ENGLISCH ALS ARBEITSSPRACHE

The Tropical Rainforest

A series of lessons for year 5 of a Secondary Academic School in Austria

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Introduction

This series of lesson plans is one of the outcomes of the course "Communication in the Bilingual Classroom", which we attended in Carlisle in July 2003. The course was offered by the In-Service Teacher Training College Tyrol/Department of Secondary Academic Schools as a COMENIUS In-Service Teacher-Training (INSET) course and therefore partly funded by the EU. It was organized by the St. Martin's College with Janet Streeter, senior lecturer in the Department of Modern Languages and one of the best-known experts on bilingual teaching in England, as our course leader and in charge of a group of teachers from Spain, the Netherlands, Slovenia and Austria.

The focus was to get to know and further develop bilingual teaching strategies. This has proved helpful, as we lack useful bilingual teaching methods in German speaking countries. Although the course in Carlisle was designed as a cross-curricular advanced training activity, everyone could gain a great deal for their own specific subjects, e.g. geography, history, biology, social studies, economics, etc. As a whole, this program can be highly recommended for teachers interested in bilingual education (Janet Streeter offers similar courses in Carlisle in October 2003, March and June 2004; see PI/Tirol program 2003-2004, p. 18).

Although the course in Carlisle can be seen as a valuable contribution to further education of "bilinguists", the fact remains that, so far, subject teachers have failed to come up with original ideas to develop an appropriate subject-related methodology. This complaint must be addressed to both practitioners at schools and lecturers at universities and teacher training colleges. Experts have repeatedly lamented this unsatisfactory situation at bilingual seminars over the past few years (for instance Mils January 2000: Bundesseminar West, Trier 2001: Bilingualer Geographieunterricht, Vienna 2002: Geographentag).

Thus we would like to launch an appeal to all bilingual geography teachers and lecturers at teacher training institutions to take action and to contribute to a long awaited and overdue geography-specific methodology. To assume it would be enough to simply combine the methodologies of the subjects involved (e.g. English and geography) and think of starting teaching bilingually this way would be a great misunderstanding and lead to a totally wrong and counterproductive way of bilingual learning. Above all, such an approach would imply a didactical error per se.

As for the situation in Innsbruck, we are quite happy that in June 2003 the *International Language Centre/ISI* (again the impulse came from the linguistic side!) at the university (led by Dr. Silvie Klein-Franke) finally started an initiative to bring together several representatives of various institutions engaged or at least interested in bilingual education (i.e. Pädagogische Akademien von Vorarlberg und Tirol, Pädagogische Institute Tirol und Vorarlberg, Akademisches Gymnasium Innsbruck, Institut für Anglistik und Amerikanistik der Universität Innsbruck). This raises our hopes that this can be a starting point for further activities to boost the entire bilingual issue in the Tyrol.

As for bilingual teaching in general and the lesson plans presented below in particular, some basic rules have to be observed: Comprehensive chapters and, to a certain extent, every single lesson should contain elements like **linguistic preparation** of required input (see material 6) – possibly with the help of visual stimuli, **elaboration activities** in order to focus on specific subject knowledge, **consolidation** in the form of -for instance- oral or written presentations, role plays, crosswords, etc, **transferring and applying the results** by reading excerpts of renowned passages from literature (e.g. Isabel Allende's *My Invented Country*, when dealing with regional aspects of Chile), by listening to popular songs (such as Bruce Springsteen's

The Ghost of Tom Joad on *migration*), or by follow-up activities (see activity A 16) like written assignments or projects, etc.

As this listing indicates, many activities require the social structure of open class learning. In other words **student-centred methods** are the most appropriate learning styles for bilingual education. This is, at the same time, one principal criterion of bilingual teaching. Some others are **authentic interaction in the target language**, authentic **material on contents with relevance to pupils' personal environment**, purposeful **motivating activities**, appropriate **visual/auditory/kinaesthetic support**, and a **multi-perspective approach**. A discussion of these criteria could be the topic of another article in *GW-UNTERRICHT*.

All this is based on the so called *Bilingual Triangle* (cf. Streeter, 2000, p. 15), which suggests that bilingual learning and teaching can be seen as a three dimensional construct and rests upon the following three pillars:

- the knowledge of the phenomena and facts of one's own culture and society
- the awareness of phenomena and facts of the **culture and society of the target language**
- the reference to global facts and phenomena, in particular understanding of phenomena and societies of the target regions (cultural interdependence)

The following sequence of lessons was only partly developed in Carlisle, several elements and activities had already been practically applied and tried out by the authors within the framework of their bilingual teaching at the respective schools in Innsbruck. So you may rest assured that the lesson concepts work quite well, even in classes with some thirty or more students.

Regarding the linguistic preparation, a close co-operation with the English teacher is to be strongly recommended as it helps save time and should become a common synergy concept in bilingual teaching anyway.

These lesson plans could be seen as our contribution to the ongoing discussion on bilingual education and should give you a taste of how we think that bilingual teaching could work.

Materials offered are designed as originals for transparencies and copies respectively and you may feel free to copy them and try them out in your bilingual classes.

This time we have put the emphasis on cognitive aspects. It is presumably the most straightforward way of bilingual teaching at an early and intermediate stage. It would, however, be an equally interesting task to work out another set of lesson plans concentrating on affective aspects to a larger extent (as we tried to indicate with our follow-up activities), which could be published in another issue of *GW-UNTERRICHT*.

UNITS	LESSONS	ACTIVITIES	RESOURCES
1	1 Introduction & Map skills	A1: Fantasy story	Cassette recorder, outline
A sense of place	2 Showing a video	A2: Map skills A3: Silent viewing A4: Viewing with sound A5: Gap filling	maps, atlas Video set Transcript of video Notebook
2	3 Main features	A6: Text analysis	Text
Characteristics of rainforests	The layers of the forest	A7: Visual input/OHT A8: Labelling a diagram	Notebook OHT/Copies
3	4 & 5 Sustainable land use	A9: Working with texts	Text: Waugh, p. 100-101
Land use	6 Exploiting the ecosystem	(SQ3R technique) A10: Exploiting text (co-	Text: Waugh, p. 102-103
	Fragility of the ecosystem	operative learning)	Waugh/Bushell, p. 111
		A11: Quiz A12: Reordering sentences	Notebook
4	7 The biome of the tropical	A13: Partner crossword	Conjes
Consolidation	rainforest Introduction to and prepara- tion of the follow-up activity	A14: Student-teacher dis- cussion	Copies
Follow-up activity/homework: A 15 – Writing assignment			

Organisation of the lessons

Detailed planning

UNIT 1: A sense of place

A1 – Fantasy story: listening to a story, students are taken onto a (fantasy) journey to some far away region in our world (cf. material 1)

A2 - Map skills: with the help of an atlas, students are asked to find, then colour in areas in the world covered by rain forests. Pair work (cf. material 2)

A3 – Silent viewing: students watch a short video showing several features of the vegetation in rainforests and write down what comes to their minds while viewing; afterwards collected on board;

A4 – Second viewing – this time with sound

A5 – Gap filling/using the transcript (cf. material 3)

UNIT 2: Characteristics of rainforests

A6 – students get a text describing the main features of the forest; after reading it they are asked to answer questions and write answers in notebooks (pair work) (**cf. material 4**)

A7 – visual input: teacher presents OHT that shows different layers of vegetation in rainforests

A8 – students get a copy of a diagram showing rain forest vegetation and have to label the different parts/ layers (**cf. material 5**)

UNIT 3: Land use

A9 - text on "Farming in Brazil: Shifting Cultivation and Subsistence Farming"

exploit text using SQ3R - technique (cf. material 6)

A10 – text on "Plantations"

exploit text using co-operative learning as reading technique (cf. material 7)

A11 – Quiz

A12 - text on "The effects of human activities"

reordering sentences and answering questions (cf. material 8)

UNIT 4: Consolidation

A13 – partner crossword (cf. material 9)

A14 - teacher-students discussion on what they want to do as the follow-up activity

Follow-up activity/homework

A 15 – writing assignment (in groups of four to five): put together a booklet containing stories and interviews which should help to illustrate what life is like in this ecosystem – as seen from various perspectives (additional information, pictures ... from internet, books)

Suggestions:

- interview with owner/manager of a plantation
- interview with Raimondo Jose (subsistence farmer: Waugh, 1998, p. 101)
- you have come to live with a people of Amerindians: write about your experiences
- describe a day in your life as a worker on a sugar cane plantation
- a conservationist speaks to a group of students: summarise the reasons why rainforest ecosystems are under threat and suggest ways in which people in industrialized countries can help preserve remaining rainforest

Learning outcomes: Following one common concept in German speaking countries, the categories below can be distinguished (Köck, 1986, p. 179):

Cognitive Objectives (*comprehending – applying – analysing – synthesising – judging*) Students will know

- about the topography (location) of the tropical rainforest
- what the characteristics of the tropical rainforest are
- how this eco-system works
- what the differences between subsistence farming, shifting cultivation and plantations are

- about global climatic and economic interdependence of regions
- a broader range of geographic terms

Affective Objectives (attitudes – sensitivity – feelings) Students should

- be aware of the fragility of this eco-system
- be awake to the fact that there is an interdependence between the tropical rainforest and other regions worldwide
- be encouraged to take on personal responsibility when it comes to finding ways as to what they themselves can do to protect this fragile eco-system
- think of possibilities of getting other people to take the rainforest-related problems seriously

Instrumental objectives (working techniques – methods – operations)

- creating a map
- applying content-specific reading and viewing techniques
- producing graphs
- reading diagrams

Material 1: Fantasy journey (A1)

(Pupils sit quite relaxed and close their eyes. They should try to give their full attention to the story that is being told by the teacher. By doing so, the students will be virtually taking part in this trip to a foreign country. Suitable music should help create a pleasant atmosphere. Afterwards students are asked whether they know the respective country.)

ONCE UPON A TIME, WHEN I TOOK A JOURNEY ...

When I looked out of the window of the aeroplane, I could see a dark blue sky and a thick layer of dense clouds, like a white carpet, underneath me. We, my wife and I, had already been travelling for hours and would reach our destination in a short while.

The plane landed smoothly on the ground and after a few minutes' time we left the Boeing over the metal ladder and put our feet on this part of the world for the first time. And I have to confess – what we experienced was some sort of shock, both in climatic and cultural respects.

It was July, the climate's main features at that season were high temperatures of some 35 degrees C at noon and some 30 degrees at mid-night and a very moist air, which resulted in drizzle several times per day.

Therefore we began to sweat very intensely, even when we weren't physically active. Within a few seconds the clothes we were wearing got entirely wet. We would have liked to drink a few cans of cold coke, but we had been informed before starting this trip that we should by all means drink only hot beverages to quench our thirst.

As we followed this advice, we felt a great relief by drinking hot tea, at least for the moment.

When we had managed to pass the customs check and to get our luggage, we left the huge arrival lounge of the airport for a taxi ride to the hotel we had booked in advance. When we went through the streets, I could hardly believe what I saw:

The streets were overcrowded. Not only that many people walked on them, but also entire families lay on the pavement as if they were living in the streets with only a sort of plastic shelter as protection against the rain, which very often materialized in this season of the year. Sometimes cattle crossed the streets, and the car drivers stopped not to yell at the animals, but to wait until they gave way to the drivers ...

These were some of our first impressions we got of this country. During the following five weeks we could enjoy the enormous richness and beauty of the landscape including high mountains, rainforests, exotic plants, and a broad range of wildlife (e.g. tigers, antelopes, water buffaloes ...), which we had only partly seen in television documentaries so far. At the end

of our journey we realized that we had been to one of the most exciting and beautiful countries on earth.

At the same time we had seen a region with a lot of very poor, often homeless and evidently sick people. We tried to find out about possibilities of helping these families ...

BUT THIS IS ANOTHER STORY TO BE TOLD ANOTHER TIME ... Source: Luis Strasser, written for a geography lesson at Kimberley School, December 2000



Material 2: Outline map of the world (A2)

Source: http://geography.about.com/cs/maps/

Task: With the help of the Philip's Modern School Atlas, pages 56-57 (purple section), colour in and label the global areas covered by rainforest using the topographical expressions from the box. Draw arrows from the labels to the respective areas.

Coastal Area of Upper GuineaParts of South-east AsiaCongo BasinMalayan ArchipelagoCentral America/Eastern sideMalabar CoastAmazon BasinEastern Madagascar

Material 3: Transcript of the video Tropical Rainforest – The Habitat, 4.03 min (A3-5)

Tropical rainforests belong to the earth's largest forest regions. They are located along the equator in South America, Africa and Indonesia. Huge river systems allow us to penetrate these forests. It's hot and humid here. The variety of vegetation within the tropical rainforest is hard to see since the numerous species are widely spread fighting for light and nutrients. In the Amazon alone there are more than three thousand different species of trees. Each tree itself can be home to hundreds of other types of plants and animals. The number of insect types is overwhelming. A single hectare can hold 12 000 different types of beetles. Larger animals are rarely seen since they need larger habitats. There is a constant rapid growth cycle in the rainforest. Because of the hot and humid conditions decay is one hundred times faster than in Central European forests. Stretching out in all directions along the forest floor: giant buttress roots. In tropical rainforests several layers can be distinguished: Plants and shrubs dominate the ground, bushes and smaller trees follow. 40 m up a canopy of leaves forms the rainforest's close roof. Some emergent trees rise high above it. There are no seasons in the tropical rainforest as there are in European forests. It's always green. In the tropics, the climate is diurnal. The days always take the same course: In the morning it is usually clear, around midday clouds appear and thicken, then in the afternoon the clouds release their moisture in the heavy rains, which give the forest its name.

Gap filling text

Tropical rainforests belong to the earth's largest They are located along the these forests. It's here. The variety of vegetation within the tropical rainforest is hard to see since the numerous are widely spread fighting In the Amazon alone there are more than different species of trees. Each tree itself can be home to hundreds of other types of plants and animals. The number of insect types is overwhelming. A single hectare can hold 12,000 different types of beetles. Larger animals are rarely seen since they need larger habitats. There is a constant rapid in the rainforest. Because of the hot and humid conditions is one hundred times faster than in Central European forests. Stretching out in all directions along the forest floor roots. In tropical rainforests several can be distinguished: dominate the ground, bushes and follow. 40 m up a of leaves forms the rainforest's close roof. Some rise high above it. There are in the tropical rainforest as there are in European forests. It's always green. In the tropics, the climate is The days always take the same course: In the morning it is usually, around midday appear and thicken, then in the afternoon the clouds release their in the heavy rains, which give the forest its name.

Material 4: Features of the rainforest (A6)

Tropical rainforests grow in places that have an equatorial climate. The rainforest is the most luxuriant vegetation system in the world although its trees have had to adapt to the constant high temperatures, the heavy rainfall and the continuous growing season. Over one-third of the world's trees grow here.

- Although the trees are deciduous, the rainforest has an evergreen appearance as the continuous growing season allows trees to shed their leaves at any time.
- Vegetation grows in distinct layers. The lowest layer consists of shrubs (bottom level). Above this is the under canopy, the main canopy and, rising above, the emergents, which can grow to 50 metres in height. Trees have to grow rapidly in order to reach the life-giving sunlight.
- Tree trunks are straight and, in their lower parts, branchless in their efforts to grow tall.
- Large buttress roots stand above the ground to give support to the trees.
- Lianas, which are vine-like plants, use the large trees as a support in their efforts to reach the canopy and sunlight.
- As only about 1 per cent of the incoming sunlight reaches the forest floor, there is little undergrowth. Shrubs and other plants which grow here have had to adapt to the lack of light.
- During the wetter months, large areas of land near to the main rivers are flooded.
- Leaves have drip-tips to shed the heavy rainfall.
- Fallen leaves soon decay in the hot, wet climate.
- There are over 1 000 different species of tree, including such hardwoods as mahogany [authors' note: according to other sources, mahogany is a typical tree of the tropical continental climate], rosewood and greenheart.
- There is dense undergrowth near rivers and in forest clearings where sunlight is able to penetrate the canopy.

Despite its luxuriant appearance, the rainforest is a fragile environment whose existence relies upon the rapid unbroken recycling of nutrients. Once the forest is cleared, then the cycle is broken. Humus is not replaced and the underlying soils soon become infertile and eroded. Not only is the rainforest unable to re-establish itself, but the land becomes too poor to be used for farming.

(Waugh, 1998, p. 218) **Questions**

- 1 What is the equatorial climate like?
- 2 What is a luxuriant vegetation system?
- 3 Which major category do the trees belong to?
- 4 What is the function of the buttress roots?
- 5 Why is there little undergrowth in the rainforest?
- 6 What happens to the fallen leaves?
- 7 Give examples of precious tropical woods.
- 8 Why is it so dark at the bottom of the forest?
- 9 Describe the fragility of the ecosystem.
- 10 Taking into account all the characteristics of the rainforest, why is it nevertheless the most luxuriant vegetation system on earth?

Material 5: OHP/Copies – Layers of the Tropical rainforest (A7-8) Source: Waugh, 1998, p. 218



TASK: Label the diagram by using the words from the box and annotate it by writing statements about each feature. Then try to draw an outline diagram showing the main features of the tropical rainforest.

emergent main canopy under canopy buttress roots lianas shrub layer

Material 6: Excerpt of Waugh's text on *Farming in Brazil* & description of the SQ3R-technique (A9)

Shifting cultivation

Shifting cultivation is a form of <u>subsistence</u> farming, and is a traditional form of agriculture found in many areas of the tropical rainforest. It tends now to be found in only the most inaccessible and least '<u>exploited</u>' areas. The Amerindians use stone axes and machetes to fell about one hectare of forest. Any <u>undergrowth</u> has to be cleared immediately to prevent it growing rapidly in the hot, wet climate. After a time the felled trees, having been given time to dry, are burned. This burning helps to provide nutrients for the soil as the ash is spread over the ground as a fertiliser. This is also known as 'slash and burn'... (Waugh, 1998, p. 100 - 101)

(*Pupils are asked to read the entire text individually. The underlined words in the excerpt could be students' suggestions that cause linguistic and comprehension problems.*)

Reading technique SQ3R (SURVEY QUESTIONS 3 READING) Source: Simpson, 2000

1 SURVEY

Structure/organisation of the text:

Reading the headings, subheadings and the first sentences of each paragraph and copying into the note book

2 LINGUA POOL

<u>Skim-reading</u>: get an overview of the text

- > Underlining three words (not known to the students and regarded to be important for comprehension)
- > Lingua Pool: Underlined words are collected in a pool (on the blackboard) and explained by the teacher and other students respectively (it would be helpful to count the lines beforehand and put the numbers beside the respective lines). The teacher underlines those words from the pool that the students need to know and to copy into their notebooks.



Scanning: find particular piece of information

The teacher confronts the pupils with some 10 questions (e.g. What is subsistence farming? etc). The students work individually or in groups.

Exact reading: find out details and special information

The teacher suggests passages like this which she/he considers to be particularly important (like the one below): Unfortunately the balance between plants and soil is very delicate. Once the canopy of trees has been removed, the heavy rains associated with afternoon storms can hit the bare soil. This not only causes soil erosion, but it leaches any minerals in the soil downwards. As the source of humus - the trees - has been removed and as there is a lack of fertiliser and animal manure, the soil rapidly loses its fertility. Within four or five years yields decline, and the tribe will 'shift' to another part of the forest to begin the cycle all over again. (Waugh, 1998, p. 100-101)

Task: Complete the cycle by using the information from the text. Arrange the visual depiction in form of a flow chart.



Material 7: Waugh's text on *Plantations* and explaining the reading technique (A10) Quiz (A11)

Commercial farming – plantations

Text A: **Plantations** were developed in tropical and subtropical parts of the world in the eighteenth and nineteenth centuries [authors' note: sugar cane plantations for example date back to the fourteenth century] mainly by European and North American merchants. The natural forest was cleared and a single crop (usually a bush or tree) was planted in rows (this is called monoculture). This so-called 'cash crop' was grown for export, and was not used or consumed locally. Plantations needed a high capital investment to clear, drain and irrigate the land, to build estate roads, schools and hospitals (to develop good infrastructure), and to bridge the several years before the first crop could be harvested.

Text B: (On plantations) Much manual labour was also needed. The managers were usually European while labourers were either recruited locally (e.g. Indians in Brazil) or brought in from other countries (e.g. black people from Africa in the USA). Because they were willing to accept lower wages [authors' note: or in the case of slaves no wages at all!!], this workforce secured a greater profit for the recruiting companies. The almost continuous growing season meant that the crop could be harvested virtually throughout the year. Today most plantations are still owned by transnational companies, with their headquarters in a more economically developed country.

Text C: Coffee plantations in Brazil (fazendas)

Ideal conditions include:

- gently rolling ground or valley sides at altitudes up to 1700 metres. Valleys which may become waterlogged or act as frost hollows are unfavourable (frost is coffee's worst enemy).
- a deep red soil called terra rossa.

The major producing states are Parana, Sao Paulo and Minas Gerais. The tree begins to yield after three years, reaches a maximum between 10 and 15 years and dies after 40. When harvested, the red cherries, as the ripe coffee is called, are stripped from the branches and cut into halves to expose two green 'beans' which are left out in the sun in huge drying yards. They are raked frequently, and large tarpaulins (a sort of sheet of heavy waterproof material) are kept nearby for protection against any rain. (Waugh, 1998, p. 102, slightly changed)

Reading technique: Co-operative learning

Class is divided into three groups (named A-B-C), each gets different part of text (one copy for each of the group). Students are to read the text helping each other out with words they are not familiar with.

Pupils get together in groups of three (one A, one B, one C), tell each other what their text is about.

Quiz

Teacher asks questions about the text passages above. Each group determines a writer who presents the results at the end of the quiz. The group which gets most of the answers correct is the winning team. Students jot down the answers in their notebooks. (A13)

Questions:

- 1 Where do the labourers usually come from?
- 2 What are the two main requirements for growing coffee?
- 3 What is meant by the term monoculture?
- 4 Why are plantations a capital-intensive type of farming?
- 5 Who originally developed plantations?
- 6 Describe the four main steps when harvesting coffee.
- 7 Where are plantations located?
- 8 Who are very often the owners of plantations today?
- 9 What are crops called which are grown for export?

Material 8: Text on human activities by Waugh/Bushell (A12)

This text about the effects of human activities and their impact on the ecosystem is in jumbled order – try to put sentences/lines in correct order; after correct order has been established (OHP), copy the text and the answers to the questions below in your notebooks.

10 reach the forest floor. More recently, increased human farming, known as shifting cultivation, allowed the forest to by human activity. Where it had, it was usually by groups of wildlife will be altered. Plants which cannot adapt quickly to activity has led to vast areas of the rainforest being totally their small community. Often in places like the Amazon re-establish itself. Re-established areas often have a thicker

- 1 Until recently few parts of the rainforest had been affected
- 5 forest, the land rapidly became infertile and the people destroyed, a process known as deforestation. As undergrowth as the initial clearance allowed more sunlight to
- 15 the changed environment may die out. large trees are destroyed, the habitat for other plants and had to move and make a new clearing. This method of people clearing just enough land on which to grow crops for

(Waugh/Bushell, 2002, p. 111)

Questions:

1) Why did early human activity have little effect upon the tropical rainforest vegetation?

2) Why are present day human actions having a far greater effect?

Material 9: Partner Crossword (A13)

The Biome of the Tropical Rainforest

Work in pairs. The crosswords are only half filled in. Take it in turns to ask what the missing words are (e.g. partner A: "What is three across?" or Partner B: "What is one down?") and answer by trying to explain each word.

You are A





Here are the words you will have to explain to Partner A: MAHOGANY HABITAT PLANTATION EMERGENT LEACHING SUBSISTENCE

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