

A Pattern Language for Teaching in a Foreign Language - Part 1

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Abstract. Mastering foreign languages increasingly becomes a required skill in many working fields. This often is incorporated in curricula by integrating content and language learning. This paper describes some difficulties of this integration in order to raise awareness about them and offers some patterns which support teachers who begin with integrating content and language. The patterns are: INPUT SELECTION, LUCKY LANGUAGE CLOVER, METATALK, and LANGUAGE ROLE MODEL.

1 Introduction

The set of patterns introduced in this paper is aimed at lecturers who occasionally want to teach a class in a foreign language instead of their mother tongue. The patterns are meant to raise awareness of the difficulties and problems with integrating content and language learning and to support these instructors in preparing for these classes in such a way that a foreign language will not be a barrier to students' understanding of the course content. This paper is part of a larger project for developing a pattern language for teaching in a foreign language. To date this pattern language consists of an introduction to the topic [10], this paper, and a second part which covers enhancing foreign language proficiency through integrated learning [9].

2 Foreign language teaching patterns

Subject teachers in higher technical education who occasionally need to switch to a foreign language as a teaching medium are often not aware of any language barriers. Most teachers are proficient in a single domain, either the foreign language or the content of a course. Without specific language pedagogy training, it is hard to be pedagogically aware of both domains — language and content. The students attending their classes often have different educational backgrounds and their proficiency in foreign languages will vary greatly. When the course is finished, a crucial question for lecturers is: should students fail their tests, is this due to lack of understanding of the subject content or lack of understanding of the second language used? The main focus of this work is therefore to help instructors teach their course in a foreign language without the risk of students falling behind due to low language proficiency. Yet, as attending courses in a foreign language also is an opportunity to further improve students' mastery of this language, the second focus of this work is to identify ways of integrating the use of this language in such a way that language fluency increases while keeping the focus on the course content. A useful format for providing practical specific instructions for teachers is the so-called 'pattern' format, which originates from the architectural domain. Patterns are tools for documenting solutions and problems in such a way that users can fairly easily apply them to similar problems in their own context. The patterns in this paper aim to create awareness and help teachers design the right course for

each audience on two levels: content as well as language without needing any formal language pedagogy training. It is the foreign language teaching pattern format that is of practical use to technical subject teachers rather than their content (which is based on existing literature and personal experience).

2.1 Methods for integrating language and content

Teaching a course in a foreign language can serve a number of goals. Besides structural bilingual education, teachers in higher education may be asked to occasionally teach in a foreign language. Due to internationalization programs, teachers will need to teach in a second language understood by students from various countries — often, but not always, in English. In competence based educational systems, some subjects are taught in foreign languages to promote the use and acquisition of a foreign language in a relevant context. Such courses serve a double goal: conveying content and improving foreign language proficiency. This is a form of integrated learning, requiring course integration of language and content.

This integrative approach is supported by the communicative language teaching approach on foreign language pedagogy, in which the emphasis is put on learning foreign languages through meaningful communication and meaningful tasks. The role of the teacher is to provide class room activities for such communication processes and to monitor students' progress, promoting peer assessment and self reflection rather than correcting mistakes. Teaching materials often include real-life documents and audiovisual means used by native speakers.

Various methods are available for integrating language and content in courses that provide useful support for teachers, referred to as Content Based Instruction (CBI) and Content and Language Integrated Learning (CLIL). However, the use of these methods requires a fairly large amount of teacher training in language pedagogy. Their target group is not a subject-specific teacher who *occasionally* teaches a class in a foreign language.

2.2 Preparing for foreign language instruction

When teachers in higher technical education are asked to teach a course in a foreign language, they often do not realize it involves more than just switching from one language to another. Their usual preparation for classes, however, must be adapted for teaching in a foreign language, to make sure students' class performance will not be influenced by lack of language development. So the teacher's preparation (his or her formal "talk", as well as jokes and class room instructions), the instruction activities, the materials, and the assessment must all be adapted [2]. Furthermore, students' foreign language level must be assessed before the course' start, to adjust the course to the appropriate foreign language level. The language proficiency in the foreign language of both teachers and students may vary greatly. Teaching a course without taking these differences into account could have a negative impact on students' understanding of the course content and be counter-productive. For occasional use, teachers need hands-on instructions, fit for their teaching context that can be applied without formal language pedagogy training. Such instructions can be provided by so-called patterns.

3 The Patterns

The patterns use a version of the Alexandrian pattern format, as described in [1]. The first part of each pattern is a short description of the context, followed by three diamonds. In the second part, the problem (in bold) and the forces are described, followed by another three diamonds. The third part offers the solution (again in bold), the (empirical) background, consequences of the pattern application — which are part of the resulting context — and

a discussion of possible implementations. In the final part of each pattern, shown in *italics*, we present some known applications.

These patterns were mainly mined in existing literature and experience reports. Therefore they often lack known uses and do not follow the *rule of three*. However, we intend to include additional known uses after these patterns have been applied and adjusted by a wider range of users, eventually publishing them as a comprehensive pattern language. They may be applicable outside the field of higher technical education; yet our current experience, selection and use of these patterns has been restricted to this field.

In the next sections we present the following patterns: INPUT SELECTION, LUCKY LANGUAGE CLOVER, METATALK, and LANGUAGE ROLE MODEL. After that the short versions of the other patterns — the patlets — are presented, which are published in [10, 9].

INPUT SELECTION

Most courses make use of material — literature, websites, tutorials etc. — which covers the content of the course. You have identified both the CONTENT-OBLIGATORY LANGUAGE and most parts of the CONTENT-COMPATIBLE LANGUAGE and you know the LANGUAGE STATUS QUO of the students' language levels. You now want to start to look for the material.



Available material often differs in both language levels and comprehensibility, and can be too difficult or too easy for students. Both cases will lead to problems during the course.

Complexity. Long sentences and words, academic words, complex concepts and a dense writing style requiring analysis, makes texts hard to understand.

Text cues. Cues such as headings, lists, signal words, and visuals help students understand course texts.

Different Writing Styles. Each author has a specific writing style, and as a result, some authors' texts are much easier to read than others. Getting used to different writing styles takes getting used to.

Different book audience. Most of the textbooks available which cover the content of a course and are written in the foreign language are made for people *using* this language and not for people *learning* this language. These books therefore do not include language didactics, which might be necessary or helpful if this book is used as input.



Therefore: select comprehensible course input that explains the subject matter in a way that matches students' language levels and interests.

Krashen looks upon comprehensible input as the primary motivator of language development, immersing students in meaningful input, without any explicit teaching of grammar [11]. This could be realized by e.g. incorporating newspaper or blog articles about the subject being taught.

According to Carrell, teachers should focus on the readers' background instead of on the text [3]. Students need sufficient knowledge of text content as well as text structure and grammar. They may fail to understand texts due to lack of text cues or schemata, or culturally specific schemata. She suggests narrow reading, i.e. limiting the number of authors to one. She also advocates students previewing texts, which may include presenting difficult terms and expressions used in these texts [3].

According to Dale et al., as a rule of thumb, no more than 5 of the words on a page should be unfamiliar [5]. This is not easy to realize and should be seen more as a recommendation than as a fixed rule. However, readability instruments can be found online, helping instructors determine the level of difficulty of texts¹. Another way of using this rule is to have target students read a text and mark all unfamiliar words.

A consequence of applying this pattern is a longer preparation time, as the material has to be checked on appropriateness for both content and language.

¹ http://www.online-utility.org/english/readability_test_and_improve.jsp

Christian Köppe uses for a course on Patterns & Frameworks different kinds of literature. As the book by Gamma et al. [6] is a quite difficult reading for undergraduate students, the material was complemented with links to websites which describe the design patterns in a shorter and more comprehensible way. But in the later phase of the course the students had to use the Design Patterns book, but were better prepared for it as they understood the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE.

Christian Decker from the HAW University of Applied Sciences in Hamburg provides via his twitter feed links to English articles containing interesting news related to a course's topic. These articles are supporting the course material and complementary. Students are encouraged to read them, and because they often contain interesting news, students are for a large part motivated to read this extra material and therefore are exposed to a wider range of content and language input.

LUCKY LANGUAGE CLOVER

Also known as: The Four Skills

You are thinking about the tasks you want to include in the course design and want to ensure that they also cover the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE aspects appropriately.



Exposing the students to language comprehension only — reading and listening — is not sufficient for creating a lasting effect in learning the foreign language. They might be able to understand content input, but unable to produce content output in the foreign language.

Usage motivation. Even if a foreign language as medium of content instruction is used, some students will stick to their mother tongue and therefore will not improve their foreign language production skills. This is especially the case if they miss intrinsic motivation or if some students in the class are giving answers much more often than others.

Potential Hubris. Many students think that they master a foreign language quite well because they can read and understand the foreign language. These students often fail when it comes to speaking and writing.



Therefore: Promote reading and listening, and let students write and speak in the foreign language as well. Include all four types of linguistic competences in your course design.

Learning a language requires mastery of all types of linguistic competences: reading, listening, writing, and speaking — the four leaves of the LUCKY LANGUAGE CLOVER. This is referred to as exposure to input or *comprehension* (i.e., reading and writing) and so-called pushed output or *production* (i.e., writing and speaking). But language input does not always lead to language intake. It is by actively using the language input in stimulating assignments that help students grasp its actual meaning, the input is actually stored in students' long term memory. So just giving lectures in the foreign language and requiring the students to read literature in the foreign language is not sufficient. Courses must allow for students to write and speak in the foreign language as well, as this promotes learning content and language at the same time [7]. According to Mehisto et al., a special focus should be put on speaking [14]. Producing output requires students to use their passive knowledge of the language to make themselves understood. Thus, their mastery of this language is enhanced [18].

Exercises, assignments, and didactics should therefore take all four leaves of the LUCKY LANGUAGE CLOVER into account. This could be achieved through the use of a variety of pedagogical patterns, e.g. PREFER WRITING, PEER FEEDBACK [16], and many others. Swain suggests a collaborative form of writing, as this implies the need for talking about the content [17] and therefore also promotes the use of METATALK.

Implementing LUCKY LANGUAGE CLOVER requires a careful selection of exercises, which are also aligned with the course material and should therefore be taken into account during the INPUT SELECTION. Coonan showed that GROUPS WORK [16] leads to a much higher oral output than a classical teacher-led lesson [4]. If LUCKY LANGUAGE CLOVER will be applied in teacher-led lessons, then an extended focus should be put on the questions asked

during the lesson, e.g. by applying CAREFULLY CRAFTED QUESTIONS [12], which obliges the students to elaborate their responses more richly [4].

Another important aspect is that not all students make use of the opportunity to speak, most often we see a small group of students which answers most of the questions. The teacher has to ensure that the oral participation is spread over all students equally if possible in order to increase the language learning effect for the whole group. The patterns GROUPS WORK in combination with SHOTGUN SEMINAR [16] can help hereby. This also requires an atmosphere where students *dare to speak*, another important aspect the teacher has to take care of. It helps to explain in the beginning of a course that the most important aspect is to use the language and to make oneself understood by the others, not a correct usage of the language. This will lower the participation barrier.

But even in groups work do not all students automatically make use of the opportunity to speak [4]. They are pedagogical patterns which help to increase the participation of all students, like THINK PAIR SHARE [12] or STUDENT DESIGN SPRINT [16].

Another question which needs to be addressed when applying this pattern is whether the use of the native language is permitted at all and if so, under which circumstances. Mehisto et al. suggest that especially when the students are exposed for the first time to content being taught in a foreign language they also should be allowed to use their native language when necessary [14]. This should only be seen as bridging technique and the students should always be encouraged to use the foreign language as much as possible. It has to be clear that using the language at all is more important than using it 100% correctly.

The students in a course on Model Driven Development at the Hogeschool Utrecht had to work on a longer lasting assignment which included a Model-to-Text transformation implemented in a tool new to the students. After the first week all student groups (mostly 2 students) had to prepare and give a presentation about one of the problems they encountered during the first week of the assignment. This included therefore writing (the content of the presentation) and speaking (discussing the content and giving the presentation).

An earlier version of another course at the Hogeschool Utrecht on Patterns & Frameworks which was given in English was based on classical lectures, exposing the students to reading and listening only. In a newer version of this course the LUCKY LANGUAGE CLOVER was implemented by having the students regularly give presentations on different topics, e.g. as part of the implementation of DISCOVER YOUR OWN PATTERN [8]. They were also given an assignment which included answering a few questions about two articles in English. A survey taken at the end of the course showed that their ability and self-consciousness regarding speaking and writing improved remarkably.

METATALK

Students understand the content and are using the foreign language, making use of all four leaves of the LUCKY LANGUAGE CLOVER, but the language competences of the students still vary.



Students are not aware of their foreign language shortcomings and keep using incorrect language constructs and terms.

Hands-on activities. It seems common sense that hands-on activities are of benefit for students when learning new information and language expressions [13]. But this is rather based on general pedagogical principles. But the pure fact of hands-on activity does not necessarily stimulate language learning.

No self-reflection. Students often just apply the foreign language, but do usually not reflect on their language use.

Insufficient feedback. As teacher there is not enough time to correct all occurring incorrect language uses of students, either because the number of students is too large or the teacher is not present when students use the language. The students are therefore missing sufficient feedback needed for correction and improvement of their language use.



Therefore: Stimulate foreign language learning by including exercises or other appropriate course parts which require a collaborative reflection on language usage.

Westhoff [18] explains that language learners often do not apply grammatical rules they have learned in grammar classes, even though they understand them. It appears that in language learning, people in fact apply grammar rules they deduced from input they were exposed to. They have all kinds of assumptions and hidden knowledge in the back of their minds, which become clear the moment they try to express themselves in a foreign language. So even students who passed their grammar tests and did their vocabulary exercises, will not immediately use this knowledge in actual communication. However, when talking or composing a joint text, they will become aware of their lack of knowledge, by themselves or as pointed out by others. When given frequent corrective feedback, either by peers or by teachers, students' accuracy, correct use of expressions and grammar rules will improve [18].

The usage of language to indicate an awareness about their own, or their interlocutor's, use of language is called *Metatalk* [17]. Metatalk helps in acquiring CONTENT-COMPATIBLE LANGUAGE, as students discuss different ways of saying something and therefore broaden their vocabulary and means of expression. This helps students in making use of foreign language learning strategies.

It is important that metatalk is encouraged in contexts in which learners are engaged in making meaning. One way of implementing this pattern could be through a dictogloss task [17], where the teacher reads a short article — or some other text from the course material, for example the description of a pattern — to the students, let them write down familiar words and phrases and afterwards have them reconstruct the article based on their shared resources. These can then be compared with the original text. Another possibility is a jigsaw story construction task: give some pictures in unsorted order, let students sort them, and write the story down.

If one student in the group is really good, chances are that all the others are following this student, omitting discussions on language usage. So you have to be aware of this when forming groups of students which are to work together. Encourage all members to participate in applying METATALK.

This pattern makes use of LUCKY LANGUAGE CLOVER, as discussions are mostly done orally and the results are manifested in written form. These written results could also be used for the LANGUAGE MONITOR.

METATALK can also be stimulated in a PEER FEEDBACK [16] situation, as also suggested by De Graaf et al. [7]. The artifacts feedback is given on should be made using the foreign language.

In a course on Model Driven Development, Christian Köppe let students document a problem that students experienced during the implementation of their assignments. These assignments were done in pairs. The students had to prepare a joint presentation of the problem. The requirements for this presentation were an accurate description in proper English of the whole problem including context and other relevant information, as well as possible solutions they had already tried. The preparation also required the students to not only discuss what their problem actually was, but also how to describe it in correct English. This process promoted METATALK in combination with the LUCKY LANGUAGE CLOVER and led to good presentations.

LANGUAGE ROLE MODEL

You are asked to give a course in a foreign language.



Learning is also imitating, but imitating incorrect language usage of a teacher will affect the students' learning of the language negatively.

Mother Tongue. Not all teachers who give a course in a foreign language are native speakers of this language. Their own language skills might be limited.

Qualification. Teaching content in a foreign language requires the ability of doing so. Evenly important is the ability to *select* and *apply* the appropriate instructional options.

Linguistic Confidence. The combination of teaching a specific content while using a foreign language correctly can be overwhelming, as it requires a greater repertoire of instructional options as fallback if observations indicate that the used option does not work for the students [15].

Facilitation. The teacher should have the facilities needed for teaching content in a foreign language. These facilities include material, time for preparation (including INPUT SELECTION and general course design), and, if necessary, additionally available language courses.

Curriculum objectives. If the language abilities of a teacher are sufficient for giving a specific course in a foreign language depends on the defined curriculum objectives regarding the foreign language.

Content-Focused. Swain observed that in cases when considerable teaching of content occurred, no or less attention was paid to the accuracy of the target language use [17].



Therefore: make careful language preparations to ensure that you can instruct students using a foreign language in a correct way for all related language parts. Use the language during the course always as correct as possible.

As teacher you should be a LANGUAGE ROLE MODEL for the students and use the CONTENT-OBLIGATORY LANGUAGE, the CONTENT-COMPATIBLE LANGUAGE and the general language as correct as possible.

The process of implementing this pattern consists of three steps: (1) assess your level in the foreign language (free online resources are available, such as the Dialang test²) and compare it with the level of the curriculum objectives, (2) carefully prepare your classes to ensure that you as teacher are able to give the course using the foreign language in an appropriate way and (3) use your language consciously during the course while taking the different language aspects into account.

Proper language assessment will help you decide whether you are the right person to teach in a foreign language. Your level in the foreign language should clearly exceed the required level as defined in the language objectives of the curriculum.

People just acquiring specific skills are often unsure if they also can apply them sufficiently, even if the qualification to do so is sufficient. If this is the case it might help to

² see <http://www.lancs.ac.uk/researchenterprise/dialang/about>, last visited on 13 june 2012

rehearse parts of your classes in front of colleagues and ask for feedback. You could also videotape your classes and review them, to detect points of improvement.

Christian Köppe used this pattern for a course on Patterns & Frameworks. As he'd given the course in English before it was ensured that his language skills were appropriate. During the course he made use of CONTENT-OBLIGATORY LANGUAGE and CONTENT-COMPATIBLE LANGUAGE in general and also at specific COMMENTED ACTIONS.

Patlets of the other patterns

LANGUAGE STATUS QUO

You assume that students are at a sufficient level of general foreign language abilities, i.e. they have knowledge of basic common vocabulary and grammar and can use the language. You now want to start teaching a course in this foreign language, with a foreign language as a medium of instruction so as to improve the use of this language in a professional setting.



Without knowing the actual level of foreign language abilities of the students it is likely that the language parts of the course design are either too difficult for the students which hinders them in grasping the content or are too simple for them which means that their language understanding probably does not improve.



Therefore: Get to know the language level of all students at the start of a course to obtain a realistic overview for your specific professional and educational goals. Use appropriate tests that include both general language capabilities and context specific abilities, such as class room language, formal academic language, and core professional activities in your field. This is the basis for an adequate language integration in the course design.

CONTENT-OBLIGATORY LANGUAGE

The content of a course is mostly focused on one domain, which often has specific terminology used in this domain. If students have a low general language proficiency, the chances of them failing to understand the real meaning of this terminology increases [15].



Some parts of the foreign language are so closely related to the content of a course that mastering them is crucial to students in order to achieve the course objectives.



Therefore: Define the content-obligatory language before and during course design. Expose the students to this language continuously in different ways with an emphasis during the beginning of the course. Let this language repeatedly come back during the whole course to improve acquisition and understanding of this language.

CONTENT-COMPATIBLE LANGUAGE

You identified the CONTENT-OBLIGATORY LANGUAGE and included in the course design opportunities so that the students can master it. However, most domains contain more elements of a specific language: synonyms, proverbs, expressions, phrases, metaphors, etc..



Only mastering the obligatory language of a course's content might be sufficient to fulfill the course's requirements, but it limits the students in their expressiveness and does not improve the overall quality of students' language skills.



Therefore: Identify the language constructs and expressions of the course domain which are additional to the obligatory elements. Include opportunities for learning these in your course design and course execution.

COMMENTED ACTION

Also known as: Think Aloud Protocol, Show and Tell.

Often in courses or lectures you show or demonstrate some content-specific activities. You are aware that you are a LANGUAGE ROLE MODEL and have identified the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE of your course. Students do not yet know these language constructs or were just introduced to them.



If the students only see the activities done by the teacher, they might be able to execute them themselves, but will have difficulties describing in the foreign language what they are doing. Their vocabulary and expressiveness will not increase.



Therefore: Do not only show or demonstrate complex abilities but give a spoken description of the steps you are taking. Use the earlier identified language terms when you show their meaning.

LANGUAGE MONITOR

Also known as: Formative Assessment.

You have designed a course with a focus on both content and language, identified the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE and used this for INPUT SELECTION. You have chosen specific learning activities to stimulate METATALK, support language learning with COMMENTED ACTIONS and are aware that you are a LANGUAGE ROLE MODEL. You now want to assess whether your learning activities have had the expected result: an improvement of the students' foreign language skills.



Judging the progress students make with language acquisition is not possible during lecturing, as this already requires all effort of the teacher. But without judgement you don't know if the students make progress with language acquisition.



Therefore: Implement regular assessments on the language skills of the students to determine whether they grasped the content and whether their language skills have improved, and use these outcomes to intermittently adapt your course.

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References

1. Christopher Alexander, Sara Ishikawa, and Murray Silverstein. *A Pattern Language: Towns, Buildings, Construction (Center for Environmental Structure Series)*. Oxford University Press, August 1977.
2. ME Brisk. Quality Bilingual Education: Defining Success. LAB Working Paper No. 1. 1999.
3. Patricia L. Carrell and Joan C. Eisterhold. Schema Theory and ESL Reading Pedagogy. *Tesol Quarterly*, 17(4):553–574, October 1983.
4. Carmel Mary Coonan. The Foreign Language in the CLIL Lesson: Problems and Implications. *CLIL e l'apprendimento delle lingue*, pages 22–52, 2008.
5. L Dale, W Van der Es, and R Tanner. *CLIL skills*. 2010.
6. Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides. *Design Patterns*. Addison-Wesley, Boston, MA, 1995.
7. Rick De Graaff, Gerrit Jan Koopman, and Gerard Westhoff. Identifying Effective L2 Pedagogy in Content and Language Integrated Learning. *Vienna English Working Papers*, 16(3):12–19, 2007.
8. Christian Köppe. A pattern language for teaching design patterns (part 1). In *Proceedings of the 16th European Conference on Pattern Languages of Programs - EuroPLoP '11*, volume 2011, pages 1–21, New York, New York, USA, 2011. ACM Press.
9. Christian Köppe and Mariëlle Nijsten. A Pattern Language for Teaching in a Foreign Language - Part 2. In *Preprints of the 19th Pattern Languages of Programs conference, PLoP'12*, Tucson, Arizona, USA, 2012.
10. Christian Köppe and Mariëlle Nijsten. Towards a Pattern Language for Teaching in a Foreign Language. In *Proceedings of the VikingPLoP 2012 conference*, Saariselkä, Finland, 2012.
11. Stephen D. Krashen. *Second Language Acquisition and Second Language Learning*. Prentice Hall, 1988.
12. Kathleen a. Larson, Frances P. Trees, and D. Scott Weaver. Continuous feedback pedagogical patterns. *Proceedings of the 15th Conference on Pattern Languages of Programs - PLoP '08*, page 1, 2008.
13. Constant Leung. Language and content in bilingual education. *Linguistics and Education*, 16(2):238–252, 2005.
14. Peeter Mehisto, David Marsh, and Maria Jesus Frigols. *Uncovering CLIL: Content and Language Integrated Learning in Bilingual and Multilingual Education*. Macmillan Education, Oxford, 2008.
15. M Met. 7 Teaching content through a second language. *Educating second language children The whole child the whole curriculum the whole community*, 7(1994):159, 1994.
16. Pedagogical Patterns Editorial Board. *Pedagogical Patterns: Advice for Educators*. Joseph Bergin Software Tools, 2012.
17. Merrill Swain. Integrating language and content teaching through collaborative tasks. *Canadian Modern Language Review La Revue canadienne des langues vivantes*, 58(1):44–63, 2001.
18. GJ Westhoff. *Een schijf van vijf voor het vreemdetalenonderwijs*. IVLOS, Deventer, 2008.