Development of a vocabulary instruction model for content and language integrated learning for English language learners in Bangkok

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Abstract
This paper presents a research project on content vocabulary instruction with a focus on the development of a model to improve vocabulary learning in a content and language integrated learning (CLIL) environment. The model was based on Cronbach’s (1942) and Stahl and Fairbanks’ (1986) theories of vocabulary learning, which emphasise a progressive approach starting at a basic level, then moving to an intermediate level, and culminating in a productive stage of specific vocabulary. The model also relates to the analysis of classroom discourse which highlights the importance of a student-centred learning approach, where emphasis is placed on encouraging students to progress more at their own pace and in their own time rather than the circumstances set by the teacher (in light of concerns over the amount of and frequent use of content vocabulary) while studying major theories in content-area studies.

Key Words: vocabulary; model; instruction; English; integrated.

Resumen
Este artículo presenta un proyecto de investigación sobre la enseñanza del vocabulario de contenido con un enfoque en el desarrollo de un modelo para mejorar el aprendizaje de vocabulario en un entorno del aprendizaje integrado de contenido y lengua (AICLE). El modelo se basa en las teorías de aprendizaje de vocabulario de Cronbach (1942) y Stahl y Fairbanks (1986), que hacen hincapié en un enfoque progresivo a partir de un nivel básico, que a continuación pasa a un nivel intermedio, y que culminó en una etapa productiva de vocabulario específico. El modelo también se refiere al análisis de discurso en el aula que pone de relieve la importancia de un enfoque de aprendizaje centrado en el estudiante, donde se hace hincapié en animar a los estudiantes a progresar más a su propio ritmo y en su propio tiempo en lugar de las circunstancias establecidas por el profesor (a la luz de las preocupaciones sobre la cantidad y el uso frecuente de vocabulario de contenido), mientras que se estudian las teorías más importantes en los estudios de las áreas de contenido.

Palabras Claves: vocabulario; modelo; instrucción; inglés; integrada.
INTRODUCTION

Giving information directly to students is not teaching. Students need to be engaged in what they do and to be allowed opportunities to actually learn by doing, whether it is using new vocabulary or recycling familiar content and language items together. There is no doubt that ELL students working in a CLIL environment also need to be engaged in a variety of activities that help widen and deepen their learning of vocabulary, which is highly correlated to good reading skills that aid understanding of texts (Marzano, 2004).

Related to this are the challenges that teachers encounter when trying to encourage students to write, which can be many, even if they have the necessary basic skills. And because of this reluctance, being asked to write statements in a CLIL class can be daunting for many students and presents even more challenges for the teacher in terms of motivation, classroom management, and engagement. This is because many students feel as if they do not have sufficient confidence to write and be as successful at it as in other subjects (Fisher & Frey 2008).

The objective of this article is to propose a student-centred model based on Cronbach’s (1942) and Stahl and Fairbanks’ (1986) models of vocabulary theories. At the centre of the proposed model is a simple set of classroom exercises specifically designed in a set sequence and that can be used as hard scaffolds to improve students’ engagement skills while studying vocabulary through progressive phases—starting at association, then passing to comprehension, and finally moving on to generative study. This is to enable students to become gradually more engaged in vocabulary studies, which also build their confidence in understanding and reading texts as well as writing, especially in content area studies. If materials are designed with this theory in mind, the teacher can plan more easily for “the gradual release of responsibility” (Fisher & Frey, 2003; 2006; 2008, p. 41).

The gradual release of responsibility model requires that the teacher design a transitional style of teaching approach by initially assuming “all the responsibility for performing a task to a situation in which the students assume all of the responsibility” (Duke & Pearson, 2002, p. 211). However the pace of delivery for this theory may last the duration of one lesson for simple words and concepts which can be built on during future classes or it may have to continue on in classes lasting over several days, weeks, or months—or even over a whole
The concept of support theories is especially important for students who study key concepts in the social studies like communism, capitalism, and other more complex issues like colonialism and imperialism that continuously reappear throughout this kind of curriculum (Duke & Pearson, 2002).

**Problem Statement**

It is a simple fact that students who are not engaged in their work are not really learning. Classroom work must be designed in such a way that it is engaging and guides them in a manner that leads to active learning. Moreover, a lack of student engagement can lead to problem behaviours, and a higher likelihood that students will “switch off” from learning, giving in to the temptations of competing stimuli from classmates or some other part of the classroom environment. Such students, those who are the first to react negatively to classroom work, are often the “canary in the coal mine”. Unfortunately (and all too often), it is the students who are blamed for this lack of concentration, without regard to how the problem behaviour started in the first place. If students are to study effectively, then a new, student-centred, bottom-up approach, incorporating thoughtful, systematic and student-friendly processes, must be devised.

This study was carried out specifically with students who studied vocabulary for content subjects in grades 7 to 12. These periods of study were preparation lessons for reading main texts. Although learning vocabulary is essential for effective reading and auditory processing, as well as general academic study, it was especially problematic for this group simply because they were in their early teenage years and, as the teacher often observed, subject to strong distractors from study. Moreover, everything used to teach the vocabulary had to be copied from the whiteboard, including meanings and exercises, which were all constructed from various dictionaries and had all the problems associated with teaching vocabulary without a formal structure. The majority of students found it difficult to concentrate on whiteboard-to-notebook exercises, especially when studying complex multi-meaning vocabulary related to content-based subjects. All this was time consuming in the extreme, and there was never any guarantee that learning vocabulary in this uneconomical manner would be in any way academically successful.
Purpose of the study

This study sought to discover the main challenges faced by students who study content-specific text and, particularly, how teachers who teach in a CLIL environment can make learning easier for students when using new vocabulary in content specific text. Students’ performance was measured so as to develop new approaches to improving student engagement in such programs. The proposed model is intended to aid the planning of vocabulary study, which can greatly reduce extemporaneous teaching of vocabulary (which should be avoided).

Literature Review

Teaching Support Theories

There is a vast body of research that highlights the importance of learning support theories; what is important about these supports is that they should not be permanent but temporary. Teacher support should be withdrawn in subtle stages as the student becomes more confident and assured over time. How long this time is depends on several factors: the subject matter, the learner’s learning style, the number of lessons, and the amount of vocabulary in the text, but also the student’s background knowledge. This process is often referred to as scaffolding (Bruner, 1978, p. 19).

List Group Labelling

The idea of listing, grouping, and labelling words (LGL) was first conceived by Hilda Taba in her book Teachers’ Handbook to Elementary Social Studies (1967). LGL was originally used as a study aid for students who needed to remember technical vocabulary in social studies and science. Many teachers also use it in other curriculums to help students focus on background knowledge. LGL was also designed to help teachers activate students’ schema with regards to a particular concept, to improve existing vocabulary, to organize verbal concepts, and to remember new vocabulary. For the purposes of the present study, the rationale for using this strategy is elaborated and extended from its original conception. It has been adapted for students who are studying content texts and whose first language is not English, and incorporates the ideas that categorizing
words is part of the learning process that takes place whilst studying and reading the text and that all the exercises be designed to recycle a specific list of words and their various inflections using the students’ known language (Taba, 1967).

**Bloom’s revised taxonomy**

Like the original taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956), the revised list (Anderson et al., 2000) provides a hierarchy of six major categories of the cognitive process dimension. The revised list states that remembering is considered as being less complex than understanding, and the idea of understanding is less complex than applying. This study’s model is also designed to align with the elements in the revised taxonomy, although these elements are dispersed throughout the model and overlap at times. The revised taxonomy (Krathwohl, 2002) is thus:

- remembering;
- understanding;
- applying;
- analyzing;
- evaluating;
- creating.

**Designing for engagement**

It is also important to keep in mind that for students to stay on task and be engaged in their work, materials need to be designed so they are challenging but achievable and this fact alone is one of the key issues. Exercises that students can do by themselves are far more beneficial for them than those that require any support from the teacher, and teachers should choose very carefully the content of those worksheets, this is one of the major keys to grabbing the attention of students and maintaining it. Concentrating on studies is nothing new, and there is nothing surprising about the research by Fredericks, Blumenfeld, Friedel, and Paris (2003) when they argue that there is “a considerable amount of research has documented the relation between cognitive engagement and achievement” (p. 5). More recently, Marzano (2007) has shown that students in highly engaging classrooms out-perform their peers by an average of almost 30 percentile points. He concludes that “keeping students engaged is one of the most important considerations for the classroom teacher” (p. 98).
Of course, engagement means different things to different teachers. But for the present study, engagement is about creating a situation in which students are focused on activities that are challenging yet achievable. This also helps cut down on teacher involvement, encourages students to practice their writing skills, becoming more involved and independent from the teacher as well as adopting student-centred learning practices, academic discipline, personal concentration.

**Designing for Quality**

Successfully engaging students’ in CLIL classrooms has effects beyond mere test score improvements, however, as teachers who employed strategies to engage students experienced almost no behavioural problems in their classrooms (Raphael, Pressley, & Mohan, 2008). This makes perfect sense, especially if teachers have taken the time to design materials that are within the students’ zone of proximal development and that are not too difficult for them. If students’ find that the work is too difficult, they will lose concentration; and if this happens, we cannot expect them to apply themselves and it is entirely reasonable to expect much worse.

**The 8 Cs of Engagement**

This study also takes account of another very important theory to be applied in the classroom: that of the “8Cs of engagement” (Silver & Perini, 2010). Students must be able to learn to concentrate on their work and to take time to think about what they are doing, as well as to become more engaged so that they can develop their own ideas and perspectives. Classroom exercises should be designed to enable students to do just that by taking account of four particular drivers of human nature: mastery, understanding, the interpersonal, and self-expression. Incorporating aspects of mastery can be engaged through challenging but achievable exercises. Understanding can be achieved through curiosity and controversy. The interpersonal drive can be accommodated through cooperation and connections (to student’s lives, feelings, and experiences). Finally, we can engage learners’ self-expressive drive through choice and creativity.

The model for this article is intended to aid the achievement of this goal, providing that materials designers carefully select the study criteria that fit with these theories and with the student’s cognitive levels. The reason behind this focus on engagement is simple: materials should be designed that will earn
commitment from students, and this means that the materials must be challenging but achievable. If materials are too long and complex, or ill-prepared, then we cannot expect students to take an active or in-depth approach to their learning; rather, this will result in only superficial learning (Silver & Perini, 2010 p. 7).

**Cloze Procedure**

Cloze procedure (Perry, 2004) is a common and effective technique in which certain key words are omitted from a passage so that the students have to fill in the blanks either by choosing from words they already know or choosing words from a defined set. Cloze procedures are often used as a diagnostic style of reading assessment technique in which the purpose is to identify students’ knowledge and understanding of their reading and to assess how well they know which words fit in to the syntax structure related to their knowledge of the subject. They can also encourage students to monitor their writing for meaning while reading and to think critically and analytically about the relationship between text and content. To write cloze exercises correctly, the written language and syntax needs to be simple and easily understand, with the emphasis on use of the target word and nothing more. The student’s background knowledge also needs to be taken in to consideration because it is counterproductive to use words and theories they do not know. The use of advanced cohesion, complex noun groups, and nominalization needs to be limited, and students also need to have some association with the words and the concepts prior to the exercise.

**English programs and content education in Thailand**

English programs in Thailand are very similar to bilingual education programs operated in countries with well-established bilingual educational contexts like Canada, involving the teaching of academic content in two languages, the native and a secondary language, with varying amounts of each language depending on the context. The goal is to help students transition to participation in English-speaking classes at the top universities in Thailand or abroad as quickly as possible, and the linguistic goal of such programs is English acquisition only.
Since 2008, the Thai national curriculum has established five core subjects that form the basis for the social studies curriculum: economics, history, geography, politics, and citizenship (Parker, 2010). According to Parker:

Social studies is at the center of a good school curriculum because it is where students learn to see and interpret the world—its peoples, places, cultures, systems, and problems; its dreams and calamities—now and long ago .... Social studies needs to be set deeply into the school curriculum from the earliest grades. (Parker, 2010, p.3)

Content subjects—social studies not least among them—are quite often packed with vocabulary that appears esoteric but which is central to understanding them. One of the central themes of this article and its research is to build students confidence in vocabulary knowledge and writing through a system in which they can focus on recycling known and new content and language items together. This is achieved through a pre-constructed set of exercises that are designed to recycle a set of target words listed at the beginning of the study known as list words.

**METHODS**

**Model used**

The model proposed and tested in this study is a practical student-centred model for studying vocabulary. It is based on the work of Cronbach (1942) and Stall and Fairbanks’ (1986) theories of vocabulary learning. Critical to this model is the importance of advancing a student’s knowledge of content vocabulary through three phases of learning: association, comprehension, and generation. This is achieved by initially selecting and grouping specific exercises according to their special learning and productive characteristics.

Some exercises only give students a basic understanding of a word, like a dictionary definition, and therefore were placed in the association section. In this phase, emphasis was on the teacher teaching the words using a direct instruction method at the start of the class and then gradually withdrawing support as the students progress through the comprehension and generative exercises. Other exercises, like multiple-choice questions, help students understand the meaning of a word in greater depth, and so these were placed in the comprehension section. Other exercises that involved students having to create new words from
the words that they already had been using in the association and comprehension sections were put in the generative section.

Additionally, this study elaborated on the theories of Cronbach and Stall and Fairbanks by categorizing specific, well-known exercises based on the three phases in combination with items drawn from Bloom’s revised taxonomy (Anderson et al., 2000) which allowed students to study content and language items together in a set of progressively more challenging exercises. In this sense, the cognitive process dimension is hierarchical in nature, and at times the categories may overlap with one another. Although these exercises are not new, the idea of capturing them and categorizing them in a progressive system related to well-known theories about learning and recycling vocabulary, represents an innovative basis for the model.

The items on each page in the model were designed for integration, allowing students to relate one exercise to another to help maintain engagement. Students need not hunt around, looking for clues, wasting time and breaking their concentration, searching through dictionaries, on the Internet, or asking for help, because the clues they need to complete a given exercise have already been written on either the same page or on another page (in some other form).

**Phases of the Model**

The first phase of the model (association) starts by providing learners with a list of vocabulary words from the text to be read. All the exercises at this stage are purely associational in nature they include;

- a short description;
- collocations to other known words;
- matching meanings;
- synonyms and antonyms;
- classifying words in to groups.

The second phase (comprehension) uses a collection of exercises designed to teach students how to study and recycle meanings and understandings of the listed words in more detail. These exercises require students to demonstrate a deeper understanding of the listed words, and include:

- multiple choice questions about the words;
- true false items about word knowledge;
- cloze style exercises;
• using correct words in context;
• matching definitions;
• illustrations.

The third phase (generative) uses a collection of exercises designed to recycle the words at even deeper levels and to generate new words from the list. The exercises at this stage require students to demonstrate their understanding through exercises in:
• forming compound words from words on the list;
• completing inflection tables from words on the list;
• forming new words from the list using prefixes roots and suffixes;
• demonstrating understanding of word conversions using words from the list.

All three phases of this model were designed initially on A4 paper as templates, so that the teacher can design the content quickly. New sections for the templates can be added, or existing portions can be deleted, to suit the of available study time and for particular lists of words. This way, exercises can be designed for a particular level of class or even for a particular student.

Figure 1. The models three phases and the levels of exercises detailed for each phase.

Limitations on the Model

The model is designed to list up to 20 words on an A4-sized sheet of paper; this allows only for short descriptions at the associational phase. Secondly, the model is, of course, not an answer to all of the problems associated with engagement and learning in the classroom; rather, it is an approach to categorising learning support and offers an subtle infrastructure to help scaffold the learning of new words and concepts in a content-based classroom. Thirdly, research on this model is still in progress, especially with regards to the design of more challenging exercises for each phase.

The model is also limited in that it is specifically designed to advance student learning with single vocabulary words only. However further research is on-going to find ways to adapt this model to that of a reading model based on the same three phases.

**Research context**

The research for this study was conducted at a school in Thailand between May and September of 2011. Two classes of senior high school students were involved in the study, as they represented the highest standards of achievements in that school in both English and social studies. Permission was given by the administration to conduct the research, in which the participants were given specially designed question-style worksheets based on the proposed model. The research was based on the following questions:

- What maintains student’s engagement in an ELL content studies class?
- What materials can be designed to maintain this engagement?
- What exercises can be categorised according to levels of difficulty?

To this the following research objectives were devised:

- To research activities that emphasise engagement.
- To design materials that engage students sufficiently.
- To categorise the various exercises in to levels of difficulty.

Classroom observations were the main methodology used for this study, which was carried out by the teacher who designed the model based on certain IELTS exercises and Bloom’s revised taxonomy (Anderson *et al.*, 2000) over a two-semester period.

A rubric was devised to measure the responses of students when using the model, which consisted of various designs throughout the period that were continually redesigned and updated form notes taken after each class. Students received only guidance from the teacher when asked or when the teacher felt the need to intervene. Test results were also used to compare from the previous semester. The engagement rubric was designed on a model devised by Silver and Perini (see Table 1).
Table 1. Engagement rubric (after Silver & Perini, 2010).

<table>
<thead>
<tr>
<th>Class: __________</th>
<th>Model design No: _______</th>
<th>Date: ________________</th>
<th>Open book: yes / no</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deep Engagement: Students take full ownership of learning activities, seem actively involved and are quiet and display high levels of energy, a willingness to ask questions, pursue answers and consider alternatives.</td>
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<tr>
<td>2. Engagement: Students begin taking ownership of learning activities. Their involvement shows concentration and effort to understand and complete the task. They do not simply follow directions but actively work to improve the quality of their performance.</td>
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<td>3. Active Compliance: Students participate and stay on task without teacher intervention.</td>
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<tr>
<td>4. Passive Compliance: Attention may be mildly distracted and they may need some added teacher attention or direction to remain on task.</td>
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<tr>
<td>5. Periodic Compliance: Students’ attention and participation fluctuates. They appear distractible and may quit easily. May require significant teacher attention and direction.</td>
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<tr>
<td>6. Resistance: Students appear blocked, unable or unwilling to participate in learning activities. Classroom management procedures or redesign of learning activities may be required (Harvey Silver &amp; Perini 2010).</td>
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</table>

RESULTS

The rubric proved to be an invaluable tool when recording student responses and engagement levels in the class during the research period. It took all the hard work out of assessing student engagement and consolidated it on to an easily identifiable list. The researcher also confirmed that new and sometimes familiar vocabulary and grammar should also be used together whenever possible. This comes from knowing the students limitations on each vocabulary and grammar item, which proved to be the key to retaining much of their engagement for longer periods of time without them breaking their concentration because they could see that the next stage was easily at hand and answers or parts of the answer to many of the exercises were contained somewhere on the sheets that they had already done, although they were written in a slightly different form.

This research also re-confirmed the importance of the serious task of instructional design, as well as how instructional design should incorporate...
specific tools and strategies which help to maintain challenging work and encompass the “8 Cs of engagement” (Silver & Perini 2010) into a cohesive model that keeps students actively engaged.

The result of good instructional design also allows students to make what they learn their own, as it took some of the teaching especially the reviewing load off the teacher and on to the student. This is especially important for CLIL students whose first language is not English. It also allowed the researcher to see through the fog of distracting classroom activities and competing stimuli. But what was just as interesting was how this research study demonstrated a renewed and deep awareness of the students’ individual learning styles. When students did ask for help, many of the questions they asked were only confirmatory in nature which lead the teacher to believe that many students had a strong understanding about what they were doing and only asked for confirmation that it was correct. This shows that a commitment that is reciprocal, and requires mutual effort also yields mutual rewards.

DISCUSSION

This study has the potential to help teachers who employ CLIL in a content classroom, especially regarding the design of materials for content subjects—social studies, but also including science, biology, and chemistry—where English is not their first language. It highlights the need to organize students’ English language skills using a formal structure that builds on pre-existing skills. It also allows students to work within an infrastructure framework for learning vocabulary that is often missing from many classrooms. Learning vocabulary can often be founded on a haphazard collection of dictionary definitions, odd meanings from various Web sites, and the results of extemporaneous teaching and learning—all of which is far from ideal.

The proposed model also encourages more economic use of with class-time, as more time is spent in the class actually studying the words in context and teachers can devote more time and energy to supporting this and helping those students who need it most. The model also benefits students by directing them to greater, more proactive, and collaborate engagement with the texts and other materials because to complete a given task they may have to return to previous stages, either in the text of other parts of the exercises, working collaboratively in a team and sharing views. Classroom exercise sheets can help
to create a “learning by doing” aspect to content subjects, encouraging students to self-study (Wiles & Bondi, 2007). It is also important to encourage students to become better independent learners who can think for themselves and utilize their analytical skills by offering well designed materials. This study may also help future researchers, as it may also provide a platform for further research in to materials design in other specialized subjects. Therefore appropriately designed models like this could help students to understand a complex grammar point in order to understand the facts underlie its meaning.

REFERENCES


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BIODATA

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