at the undergraduate level has so far received very little attention in the domain of Interpretation pedagogy.

This case study focused on 39 Taiwanese undergraduate language students taking Interpreting classes as electives. It looked at how these students tended to approach a relevant challenge in the field of interpreting, how they identified key terms when compiling glossaries, and how different knowledge-enhancement approaches (ad-hoc vs. term-led) impacted their performances in some interpreting-related tasks. Data derived from close observation, task-oriented performances and semi-structured questionnaires suggested that there was a higher deviation in tasks involving glossary compilation and speech organization among individuals in the ad hoc preparation group, while term-led preparation offered a useful roadmap for students' more systematic acquisition of new terms and their appreciation of newer concepts. The findings of this study have given us a better understanding of what may be the best methods of knowledge preparation for undergraduate Interpreting students, and thus can help to promote the further development of undergraduate Interpreting pedagogy in general.

Keywords: undergraduate Interpreting training, ad-hoc preparation, terminology-led preparation, knowledge enhancement

Received: June 29, 2016; Revised: September 16, 2016; Accepted: December 16, 2016

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初探大學口譯教學中之知識提升——個案研究

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隨著會議口譯專業的發展，口譯已是大學語言科系畢業生理想的職業選擇。因此在臺灣上百個大學語言相關系所中，各種口譯課也成為學生選修熱門搶手的課程。各口譯課程的授課目標不盡相同，但主要多為希望通過口譯訓練以提升語言學習的質量。相較於一般認為口譯訓練應在研究所階段進行，大學部開設的口譯課程中常面臨許多挑戰，如學生語言水準及反應無法應付口譯的要求，知識不足也常造成大學生學口譯學習時莫大的挫折與壓力，這是由於口譯員面對自己較為生疏的主題時，腦部所需處理的訊息量倍增，使原來的語言上的挑戰如原文理解與譯文產出，更是難上加難。大學部學生在學習口譯上面，因缺乏背景知識而如何影響表現，尚待探索。本個案研究旨在觀察紀錄學生如何為特定主題做準備和對於相關表現的影響。我們也提出用術語準備來帶動背景知識的增長，以期提高學生口譯的表現。本實證研究將透過召集 39 名修習口譯課程的大學生進行實驗，貼近觀察和焦點小組訪談來收集質化資料進行分析討論。本研究期能深入探討大學部口譯學生的知識準備，以豐富大學口譯教學的範疇。

關鍵詞：大學口譯教學、一般型準備、術語帶動式準備、知識增長

收件：2016年6月29日；修改：2016年9月16日；接受：2016年12月16日

Introduction

With increasing recognition as a profession worldwide, interpreting has become one of the top job choices for language graduates. While it is commonly recommended that interpreter training should take place at the postgraduate (PG) level, where students would have been linguistically and cognitively ready, with better knowledge of the world and clear motivations for career preparation, interpreting classes at undergraduate (UG) level have been on the rise globally at the same time. For example, more than 100 language departments in Taiwanese universities offer interpreting classes at UG level in response to great demand from students.

The purposes of the numerous UG interpreting courses differ slightly from institutions to institutions, but many are taught as part of language enhancement (Ju, 2014). Challenges facing such arrangements, as documented in a number of studies, are not dissimilar (Her, 1999; Liu, 2002). Students' weak language proficiency, for instance, is one of the biggest challenges for interpreter training at the UG level in Taiwan. The lack of general knowledge, in addition, is a common obstacle for many young trainees and could cause high level of performance anxiety (Lu & Liao, 2012). Following Gile's effort model (2009), interpreters' cognitive load increases when encountering a topic that interpreters have little knowledge of, consequently making the existing linguistic difficulties (i.e. speech comprehension and output of interpreting) even graver, especially for the young UG interpreting students. The lack of general knowledge and how it can be enhanced for young trainee interpreters at UG level has received very little attention, offering us the opportunities for further explorations.

This study aims to observe and record UG interpreting students'

knowledge acquisition on a given topic. We devised a number of pedagogical activities to encourage UG students' knowledge and linguistic development in interpreting-related tasks. Knowledge acquisition for professional interpreters has been researched in a number of studies (Gile, 2009; Jiang, 2013; Kalina, 2015; Moser-Mercer, 1992; Xu, 2015) mostly in the name of meeting or terminology preparation, which nevertheless all shed light to the construction of our current study on UG interpreting students' knowledge enhancement (KE). Among those, Xu's work (2015) with interesting results on terminology-led preparation for trainee simultaneous interpreters at postgraduate level inspires this study to explore how such an approach would affect UG interpreting students' performances in a number of interpreting-related tasks. To fulfill the aims of the study, the following questions have been identified to guide us through the process of searching for answers:

1. How do the UG interpreting students prepare for a relatively challenging theme?
2. How do they identify key terms when compiling glossaries?
3. How would different knowledge enhancement (KE) approaches (ad-hoc vs. term-led) impact on students' speech organizations and the use of the newly acquired terms?

Literature Review

Making Sense and Knowledge

To facilitate communication among speakers of different languages, backgrounds and ideas effectively, an interpreter plays both roles of a listener and a speaker (Herbert 1952; Seleskovitch, 1978). In Seleskovitch's Interpretive Theory of Translation (also known as the *théorie du sens*), the interpreter strives to understand (to 'makes sense of') message being delivered

in the source language, and to re-express the ideas in another language so that they could ‘make sense’ to the audience. To ‘make sense’, comprehension is the first vital step. Seleskovitch (1978, p. 11) stated that “To interpret one must first understand”, and to understand, interpreters need to have “a good knowledge of the subject matter” (Herbert, 1952, p. 19). As Pöchhacker (2004, p. 57) summarizes, the activation of prior knowledge plays a crucial role in the comprehension process in interpreting. When processing new information, interpreters would actively integrate the new information with different kinds of existing knowledge to achieve new understanding (Pöchhacker, 2004, p. 119). In other words, without sufficient and relevant prior knowledge, interpreters will struggle to make sense of what is to be conveyed, and without the right message being delivered, communication, the main function of interpreting, would break down.

Knowledge and Interpreters

To ensure quality interpreting, meeting preparation is indispensable for interpreters to acquire knowledge for interpreting assignments. Moser-Mercer (1992, p. 509) views interpreters’ acquisition of information as a continuous process, and it can take place before, during and after interpreting assignments (Xu, 2015, p. 15). Ideally, to acquire knowledge for specialized meetings, interpreters should take a rational and logical approach by reading extensively and systematically to achieve a better level of understanding of the subject than that of the educated public (Seleskovitch, 1978).

In reality, interpreters do not always have the luxury of sufficient time for knowledge-driven preparation as Seleskovitch suggested and therefore, have to resort to go through available meeting documents and materials for a more targeted preparation. During the process, interpreters actively identify key terms from the meeting documents and compile individual glossaries accordingly.

For example, Jiang (2013) reports that 30% of interpreters who normally would not make glossaries for meetings would compile glossaries for technical meetings, or meetings of highly specialized nature. Participants in those meetings are mostly specialists in the given field, and would communicate their knowledge by the use of terminology, which might not be commonly known by outsiders such as interpreters. Knowledge acquisition for professional interpreters, therefore, is a deliberate constitution of both term-specific and knowledge structures (Will, 2007). In other words, with both conceptual and terminology preparations, interpreters aim to boost their cognitive readiness for the interpreting assignments, hoping to be able to interpret better with more cognitive resources available for better speech comprehension, as well as to re-express the message with increased accuracy, precision and confidence.

Knowledge and Terminology

The relationship between knowledge and terminology is closely intertwined. Ogden and Richards (1923) proposed a semiotic triangle between an object, a concept and a term, that a concept is an interpretation of a physical or abstract object, and a term signifies the concept, which also reproduces specialized knowledge within a subject matter. As Xu (2015, p. 5) summarizes, “a term is the formal representation of a specialized concept, which reflects specific or technical knowledge within a given subject field. Each knowledge structure consists of various interlinked concepts”. The functions of terminology, therefore, are twofold: it represents concepts, the units of any knowledge structure; and it also facilitates specialist communication within the same field (Cabr e, 1996, pp. 16-23). The use of terminology, according to Cabr e (1998, p. 47, pp. 80-81), enhances the efficiency of communication among specialists. Zauberga (2005, p. 107) maintains that, “without terminology there is no professional communication and without professional communication

there is no transfer of knowledge”.

With regard to knowledge, Cambridge Dictionaries Online defines it as “understanding of or information about a subject that you get by experience or study, either known by one person or by people generally”.¹ Likewise, knowledge for interpreters would be the understanding and information shared among meeting participants of any specialized fields. Therefore, appropriate use of terminology by interpreters will undoubtedly facilitate communication among specialists and is deemed as one of the important quality criteria in conference participants as well interpreters themselves (Kurz, 1993, 1994, 2001; Moser, 1996).

Likewise, knowledge for UG interpreting students is also the key to successful comprehension of any incoming message as the first step of interpreting. It is undeniable that the majority of UG interpreting students in Taiwan are not linguistically ready at both comprehension and production stages of interpreting. The lack of general knowledge of the world as well as of many topical issues is one of the contributing factors to the poor linguistic performances. Without relevant knowledge or experience on a given topic as the foundation, it is difficult to establish new understanding effectively, not to mention to externalize the new concepts with the corresponding expressions and terms appropriately. Therefore, it is hoped that with enhanced knowledge base, the UG interpreting students would develop better cognitive capacities for comprehension and analyses, and more linguistic resources to express message derived from speeches more efficiently and effectively.

Study Design and Procedures

To address the research questions and investigate relevant issues further

¹ <http://dictionary.cambridge.org/dictionary/english/knowledge>

in context, it is essential to consider the realistic arrangements where the study takes place. The results and the discussion will mainly be generated from the qualitative data generated from the relevant activities, supplemented by the researcher's observations.

Subjects

We involved 39 undergraduate students at the third and final years of university studies taking semester-long seminar courses on interpreting: 19 from 'Introduction to Consecutive Interpreting' (Group A), and 20 from 'Introduction to Interpreting' (Group B). Both courses offered similar introductory interpreting training, but with slightly different training foci towards the end. Both groups had two contact hours per week on interpreting-related skills; while Group B met one extra hour per week for theoretical discussion on interpreting studies. Students in both groups had no prior training, with very little knowledge and experience of interpreting.

The majority of participants have Mandarin Chinese and English as their working languages, while two with Cantonese as their A language. As explored in a few previous studies (Her, 1999; Liu, 2002), that weaker language proficiencies are among the common challenges facing UG interpreting students, similar situations were observed among the participants of the study. It is noted through the questionnaires, that despite all of the students have had at least 14 years or more years of English learning, unfortunately for many reasons beyond the scope of discussion of the current study, the long years of language learning did not seem to be able to equip the participants with sufficient linguistic resources to perform in some interpreting-related activities confidently. Some students also reported that through interpreting practices and classes, they realized that their Chinese was limited in terms of linguistic resources and discourse strategies as well.

In addition, due to university regulations and pedagogical considerations, there were no screening tests in place to select students with suitable and comparable level of language proficiencies for the courses. Therefore, there was noticeable disparity of linguistic and cognitive capacities among individuals in both groups. Qualitative analyses, understandably, would be more suitable in handling data collected in this case study under the circumstances.

It is vital to recognize that, unlike students in PG interpreting schools, who regard interpreting training as the core element of studies, the participating UG interpreting students in the project took interpreting classes as electives in addition to their other major studies. The time and effort students invested in the interpreting-related practice and activities outside class would be considerably limited. It is also important to note that the purposes of training as well as training approaches are naturally different between the PG and the UG levels, so are the language and cognitive skills among the PG and UG students.

Topic Identification

To investigate how the UG students in this study enhance their knowledge on a given topic and how the newly acquired knowledge affects their performances, the topic of Climate Change (CC) was identified as the subject topic. It was understood that all of the participating students had acquired some basic knowledge on Climate Change in high school, but CC-relevant topics are many, and related discussion as well as debates only grow more intense and diverse these days, offering a large pool of new information and knowledge for students to acquire. In addition, the timing of the project collided well with the COP21 (2015 Paris Climate Conference), which helped sustain students' interest in the topic through never-ending media coverage and online resources over the weeks when the study was in progress.

Knowledge-Enhancement (KE) Activities

The knowledge-enhancement activities were chosen and arranged in consideration of students' initial profiles and their progress in interpreting skills. To train complete beginners in interpreting with limited linguistic and knowledge resources, it is essential to introduce related skill components separately and progressively while addressing their lack of knowledge of various discussions on Climate Change.

All of the activities were introduced to support better activation of knowledge acquired during the process. As Gile (2009, pp. 220-231) explains in the Dynamics of Gravitational Model, to ensure better retention and use of newly acquired words or concepts, active stimulations such as speaking and writing are generally more effective than passive reading and listening. It is however, important to note, that to acquire new knowledge and new terms, one needs to engage in listening and reading activities as the first steps. Speaking and writing, are undoubtedly very useful with regard to activating new learning. With this understanding in mind, both passive and active activations were included in all of the KE activities to enrich the students' learning experiences, and hopefully in the long term, to improve the learning outcomes.

Glossary compilation: ad-hoc preparation vs. term-led preparation.

To explore how different approaches of knowledge enhancement would impact on students' performances, two activities of glossary compilation were devised for the groups (A and B).

Group A (ad-hoc group) was assigned to research on the topic of Climate Change on their own, and to compile individual bilingual glossaries containing at least 10 key terms (important keywords) of their choices. With the 10 (or more) key terms, they would be making Chinese speeches on CC-related topics. Through this arrangement, we observed how students approached a new topic

on an ad-hoc basis.

Group B, on the other hand, went through a term-led approach for knowledge enhancement. They were given a revised glossary on Climate Change from BBC (Appendix A).² The original list was edited to eliminate terms of highly specialized nature, which has less coverage in general CC discussion and reports. The revised glossary contains 42 terms in total. Students were asked to read through the list and choose at least 10 key terms which they believed to be important, and with which they would make speeches on CC-related topics in English.

Although it is less desirable in terms of experimental design to instruct the two groups to engage in the same tasks with different languages (Group A with Chinese and Group B with English), the tasks were designed to be pedagogically useful with suitable challenges included for both groups. To compensate for the lack of the reference glossary, it was intended for Group A to work with their mother tongue so that they would have more resources to explore relevant topics and perform to their best in the various tasks. Group B, on the other hand, with the reference glossary as guidance, were asked to engage in the activities in English to explore if they could integrate newly acquired information and terms coherently as speeches. Understandably the results from arrangements might not be readily comparable as which from other strictly controlled experiments, but they shall shed some light on how UG interpreting students would react to the two different approaches. In brief, the arrangements are meant to engage both groups (A & B) in both passive and active in knowledge acquisition. Either individual researching on the topics of Climate Change for Group A or reading through the BBC glossary for Group B served as passive activation of linguistic and conceptual knowledge; while deciding on the key terms as well using them in speeches actively engaged

² Source: <http://www.bbc.co.uk/news/science-environment-11833685>

students to apply the newly acquired terms and knowledge further.

Speech organization. Public speaking has long been deemed as the first step of interpreter training at all levels. As Herbert (1952, p. 59) affirmed, “A good interpreter must be a trained public speaker”. Although students nowadays all have had experiences of giving speeches or making presentations in classes, only few have learned how to integrate information from multiple sources to form a speech in either Chinese or English coherently with their own views. It has been observed that speech making for students has been a combination of writing and reading aloud practices, that many would write up verbatim scripts and read them out when they were asked to give speeches in class. It is also noted that due to nerves, some students experience high level of stress and fail to remember their lines of speeches when facing audience in interpreting classes.

To address such mental blank out, we introduced mind-mapping techniques to help students arrange and record their speeches accordingly. MindMup,³ a free online mind-mapping tool, was chosen and used in this study for students to organize their concepts and newly acquired terms on their chosen topic from the glossary compilation exercises. By observing the topics chosen and issues covered in the speeches, we could explore the scope of discussion and relevant knowledge of Climate Change activated via the two different KE approaches: ad-hoc and term-led preparation.

Semi-structured questionnaire. A semi-structured questionnaire was devised (Appendix B) to collect students’ reflections on the steps and process of preparation they went through for the previous activities, i.e. researching and deciding on speech topics, compiling glossaries, and making speeches. The questionnaire was administered in class in hard copies and students were given 20 minutes to fill in the questionnaires. The questionnaire results offered

³ Source: MindMup (www.mindmup.com)

useful information to understand how the students approached a new field and how they connected different terms representing various concepts to organize speeches of their own.

Results and Discussion

To discover how knowledge is enhanced for UG interpreting students via the ad hoc and the term-led approaches, we explored the data collected from the three knowledge enhancement activities to search for answers to the three research questions identified in the study. It is hoped that, with the research questions answered, a bigger and clearer picture of knowledge enhancement for UG interpreting students will emerge and shed light to UG interpreting curriculum design.

UG Students' Knowledge Acquisition

To answer our first research question: How do the UG interpreting students prepare for a relatively new theme for interpreting classes? We looked into students' responses to the first question in the questionnaire on how they researched on the topic of Climate Change.

With regard to the sources of information (Table 1), all of them went for online sources, 2 out of 39 suggested that it was useful to consult friends who were interested and knowledgeable in related fields, and only one (1) reported reading an article in a paper magazine. It is interesting to note that some students (5) used their prior knowledge on Climate Change acquired from high school as the start point; and three (3) based their research on their personal interests in wildlife, bees and food production.

Table 1
Sources of Information for Preparation

| Information sources | Notes | Counts |
|---------------------|--|--------|
| Online resources | | 39 |
| | News report | 18 |
| | Wikipedia | 16 |
| | Documentaries | 9 |
| | NGO websites | 8 |
| | YouTube | 6 |
| | research report | 1 |
| | Just googled it | 4 |
| Others | Official websites, TED talks; NASA, blogs) | 3 |
| Personal interests | e.g. wild life, bees, food production | 3 |
| Prior knowledge | i.e. high school learning | 5 |
| Print materials | | 1 |
| Informants | | 2 |

Note. Compiled by the author.

As anticipated, in this information age, all of the participants consulted online information and it would be relevant to understand where they looked for information and acquired new knowledge. It transpired that online news reports (18) and Wikipedia (16) were the top two choices, followed by documentaries (e.g. Discovery and National Geography) (9), NGO websites (e.g. Green Peace) (8), and You Tube (6). Few visited governmental websites, TED talks, NASA, expert blogs, and one read a research report. An interesting response was that a few (4) students suggested that they just ‘googled it’. Understandably, students nowadays rely heavily on internet search for almost

everything, but it is observed that some participating students have not quite developed very clear strategies when researching for specific topics yet.

The majority of students started their online searches with Google, but only four (4) specified Google as their source of information. While the results from Google search could be daunting and not immediately comprehensible, most of the students selected information following certain links, such as news reports, Wikipedia, official websites, and many others. A few (4) suggested that they would only explore further on issues that they had prior experience or knowledge of.

Two (2) reported that they would follow what Google search would bring out for them regardless. One of them suggested that Google would have prioritized items of high relevance automatically, which could be very convenient in research.

In addition, online news reports and Wikipedia, the top two choices for students, appeared to offer different functions. Students went for Wikipedia when encountering completely new concepts that they found it hard to make any relevance to their previous knowledge or experience. Online news reports, on the other hand, delivered timely development of those topical issues and offered students a sense of participation and a context where they can validate and consolidate the newly acquired knowledge.

Glossary Compilation

To answer the second research question: How do they identify key terms in order to compile glossaries? We collected students' glossaries and some of the information from the questionnaires to form better understandings of the situation. It is important to note that the two groups of students were given different instructions as described for the activity of glossary compilation.

Top 10 terms. To see a better picture of choices of terms from the two

groups, all the glossaries from both groups were collated, and related results are discussed as follows. The total number of terms collected from Group A reached 190 (10 items per student) and covered 123 different terms. Group B students, with the revised BBC glossary as reference, selected 227 terms in total, and covered all of the 42 terms on the revised glossary. The top 10 terms from the two groups are presented in Table 2.

Table 2
Top 10 CC Terms Identified by UG Interpreting Students

| Group A (ad hoc) | | Group B (term-led) | | |
|-----------------------|-----------------------|----------------------|------------------------------|----|
| Key term/occurrences | | Key term/occurrences | | |
| 1. | global warming | 11 | global warming | 14 |
| 2. | carbon dioxide | 10 | carbon dioxide | 12 |
| 3. | greenhouse gases | 9 | Kyoto Protocol | 12 |
| 4. | sea levels | 6 | climate change | 11 |
| 5. | greenhouse effects | 6 | greenhouse gases | 10 |
| 6. | arctic | 6 | fossil fuels | 9 |
| 7. | Kyoto Protocol | 5 | greenhouse effects | 9 |
| 8. | deforestation | 4 | Methane | 9 |
| 9. | polar bears | 4 | anthropogenic climate change | 9 |
| 10. | industrial revolution | 3 | biofuel | 8 |
| 123/190 (terms/total) | | 42/227 (terms/total) | | |

Note. Compiled by the author.

It is clear that both ‘global warming’ and ‘carbon dioxide’ topped the lists in both groups with comparably similar number of occurrences. Both groups also identified ‘Kyoto protocol’, ‘greenhouse gases’ as well as ‘greenhouse

effects' among the top 10 terms in their glossaries. It is interesting that 'climate change' gained no mention by Group A, but was listed as the top 4 by Group B. In addition, both 'fossil fuels' as well as 'biofuel' have been nominated, suggesting that greenhouse gases, causes of global warming and solutions to some CC issues would be discussed in many speeches from Group B.

Having explored both the glossaries students compiled as well as their questionnaires, it is understandable why some terms appeared in the glossaries compiled by Group A students, such as 'industrial revolution', 'factory', 'fart of cows and sheep', 'increasing/higher temperature', 'essential mechanism' and some others. When students initiated their research on new topics based on their personal experiences, knowledge and preferences, it was natural that the topics would become very specific and so would the terms chosen.

Identifying a term. Information collected from the questionnaires also offered some interesting indications of how students identified their key terms (Table 3). In Group A, 7 out of 19 students pointed out that a word which appeared frequently counted as a term; 6 suggested that a key term should be directly related to the topic of discussion; and 4 reported that their instincts and personal knowledge helped them decide.

In Group B, 7 out of 20 stated that a key term normally contained a lot of relevant information; 5 suggested that a term was linked to many other terms; and the others (5) felt that a term could be found frequently in important places such as the topic sentences and on important websites. Interestingly, few students in both groups left this question unanswered on paper. Few students (2) in Group A later confirmed verbally that it was their existing knowledge guiding their choices, and the 3 in Group B admitted that they chose their terms according to their needs for speech making.

Table 3

Identification of a Key Term

| Group | A key term... | Counts |
|-------|---|----------|
| A | appears frequently | 7/19 |
| | has a direct link to the topic | 6/19 |
| | comes from instincts and personal knowledge | 4(+2)/19 |
| B | contains other information | 7/20 |
| | links to many other terms | 5/20 |
| | appears frequently in important places | 5/20 |
| | offers useful information for my speech | (+3)/20 |

Note. Compiled by the author.

Without any references to follow, some Group A students admitted that it was quite confusing to determine which words or phrases qualified as terms, and what was worth noting down in the glossary. Consequently, some students borrow ideas and approaches from their prior language learning strategies in school, that they would compile a list of new expressions, phrases or terms to help them memorize those items in preparation for exams.

When working with a reference glossary, it appeared that students in Group B developed better sense of what constituted a term and they seemed more willing to venture out to less familiar fields. For example, both ‘methane’ and ‘anthropogenic climate change’ were chosen as the key terms and later incorporated in their speeches. Compared to their counterparts in Group A, it is observed that through working with the reference glossary, some Group B students suggested that terminology represents concepts and contains more information than its literal meaning, which corresponds with the definition of terminology discussed previously. In other words, their experience of working

with the reference glossary offered them the opportunity not only to expand their knowledge basis, but also to deepen their appreciation for functions of terminology overall.

To summarize, terminology compilation is not a completely new task for the students, as they all had similar experiences of compiling vocabulary lists for foreign language learning. Yet the purpose and challenges of this task are different from that of their previous vocabulary learning. Through preparing individual glossaries, students were expected to consolidate new knowledge by using the newly acquired terms in their speeches more effectively and efficiently. Between the two different approaches, the term-led knowledge enhancement appeared to be comparably productive and seemed pedagogically effective to foster collective learning in interpreting classes. The use of the authentic materials as references also offered a clear framework for students to follow, which in return helps to contextualize students' learning in general.

Speech Making

To answer the third research question: How would different knowledge enhancement approaches (ad-hoc vs. term-led) impact on students' speech organizations and the use of newly acquired terms? We reviewed students' choices of speech topics in both groups and collected the mind maps students created during their speech preparing as instructed in Speech Organization. Data generated from the questionnaires also offered useful clues.

Choices of speech topics. In terms of choices of speech topics (Table 4), despite with different preparation approaches, both groups came up with similar numbers of speeches on 'CC and global warming' and 'CC and greenhouse gases/effects'.

Table 4
Choices of Topics for Speech Making

| Speech topics | Group A (ad-hoc) | Group B (term-led) |
|----------------------------------|--------------------|------------------------------------|
| CC and global warming | 3 | 5 |
| CC and greenhouse causes/effects | 4 | 4 |
| Causes/effects/solutions of CC | 5 | 4 (2 on solutions; 2 on causes) |
| CC and Kyoto Protocol | 0 | 2 |
| Climate Change | 3 | 0 |
| Other topics | CC and rainforests | CC is a truth |
| | CC and food | EU on Kyoto protocol |
| | CC and bees | CC and natural resources |
| | CC on wildlife | CC and renewable energy |
| | | Global warming and sea level rise |

Note. Compiled by the author.

To begin with, it is noted that with ad-hoc preparation (Group A), it was easy for some students to resolve to very general discussion in their speeches without clear directions. Term-led knowledge enhancement (Group B), by comparison, seemed to be able to offer students useful signposts to relevant issues which demand further exploration.

In Group A, for instance, there were three (3) speeches on Climate Change, which contained very general (if not loosely connected) CC discussions, but there was no speech on this general topic in Group B. By contrast, there were two (2) speeches from Group B on CC and Kyoto protocol (plus one on EU's attitudes towards Kyoto Protocol), but no Group A speeches touched upon Kyoto protocol.

Other choices of topics also verified that different approaches of preparation led to different results. Topics through ad-hoc preparation can also be highly specific with clear directions and personal views on those issues, such as CC and food, bees, or wildlife. It is interesting to note that students going for these topics tended to be highly motivated and hard working in general. These activities offered them the opportunities to actively exercise different skills such as researching, speech organizing and glossary compilation, which all contributed positively to their interpreting learning.

With term-led preparation, on the other hand, students' choices of speech topics were highly related to the terms they selected and studied from the reference glossary. Issues related to climate change such as renewable energy, rising sea levels, and international negotiations all appeared as topics. In other words, with term-led knowledge enhancement, students seemed to be able to concentrate on issues of high relevance to the given topic. To summarize, with either approach, students had multiple opportunities to activate their newly acquired knowledge in context by incorporating the new terms and concepts that they had researched to the speeches they made.

Speech organization. With regard to speech organization and how the selected terms were incorporated, students' mind maps offered clear visual representations. As a qualitative case study, we chose four (4) sample student mind maps from the two groups for demonstration.

Figure 1 and 2 are the mind maps of speeches (a) and (b) made in Group A through ad-hoc preparation, and Figure 3 and 4 are that of speeches (c) and (d) made by two Group B students via term-led preparation.

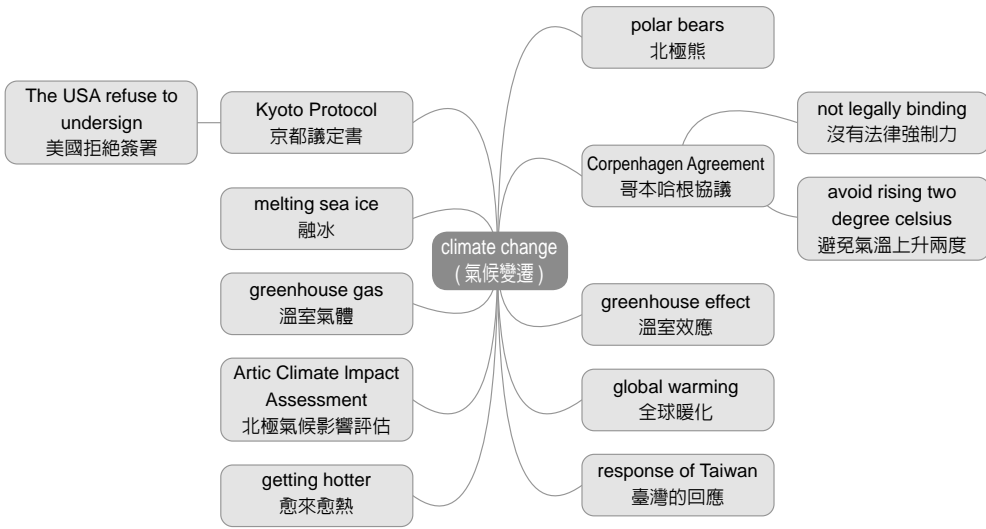


Fig. 1 Mind map of a speech (a) on Climate Change (ad-hoc preparation) from student F (compiled by the author).

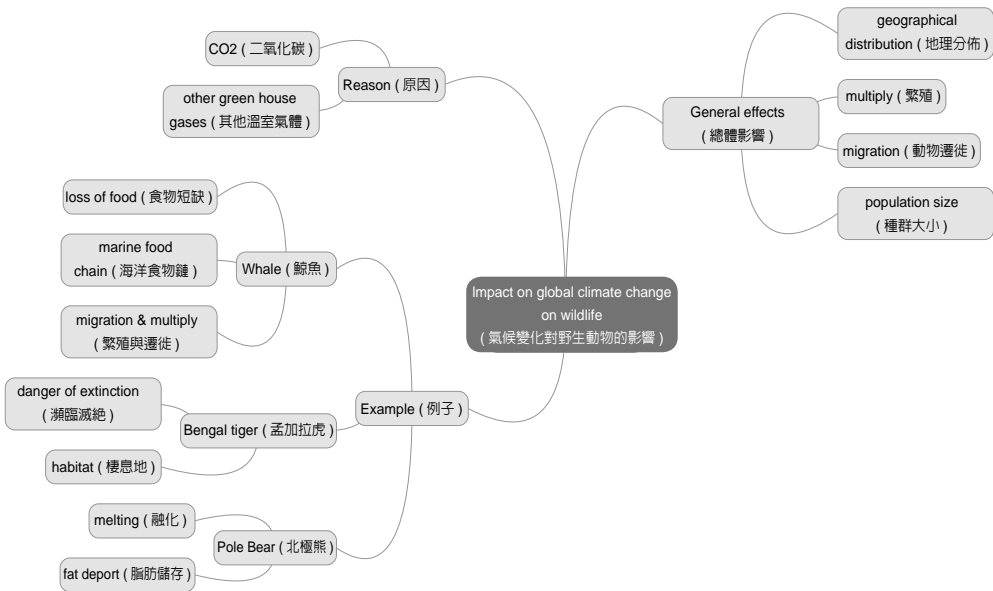


Fig. 2 Mind map of a speech (b) on Climate Change on wildlife (ad-hoc preparation) from student Y (compiled by the author).

As discussed previously, some students relied heavily on their prior knowledge when researching on the given topic, and extra information gathered was to reinforce the existing knowledge structures. For example, one reported that she consulted her high school textbooks on geography and science as there were many important terms. Her speech (a) was on Climate Change's causes and solutions, and her mind map (Figure 1) shows a collection of terms without much organization among them.

The other example from the same group (Figure 2) shows a very different picture, that the student seemed to have very clear ideas on how to organize her speech (b), and based on her personal interest, her research for new information was to enrich her prior knowledge on the topic. Her use of terms was less specialized than that of her colleague in Figure 1, but it is evident that the student was able to incorporate all her chosen terms to construct a coherent and convincing speech, demonstrating evidence of knowledge being internalized, and hopefully the message verbalized as a result.

Figure 3 and 4 are the mind maps of two speeches: (c) and (d), organized by two students in Group B (term-led preparation) on the causes and effects of Climate Change. Both mind maps presented clear hierarchical structures of speech organization with the chosen terms incorporated. It was also noteworthy that despite the fact that the speeches were made by two individuals, the concepts and terms presented were very similar. It is also observed that having gone through the very similar processes of preparation, with the new terms and knowledge being activated, both students felt less intimidated (if not more confident) when facing interpreting-related tasks on relevant but less familiar discussion. In other words, the term-led approach of knowledge enhancement helped students to acquire new concepts and terms more systematically and with clearer foci, which suits the needs as well as features of UG interpreting training well.

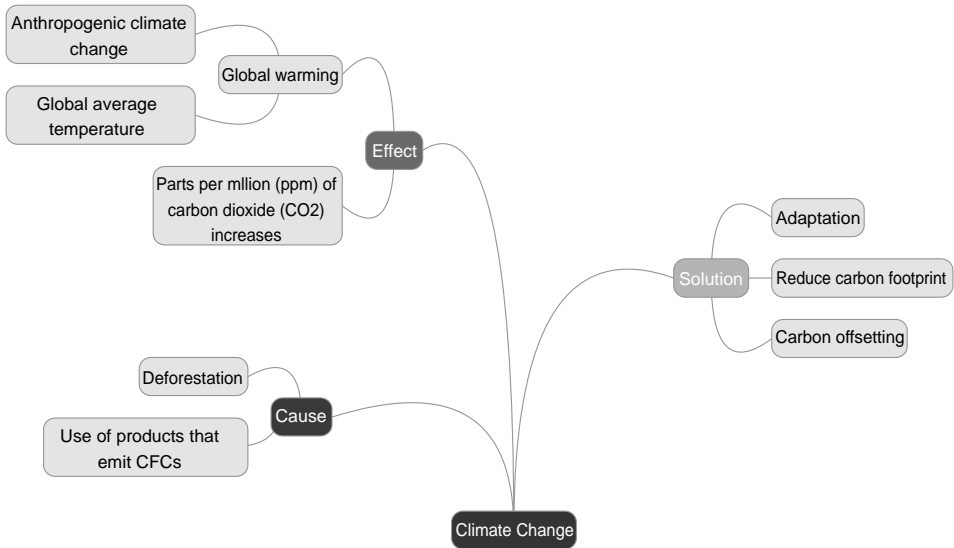


Fig. 3 Mind map of a speech (c) on Climate Change (term-led preparation) from student C (compiled by the author).

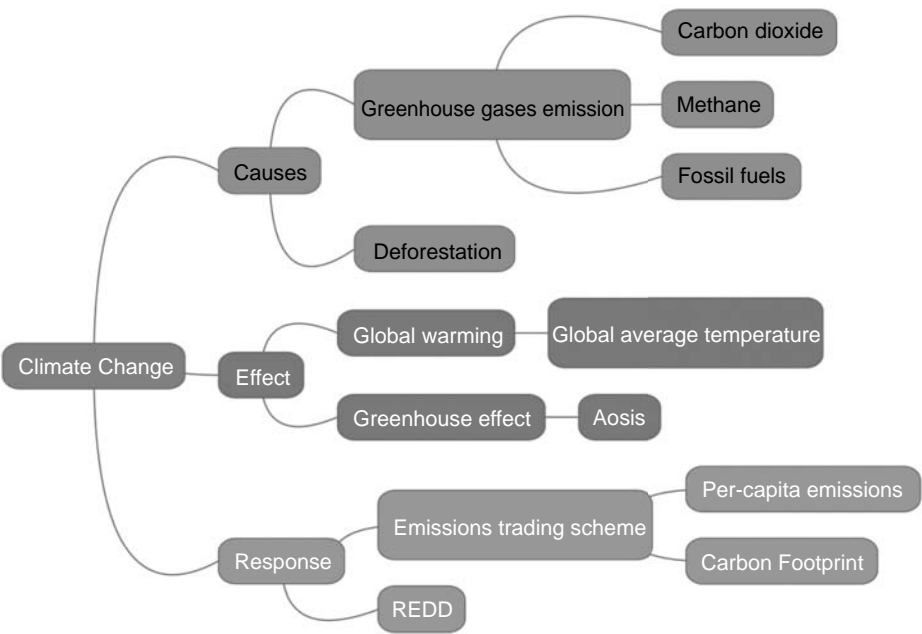


Fig. 4 Mind map of a speech (d) on Climate Change (term-led preparation) from student E (compiled by the author).

Discussion

Terminology preparation for professional interpreters and knowledge enhancement for UG interpreting students are two different domains and naturally require different approaches. In the context of UG interpreting training, it offers students opportunities to learn ‘about’ interpreting and related skill components, instead of a full training to prepare students for the world of professional interpreting like that of many PG interpreting schools.

On the other hand, regardless of the levels of training, being it PG or UG, ‘deverbalization’ is one of the key concepts and skills of interpreting. It could take a long time for UG students in particular to understand why interpreting is more than literal equivalences between two languages, and very often even longer to grasp the basic skills of deverbalization. Therefore, when adopting the term-led approach for knowledge enhancement, it is vital to ensure that students do not fall back to the pattern of memorizing word-for-word equivalents, and that the reference glossary is just a means to an end.

As Xu (2015, p. 16) indicates, knowing terms without understanding the concepts would not be of great help for interpreters. Like vocabulary acquisition in language learning, which develops better in context (Nagy & Herman, 1987), term-led knowledge enhancement will not work in isolation from suitable contexts. It is also observed from our case study that new terms acquired without the context as well as individuals’ cognitive deliberations will be hard to consolidate in further activities such as speech making.

Ad-hoc knowledge enhancement has useful applications, too. It offers students time and space to explore new topics from personal perspectives or prior understandings of the field, to acquire appropriate language expressions and specialized terminology in their working languages, and to collect information to enrich their knowledge in the given field. All of these are

positive steps to develop their interpreting skills in general.

The pedagogical nature of the study as well as administrative limitation facing the researcher as discussed previously inevitably dictated the design of the study and therefore its results consequently. Without a screening test beforehand to ensure the comparability of linguistic and cognitive capabilities among subjects, the study aims to be exploratory with the results less conclusive as expected. Nevertheless, it is vital to note that with either approach, ad-hoc or term-led, interpreting students at the UG level benefited from the process, and issues emerged from the process offer food for thought when designing and implementing pedagogical activities for knowledge enhancement for UG interpreting students.

In summary, having addressed the three research questions we have gained better understanding of how new terms and knowledge are acquired by UG interpreting students, and how the proposed term-led approach impacts on students' glossary compilation as well as on how they organized speeches with the mind mapping tool. It is clear that the Internet is where students turn to for its abundant information and various useful online platforms when researching a new topic. It is also evident when facing new concepts, UG students in this study rely on their existing knowledge or experience to explore less familiar fields and terminology. From glossary compilation and speech making, it is noted that the term-led approach enabled students to cover more relevant issues than their counterparts in the other group, and the reference glossary offered them a clearer guidance in both terminology learning as well as speech organization. It also confirms that pedagogically, learners of limited knowledge and language resources benefit more from such instructional scaffolding approach overall.

Conclusion

From the case study, we have observed how UG interpreting students acquired knowledge and the learning results have been demonstrated through a number of pedagogical activities and explored how the term-led preparation impacted on students' speech organization. Findings from the study are not to be conclusive, yet they offer us the opportunity of closer observation and useful discussion.

Despite the small size of samples, disparity of capacities and motivations among the participating students, and limitations facing the experimental setups, the combination of a series of knowledge-enhancement activities as well as the semi-structured questionnaires offered useful empirical data for us to record and report on students' knowledge and terminology acquisitions. It also offered us flexibility to explore potential pedagogical applications of the proposed term-led approach in empowering students' knowledge. Nonetheless, it is also important to appreciate the fact that knowledge enhancement, meeting preparation as well as glossary compilations for professional interpreters are approached completely differently, where prepared glossaries are not commonly available or provided at all. The term-led preparation as proposed would have to be adjusted with different strategies and resources for professional interpreter training (normally at the PG level). Independent research skills and the abilities of evaluating relevant terms to compile suitable glossaries, for example, would be among the core skills to acquire for professional interpreters. The abundance of online resources plus the advancement of technology and tools nowadays also offer considerable opportunities for professional interpreters to prepare themselves according to their needs and the nature of the meetings they prepare for.

To conclude, while the majority of UG interpreting students are not linguistically and cognitively ready for professional interpreting training, there are areas such as knowledge enhancement, which can be explored and addressed further in interpreting pedagogy. It is vital to recognize that by breaking down complicated and challenging interpreting skills into manageable components, it enables students to construct their interpreting learning step by step. The buildup of those small steps would serve as a useful foundation of future professional interpreting training, or an opportunity of capacity building in general, which in return would benefit UG interpreting students' linguistic and cognitive developments overall.

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Appendix A

Climate Change glossary (selected BBC glossary)

A

- | | |
|---------------------------------|--|
| 1. Adaptation | Action that helps cope with the effects of climate change - for example construction of barriers to protect against rising sea levels, or conversion to crops capable of surviving high temperatures and drought. |
| 2. Adaptation fund | A fund for projects and programmes that help developing countries cope with the adverse effects of climate change. It is financed by a share of proceeds from emission-reduction programmes such as the Clean Development Mechanism. |
| 3. Anthropogenic climate change | Man-made climate change - climate change caused by human activity as opposed to natural processes. |
-

B

- | | |
|---------------------|--|
| 4. Bali action plan | A plan drawn up at the UN Climate Change Conference in Bali, in December 2007, forming part of the Bali roadmap. The action plan established a working group to define a long-term global goal for reduction of greenhouse gas emissions, and a “shared vision for long-term co-operative action” in the areas of mitigation, adaptation, finance and technology. |
| 5. Biofuel | A fuel derived from renewable, biological sources, including crops such as maize and sugar cane, and some forms of waste. |
| 6. Black carbon | The soot that results from the incomplete combustion of fossil fuels, biofuels, and biomass (wood, animal dung, etc.). It is the most potent climate-warming aerosol. Unlike greenhouse gases, which trap infrared radiation that is already in the Earth's atmosphere, these particles absorb all wavelengths of sunlight and then re-emit this energy as infrared radiation. |
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7. Business as usual A scenario used for projections of future emissions assuming no action, or no new action, is taken to mitigate the problem. Some countries are pledging not to reduce their emissions but to make reductions compared to a business as usual scenario. Their emissions, therefore, would increase but less than they would have done.
-

C

8. Cap and trade An emission trading scheme whereby businesses or countries can buy or sell allowances to emit greenhouse gases via an exchange. The volume of allowances issued adds up to the limit, or cap, imposed by the authorities.
9. Carbon capture and storage The collection and transport of concentrated carbon dioxide gas from large emission sources, such as power plants. The gases are then injected into deep underground reservoirs. Carbon capture is sometimes referred to as geological sequestration.
10. Carbon dioxide (CO₂) Carbon dioxide is a gas in the Earth's atmosphere. It occurs naturally and is also a by-product of human activities such as burning fossil fuels. It is the principal greenhouse gas produced by human activity.
11. Carbon dioxide (CO₂) equivalent Six greenhouse gases are limited by the Kyoto Protocol and each has a different global warming potential. The overall warming effect of this cocktail of gases is often expressed in terms of carbon dioxide equivalent - the amount of CO₂ that would cause the same amount of warming.
12. Carbon footprint The amount of carbon emitted by an individual or organisation in a given period of time, or the amount of carbon emitted during the manufacture of a product.
13. Carbon intensity A unit of measure. The amount of carbon emitted by a country per unit of Gross Domestic Product.
-

14. Carbon neutral A process where there is no net release of CO₂. For example, growing biomass takes CO₂ out of the atmosphere, while burning it releases the gas again. The process would be carbon neutral if the amount taken out and the amount released were identical. A company or country can also achieve carbon neutrality by means of carbon offsetting.
15. Carbon offsetting A way of compensating for emissions of CO₂ by participating in, or funding, efforts to take CO₂ out of the atmosphere. Offsetting often involves paying another party, somewhere else, to save emissions equivalent to those produced by your activity.
16. CFCs The short name for chlorofluorocarbons - a family of gases that have contributed to stratospheric ozone depletion, but which are also potent greenhouse gases. Emissions of CFCs around the developed world are being phased out due to an international control agreement, the 1989 Montreal Protocol.
17. Clean Development Mechanism (CDM) A programme that enables developed countries or companies to earn credits by investing in greenhouse gas emission reduction or removal projects in developing countries. These credits can be used to offset emissions and bring the country or company below its mandatory target.
18. Climate change A pattern of change affecting global or regional climate, as measured by yardsticks such as average temperature and rainfall, or an alteration in frequency of extreme weather conditions. This variation may be caused by both natural processes and human activity. Global warming is one aspect of climate change.
-

D

19. Deforestation The permanent removal of standing forests that can lead to significant levels of carbon dioxide emissions.
-

E

20. Emission Trading Scheme (ETS) A scheme set up to allow the trading of emissions permits between business and/or countries as part of a cap and trade approach to limiting greenhouse gas emissions. The best-developed example is the EU's trading scheme, launched in 2005. See Cap and trade.
-

F

21. Fossil fuels Natural resources, such as coal, oil and natural gas, containing hydrocarbons. These fuels are formed in the Earth over millions of years and produce carbon dioxide when burnt.
-

G

22. G77 The main negotiating bloc for developing countries, allied with China (G77+China). The G77 comprises 130 countries, including India and Brazil, most African countries, the grouping of small island states (Aosis), the Gulf states and many others, from Afghanistan to Zimbabwe.
23. Global average temperature The mean surface temperature of the Earth measured from three main sources: satellites, monthly readings from a network of over 3,000 surface temperature observation stations and sea surface temperature measurements taken mainly from the fleet of merchant ships, naval ships and data buoys.
24. Global energy budget The balance between the Earth's incoming and outgoing energy. The current global climate system must adjust to rising greenhouse gas levels and, in the very long term, the Earth must get rid of energy at the same rate at which it receives energy from the sun.
25. Global warming The steady rise in global average temperature in recent decades, which experts believe is largely caused by man-made greenhouse gas emissions. The long-term trend continues upwards, they suggest, even though the warmest year on record, according to the UK's Met Office, is 1998.
-

26. Greenhouse gases (GHGs) Natural and industrial gases that trap heat from the Earth and warm the surface. The Kyoto Protocol restricts emissions of six greenhouse gases: natural (carbon dioxide, nitrous oxide, and methane) and industrial (perfluorocarbons, hydrofluorocarbons, and sulphur hexafluoride).

27. Greenhouse effect The insulating effect of certain gases in the atmosphere, which allow solar radiation to warm the earth and then prevent some of the heat from escaping. See also Natural greenhouse effect.

I

28. IPCC The Intergovernmental Panel on Climate Change is a scientific body established by the United Nations Environment Programme and the World Meteorological Organization. It reviews and assesses the most recent scientific, technical, and socio-economic work relevant to climate change, but does not carry out its own research. The IPCC was honoured with the 2007 Nobel Peace Prize.

K

29. Kyoto Protocol A protocol attached to the UN Framework Convention on Climate Change, which sets legally binding commitments on greenhouse gas emissions. Industrialised countries agreed to reduce their combined emissions to 5.2% below 1990 levels during the five-year period 2008-2012. It was agreed by governments at a 1997 UN conference in Kyoto, Japan, but did not legally come into force until 2005. A different set of countries agreed a second commitment period in 2013 that will run until 2020.

L

30. LDCs Least Developed Countries represent the poorest and weakest countries in the world. The current list of LDCs includes 49 countries - 33 in Africa, 15 in Asia and the Pacific, and one in Latin America.

M

31. Methane Methane is the second most important man-made greenhouse gas. Sources include both the natural world (wetlands, termites, wildfires) and human activity (agriculture, waste dumps, leaks from coal mining).
32. Mitigation Action that will reduce man-made climate change. This includes action to reduce greenhouse gas emissions or absorb greenhouse gases in the atmosphere.
-

N

33. Natural greenhouse effect The natural level of greenhouse gases in our atmosphere, which keeps the planet about 30C warmer than it would otherwise be - essential for life as we know it. Water vapour is the most important component of the natural greenhouse effect.
-

O

34. Ocean acidification The ocean absorbs approximately one-fourth of man-made CO₂ from the atmosphere, which helps to reduce adverse climate change effects. However, when the CO₂ dissolves in seawater, carbonic acid is formed. Carbon emissions in the industrial era have already lowered the pH of seawater by 0.1. Ocean acidification can decrease the ability of marine organisms to build their shells and skeletal structures and kill off coral reefs, with serious effects for people who rely on them as fishing grounds.
-

P

35. Per-capita emissions The total amount of greenhouse gas emitted by a country per unit of population.
36. ppm (350/450) An abbreviation for parts per million, usually used as short for ppmv (parts per million by volume). The Intergovernmental Panel on Climate Change (IPCC) suggested in 2007 that the world should aim to stabilise greenhouse gas levels at 450 ppm CO₂ equivalent in order to avert dangerous climate change. Some scientists, and many of the countries most vulnerable to climate change, argue that the safe upper limit is 350ppm. Current levels of CO₂ only are about 380ppm.
-

R

37. Renewable energy Renewable energy is energy created from sources that can be replenished in a short period of time. The five renewable sources used most often are: biomass (such as wood and biogas), the movement of water, geothermal (heat from within the earth), wind, and solar.
38. REDD Reducing Emissions from Deforestation and forest Degradation, a concept that would provide developing countries with a financial incentive to preserve forests.

T

39. Technology transfer The process whereby technological advances are shared between different countries. Developed countries could, for example, share up-to-date renewable energy technologies with developing countries, in an effort to lower global greenhouse gas emissions.
40. Twenty-twenty-twenty (20-20-20) This refers to a pledge by the European Union to reach three targets by 2020: (a) a 20% reduction in greenhouse gas emissions from 1990 levels; (b) an increase in the use of renewable energy to 20% of all energy consumed; and (c) a 20% increase in energy efficiency. The EU says it will reduce emissions by 30%, by 2020, if other developed countries also pledge tough action.

U

41. UNFCCC The United Nations Framework Convention on Climate Change is one of a series of international agreements on global environmental issues adopted at the 1992 Earth Summit in Rio de Janeiro. The UNFCCC aims to prevent “dangerous” human interference with the climate system. It entered into force on 21 March 1994 and has been ratified by 192 countries.

W

42. Weather The state of the atmosphere with regard to temperature, cloudiness, rainfall, wind and other meteorological conditions. It is not the same as climate which is the average weather over a much longer period.

Appendix B

Questionnaire

NAME:

Course:

Topic:

1. How did you research on the topic of CC ?

1) Sources

online information

off-line

others _____

2) Types of online information:

Wikipedia

Youtube

Facebook

news reports

official documents from NGOs _____

documentaries

others _____

2. How did you decide your topic for the speech ?

3. How did you come up with your mind map for CC ? Steps:

1)

2)

3)

4. Has the mind map strategy been helpful ? In what way ? If not, why not ?

Helpful. especially in

Not very helpful because

5. How did you identify the key terms for CC ? How did you know it's a key term ?

6. What are the difficulties you faced while you prepared for the speech ?

1)

2)

3)

7. Are you happy with the speech you made ? Why (or Why not ?)

Why (not)

1)

2)

3)