

# Towards a Pattern Language for Teaching in a Foreign Language

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**Abstract.** Teaching a technical subject in a foreign language is not just switching to the foreign language. There are specific problems related to the integration of content and learning. This paper begins with the mining of patterns which address these problems and intends to offer practical help to teachers by working towards a pattern language for technical instructors who teach students in a second language, and who are not trained in language pedagogy.

Please note: the authors would like to get feedback especially on the first four patterns. However, feedback on the other patterns and paper parts are also welcome and appreciated. This work has also been submitted to the EuroPLoP conference for further improvement.

## 1 Introduction

Globalisation and the resulting increase in international projects of people from different language backgrounds, calls for greater proficiency in a common language of communication and mastery of a second language - often yet not always the English language. As fluency increases with regular use of foreign languages, universities and other educational institutions offer students not just language classes, but also regular courses taught in a modern foreign language.

In modern language pedagogy, two essentially different views prevail[15]: the language structure view and the communicative view. In the language structure view, learning grammar must come before learning how to communicate in a foreign language. Foreign languages are taught and tested by applying the right grammatical rules, practicing correct pronunciation, idiom and vocabulary. The communicative view on the other hand aims to teach grammar in the context of communication tasks. In this view, a student's proficiency can be tested when communicating during authentic tasks, allowing compensation strategies (gestures, explanations) for lack of idiom and vocabulary. The latter vision collocates with competence-based education, in which knowledge and capabilities are taught within the context of (nearly) authentic work situations, and not as separate subjects. In this type of educational setting, English classes may be integrated with subject-specific classes, with subject-specific teachers teaching professional use of a foreign language by using it as the medium of communication in class. The reverse, English teachers teaching a second subject, is much less common. Besides many benefits, this approach to teaching foreign language also carries several risks, the main one being lack of language pedagogy skills of subject specific teachers. Moreover, the level of proficiency in the second 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.

Existing methodologies to handle this problem, such as Content and Language Integrated Learning (CLIL) or Content Based Instruction (CBI), take a different perspective, with CLIL largely aiming at full time CLIL teachers working in schools that promote CLIL throughout the whole curriculum and CBI aiming at native speakers teaching students for whom this native language is the second language. The proposed patterns are aimed at subject-specific teachers without any formal language pedagogy training who as non-native speakers occasionally teach a subject-specific class in a foreign language to non-native speakers of this foreign language. For this specific target group, most best practices advised in CLIL or CBI handbooks lack solid underpinning arguments, the proper context of use, or an exact description of the problems they address. Without specific modern language pedagogy training, they need more clear rules of thumb to properly apply the right strategies.

This work therefore aims at reaching the following goals:

- Find and describe the common principles of existing methodologies and approaches in order to build a common vocabulary — a pattern language — which can be applied to generate the desired results.
- Provide teachers who wish — or have — to teach specific subjects in a foreign language with practical strategies to take language-related aspects into account without having to fully master a high-level methodology like CBI or CLIL.

It is obvious that students already have to know the foreign language at a certain level, otherwise the teaching would have to focus too much on language and not enough on the content. These knowledge levels can be quite diverging, and this diversity is the reason why there still are (or can be) language barriers. These barriers can lead to problems with comprehension of the technical content due to the language problems. A crucial question for instructors is: when students fail their tests, is it because of lack of understanding of the technical content or lack of understanding of the second language used? In the latter case, it is also relevant to know whether their lack of understanding is limited to technical vocabulary only or includes lack of comprehension of e.g. general class room English as well. To prevent this from happening, teachers can take precautionary measures to ensure the class can be taught in the foreign language without the risk of students falling behind due to low language proficiency. The main focus of this work is therefore to help instructors achieve just that.

Probably the best way to improve the usage and understanding of a foreign language is by using it, which is one of the main ideas behind teaching in a foreign language. This improvement can be accelerated by adjusting the content teaching in small ways that help with successful language acquisition. The second focus of this work is therefore to identify ways of integrating the second language in a specific course or class in such a way that language fluency increases without losing the focus on the specific course content.

## 2 Background

Education in different languages can serve different educational and social goals [12]. But there are some basic principles to be found in all approaches serving these goals. And there are practices which can be used to implement these principles, but most methodologies do not include the descriptions of these best practices detailed enough for subject-specific instructors to apply them without having had a language pedagogy training.

The educational focus of competence based courses is not on language learning as a separate subject, but on integrated learning with professional activities at its core, a learning by doing approach. In such a context, teachers easily decide on the use of a foreign language as the medium of instruction, without giving the risks this may bring much further thought. Yet integrated learning can only be successful when sufficient attention is paid to both sides of the coin: language and core competences. So raising awareness among teachers to pay attention to both aspects is a first step and offering them a practical helping hand a second step. In such settings, CLIL for example is often an oversized method. What such teachers need is a practical and easily applicable manual for the integration of the foreign language in the courses.

Content Based Instruction (CBI) and Content and Language Integrated Learning (CLIL) are both methodologies of improving second language proficiency through teaching specific subjects, providing the benefit of functional exposure to foreign languages [8]. CBI is aimed at second language learners living in English speaking countries, who lack fluency due to extensive use of their mother tongue outside the class room; teachers are native speakers of students' second language. CLIL is aimed at classes in which both teachers and students are still developing their second language skills by giving or taking extended classes on specific subjects in a second language. Typical components of a CLIL or CBI approach are vocabulary and cooperative learning strategies, and practicing reading, writing, listening and discussion. According to Schleppegrell et al., visualisation and hands-on activities are useful means for beginners in learning foreign language grasp the meaning of the teacher's instruction [16]. Yet advanced learners need a greater focus on language to improve their level of proficiency.

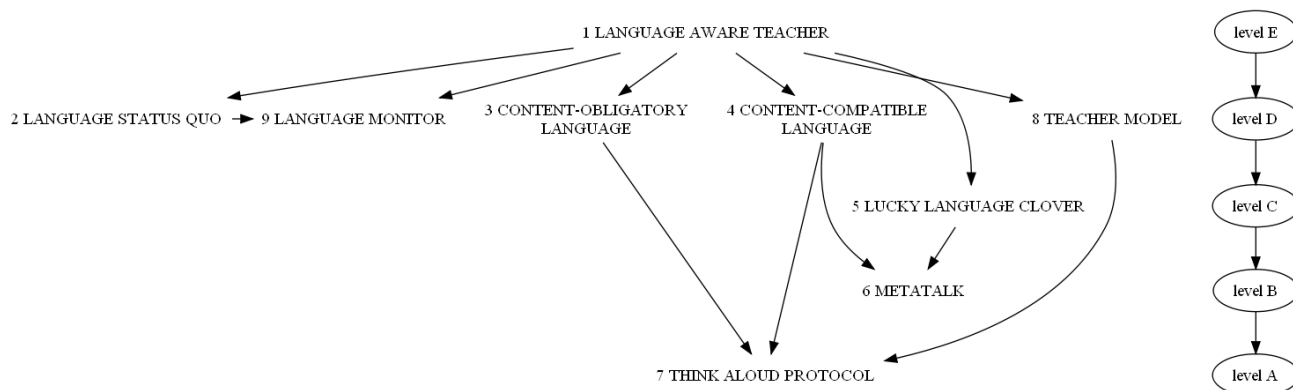


Fig. 1. Language Map with corresponding levels of educational actions taxonomy by Baumgartner [2]

Part of the whole story is content-based language teaching [17]. 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].

### 3 The Pattern Language

The patterns in this language can be classified in different levels of educational actions. We use Baumgartner's taxonomy of instructional methods for this classification [2]. The following list gives an overview of the levels and the classified patterns, an explanation per pattern can be found in the pattern descriptions:

- curriculum level (level E): LANGUAGE-AWARE TEACHER<sup>1</sup>
- module level (level D): CONTENT-OBLIGATORY LANGUAGE, CONTENT-COMPATIBLE LANGUAGE, LANGUAGE STATUS QUO, LANGUAGE MONITOR, TEACHER MODEL
- educational ensembles (level C): LUCKY LANGUAGE CLOVER
- educational scenarios (level B): METATALK
- educational interactions (level A): THINK ALOUD PROTOCOL

Figure 1 shows the language map with the corresponding levels of Baumgartner's taxonomy.

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.

In the following sections we present the proposed patterns. Then we provide an overview of pedagogical patterns which are especially applicable in the context of teaching content in a foreign language.

<sup>1</sup> This pattern could probably also be placed in level D, but most often the decision of which courses are taught in a foreign language is made at curriculum level. We therefore classify this pattern as level E.

## LANGUAGE AWARE TEACHER

Non-native speakers without a language pedagogy training have to teach specific content in a foreign language, to allow the students to enhance their proficiency in this foreign language by communicating in a professional setting while being involved with core professional activities.



**When a teacher simply switches to a foreign language as teaching medium, students with insufficient knowledge of the foreign language may be unable to comprehend the course content as easily as a course in their mother tongue. Additional lack of language pedagogy training withholds the teacher from improving the foreign language skills of the students.**

Student's learning of the non-language subject matter will suffer due to foreign language difficulties and foreign language competence will not grow [6]. Just giving the opportunity to *use* the other language in a programme is not enough for sufficient learning [12].

*Integrated Learning.* In competence based education, foreign languages are taught through integrated learning, i.e. by letting students use a second language during core professional activities or content-specific classes.

*Single Domain.* Mostly teachers are proficient in one domain, either the foreign language or the content of the course. It is difficult to be good in both and be pedagogically aware of both domains [6]. Quite often teaching content and teaching a foreign language are still seen as separate pedagogical issues [12].

*Multiple teachers.* The teaching of language and content in one course could be done in a team where one teacher is responsible for the language part and the other for the content. Studies show that this splitting is not very effective and can be counter-productive [6].

*Awareness.* Without knowing the specifics of language teaching, content teachers are often not aware of the problems when switching to a foreign language as a teaching medium.

*Non-Native Speaker.* As the language the teacher will be using is often not the mother tongue, she may have some difficulty in expressing herself properly.



**Therefore: Become aware as teacher of the (often unexpected) problems which teaching content in a foreign language creates. Design your course in such a way that its content can be captured despite the use of a foreign language as the medium of instruction. Make use of the possibilities for students' language improvement when possible and desired.**

If a course is a road that brings you from A to B, with A being the knowledge students have at the start and B the knowledge you want them to have after completing the course, then a teacher needs to know what A looks like exactly in order to design the right course. Teaching in a foreign language adds unexpected events to this road that an instructor would not run into in case of regular classes (in mother tongue).

In regular courses, the description of starting point A is limited to the course content only. In integrated learning through the use of a foreign language, the description of the starting point should include both content and students' language background. Teachers may not be aware of these language issues (the language being a barrier to understanding the content); hence they can be seen as *language landmines*. So this pattern is a warning sign for teachers: 'when designing your course, be aware of these possible hidden setbacks in the starting point students are at, and watch out for comprehension problems further down the road'. Depending on their findings, teachers may decide to drive more slowly or take some side turns, etcetera. So the pattern creates awareness and

helps teachers design the right course for each audience on two levels.

Working on the solution is supported by the following associated patterns<sup>2</sup>:

- assess students' language proficiency in class room English — or another foreign language — as well as content specific jargon, this is the LANGUAGE STATUS QUO.
- define the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE.
- include speaking and listening as well as reading and writing during classes and in assignments, these are the four leaves of the LUCKY LANGUAGE CLOVER.
- urge students to reflect on their language use by stimulating METATALK.
- use enhanced language and synonyms when giving explanations using THINK ALOUD PROTOCOL and the earlier defined CONTENT-COMPATIBLE LANGUAGE.
- Get answers to the question if students indeed comprehend the course content and/or does their level of proficiency improve by installing a LANGUAGE MONITOR.
- Be aware that you are the TEACHER MODEL for the students.

In the taxonomy of instructional methods by Baumgartner [2], this pattern is at the module level in the layers of educational actions. It helps with integrating the foreign language and content in the stage of course design without the need for extensive language pedagogy training.

*This pattern forms the basis for two courses at the Hogeschool Utrecht, Netherlands, which are given in English. The teachers use this pattern (and the related patterns from this language) for their course design.*

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<sup>2</sup> As this pattern language is work in progress, this list is not complete.

## 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.**

In undergraduate or graduate programs, students will often have different levels of language proficiency due to their different backgrounds.

*Cultural Background.* In ICT related subjects, the written classroom materials used are often available in English only, making it harder for instructors to teach these subjects in their mother tongue, as it forces teachers and students to translate parts of the texts used into the mother tongue, e.g. when giving explanations or answering questions. This results in poor quality translations and negatively affects both the teaching and the learning process. Some courses are taught in a foreign language — often English — to attract students from abroad and enable them to take part. The level of language proficiency and the way these students have learned the language in their original countries affects the way the foreign language can be used in such a course. A third background issue may be the students' level of academic English which can vary greatly, depending on the type of education students have had before entering the course and their knowledge of academic language in their first language [5, 16].

*Educational Career.* Many courses (or studies) define minimal language requirements, like language courses which have to be attended and finished. This just gives an indication of the minimum level a teacher can expect from the students and still does not say anything about the variety of language levels present among students.

*Standard Language.* Even though it shows that the understanding and general knowledge of the foreign language is at a sufficient level, it still can lead to problems. In technology courses, the content contains a lot of specific terms — jargon is used as well as language-structures with content-specific semantics. Knowledge of this vocabulary is not reflected by standard language certificates.

*context-specific pretests.* Pretesting is often aimed at a narrow range of aspects: what do students know on the subject? What is their general language proficiency? What is needed for competence based learning or integrated learning, is a specific pretest on communication abilities used while performing selected professional and educational tasks in a specific branch or sector you train students for. Context-specific pretests are often tailor-made, though their components may be selected from existing proficiency tests.



**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.**

The LANGUAGE STATUS QUO is usually gathered by one or more tests and should cover the aspects relevant for the course at hand. These aspects can include:

1. *general language abilities* — Grammar and general vocabulary, but also the general abilities of reading, listening, writing, and speaking.

2. *content-specific language abilities* — Knowledge of the course domain language, like jargon or often used language constructs etc. The CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE can be used for testing these aspects.
3. *language-related abilities* — Like giving (or *daring* to give) presentations in the foreign language, discussing problems in the language, speaking the language in front of a group, or creating formal writings in the foreign language.

The first aspect can be covered by looking at which courses in the foreign language the students already followed or the language certificates the students own. It is helpful to use proficiency tests based on international standard frameworks for language examination, such as the International English Language Testing System (IELTS), Common European Framework of Reference for Languages (CEFR) or Association of Language Testers of Europe (ALTE). But, as described earlier, there are more aspects which are (usually) not covered by such tests.

In some cases it can be useful to determine the content-specific language abilities of the students, if e.g. the students in a course have different educational backgrounds. If the students follow a fixed study scheme and it can be assumed that they have a more or less equivalent level of language knowledge, this aspect can be omitted.

Commonly used proficiency or placement tests (often) do not include the abilities to use the language in different educational and professional contexts. Missing these abilities can lead to situations where students are not able to give a presentation because they have trouble speaking in front of groups in the foreign language (and not because they don't understand the content). These tests (often self reflective) give a clearer picture on how students apply the language.

Knowing the students' current levels per aspect forms the basis for an appropriate set-up of language elements in a course. Depending on the relevant aspects the following consequences can be identified:

- Difficulties in grammar and general language abilities can be improved by promoting METATALK and including the missing parts in the CONTENT-COMPATIBLE LANGUAGE.
- Depending on the strengths and weaknesses of the students' abilities to read, listen, write or speak the foreign language, an accordingly balanced mix of the four leaves of the LUCKY LANGUAGE CLOVER should be included in student activities.
- If content-specific language abilities already are present, then the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE can be adjusted to cover a broader or deeper range of language aspects. Another consequence could be that less exercises need to put the focus in both content and language aspects.
- If content-specific language abilities are not (sufficiently) present, then the missing parts of the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE should be taken into account during course design or course adjustment. Exercises should expose the students repeatedly to these language aspects in different ways, e.g. by letting them research the meaning of different content-specific words, using THINK ALOUD PROTOCOL during lectures and working groups, or let them give presentations which require the knowledge and usage of content language (and also makes use of the LUCKY LANGUAGE CLOVER).
- If the students have shortcomings in language-related abilities then include exercises which let them develop and practice these abilities.

The identified LANGUAGE STATUS QUO can also be used as the first check of the LANGUAGE MONITOR. The following checks can then be compared with the beginning situation.

One advantage of testing is that students will become more aware of their language proficiency and that they are able to determine themselves whether their language skills need further improvement.

According to Carrell, teachers should focus on the readers' background instead of on the text [5]. 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.

De Graaf et al. suggest that students should be exposed to input at a (just) challenging level [8]. In order to determine this level, knowledge of the LANGUAGE STATUS QUO is required.

*The authors applied this pattern at the beginning of a course which was taught in English to students whose mother tongue was Dutch. They had to fill in a short survey stating their last followed courses in English and the grades received for those. Furthermore they were also asked to fill in a self-evaluation about their abilities and ease of giving presentations, reading technical documentations, explaining technical problems, etc. The test showed the most students were afraid of giving presentations in English at the beginning of the course, so the amount of exercises and assignments which required student presentations was increased, starting with just giving small presentations about a small-scoped problem and ending with a presentation of their final project result.*



## 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 [14].



**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.**

Some students may get the wrong understanding of the domain of the course contents. When explaining this vocabulary in the foreign language, they use phrases in the foreign language without grasping their meaning.

*Definition Repetition.* Students know that it is sometimes sufficient to memorize definitions without understanding, as tests are often asking for memorized knowledge only. Not all things have to be understood more deeply and in the broader context.

*False Friends.* When reading a text in a foreign language there are often words which are unknown or the meaning is only vaguely known. Usually the meaning becomes somewhat clearer in the broader context and through the position of the words, but these are just assumptions. Especially terminology in specific domains can give a different meaning to common known words, which can lead to “false friends”.



**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.**

The content-obligatory language can consist of different parts:

- **vocabulary** - the terms used in, and specific for, the domain covered in the course. Example for mathematics would be the terms: Subtraction, Addition, Division, and Multiplication.
- **language constructs** - domain-specific ways of using the language, which are specific for the domain. Examples are the mathematical constructs: “x is subtracted from y” or “factor out the greatest common factor”.

The language specific for a domain often includes visuals as well, but these are mostly independent of the language used and should therefore already be included in the content-related material. However, these are also very helpful in language acquisition [8], as they help in relating knowledge structures to associated language expressions [12]. In some cases it therefore can be considered to be helpful if these visuals are also explicitly added to the content-obligatory language. The known uses section gives an example of this.

The defined language is a reference for the course design — the used materials, presentations, etc.

Use different communication ways — as defined by the LUCKY LANGUAGE CLOVER — for explaining the language and exposing students to the language and letting students grasp, practice and apply the language.

To check whether they really understood the domain concepts, ask students to explain them in their own words. This way you will find out whether they’ve simply learned phrases or really grasped a deeper understanding of the concepts and terminology. Especially in the beginning these explanations can also be in the students’ mother tongue, which gives more insight into the deepness of understanding [13].

When defining CONTENT-OBLIGATORY LANGUAGE, one should be aware of lexical ambiguities like homonyms, synonyms, polysemy, homophony, or spatial words. Explain these cases explicitly and repeatedly, using writing *and* speaking. Check the correct usage with a LANGUAGE MONITOR.

De Graaf et al. suggest the learners should be stimulated to request new vocabulary items [8]. However, in order to ensure that these items contribute to the content too, a list with the essential vocabulary items should be made in advance. This list could also contain the items of the CONTENT-COMPATIBLE LANGUAGE.

Carrell suggests narrow reading, i.e. limiting the number of authors, and previewing texts, which may include presenting difficult terms and expressions used in these texts [5].

A negative aspect of defining the CONTENT-OBLIGATORY LANGUAGE is that it costs the teacher a lot of preparation time, mainly for two reasons: (a) it is not always obvious which parts of the language are really essential for understanding the course content, so determining these parts requires extra time and (b) the amount of relevant terms and constructs can be overwhelming, leading to excessive lists which are not easy to create and handle.

*Köppe and Weber defined in a course on (Design) Patterns & Frameworks (described in [10]) a list with the essential terms (and important visuals like UML class- and sequence-diagrams), which included: class, association, generalization, specialization, inheritance, interface, Pattern, Framework, sections (of a pattern), context, forces, abstraction, coupling etc. Even though some of these terms can be assumed as known to the students because of earlier programming and UML courses, they are included again here as they are essential for understanding the patterns but also the pattern solutions and their impact on the overall design. In the first lecture the students had to give short presentations in English about general design principles and techniques including examples. The use of some of the terms was implicitly required for this exercise, and the teachers emphasized the importance of these terms by immediately asking questions like "Why have you chosen a generalization and not an association" which requires deeper understanding of the terms in order to be answered correctly. This exercise gave a good overview of which terms the students already know at a sufficient level and which terms do need more explanation and repetitive attention during the next lectures.*

## CONTENT-COMPATIBLE LANGUAGE

You identified the CONTENT-OBLIGATORY LANGUAGE and included in the course design possibilities so that the students can master it. However, most domains contain more elements of a specific language: synonyms, proverbs or other expressions. While it is not required to know these expressions as well, their use will help improve the overall quality of students' language skills by adding variety to their vocabulary.



**Only mastering the obligatory language of a course's content limits the students in their expressivity.**

*Language Variety.* Things in general are better understood if described in different ways. Using only one set of language constructs restricts the language variety.



**Therefore: Define the language constructs and expressions which enrich the quality of the students' language and offer opportunities for learning these.**

Dale and Cluevas provide an example from teaching mathematics: To understand and be able to use the mathematical concept of subtraction, the expression 'subtract from' might be sufficient. But there are many other expressions which can be used synonymously: 'decreased by', 'less', 'minus', 'differ', 'less than', or 'take away' [7]. These offer a broader variety of descriptive possibilities and might also help with the better understanding of the content. Even though the synonymity might be obvious to the teacher, this is not always the case for the students. Therefore documenting these synonyms (as a part of the CONTENT-COMPATIBLE LANGUAGE in advance creates an awareness of these, which also can later be used in a THINK ALOUD PROTOCOL.

One starting point for this is the LANGUAGE STATUS QUO. But it is also necessary to look at the long-term language learning objectives. This way some vocabulary can already be included which enriches the current language, but is obligatory for follow-up courses [14].

## LUCKY LANGUAGE CLOVER

Learning a language requires all types of language usage: reading, listening, writing, and speaking. Especially the last two — language output — are much harder, but also more efficient for learning a language. So just giving lectures in the foreign language and requiring the students to read literature in the foreign language is not sufficient. It is necessary to also let the students write and speak in the foreign language.



**Only consuming language input — reading and listening — is not sufficient for a good understanding of a foreign language.**



**Therefore: Use all four types of language usage. Promote reading and listening, but let the students also write and speak in the foreign language.**

Exercises, assignments, and didactics should take all four leaves of the LUCKY LANGUAGE CLOVER — reading, listening, writing, and speaking — into account. The implementation of this could make use of different pedagogical patterns, e.g. PREFER WRITING, PEER FEEDBACK, and many others. Swain suggests a collaborative form of writing, as this implies the need for talking about the content [17], but also promotes the use of METATALK.

De Graaf et al. also emphasize the importance of practice through relevant speaking and writing assignments.

*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).*

## METATALK

Students are already using the language — making use of all four leaves of the LUCKY LANGUAGE CLOVER. But the language acquisition progress is slowing down.



**Students keep on using wrong language constructs and terms. They are not aware of their language shortcomings, and the teacher does not have the time to correct them individually.**

*Hands-on activities.* It seems common sense that hands-on activities are of benefit for students when learning new information and language expressions [12]. 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 do usually not reflect on their language use.



**Therefore: Promote second language acquisition processes through initiating awareness of — and discussion on — the language use of students by fellow students or themselves.**

The usage of language to indicate an awareness about their own, or their interlocutor's, use of language is called *Metatalk* [17]. Metatalk also 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 second language acquisition processes.

It is important that this metatalk is encouraged in contexts where the learners are engaged in making meaning. Implementation can be dictogloss task (see Swain pg. 52). E.g. read the description of a pattern to the students, let them write down familiar words and phrases and afterwards they have to reconstruct the pattern based on their shared resources. These can then be compared with the original text. Another possibility is 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, then there is a chance that everyone is following this student. So you have to be aware of this when forming groups of students which are to work together.

This pattern makes also use of LUCKY LANGUAGE CLOVER, as the discussion is mostly done orally and the results are manifested written. These written results could, if appropriate, also be used for the LANGUAGE MONITOR.

METATALK can also be stimulated in a PEER FEEDBACK situation. The artifacts where is feedback given on should be made using the foreign language for this. According to De Graaf et al., this situation should be stimulated [8].

*Christian Köppe lets students in one course on Model Driven Development document one of the problems the students experienced during the implementation of their assignments. These assignments have to made in pairs and the students were also expected to prepare the presentation of the problem together. The requirements for this presentation were that the whole problem including context and other necessary information as well as possible solutions they already tried are presented in complete English sentences. The preparation therefore also required that the students had not only to discuss what their problem actually was, but also how to phrase that in correct English, which promoted Metatalk and led to good presentations.*

## THINK ALOUD PROTOCOL

You want to improve the CONTENT-COMPATIBLE LANGUAGE by functioning as TEACHER MODEL.



**Just stating essential information in the foreign language to the students will lead to stagnation in their development of language skills.**



**Therefore: Do not just give the information, but also the steps leading to this information. By using Thinking Aloud to express all these steps orally, teachers provide additional information and alternative expressions to the students, helping them improve their understanding of the language.**

This solution improves mainly the understanding of CONTENT-COMPATIBLE LANGUAGE.

One implementation could be to EXPOSE THE PROCESS [3], which helps in general for a better understanding of the content but, if applied in a foreign language, also with the learning of this language.

## TEACHER MODEL

Learning is also imitating, so the one the students are imitating should make sure that he/she is doing it correct. This can also be used to vary in explanations styles, use synonyms or other ways of providing a broader language application.



**Learning is also imitating, but imitating incorrect language usage will affect the learning of the language negatively.**

*Mother Tongue.*



**Therefore: Be aware as teacher that you are a model and therefore required to make correct use of the foreign language. The way the language is used can also help with other aspects of language learning.**

## LANGUAGE MONITOR

It is necessary to continuously check if the language exercises indeed lead to the desired and expected results, therefore a monitoring has to be executed. This way one can also react in short time if the results are not as expected or adjust the implementations of the patterns to fit better in the specific context of the specific students, topics, etc. Repeat these tests (as monitors) in the begin of a lecture, e.g. for checking the CONTENT-OBLIGATORY LANGUAGE and the CONTENT-COMPATIBLE LANGUAGE.



**Practices for language improvement of the students do mostly not include evaluational parts. One can therefore not be sure if these practices or patterns were really successful.**



**Therefore: Implement regular checks on the language skills of the students to determine if their skills have improved and/or which aspects of the language do need more attention.**

The most simple way of applying this pattern is to compare the results of two different LANGUAGE STATUS QUO, determined at the beginning and at the end of a course or the beginning of the next course.

A LANGUAGE MONITOR can also be applied using self assessments of the students. Butler reported some positive effects of regular self assessments among young learners of English, including an increased confidence in learning English and a greater ability in assessing their actual level of English [4].

## Related Educational Patterns

Some problems which can occur when teaching through a foreign language are already addressed by existing educational patterns. These related patterns are described in the following sections.

### Extra Waiting Time

It is good practice to give students time for formulating an answer to the question raised by the teacher. The pattern PREGNANT PAUSE[11] addresses this issue. In a foreign language context this is especially important as students do not only have to think about an answer, but also need to formulate it. This requires therefore some extra time.

### Student Activities

The students can be introduced to the Learning Patterns LANGUAGE SHOWER[9] and FOREIGN LANGUAGE EVERY DAY (unpublished yet).

### Honor Questions

It is helpful to HONOR QUESTIONS which are related both to the content and the language. This should be emphasized continuously.

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