



ISSN 2187-4972

Working Papers in Language Education and Research

<http://eliworkingpapers.org/>

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Publication date: February, 2013

To cite this article

Rowland, L. (2013). Applying the 4Cs framework in a course on problem solving. *Working Papers in Language Education and Research*, 1 (1) 84 - 93.

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APPLYING THE 4Cs FRAMEWORK IN A COURSE ON PROBLEM SOLVING SKILLS

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The 4Cs framework (Coyle, Hood & Marsh 2010) describes an approach to designing and teaching Content and Language Integrated Learning (CLIL) courses that prioritise content, communication, cognition and culture. For teachers of 3rd and 4th year students at Kanda University of International Studies, the framework represents a principled and coherent approach to the design of content-based language courses for senior students. The aim of this paper is to introduce the framework and outline its application in a course on Problem Solving Skills.

1. INTRODUCTION

Third and fourth year students at Kanda University of International Studies take semester long content-based English courses, in contrast to their first two years at university in which they study more traditional language-focused courses over a whole year. The idea is that the senior students can benefit in their last two years at university from examining the English language in relation to specific contexts and domains and at the same time broaden their understandings of global topics and issues of current relevance. The thematic scope of these content-based courses includes classes on literature, cinema, popular culture, national cultures, sports, diet and health, and critical thinking, amongst others. The courses are designed by lecturers at the university with particular interests and levels of expertise in these topics. Although the content-based courses conform to some general guidelines as set down by the university, lecturers enjoy a substantial amount of freedom in selecting content, structuring and sequencing units of

work, and setting assessment tasks. While this pedagogical independence is appreciated, it can leave teachers unsure at times of the best way to proceed in designing their courses. The aim of this paper is to introduce a framework which provides a principled approach to designing content-based language courses and to illustrate the use of this framework in the delivery of a course on Problem Solving Skills.

2. BACKGROUND

2.1 The 4Cs Framework

The 4Cs framework (Coyle, Hood & Marsh, 2010) describes an approach to designing and teaching Content and Language Integrated Learning (CLIL) courses. CLIL is a form of content-based language instruction which has become popular across Europe and which is broadly similar to other manifestations of content-based language pedagogy (see Stoller, 2004 for an overview). CLIL can be defined as “an educational approach where curricular content is taught through the medium of a foreign language, typically to students participating in some form of mainstream education at the primary, secondary, or tertiary level” (Dalton-Puffer, 2011, p.183). The 4Cs framework identifies the essential building blocks of CLIL as content, communication, cognition and culture, hence the name: the 4Cs. The main thesis behind the framework is that the presence and integration of these 4 elements is necessary to produce a content-based language course of value.

2.2 A Course on Problem Solving Skills

The aforementioned course on Problem Solving Skills is a 15 week course taught to third and fourth year English major students by the author of this paper at Kanda

University of International Studies. The approximate number of enrolled students each semester is 30 and their language levels range from approximately 4.5-7.5 on the IELTS scale. The initial motivation for creating the course arose from the author's interest in problem-based learning (PBL) (see Kwan, 2009 for an overview) as well as from the author's observations that language learning in Japan, especially at the pre-tertiary level, often suffers from a pedagogical overemphasis on the importance of language conventions and an accompanying lack of focus on the functions of language. The course was thus intended from the start to redress this imbalance in some small way by encouraging the enrolled students to view languages, including both Japanese and English, as resources which can empower people in problematic situations. The overall aim of the course is to assist students in developing a set of tools, including the appropriate language, for a systematic approach to problem solving. The course features a mixture of formative and summative assessment tasks, including reflective journals, oral presentations, and project-based work. The next section provides further description of the course by examining each of the 4Cs in turn and discussing their incorporation into the Problem Solving Skills course.

3. DISCUSSION

3.1 Content

A key issue in the 4Cs framework, and indeed in CLIL courses generally, is that content is pre-eminent; content is the starting point and the driving force behind CLIL course design. Using content as the organising principle ensures that the ideas and issues to be discussed in class are not diluted or diminished in any way to compensate for the L2

linguistic level of the students. As Coyle et al. (2010) indicate, students are always more ‘cognitively-able’ than ‘linguistically-able’ in a foreign language. In other words, their ability to make meaning in interaction with the world, as developed in their native cultures and languages, is greater than their ability to linguistically engage with the world according to their current L2 level. Needless to say then, the content selected for a CLIL course should be challenging, relevant and engaging for learners so that they are stimulated and motivated to participate in class and to learn.

The course in question has four main strands of content running through it. These strands are introduced in initial lessons and then revisited periodically throughout the course. Firstly, the lessons are designed to facilitate student identification and analysis of different types of problems, from personal/local to social/global issues and including well-defined problems as well as more open-ended ones. The students are encouraged to share problems from their everyday lives, discuss recent issues from the news, and even project into the future to predict the possible national and global issues of tomorrow. Secondly, the course encourages the students to evaluate the importance of intrapersonal resources for problem solving, such as personality and character, the five senses, and multiple intelligences. Interpersonal dynamics for problem solving are also covered with lessons on communication styles, and cooperative and collaborative behavior patterns. The third content focus of the course is on different types of thinking, such as deduction, induction, metaphorical thinking, and the ways that certain problems require certain cognitive approaches. Finally, the students are asked to work with a set of four problem solving steps – defining a problem, diagnosing root causes, identifying and evaluating solutions, and implementing solutions – as a heuristic for solving more complex

problems. These four strands of content determine the materials and resources that are used in class and also provide a clear focus for the creation of assessment tasks.

3.2 Communication

Communication describes the language focus of a CLIL course designed using the 4Cs framework. While CLIL does not necessarily reject a didactic approach to language pedagogy with its inherent *focus on forms* (see Long, 1991), the emphasis within the 4Cs framework is more often on the functions of language and on how particular lexicogrammatical, textual and discursive features of language successfully convey particular meanings and carry the content of the course. As Coyle et al. (2010) explain, communication in the CLIL curriculum is about “learning to use language and using language to learn” (p.54) so that students engage in meaningful interaction with each other and with the content of the course.

Regarding the Problem Solving Skills course, the communication focus is on providing students with opportunities for authentic use of the four language skills. Rather than attempting instruction of each skill in isolation, a multimodal pedagogy is employed in which students are, for example, asked to combine the audio, visual and oral-linguistic modes of communication in presenting information to a group. The different potentialities of the various modes of meaning making are discussed and contrasted so that students are able to make informed choices and justify their decisions about how they intend to communicate their various messages. Just as importantly, a number of strategies for coping with authentic language use are presented and students are asked to evaluate these as they do various activities, such as watching online lectures and presentations. Finally, the course features both proactive and incidental approaches to the teaching of

language form. While some elements of language, such as modal and passive verb forms, demand attention because they are widely applicable to the discussion and description of problems and issues generally, other lexicogrammatical issues are dealt with as and when they arise in student discourse.

3.3 Cognition

Although content is the principal organizing concern when using the 4Cs framework, the cognitive processes that the activities, lessons and the course overall are intended to activate in the learners are also key considerations and as such need to be explicitly accounted for in the teacher's thinking and planning as the course is developed and units of work are put together. "For CLIL to be effective, it must challenge learners to create new knowledge and develop new skills through reflection and engagement in higher-order as well as lower-order thinking" (Coyle et al., 2010, p.54). Bloom et al.'s (1956) taxonomy of cognitive educational objectives describe various orders, or levels, of thinking, from lower order *remembering* and *recalling* to higher order *evaluating* and *creating*, and a well designed content-based language course will engage learners in using the full gamut of cognitive processes, both lower order and higher order.

The lessons in the Problem Solving Skills course are a mix of input and application sessions, which make use of the full range of Bloom et al.'s (1956) taxonomy: lower order processing – remembering, understanding, applying; higher order processing – analysing, evaluating, creating. During input sessions, content is presented to the students through, for example, videos or other online content, in short lectures by the teacher, or in print articles, and the students are given opportunities to discuss and summarise what they understand from the content and then report back to the class

(*understanding*). The class then moves on to activities which require students to relate the content they have just studied to a given task (*applying*). At intervals through the course, there are lessons which involve the students planning, designing and producing things, such as freestanding towers or logical thinking puzzles (*creating*). Towards the end of the course, the students are given larger, more open-ended assessment tasks which have them select real world problems for investigation and use the information from the content sessions to address these problems (*remembering*). They break the problems down through description and analysis into causes and effects (*analysing*) and then use some of the methods they have learned about for assessing the suitability of various solutions to the problems (*evaluating*). In this way, the course iteratively engages different cognitive processes and provides a challenge to students of varying linguistic and cognitive levels.

3.4 Culture

The final C is culture, and in the context of designing a CLIL course, culture refers to the need to develop intercultural awareness and sensitivity in students during the course. This is not a simple matter of introducing foreign customs and traditions however; it demands that the teacher involve the students in critical analysis of their native culture and the taken-for-granted and commonsensical behaviors and attitudes that are seen to be most indicative of cultures, both their own and foreign. Additionally, there is a strong emphasis on having students make use of online resources to interact with the world beyond the classroom and begin to create a global identity for themselves. The overall idea is that students can experience “deep learning” (Coyle et al., 2010, p.39) by going beyond a mere acceptance of how things are in the world to a deeper analysis of how concepts and social processes are bound together in specific ways and for specific

reasons in different societies. A well designed CLIL course will help learners understand that culture is both created by and reflected in language and social practice.

The Problem Solving Skills course presents a somewhat dialectical view of problems in relation to culture. Problems are approached on the course as both universal, inasmuch as all people have problems, and perspectival, in that what matters to one group of people may not matter to another. As far as culture is concerned then, problems (as well as certain techniques for solving them) are aspects of human existence that can and do transcend culture while it is also true to say that problems are often created or exacerbated in particular places at particular times by particular cultural perspectives. In this regard, the enrolled students are encouraged to identify the societal and cultural stances which frame an issue as problematic. They also look at the implications of changing these stances and, beyond resolving the problem, what that would mean for the society in question. The students are encouraged to read blogs and forums online which address current issues and to contribute their own comments and ideas as part of the communal online dialogue on different matters. In this way, the agency of the students is engaged and they develop voice and identity as active global citizens.

4. CONCLUSION

Overall, the 4Cs represent the main areas of pedagogical focus for teachers when designing CLIL courses. Each area demands individual attention and conscious consideration as the goals and objectives for a course are outlined. Importantly though, the 4Cs framework is intended as a thoroughly integrated approach to content and language learning and thus it follows that the four separate areas are interrelated and in

fact interdependent. The educational potential of each C – content, communication, cognition and culture – is contingent upon the presence and the convergence of the others in any given unit of work; a “symbiotic relationship” (Coyle et al., 2010, p.41) is seen to exist between them. It is this interweaving of content, communication, cognition and culture which, far from just giving the course on Problem Solving Skills some structure, actually creates the conditions for learning opportunities to take place as the students extend their knowledge, develop their communicative repertoire, engage higher and lower order cognitive processes, and account for the role of culture in the framing and the resolution of problems.

5. ACKNOWLEDGEMENTS

A version of this paper was presented at CamTESOL 2012 (Phnom Penh, Cambodia). The project was partly funded by the Research Institute of Language Studies and Language Education at Kanda University of International Studies, Japan.

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