Section 3: Language Across Curriculum (LAC)

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LANGUAGE ACROSS THE CURRICULUM – A WAY TOWARDS PLURILINGUALISM

Introduction

Language across the curriculum (LAC) relates to linking different forms and aspects of language education within the school, particularly emphasising the role of language in all subject-matter learning. LAC has two meanings: in the narrow sense it is a concept suggesting the importance of language work and language training in all non-linguistic subjects. In the wider sense it is a concept demanding a comprehensive model of language education as the basis of a whole school language policy. The latter includes linking all languages as subjects (mother tongue education, foreign language education, second (or third) language education) and the language dimension in all other subjects. In the following I will focus on LAC in its narrow sense: extending the know-ledge and skills acquired through the language of school (LS) into subject-specific language vari-eties and discourse competencies, leading to a *first (internal) or basic form of plurilingualism*. A *second form of (external) plurilingualism* develops, when other languages than the LS and thus new language repertoires are acquired, *through foreign language education or CLIL*. Both types of plurilingualism are indispensable for becoming linguistically and culturally sensitive and knowledgeable and for developing democratic citizenship and participation within Europe.

Language Across the Curriculum (LAC) is a concept and a policy. As a concept it acknowledges the fact that language education in school does *not only* take place in specific language subjects such as *mother tongue education*, *foreign language education*, *second language education* etc., but also *in each and every other subject*, in each and every activity in school, across the whole curriculum. LAC leads to new forms of language use of L1 or LS (language of the school), to new types of discourse behaviour, to extended linguistic competences, the bases of which are already laid, mainly through early childhood socialisation and through L1/LS education in school.

This is in accordance with the latest research findings on *Reading Comprehension* (which is demanded extensively in each non-linguistic subject-matter learning) and with insights that LS/L1 as a subject in school cannot be exclusively responsible for language education, but that the development of language skills and competences has to be integrated also into subject-specific teaching.

1. Language in subject-specific contexts vs. foreign language education

LAC in the narrow sense focuses on the role of language in subject--specific learning and teaching. In addition to the many basic goals of LS/L1, it leads to other forms of functional language use, to mastering new domains and discourse types and moving towards a more explicit or "pre-scientific" mode of thinking and communicating. In subject--specific contexts language is used as a tool for cognitively demanding tasks and purposes. This can be seen as an application of the existing language proficiency in new contexts and as an extension and transformation of this proficiency unto a higher or deeper level of cognitive-academic use.

New forms of language use are not only happening in *one* non--linguistic subject, but in all of them. Thus we are talking about a *central* educational experience which is *substantial* for the learner and which will have a marked effect on his or her self-perception and learning biography. Although each non-linguistic subject requires slightly different competences which have to do with their specific ways of proceeding in gaining new insights and integrating them into the existing knowledge

structures, there is also a large area of overlap in competence requirements between subjects (the cross-curricular nature of the basic language categories, mental procedures and discourse components).

We know from research (e.g. Vollmer, forthcoming) that these academic language skills and competences do not develop all by themselves, simply through their use in subject-specific contexts alone. Rather, they have to be sufficiently stimulated and trained through systematic development and language awareness raising measures. Only then can we hope for all of our students to arrive at a level of academic language use and discourse competence which will allow them to participate successfully (or at least to a satisfying degree) in subject--specific learning experiences, in discussions and developments of the respective disciplines (being the representatives of scientific thinking) and in the solution of societal problems related to or based on the knowledge structures of those disciplines. Being confronted with new content domains and being challenged by them mentally as much as linguistically constitutes also – or at least supports – the development of new identities within one and the same overall cultural macrostructure linked to L1/LS. By extending the knowledge and skills already acquired through L1/LS into subject-specific language varieties and discourse competencies, a learner develops a *first (internal) or basic form of plurilingualism*.

In contrast, *foreign language education* aims at the acquisition of another (mostly second or third) language system or language repertoire in addition to that of L1/LS, but it does so by focussing on the development of the respective language itself as a code, as a system of rules. Consequently, foreign language education is more concerned with the development of basic interpersonal communication skills (BICS) than of cognitive-acade-mic language proficiency (CALP, cf. Cummins 1978). In doing so it adds to the development of *plurilingualism in its external or explicit form – explicit* because a *new language* or *a new language repertoire* is acquired and thus new means of communication developed, contrary to LAC where *new discourse types* are acquired within the already existing language system of L1/LS.

As to Content and Language Integrated Learning (CLIL) or "bilingual education" – this is a special case of LAC. Bilingual education supports the development of both types of plurilingualism. On the one hand, the mastery and knowledge of the foreign language is deepened by using it more frequently in a meaningful, functional way; on the other hand, the foreign language repertoire is used for cognitive-academic purposes,

embedded into content learning, leading to the development of subject-
-specific discourse competence in L2/L3 etc. This in turn can transfer
back to LS/L1 under certain favourable conditions (cf. the inter-
dependence hypothesis between L1 and L2 from Cummins 1979 and the
model of a common underlying proficiency, driven by a central operating
system). CLIL can, in the best of all cases, lead to cross-linguistic and
even cross-cultural forms of thinking and communicating, provided there
is room within CLIL teaching for language work, for comparison of
expressions, of discourse styles, of linguistically mediated modes of
thinking and of viewing reality (cf. Vollmer 2005)[1].

LAC, as outlined so far, is extremely important for qualifying young
or adolescent learners so that they can function well within the school as
an academic setting, benefit from the subject-based offers of the school,
developing basic thinking and communication skills which are absolutely
necessary and vital for their personal development and their future career
in the workplace, in society, in trans-national encounters and in
democratic actions: *language is the key to negotiation of meaning and
informed decision-making in all of these cases*. Therefore the Council
of Europe rightly suggests that each of its member states should develop
a comprehensive and coherent language education policy including LAC
and explicitly relate it to LS/L1 education. It cannot be overlooked,
however, that there are massive problems to be solved on the way to
success.

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[1] We can also identify new approaches of extending CLIL into so-called *multilingual or plurilingual modules* of learning and teaching. These make use of several languages existing or accessible at a particular school or in a particular classroom (mother tongues, heritage languages, second languages etc.): this can lead to intensified forms of plurilinguistic education, where one and the same subject-based topic is dealt with in a number of languages and looked at from different points of view. These approaches enable learners to shift between language codes and thus support the experience and development of multiples identities to a certain extent. But on top of its advantages, there seem to be also some disadvantages implied in this approach (see Vollmer, in preparation). So far we have too little experience with plurilingual learning and teaching approaches in Europe; we are just beginning to "experiment" with them on a local or regional level and sometimes beyond national boarders.

2. Origins, goals and difficulties of LAC

2.1. Origins

LAC as a concept has been around for some time in academic and pedagogic theoretical discourse, but less so in school practice. It was developed in the late 70s/early 80s of the last century. It originated in Great Britain, where the idea of linking LAC with school language policies as a whole received formal recognition in the so-called Bullock Report (entitled *A Language for Life*):

> Each school should have an organised policy for language across the curriculum, establishing every teacher's involvement in language and reading development throughout the years of schooling. (DES 1975: 514)

A decade later this was underlined in the Swann Report (*Education for All*):

> Unless there is a school language and learning policy across the curriculum there will be wastage of effort and often confusion. (DES 1985: 419)

The ideas of LAC itself, which had received real impetus in that report, have somewhat changed over time, they were also influenced by work outside Britain. Nevertheless, the basic tenets on which LAC rests, have stayed the same: they focus on the importance of language in and for school education, for all subject-matter learning, across the whole curriculum (cf. Corson 1990: 74):

1. Language *develops* mainly through its purposeful use (domains to be broadened)
2. Learning (often) *involves* talking, writing, shaping and moving (normally in reaction to perceptions)
3. Learning often *occurs* through speaking or writing as much as through shaping and moving
4. Language use *contributes* to /is a pre-requisite for cognitive development
5. Language is the *medium* for reflecting learning, for improving it, for becoming autonomous.

Much has been studied about the role of language in learning and in cognition ever since (e.g. Bereiter/Scardamalia 1993); much has been learned about language processing and language use, its basic structures, functions and similarities in all the activities and subjects in school (see Lemke 1990, for example). But the institution itself apparently has some difficulties in accepting cross-curricular responsibilities; it also has difficulties in dealing with differences in their clientele, with heterogeneity in their studentship and particularly with disadvantaged learners for whose basic, successful education they are equally responsible: The criticism of Bernstein (1969) that school does not only not overcome these disadvantages, but rather reproduces them systematically through their linguistic norms and procedures, is probably still valid today.

2.2. Goals of LAC

The goals of LAC are – simply speaking – to support language development in each and every child, in all domains of language use, in each learning activity in school. This implies to reflect about the strongly language-mediated evaluation criteria for success in academic learning, in passing tests and in getting good marks. All of these heavily depend on managing and manipulating language as communication which therefore has to be learned by each and every student. But this development should be based on the linguistic capacities and potentials of the children themselves, on what they bring to school, not on the norms of the school as a middle-class institution alone. These norms coincide, however, with notions of a clear, precise, explicit, rational or pre- scientific language use. At this point we move into a more political type of discourse influenced by the important work of Basil Bernstein, his sociolinguistic findings in the 1960s and the consequences to be drawn on that empirical basis. This debate centres on the issue whether the school should adapt to the learner or the learners to the school – or to put it in Bernstein's terms: there are *differences* in language use on the part of some learners (with a lower-class socio-cultural background), but no *deficiencies* to be *overcome* or *remedied*, the *restricted code* of those learners is (or seems to be) functionally equivalent to the one identified as *elaborated* – those were the conceptual labels in the

discourse of the time which point to the existence of "institutionalised" educational inequalities and the search for measures and policies of overcoming them ever since.

Two great changes have occurred in the development of modern societies and consequently in the mental setup of school children since the 1960/1970s: For once, the possibilities to fail in school (and thus to become a disadvantaged or "risk learner") have severely increased; at the same time, the type of literacy prevalent in school children, their ways of perceiving reality and of learning have also changed dramatically in the multi-media age (cf. Kress 2003). LAC can no longer narrowly be seen as the exclusive domain of L1/LS education nor is it confined solely to the conventional four modes of language use: In addition to Reading, Writing, Listening and Speaking *all non-verbal ways of representation* (in PISA partly identified as "discontinuous texts") are rightly seen as part of the overall semiotic system that we have at hand and that we use when communicating. These include visual, images, graphs, movements etc. – all "physical" forms of human perception and expression. Thus, we have to distinguish eight modes of human activities involving language (cf. Corson 1990: 72), namely:

- Listening: comprehending oral input/intake
- Speaking: constructing meaningful utterances
- Reading: understanding written texts
- Writing: producing written texts/discourse
- Viewing: attending to visual signs/information
- Shaping: using visual means of expression
- Watching: attending to the movements
- Moving: using the whole body, the whole person.

The concept of LAC also claims that *language and learning* are deeply linked. Therefore, wishing to acknowledge and develop children's existing mental and linguistic capacities, LAC focuses on active, constructive, potentially autonomous learning:

„Language plays a central role in learning. No matter what the subject area, students assimilate new concepts largely through language that is when they listen to and talk, read and write about what they are learning and relate this to what they already know. Through speaking and writing, language is linked to the thinking process and is a manifestation of the thinking that is taking place. Thus, by explaining and expressing personal interpretations of new learnings in the various subject fields, students clarify and increase both their knowledge of the concepts in those fields

and their understanding of the ways in which language is used in each."
(Ontario Ministry of Education 1984; quoted in Corson 1990: 75).

Consequently, it is suggested that all teachers participate in developing
language within their fields of responsibility and contribute to a school
learning policy. Finally, the relationship between *language and thinking*
has become central for LAC, mainly supported by findings in cognitive
science, but also in linguistics and language pedagogy itself. In this
context, we can state the following beliefs:
- Language is more than communication skills
- Language is linked to the thinking process and is used in it
- Language is a tool for conceptualizing and for linking information
- Language supports mental activities and precision in cognition
  which is particularly true for subject-based writing
- Language helps to bridge between cognitively demanding tasks
  and their solutions in a more and more de-contextualized manner
- Language helps to structure discourse and realise discourse
  functions.

So the overall goal is not just developing *Cognitive Academic
Language Proficiency,* but "Conceptual Literacy" (see below).

2.3. Difficulties

These goals have begun to spread slowly within the last two or three
decades, although they were never really fully put into practice, as far as
I know. There was never a wider application of them, at least there is no
documentation available about such a movement: apparently LAC was
never practised to any larger extent on a regular basis, neither in Britain
nor in North America – although the relevant literature quotes many
well-meant proposals and programmes from the 1980s, for different levels
of schooling, for different contexts of formal education, for different
genders and social groups. But since there are no further reports about
implementation, one can conclude that the concept of LAC must have
more or less failed – at least in the UK in the 70s and 80s.

Corson (1990: 76-77) lists a number of the difficulties involved in
making LAC work in practice: On the one hand, these have to do with
the attitudes of teachers, the objection or even resistance of many *subject*

teachers to become "language teachers" on top (at least in their view), although this is clearly a misunderstanding of their role within LAC. According to my knowledge, this has never been expressed explicitly nor is there any single case study published which would have outlined the feelings and arguments or the positions of the different proponents involved at the time. On the other hand, there might not have been a clear or precise conceptualisation as yet of what it means to do language education across the curriculum, to support subject-matter learning through language work, nor didactic suggestions of how exactly to integrate content and language learning in a specific course or subject. This could explain part of the difficulties in realising LAC programmes and their possible failure.

Another obstacle lay in the fact that there was no one centrally responsible in the school for such a cross-curricular approach, except perhaps the head master or principal. But for an administrator it would be impossible to see to it that LAC really works. This is a structural weakness, in school as much as in university, since nobody can be identified who is or feels responsible for this type of qualification in subject-specific language skills, in conceptualising language learning in this functional way and in coordinating the development of a whole school/whole university language education policy accordingly. Unfortunately, all of the difficulties mentioned are still valid.

Introducing LAC requires a radical change in the attitudes and mentality of the teachers involved, the ones already in service as much as the ones still in teacher education. Every teacher has to be confronted with the issues of academic language use, oral and written, and be prepared and trained with fantasy for integrating language into the subject-matter teaching at school. Every subject teacher student has to learn how to define minimal goals in conceptual and discourse terms and what to do with the ones he either misses or encounters in school. All of these decisions and skills require a high degree of information and of professional competence on the part of the teacher in terms of theory, curriculum planning and teaching methodology.

3. Revival of LAC

The value and necessity of LAC were rediscovered at the end of the 90s, when it became obvious through international comparative studies

that especially *Reading Comprehension* is at the heart of all learning experiences and involved in each subject. Prior to this the concept and goals of LAC had already been widened by wanting to support not only the development of *language skills*, but of *literacy skills and strategies* in the children. The question was raised again what could be done about these trans-versially, across all subjects. Based on a socio-semiotic theory of meaning and discourse, the focus was now to support students in applying higher order skills, in making inferences, in using their world knowledge, in constructing coherence, in adequate ways of expressing themselves and in exchanging with others (Halliday/Hasan 1989, Lemke 1990, Johns 1997).

3.1. Developments in Germany

In *Germany*, for example, the shocking results of the first PISA study (published in 2001) led to the insight that the weak performance of 15-year-old students in reading comprehension could only be overcome and changed, if *language* would become a focus of concern in each and every subject in school. This debate did not last very long nor did it lead to any specific measures or focussed pedagogical activities in the schools which were challenged and burdened with so many other things which, as we know, have difficulty to think and act cross-curricularly. So the dynamics got somehow lost again. In academia, however, LAC became more and more linked to Cummins' concept of *Cognitive Academic Language Proficiency* (CALP) – as opposed to BICS. Especially in the work of mother tongue researchers it was found out that it was *not only economic or social variables* (like income, class affiliation or socio-economic status of the parents) which was decisive for success in school, but rather "soft skills" like communication structures/potentials and their link to what is called "*conceptual literacy*": a cognitive, skill-based and experienced-driven set of variables within an individual which is responsible for clear thinking and in relation to that for successful language use, in reading as much as in writing. But also educators from non-linguistic subjects became concerned with defining the basic competencies a learner needs to have in order to succeed in subjects like biology, chemistry or physics. In their attempts to define educational standards to be reached by everyone at the end of grade 10, they identified "*Communication*" as *one* of the *four main dimensions of competence*

(next to subject-specific knowledge, procedural or methods competence and ability to evaluate). The geographers followed soon. This decision was informed by theoretical and didactic insight, yet a detailed model of subject-specific communication is still pending; it is in the process of being developed, in close cooperation with linguists and communication experts. This is definitely a new beginning for language education to become a major issue of concern within content teaching.

3.2. Research on LAC: State of the art

LAC has no real research tradition. There are research branches on German or English for specific purposes, but these are narrowly defined as functional support systems for understanding, analysing and using subject-specific terminology or subject-specific dis-course patterns, mainly by adult professionals. The research of this type was hardly ever related to school-based learning or communication within non-linguistic subjects. This changed when research on bilingual education focused on the integration of language and content within its frame of reference: CLIL became the motor for rediscovering the central role of language in all subject-matter learning and particularly in developing ways of conceptual thinking and communicating in a second language, motivated and authorised / validated by the respective discourse communities linked to each subject. My own research has focused exactly on this topic, namely on identifying and analysing the structure of subject-specific competences in geography and in particular on comparing the task-based discourse competences of regular geography students in grade 10 to those of bilingual learners using English as a foreign language for all their activities in the classroom including group work, individual solving of tasks, and interaction with the teacher and their peers. Some of the results of our project will be summarised here.

Based on an empirical study of the subject-specific competence structure of more than 250 10-grade geography-learners (both regular and bilingual learners), it became obvious that at least in certain parts of the German school system (but probably all over Europe) the need for a systematic development of discourse competences in an oral and particularly in a written mode seems to be highly underestimated by teacher and students alike. Learners of both groups did not perform to any satisfying degree when it came to verbalising their responses to

a wide range of representative tasks in the domain (geographical competence test). In content as much as in linguistic terms, their texts are closer to everyday conceptualisation and formulations than to scientific ways of thinking and communicating – the majority of "well--educated" grammar school students simply fail to reach to minimal goals set by educational standards for this age level[2]. Their subject-specific command over the appropriate language choices is simply low, it is dramatically underdeveloped. Although we gave the participants the chance to think aloud while solving a task or to interact with others in a pair on certain other tasks (in both cases eliciting additional process data) and also to have a second look at their answers and to edit them, if they so wished, the results nevertheless show that the language competences in demand here had not been specifically trained, were absent to a large degree. They are badly developed at the end of grade 10, which is the end of formal secondary education for most learners in Germany. This is alarming, indeed[3].

As a consequence, our findings strongly suggest that academic language skills and competences in the different non-linguistic subjects do not develop automatically all by themselves, simply through their use in subject-specific contexts alone. Rather, they have to be systematically supported and developed in close connection with the content which requires language awareness, language education attitudes and language skills on the part of each subject teacher. This is the only way that the learners can arrive at a level of academic language use and discourse competence which allows them to participate successfully or at least to a satisfying degree in subject-specific learning experiences, in the development of "scientific" thinking (represented in the school subjects) and in the on-going discussions and explorations in a number of disciplines which strongly shape our society and our mental, social and political realities. Moving into new content domains and being challenged by them cognitively as much as linguistically is a highly sensitive and

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[2]   This finding will be magnified when we deal with learners in the German "Hauptschule" who are known for their low reading fluency and their lack of reading: many of then can be considered as "risk learners" (section 4 below).

[3]   For *bilingual learners*, the additional challenge is to handle the L2 as the language of work and of thinking. Due to certain difficulties in vocabulary search, some of them wrote less than what they originally wanted to express (as we know from elicited process data in the form of Think-Aloud Protocols (TAP); Heine 2005). Others paraphrased as well as they could, but none of them broke off. Bilingual learners seem to have a higher level of frustration tolerance than monolingual ones, and a stronger sense of perseverance.

de-qualifying/disempowering experience for many students, because their existing language repertoire (often based on everyday notions and communication structures) does not hold any more, although they try to apply it as usual. What is so difficult to learn and almost impossible to acquire without systematic initiation and language support, is the development of more explicit ways of thinking and expression, based on the knowledge of subject-specific conventions and registers. "*Academic literacy*" is by no means to be contrasted with "vocational literacy", which requires the same basic language competences to be acquired and applied, the only difference being the topic, the context, the level of application and that of a competence reached[4]. We can rephrase the aim of LAC therefore as enabling students to manage the diverse discourse functions involved in academic and/or vocational work and in constituting academic/ vocational language proficiency[5]. This is a basic way towards internal plurilingualism.

3.3. Defining linguistic competences for both LS/L1 and LAC

In order to identify how L1/LS and LAC are closely linked language-wise, it is necessary to develop a comprehensive model of linguistic competences and show how both LAC and LS/L1 education can or could mutually benefit from one another. Possible components of such a comprehensive competence model have been presented elsewhere (see Frederking *et al.* 2004 or the framework paper for the Council of Europe (Vollmer / Beacco 2006). This line of research is only in its beginning stages, it has a theoretical and an empirical side to it and none of the two is very developed as yet. But at least there are first suggestions which will have to be refined and empirically based; their validity is a prerequisite for a successful cooperation between LAC and language education as a subject, namely L1/LS, but also foreign language education and CLIL. Only then can we understand the specifics of conceptual and

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[4] In another paper I have given an example in order to illustrate that the cognitive and language requirements are similar in principle, whether one has to write a report about certain aspects of vocational training or about an experiment or an observation in a literary text (Vollmer 2006b).

[5] These discourse functions can grossly be divided into a number of mental-linguistic macro structures, namely: describing/reporting, explaining/exemplifying, naming/defining, arguing/ supporting, assessing, evaluating (see details in Zydatiß 2005 or Coetzee 2007).

discourse competence in a particular subject and their difference to other components which some or all subjects may share.

4. Social policy issues in connection with LAC: Perspectives

Ever since the report on *Education for All* in Great Britain (DES 1985), one of the big issues is yet unresolved – that of equal educational opportunities for all. Our schools host many learners who are not really well equipped to move into new domains of knowledge and subject-specific learning experience, because their language proficiency does not allow them to fully participate and benefit from these experiences. More dramatically so, they are at risk to stay behind and become even more deprived as time advances: these are native children with a poor socio-cultural background as well as children from migrant families, especially when the LS is not used at home at all[6]. These groups of learners are extremely disadvantaged by not mastering the language of school (fully) and even less so the necessary transfers of LS/L1 language skills unto subject specific contexts. This is a clear case of disempowerment. In the extreme, risk learners with such a low proficiency in LS cannot really follow other subjects, they do not benefit enough from these educational experiences, neither linguistically nor in subject-matter terms.

There is no doubt that school has to compensate for social differences, for the negative effects of certain socio-cultural influences, for which the learners cannot be made respon-sible. On the contrary, they have a right to be educated and qualified up to a certain point, to be able to acquire and meet the same basic objectives as everyone. These have to be defined therefore as minimal goals or minimal standards, agreed upon by societal consent. Reaching these standards is in the interest of both the individual and the society, because learners need to be able to participate, in school, in society at large, and in the shaping of Europe. Only this will lead to democratic citizenship and to social cohesion on our continent.

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[6] A recent large-scale study in Germany named DESI showed that children growing up bilingually (e.g. when the language of the school is already spoken by at least one member in the family) do quite well in LS competences, and even better in foreign languages, with a slight advantage over the regular native-speaker children aged 15.

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