

## **CONTENT AND LANGUAGE INTEGRATED LEARNING, CULTURE OF EDUCATION AND LEARNING THEORIES.**

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### **Introduction**

In many countries some form of bilingual and/or multilingual education is promoted. This usually means (1) that part of the curriculum is taught in a different language than the mother tongue, (2) that subject matter is taught in a different language than the mother tongue (3) that (traditional) language teaching continues to play a role although adapted to the specific multilingual learning situation. In recent years this method has been addressed as *Content and Language Integrated Learning*, CLIL in short (cf. Marsh & Marsland 1999). While the acronym is a synonym of *Content-Based Language Teaching* the terminology refers to more than simple word-play. It illustrates a significant shift of attention from teaching to learning.

CLIL is getting increasing attention and this basically for two reasons. First, because in most countries at the end of the XXth century, foreign language teaching and learning seem to be in a state of crisis. It is felt that the efforts put into language teaching lag far behind the results that should be achieved. Second, CLIL suits European aspirations of educating citizens capable of speaking, apart from their mother tongue, two community languages (cf. White Paper 1995). In contrast to this interest, scientific research regarding CLIL is only starting. While CLIL or CLIL related methods seem to work it cannot be said why they work and which parameters should be studied in order to actually see linguistic and metalinguistic processes at work. In this respect CLIL resembles acupuncture: it works but nobody seems to know why. Of course, many research findings are available with respect to Canadian immersion programmes, yet the transfer of these to Europe would be a serious mistake since so many variables are different.

In this contribution a number of factors will be reviewed in order to explain why CLIL works and why it is a better and more challenging (language) learning environment than traditional language classes. At the same time the discussion is placed against the background of an important debate provoked by developments in the European Union and sustained by the European Language Council (<http://www.fu-berlin.de/elc>): if European citizens are supposed to learn two languages how are they going to do that in the wake of the apparent shortcomings of traditional language teaching? Moreover, how to overcome the classical arguments against bilingual/multilingual education such as (1) multilingual education (ME) is disadvantageous because it will interfere with the learning process; (2) ME will result in a lack of knowledge of the mother tongue; (3) ME will slow down learners' learning capacities; (4) ME is good for immigrant children but bad for autochthonous children and (5) today, children are already multilingual on leaving school (see Van de Craen 1999).

To end the introduction a few words on terminology. In this text *multilingual education* or CLIL will be used to refer to any form of language education in which subject matter is taught in a second or a foreign language. It could be called *bilingual education* or *immersion* but it is felt that multilingual education is more neutral and in line with developments actually taking place within the European Union and the European Language Council. Moreover, there are no serious scientific considerations to prevent bilingual education to be called multilingual education. Finally, in most countries where bilingual or immersion education is part of school policy usually more than two languages are involved.

### **Language Pedagogy and (Language) Learning Theories.**

Learning theories as well as language learning theories come in great varieties. Yet one might say that the outline of the ideal learning theory put forward by Hill (1980) is still valid. The characteristics of such a theory, according to Hill, are as follows. The theory has (1) to deal with the complexities of human symbolic learning and insightful problem solving, (2) to allow for the flexibility of behaviour, (3) to explain cognitive flexibility and its far from universal aspects, (4) to take into account developmental processes, (5) to consider the influence of earlier on later learning and (6) to deal with motivation and reinforcement. Hill's ideal - admittedly, complicated - interactionist theory is in sharp contrast with the simple - admittedly, naïve - language learner's theories inspired by the Chomskyan tradition. Language learning for those scholars seems to be a mere computational exercise (cf. Wexler & Culicover 1980; Pinker 1994, 1999).

Hill's programme was certainly ahead of its time considering that it was first published in 1964. Today, the consideration of symbolic learning and cognition, the questioning of universalism and the insistence on the importance of motivation and reinforcement certainly coincides with modern ideas in language learning theory away from traditional, computational, generativist thinking.

Language learning theories related to multilingualism and education draw more on interactionist theories than on some form of computational approach. These theories focus on, firstly, the way second language learning (L2 learning) differs from mother tongue or L1 learning (see Segalowitz 1997); secondly, on the (dis)advantages of explicit, i.e. grammatically oriented or form-focused, vs implicit, i.e. discourse oriented or meaning-focused learning (see Ellis 1990, 1994); thirdly, on the impact of multilingual competence on cognitive aspects of the brain (see Albert & Obler 1978; Cook 1997; Paradis 1997; Fabbro 1999). Moreover, the distinction between theories of multilingualism vis-à-vis theories of second language acquisition (SLA) is not always easy to make. This is not necessarily a disadvantage: in most cases SLA theories and multilingual ones should be regarded as complementary rather than the opposite. Yet, one should be aware that SLA findings are not necessarily applicable to CLIL environments.

The large number of theories contrast sharply with their relevance to language pedagogy in general and multilingual language pedagogy in particular. In an attempt to adapt Levelt's speech production model for bilinguals De Bot concludes that '[...] the empirical basis for an evaluation of a bilingual production model is rather small at the moment' (De Bot 1992:24) and in an overview of language lateralisation studies of bilinguals Paradis sighs: 'How many additional repeated failures to demonstrate different laterality in increasingly specific subgroups of bilinguals will it take for neuropsychologists to move on to something more productive?' (Paradis 1990:386). The well-documented area of explicit vs implicit learning does not boost language pedagogy either. The review by Ellis (1994) clearly shows that the debate is at best inconclusive and at worst of no use at all for language pedagogy.

The disturbing conclusion seems to be that, at the moment, no language learning theory is available that can account for multilingualism and multilingual education. Despite the previous, in the next paragraph an attempt will be made to outline a model and to come to grips with the problem areas mentioned in the introduction.

### **Language Learning Theory Revisited**

Bearing in mind Hill's remarks regarding an ideal learning theory and the fact that behavioural and cognitive flexibility, developmental processes, earlier and later learning as well as motivation and reinforcement should play a part, a more fruitful approach seems to lie more in studying individual learning differences rather than to look for universal aspects of learning. This is precisely what Segalowitz (1997) has done. Referring to a cognitive information processing framework by Ackerman and Anderson (e.g. Ackerman 1989; Anderson 1976) Segalowitz proposes a model where progress in knowledge, linguistic performance and cognitive aspects are joined together. Table 1 is an adaptation and a slight expansion of Segalowitz's (1997) discussion.

Insert Table 1 here (see last page)

Let me briefly explain table 1. From declarative to procedural knowledge means to move from factual *knowledge* to automatised *doing* via a process of slowly internalised rules which need less conscious, cognitive effort the more internalised they become. At the same time linguistic performance moves from error prone to native speaker like performance. The latter evolution is of course accompanied by (i) an increase in speed of execution and (ii) an improvement in prosodic features moving toward native speakers' language command.

This representation of how language learning evolves has a number of interesting advantages over a number of other models. First, this learning model coincides with the experience of language specialists, i.c. language teachers. No matter how individual learners' progress may evolve, the underlying processes, as judged from learners' performance, are similar to the ones summarized in table 1. Second, this learning model is in accordance with current neuroscientific ideas on the subject. In Kutas' words '[...] there may be a relatively direct relationship between processes of language comprehension and general cognitive processes' (Kutas 1998:968). Third, the model is open for testing. Fourth, the model can be applied to both mother tongue learning as well as to second/foreign language learning and multilingual education. Fifth, it is in line with Hill's proposals (Hill 1980) regarding an ideal learning theory.

However, learning cannot be restricted to model searching or the application of models. It takes place in institutions, schools, where people manage other people. These institutions form a culture of their own, which has a considerable influence on learning in general and language learning in particular. It is to this culture of education that I turn now.

### **Learning and the culture of education.**

In a long footnote to one of Sapir's later articles (Sapir 1939) Sapir compares the 'statistical' study of children's reading to the 'psychiatric' approach, which aims at researching the role, meaning and function of reading with respect to the development of fantasy and personality. Sapir advocates the latter approach because it is only in studying the total personality of man that valid claims about him can be made. A similar argument is made by Bruner (1996) while discussing the relationship between 'computationalism' and 'culturalism'. Bruner is interested in 'the powers of individual minds and the means by which the culture aids or thwarts their realization' (Bruner 1996:13). Culture 'manages' education and 'education is a major embodiment of a culture's way of life' (Bruner 1996:13). Bruner goes on to identify a number of tenets and their importance for education. I will briefly present and discuss them here before moving back to language learning.

The *perspectival* tenet or the meaning of any fact. Perspectives of reality may be shared by the individual and the institute or they may not. An example would be the way immigrants look at schooling today and the official way of doing so. Bruner wants this perspective to be made explicit.

The *constraints* tenet. Education and culture imply two kinds of constraints: (i) constraints affecting the human mind and culture and (ii) constraints imposed by language. Although Bruner refers to the Sapir-Whorf hypothesis he insists that these constraints can be 'turned around' and transcended by students' 'metalinguistic gifts'. The development of this gift should be an ingredient of education.

The *constructivism* tenet. The realisation that reality is not 'out there' but 'made'.

The *interactional* tenet. This involves the roles of 'teachers' and 'learners'. Bruner rejects the traditional 'transmission' model in favour of a 'scaffold' one.

The *externalisation* tenet. This refers to the production of 'works', i.e. joined activities in order to create group solidarity and 'negotiable ways of thinking in a group' (Bruner 1996:23). An example of enhancing this aspect is the idea to keep children and teachers together through primary school.

The *instrumentalism* tenet. Referring to the 'discovery' and 'use' of talent, such as the creation of a chess club in a ghetto school (i.e. Bruner's example) or making it possible for students to speak their own language in an institutionalised way (my own example).

The *institutional* tenet. To prepare for participation in institutions.

The tenet of *identity and self-esteem* or the realisation that one can do something to undesirable situations by giving tools to evaluate them; as a consequence self-esteem arises.

The *narrative* tenet. Because the narrative mode is seen as the creator of cohesiveness and meaning.

While it is hard to do justice to Bruner's ideas here the meaning of it all is clear. Education is much more than a learning game. It involves the totality of the personalities involved and, unless it is considered in that way progress cannot be made. The importance of Bruner's approach lies in his encompassing view of education. Take language education in a highly sensible linguistic area such as Brussels,

Belgium. Compare the teaching of French in the Dutch-speaking school system (Van de Craen & D'hondt 1997) to the teaching of English in secondary schools in The Netherlands, a linguistically much less sensitive area (Huybregtse *et al* 2000). Bruner's point is that comparison of any data – if comparison were at all possible – cannot be done without taking into account the *meaning* of being multilingual in a multilingual society such as Brussels and being multilingual in The Netherlands. The tenets for both environments are so different that the way (language) education is experienced is hardly comparable. Let me now turn back to multilingual education.

### **Learning in a 'Content and Language Integrated Learning' Environment.**

Content and language integrated learning (CLIL) or any form of multilingual education is a meaning-focused learning method where language knowledge is not the ultimate aim but rather a vehicle for instruction. The aim of CLIL is twofold: learning subject matter together with learning a language. But CLIL is first an educational approach embodying 'a range of different methodologies' and not simply 'using an additional language for the purpose of instruction' (Marsh 1999:38). In other words CLIL is a pedagogical project encompassing every aspect of education in the Brunerian sense. First, the social environment is briefly considered with reference to the situation of Dutch-speaking primary schools in Brussels; second the language pedagogical side is highlighted.

#### *CLIL and the change in social environment.*

Transforming a traditional monolingual school in a school advocating multilingual education has a major and dramatic impact on (i) classroom activities, (ii) school organisation, (iii) curriculum building, and (iv) the way schools deal with the outside world because multilingual education drastically alters the learning and the social environment.

(i) *Classroom activities.* In the Dutch-speaking primary school system in Brussels more than half of the pupils are not of Dutch-speaking origin (Van de Craen & D'hondt 1997). Since the dominant language in the city is French most pupils communicate in French with each other. In the current system there is no 'legitimate' place for French. In a multilingual learning environment both languages have a 'legitimate' place since classroom activities happen either in Dutch or French.

(ii) *School organisation.* In Brussels, Dutch-speaking schools are supposed to play a linguistic as well as a political role. The 'preservation' of Dutch is one of their tasks. However, social demand for multilingualism is increasing rapidly, hence the increasing number of non-Dutch speaking pupils in traditional Dutch-speaking schools. It is easy to see how conflict arises from the tension between

these two tasks: on the one hand the preservation of Dutch vis-à-vis a for a large part non-Dutch-speaking public. Multilingual education will preserve Dutch and will create multilingual citizens. At the same time schools tension will be defused.

(iii) *Curriculum building*. The final curricula goals (the *kerndoelen* or *eindtermen* as they are called in Dutch) should be attained by all pupils at the end of primary school. This is becoming increasingly difficult in the Brussels Dutch-speaking school system because non-Dutch speaking children have to overcome the language barrier first before they can actually tackle the cognitive one. Multilingual education would take care of both aspects at the same time, especially if the curriculum is rearranged in such a way that subject matter in the second language is taught right after it has been learned in the strong language or the mother tongue.

(iv) *The way schools deal with the outside world*. Just as in classrooms tension arises because teachers are torn between allowing pupils to speak French among themselves and to forbid it, school authorities are torn between communicating with the parents in French, which is in most cases the language they use most, or to communicate in Dutch, a language many parents do not master. In a multilingual school this problem is overcome because both languages are allowed.

#### *CLIL and the change in the language pedagogical environment.*

It is clear that a multilingual school can change the social climate considerably for the best. Let me now turn to the language pedagogical side of multilingual education. Table 1 basically offers a learning model from the point of view of second language acquisition (SLA). What happens if the second language is acquired in a multilingual learning environment? Undoubtedly, learners will have to undergo the three phases as well. But there is one big difference with SLA. The fact that focus does not lie on language but on *doing* something with language, namely acquire subject matter, makes multilingual classrooms different. I will briefly consider (i) the cognitive differences, (ii) knowledge differences and (iii) performance differences each time referring to table 1.

(i) *Cognitive differences*. Table 1 seems to suggest that in the first phase the highly cognitive load entailed by both subject matter and language learning is laying a heavy burden on the learner's shoulder. However, this turns out not to be the case. Take two aspects that can be seen as characteristic for multilingual classrooms, scaffolding and (self-)correction. Scaffolding refers to the informal, unplanned intervention of teacher and/or other learners to correct and/or expand what is being said. A typical example is the following interaction to be witnessed hundreds of times in multilingual classrooms.

Pupil 1: He was looking out of . eh. How do you say 'raam'?

Pupil 2: Window, window

Pupil 1: He was looking out of the window...

Teacher: 'Raam' is window

In this extract of a lesson Pupil 1 is looking for the English word for *window*. He knows the Dutch word *raam* and asks a fellow pupil for help. Notice the spontaneous way in which this happens, because it is part of an on-going conversation where meaning is put across. While it remains to be shown what the exact added-value of scaffolding is with respect to learning, it is clear that this interaction is perfectly natural, accepted and appreciated by both teacher and pupil. What is important is that the meaning and the flow of what is being said is hardly disturbed. As a result the cognitive load is low.

The same is true when it comes to correction. Gajo (1999) has pointed out that in multilingual classes there seems to be a kind of *philosophy of correction* that takes into account various aspects related to correction that seem to be neglected in traditional SLA classes. Aspects such as: *latency*, referring to the time lapse between knowing a form (declarative knowledge) and using it (procedural knowledge), *tolerance*, referring to the level of tolerance that seems to exist before a native speaker corrects the form and *delay of response*, referring to the slower reaction of L2 learners in a communicative environment. In multilingual classrooms correction is considered differently and plays a different role than in SLA classes because the nature of most interaction processes are different.

(ii) *Knowledge differences*. In multilingual classes the step from knowledge of linguistic facts, declarative knowledge, via associative knowledge to automatized, and procedural knowledge happens at a much faster speed than in traditional SLA classrooms. The reasoning behind this is quite simple: what makes a learner move from phase 1 to phase 2 (see table 1)? The answer is practice. CLIL classes offer plenty of practice implying, in terms of table 1, that compilation of production systems goes faster and that, consequently, performance will improve quicker. The same reasoning applies for phases two and three in table 1.

(iii) *Linguistic performance*. Performance will increase rapidly in a CLIL environment because the low cognitive burden together with the way knowledge is acquired strengthen one another. In this respect language learning can be seen as a correlate of subject matter learning much in the same way as learning how to play the piano can be seen as a correlate of wanting to listen to a beautiful melody.

### **CLIL, culture of education and (language) learning theories**

Let me by way of conclusion come back to the five classical counter-arguments against multilingual education.



- (1) Multilingual education/CLIL is disadvantageous because it will interfere with the learning process. The method does indeed interfere with the learning process but for the better: language learning as well as subject learning will be enhanced
- (2) ME will result in a lack of knowledge of the mother tongue. It is quite unclear how this may happen. The number of hours spent with a language is not the only variable in learning a language. The social environment and the well-being of the pupil play an important role as well.
- (3) ME will slow down learners' learning capacities. I hope to have given indications that the opposite is bound to happen.
- (4) ME is good for immigrant children but bad for autochthonous children. It is true that good results have been obtained with CLIL like methods with immigrants' children. All the more a good reason to expand this way of language learning.
- (5) Today, children are already multilingual on leaving school: this is contradicted by reports in most European countries.

Moreover, CLIL seems to offer interesting insights in (language) learning theory and the social cultural environment. It can only be hoped that CLIL experiences in different countries will lead to greater insights in language learning by means of subject matter. Of course, there remain a considerable number of organisational problems: the education of language teachers should be much more intensified than it is now, the development of CLIL curricula needs to be set up and more research is needed with respect to the influence of environmental factors. Despite this, the teaching of languages by means of teaching subject matter seems to be the only way to overcome the current language learning crisis as well as the answer to the demand for a new multilingual European citizen.

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	<b>Nature of Knowledge</b>	<b>Nature of Linguistic Performance</b>	<b>Nature of Cognitive Demands</b>
Phase 1: Beginners	Facts, Declarative e.g.: learner knows certain words but is unable to converse	Slow, error prone, easily disturbed by competing demands such as thinking	Heavy, cognitive load, conscious, explicit activities
Phase 2: Intermediate learners	Associative e.g.: 'compiled' in the sense that cognitive and motor processes are put together; simple conversations possible	Faster, less error prone, yet numerous mistakes are still made	Less heavy cognitive load, a mix of controlled and automatised processing
Phase 3: Advanced learners	Automatised, Procedural e.g.: ability to converse native speaker like	Native like fluency	Low cognitive load, 'unconscious', implicit activities

Table 1: Language learning model along a cognitive, information processing framework adapted from the discussion in Segalowitz 1997. See also Ackerman 1989 and Anderson 1976.