

TEACHING AND ASSESSING SKILLS IN ENVIRONMENTAL GEOGRAPHY IN A BILINGUAL CLASS

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ABSTRACT

This paper presents my experience in bilingual teaching, an integrated programme for geography and English language learning for upper secondary students. General geographical aspects are connected to the geography of Great Britain and that of the USA, with an attitude of raising students' awareness on environmental issues. The topics are a framework for the development of (environmental) geography-related knowledge and skills, cognitive skills and language aspects. Therefore, the paper presents various methods of teaching and assessing environmental issues in four distinct structured texts, which combine typical geographical skills (like completing a sketch or a mind map) with methods used in English classes (like true/false questions). A special accent is on both the use of specific environmental vocabulary – synonyms, false friends, also anticipated grammar mistakes – as well as on discussions in class, based on cause-effect relationships between processes and phenomena.

Keywords: *bilingual class (Geography-English integrated teaching and learning), active teaching, geographical skills assessing, environmental issues and vocabulary*

INTRODUCTION

Content and Language Integrated Learning (CLIL) is a term – widely used nowadays – that defines the approach of teaching content subjects through a foreign language. Another term, which is similar to this, is Bilingual Content Teaching. The use of these terms relies on the assumption that foreign languages (English – in my case) are best learnt by focusing, in the classroom, not only on language, but also mostly on the contents (Geography – in my case) which is transmitted through the English

language. It should be stressed though, that CLIL always involves dual-focused aims, both topic and language, the main characteristic feature being curricular integration. The subject matter and the foreign language are developed simultaneously and gradually, depending on students' age and on other variables.

In Romania, the syllabus for teaching geography in English is in use at "George Coșbuc" Bilingual National College in Bucharest, as well as in Cluj-Napoca at "Gh. Șincai" National College, and in Timișoara at "William Shakespeare" National College. In these high schools, students learn general Geography according to the national curriculum and there is a syllabus for British and American Geography as a compulsory subject for the bilingual program (1 hour/week in the 9th grade).

My presentation deals with geographical topics that represent a framework for the development of environmental geography – related knowledge and skills, cognitive skills, and language aspects. There are four distinct texts/case studies included in lessons about British and American geography, with specific contents and vocabulary. They try to raise students' awareness of environmental aspects, to make students think critically about cause-effect relationships, and to use the English language correctly, by explaining the adequate geography-related vocabulary.

THEORETICAL BACKGROUND

Bilingual content teaching is an educational approach, European-oriented, with innovative methodology, and, in the case of Geography, also enabling intercultural education (Dulamă and Ilovan, 2004). The need of a specific syllabus in the national curriculum, apart from the general geographical one, was obvious from the beginning. This happened in 1992, when Geography was the first subject that fit well in the CLIL system in upper secondary education. It involves both content and language aims, it is student-centred and requires professional development.

Teaching and assessing skills in Geography is complex and demanding (Dulamă and Ilovan, 2008). In the nowadays-changing society, the Romanian national curriculum, which underwent a slow transformation process (Dulamă and Ilovan, 2015), is putting emphasis on the acquisition of competences, as well as on subject knowledge, so that students have the ability to respond flexibly to the changing modern environment. In response, teachers must be able to both teach and assess competences and to adjust their own teaching methods to embrace a wider range of techniques in the classroom. In order to achieve this, text books are of great importance, as they offer structure, logical sequence, continuity, and linguistic quality and accessibility (Chircev *et al.*, 2015).

The CLIL Geo teacher should try to be a master in dealing with both teaching, creating, adapting materials to be used in class, but also in

motivating and supporting students in being self-confident, in participating at discussions, and in using English language appropriately. Examples of such activities would be map reading, photograph interpretation, giving arguments, as well as writing exercises, and using specific geographical vocabulary (Blînda, 2013, p. 68). Moreover, this is not an easy task – pressure on the teacher, time-consuming, use of Romanian language. This last aspect appears when students are not very sure if their answer is correct or when they ask for particular information about their homework.

Moreover, Geography helps to give students/people knowledge and understanding of life at different levels and an appreciation of a multicultural society (Dulamă and Ilovan, 2004). For instance, in the UK, it is the view of the Geographical Association (1999) that the aims of geographical education are:

- knowledge and understanding of places and processes;
- developing skills needed to carry out a geographical study;
- stimulating interest in, and encourage appreciation of the world;
- developing an informed concern for the world around us (Sibley, 2003, p. 4)

Finally, the four key elements of effective teaching and learning Geography are: planning teaching contents, implementing teaching strategies, assessment, and preparation for exams.

THE STRUCTURE OF THE COURSE

The syllabus for British and American Geography is reflected in the text book "Geoprofiles" (Dobolyi et al., 2005), which is an integrated programme for Geography and English language learning for upper secondary students. It is cross-curricular, task-based and focuses on interactive learning, and project work. There are 22 units (both UK and the USA) with general and regional geographical aspects (4 pages each unit). There are also extra activities, such as additional information, think green, case studies, and did you know rubrics.

The course is intended to help students:

- understand and operate with geographical concepts like location, pattern, change, resource, etc.;
- acquire and develop research and operational geographical skills, such as map reading, graph/chart/photo analysis, presentation, and interpretation;
- acquire and develop specific geographical vocabulary and adequate language function;

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- raise students' awareness of similarities and differences between the UK/the USA and Romania;
- foster geographical thinking and develop geographical reading and writing by problem solving and debating;
- develop communication and social skills and encourage creativity, learning autonomy, and self-evaluation;
- encourage cross-curricular approach of the subject matter;
- foster positive attitudes related to environmental issues.

KEY ELEMENTS OF EFFECTIVE TEACHING AND LEARNING IN GEOGRAPHY

A. Planning teaching contents. With the help of *case studies*, the teacher exemplifies an issue or a theme and illustrates a generality rather than uniqueness. Through case studies, you bring alive issues that may be conceptual, in order to increase students' interest, motivation and understanding; that is why teachers need to ensure that all important details of the courses are taught and worked out well in advance (Sibley, 2003, p. 6).

The outcome of the teaching-learning process comes as aims, skills, and assessment objectives. This layout is beneficial for both teachers, when preparing and organising class activities, and students, who have a clear goal of the learning process. An important role of this layout is the fact that the three steps are deeply correlated with both Geography and English.

Table 1. Aims, skills and assessment objectives

Aims	<ul style="list-style-type: none">- recall the relevant points/details;- understand terminology;- critically examine and evaluate situations;- understand the interrelationships of processes;- develop a challenging attitude/change in students' best interest.
Skills	<ul style="list-style-type: none">- identifying key-terms;- analysing geographical phenomena;- interpreting maps and graphs;- giving reasons/comparing-contrasting;- language SRLW (speaking, reading, listening, writing), skills/vocabulary skills.
Assessment objectives	<ul style="list-style-type: none">- questions involving the demonstration of knowledge and understanding / analysis / explanation / investigation / vocabulary.

B. Using teaching strategies. Both teachers and students use a variety of teaching and learning styles that focus particularly on active learning. It is not just tools and resource materials being used, but also activities that develop thinking skills and creative writing, as well as various types of assessment.

Table 2 shows how the teaching styles and methodology are connected with the learning activities and with the use of resource materials. Pair and groupwork activities are strongly recommended as they facilitate the dialogue between students. As for teaching methods, the open discussions (student-student and teacher-students), as well as problem solving situations (which enable communication abilities and those characteristic of geography) are of great importance. Regarding learning activities, the emphasis falls on communication again (discussions and data presentation), together with geography-related information analysed on maps and charts. Assessment is complex, both formative (in which teacher corrects answers and gives feedback to students regarding their results) and summative (at the end of a chapter). Evaluation focusses greatly on the language and the characteristic geography-related vocabulary aspects.

Table 2. Using teaching strategies

Tools	<i>Teaching styles:</i> didactic approaches / pair/ group work - discussion / problem-solving / use of graphs / visuals.
	<i>Learning activities:</i> LSRW (Listening, Speaking, Reading and Writing) activities / discussing / reading maps & charts / presentation of data / analysing.
The effective use of resource materials in Geography teaching / for skills in development and active learning	<ul style="list-style-type: none"> - Various resources – usually 2-3; - difficulty levels / students’ needs; - up-to-date materials.
Assessment	formative : short term (give feedback, correct errors);
	summative: medium term (monitor progress);
	language/vocabulary check: correct use of tenses, spelling, synonyms, etc.
Problems connected with CLIL	<ul style="list-style-type: none"> - more time needed; - more proper materials needed; - time-consuming for teacher; - the use of Romanian language.

C. Analysing learning activities and tasks. Four of these types of activities and tasks will be presented in the following pages; they refer to environmental aspects of four main topics: climate of the UK, rivers of the USA, the Everglades – the USA, and e-rubbish in Africa. Case studies and green spots are strategies chosen to reveal various techniques that help

students understand/explain phenomena better, as well as vocabulary/language traps (Sibley, 2003, p. 38).

Worksheet 1

Case study: LONDON'S MICROCLIMATE

This case study consists of a text and a sketch that give students information about London's microclimate. They have to analyse them in order to understand the phenomenon and also to suggest some of its consequences. In the analysis of the case study, students are guided through various tasks that should be worked out in a certain order. The activity, on its whole, is based on the constructivism theories of learning – KWL (know – want to know – learnt) method (Ogle, 1986).

In presenting and solving this complex exercise, both teachers and students use a series of concepts, such as *location*, *pattern*, *change*, in order to explain and understand the phenomenon. By practicing them, students begin to develop constructive critical thinking, by correlating understanding knowledge and efficient learning (see exercise 1) (Dumitru, 2000, p. 72). Special attention is given to geographical terms – vocabulary – and language accuracy.

"In general the climate patterns of a country tend to be affected by local factors such as *altitude*, *sheltered position*, *pollution* or *how built up* a place is. Thus, microclimates appear. In the case of big cities, like London, this microclimate is called urban climate. Its main feature is the *urban heat island effect*, which means that its temperature is a few degrees higher than that of the surrounding area.

Here are a few factors which affect the London weather:

*The great number of buildings acts as a wind-break. However, very tall buildings, like the skyscrapers, may have the opposite effect as they create true "canyons" along which the wind funnels.

*Green areas have been built over with impermeable surfaces such as asphalt or concrete.

*There are more water vapor and dust particles in the atmosphere due to the domestic heating and the burning of fossil fuels by cars and industry". (Dobolyi et al., 2005, p. 19).

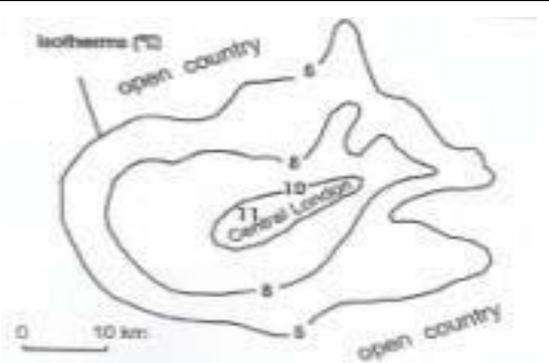


Fig. 1. London's microclimate
(Dobolyi et al., 2005, p. 19)

Tasks:

1. KWL Chart

What I KNOW / K	What I WANT to Know/ W	What I LEARNT / L

2. After you have read the characteristics listed above, suggest their effects on London’s microclimate. Add them to the list started below:

- a. London receives less snow and it melts faster (e.g. the average snow days per year for London – 5 days, for Scotland – 30 days).
- b.
- c.

3. Matching exercise:

- a. built up area i. tall buildings
- b. dust particles ii. green area
- c. water vapours iii. burning of fossil fuels
- d. wind funnels iv. domestic heating (Dobolyi *et al.*, 2005, p. 19).

Worksheet 2

Case-study: FLOODING OF THE MISSISSIPPI

This case study has three paragraphs that describe the worst flooding of the Mississippi so far. The text contains rich geographical vocabulary that students should understand correctly in order to explain the flooding – as a severe weather condition; such examples of terms are: floods, course dams, embankment, draining of riverine wetlands, watershed, etc. Apart from this, students must deeply understand the cause-effect relationships between the components of the environment. Based on this, students have to solve three tasks, the first one being to classify the information into three categories: cause, prevention, and consequences. This type of activity teaches students not just to transmit a previously memorised message, but to express their opinions and feelings about a certain topic, to give arguments and counterarguments, as well as to suggest measures to solve the problem.

Here are three paragraphs:

- a. “The Mississippi River floods in April and May 2011 were among the largest and most damaging recorded along the U.S. waterway in the past century. Areas along the Mississippi itself experiencing flooding included Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, and Louisiana. Fourteen people were killed in Arkansas, with 392 killed across seven states in the preceding storms. Thousands of homes were ordered

evacuated, including over 1,300 in Memphis, Tennessee, and more than 24,500 in Louisiana and Mississippi". (Dobolyi *et al.*, 2005, p. 70).

b. "The Mississippi is the most engineered river system in the USA, having along its course dams, which hold back the water at times of peak flow and embankment, which raise the riverbanks artificially. In addition, the river and its tributaries have been altered over time by the draining of riverine wetlands, which became farmland or were used for urban settlements. The course has been artificially straightened. For the first time in 37 years, the Morganza Spillway was opened on May 14, deliberately flooding 4,600 square miles (12,000 km²) of rural Louisiana to save most of Baton Rouge and New Orleans". (Dobolyi *et al.*, 2005, p. 70).

c. "These measures, however, proved insufficient when in April 2011, two major storm systems deposited record levels of rainfall on the Mississippi River watershed. When that additional water combined with the springtime snowmelt, the river and many of its tributaries began to swell to record levels by the beginning of May". (Dobolyi *et al.*, 2005, p. 70).

Tasks:

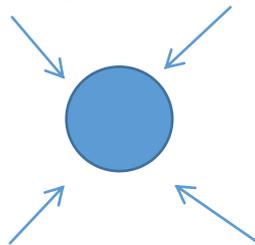
1. Sort the information into:

Prevention measures	Causes of flooding	Consequences
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2. Underline the words that form the vocabulary of river drainage basins.

3. When do floods occur in Romania and with what consequences?

Complete the mind map on the right with the flood causes in Romania.



Cutting down trees

Expressions:

In my opinion

It seems to me that

I agree but

I still feel that

The only way etc.

*Units of measurement: sq. km (km²), sq. miles, 1,300, writing of date, of numbers (Dobolyi *et al.*, 2005, p. 70).*

Worksheet 3

Case-study: THINK GREEN – The Everglades

The case study is about the National Park “Everglades”, in Florida, the USA. The text alongside with the tasks below enable students to be aware of environmental protection – understand, reflect, and find solutions. They are asked to make information transfer and identify similar situations in Romania.

As students solve the four exercises, they learn an analysis model for protected areas, with the correspondent geographical terms: *location, characteristics, composition, and activities*. A valuable exercise is the writing one, as it enables students to develop their creative thinking – express personal opinions – and critical thinking – identifying advantages and disadvantages, similarities and contrasts of various processes/phenomena (Dumitru, 2000, p. 114). Students also learn how to draw conclusions once the activities finished.

“Occupying the southern end of the Florida Peninsula, The Everglades is a vast complex of swamps, saw grass and water. In fact, over a third of the Everglades is neither land nor water, but something in between. A few higher areas are dry all year round, called hammocks. The average height of the area is not more than 2.5 m above sea level. Because these dry spots have rich fertile soil, men have tried to drain the Everglades or to clear it by burning the vegetation” (Dobolyi *et al.*, 2005, p. 71).



Fig. 2. The Everglades,
Florida Peninsula



Fig. 3. Alligators in the Everglades,
Florida Peninsula

(Source: <http://www.np.gov/ever/learn/nature/naturalfeatures>)

“In order to protect this unique area, considered to be the one of the largest swamps in the world and the largest tropical wilderness in the US, some 1.5 million acres have been turned into a National Park (1934) where there are numerous species of birds, some very rare, fish, small aquatic mammals and lots of alligators. The flora includes various water plants, cypress trees and mangrove forests”. (Dobolyi *et al.*, 2005, p. 71).

However, because of man’s intervention here, dramatic changes have taken place, putting the environment at risk. (Dobolyi *et al.*, 2005, p. 71).

Tasks:

1. *Can you suggest what environmental damage has been caused? / ORALLY*
2. *Why is it necessary to protect an ecosystem like the Everglades?/ in WRITING*
3. *Are there any similarities with an area in Romania? Can you present some?*
4. *Vocabulary related:*
 - *location:*
 - *characteristics:*
 - *composition:*
 - *uses (activities):*
5. *Definitions: saw grass/aquatic mammals/swamp/mangrove forest (+ pronunciation)*
6. *The WRITING exercise: ESSAY- personal opinion / advantages or disadvantages / list points; show effects – Contrasts/conclusion (Dobolyi et al., 2005, p. 71).*

Worksheet 4

Case-study: E-RUBBISH

This last case study features one of the major environmental problems nowadays: recycling. The text presents a particular situation, in Ghana, that students must read and understand individually, so that later on, in pairs, they can answer the questions that follow the text (cause-effect relationships, importance for the environment, health problems, etc.). They should also take into consideration the rich vocabulary that enables them to improve their conversation on such a topic.

Brainstorming: How much do you recycle or reuse items in the house or at home? How easy is it to recycle where you live?

“Nowadays, every household produces electronic rubbish (or e-rubbish) – an old TV or computer printer, or an out-of-date mobile phone we no longer need. But when we throw these everyday items away, not many of us know where these objects go. The journalist and photographer, Peter Essick, decided to follow this e-rubbish to several different countries around the world.

In particular, Essick found a lot of e-rubbish goes to Ghana. There, he saw mountains of old computers in the local markets. The sellers resell some of them



Fig. 4. E-rubbish in Ghana
(Hughes *et al.*, 2013, p. 60)

<p>but not much equipment works. Instead, they recycle the broken computers by melting the parts inside. These parts contain a little metal such as copper or even gold sometimes. However, this process of recycling is dangerous for the workers because it produces a lot of toxic chemicals.</p> <p>As a result of his journey, Peter Essick thinks it's important to stop exporting e-rubbish. It's bad for the environment and it's bad for people's health. Instead, he believes manufacturers need to produce more eco-friendly electronics in the future; in other words, electronic products which you can recycle cheaply, safely and in the country where they were made."</p> <p>(Hughes <i>et al.</i>, 2013, p. 59).</p>	
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Tasks:

I. Answer the questions:

1. How many of us know what is e-rubbish is and where it goes?
2. How much metal do the parts of the computers contain?
3. Why is the process of recycling these parts so dangerous?
4. How much e-rubbish does Peter Essick think we should export? Why?

II. Match each object you can recycle with the correct recycling bins: Aluminium foil, cardboard, cereal box, eggshell, yoghurt pot, jar, tin can, envelope, newspaper, bottle, vegetable peel (Hughes *et al.*, 2013, p. 58).

COMPOST	GLASS	PAPER and CARDBOARD	METAL	PLASTIC
1	2	3	4	5

III. Complete the sentences about the article. Then compare your sentence with the class.

I knew a little/a lot about this topic before reading this.

This article is/isn't surprising for me because ...

I agree/partly agree/don't agree with Essick because ...

(Hughes, 2013, p. 58)

IV. A. Wordbuilding: e-rubbish, eco-friendly, out-of-date

B. Quantifiers: any/some/not much/a few

CONCLUSIONS

Geography is an ideal school subject to be taught and learnt through CLIL. It is a field of study that helps students make sense of the surrounding world, to understand how people are related to and affected by their physical and human environment. The case studies presented reveal the author's experience in bilingual teaching by developing the skills of perception, evaluation and explanation of processes and phenomena occurring in our environment. The role of the teacher – students interaction is shown either in the dimension of topics, materials and methods or in the quality of the responses (content, accuracy, vocabulary, grammar). It is not an easy job, it takes time and practice, but it enables students with extra abilities to take steps forward in their future career. From this perspective, Geography is for life in every sense of that expression: lifelong, life sustaining, life enhancing.

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