Effective design in integrated content and language learning: factors, challenges, opportunities[1, *]

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1. Overview

In this paper I first outline issues affecting the integration of content and language learning in higher education, before considering selected factors in course design. I continue by examining how student-centred learning environments can promote integrated content and language learning and allow the design, implementation and assessment of courses and programmes to follow the principles of constructive alignment. Finally, I close with the challenges posed to course designers, implementers, and assessors, and point to present and future opportunities.

2. Integrating content and language

Integrating content and language (ICL) implies that courses and programmes have both content goals and language goals. The concept of integrating content and language in education is commonly termed content and language integrated learning, or CLIL,

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especially in primary and second education. It has been defined as teaching non-language subjects through a foreign/second language, with both content-matter and language learning as goals (Brinton, Snow, & Wesche, 1989). In primary and secondary education, the process of CLIL is often vested in one and the same teacher, who instructs in both the content and the language (see for example Escobar & Pérez-Vidal, 2004). To a large extent then the success of CLIL depends heavily on the competences of the single teacher. In higher education, however, faculty have specialized in different domains of expertise. This means that students encounter many different teachers during a programme or even a single course of study. Therefore, it is likely that the learning in an integrated programme will stem more from the way the programme is designed, implemented and assessed than from any specific teacher: learning is thus more student-centred than teacher-centred. To distinguish what occurs in integrated programmes in higher education from those in primary and secondary education, I prefer using the shorter term integrating content and language, or ICL.

In higher education, increased specialization, together with the higher degree of abstraction required in the disciplines, may wholly or partly account for the often signalled lack of attention to the language aspect in English-taught degree programmes (cf. Tella, Räsänen, & Vähäpassi, 1999; Räsänen, 2000; Hellekjaer & Westergaard, 2003; see also Maiworm & Wächter, 2002). It is, moreover, inadequate for academic development simply to offer content programmes in a foreign language, without incorporating explicit or implicit language goals. A course given in English that does not require any demonstration of development in language performance is not an integrated course. Similarly, adjunct language courses, which are often provided alongside content programmes in foreign language medium education, are deficient unless they incorporate and assess content development on a systematic basis. Unfortunately, this is a serious risk for content-based language learning where the content may be largely irrelevant (for many examples of this, see Brinton & Master,

1997). Adjunct language courses that make use of the same content as the parallel content courses to which they are related may of course not need to assess the content, but they still cannot neglect the content goals.

In higher education, the integration of content and language implies a course in which content staff and language staff jointly contribute to design, implementation, and assessment. ICL also implies that both academic faculty and students acquire an understanding of how 'disciplinary' communities mould the language to convey the acquired and emerging knowledge of the discipline, according to the conventions of the community (cf. Hyland, 2000; Jacobs, 2004; Wright, 2004). In other words, just as the knowledge of a discipline is not static, but evolves, so must the language used to express it.

There is no one single framework for the integration of content and language learning in higher education. Integration may take the form of an entire degree programme, where content goals and language (or literacy) goals are interwoven throughout the entire course and assessed systematically during each component or module. In practice, programmes that follow this framework may place more emphasis on the language and literacy aspects earlier in the programme, and treat these rather tacitly later. At my own university this is often the case, although in some instances (e.g. a bachelors programme in European Studies) there are explicit goals for language/literacy performance throughout the programme. More frequently, however, programmes contain integrated elements, that is specific courses with both content and language goals. In some cases a course may even be run in two languages, the target language (e.g. English) and the language of the institution (often the national language or one of them). However, it may be wise not to classify as ICL courses those in which less than 50% of the materials and the teaching is in the target language. By way of comparison, Maiworm and Wächter (2002), in their study of English-language-taught degree

programmes in Europe, include programmes where in any year at least 25% of the tuition was in English. Further formats for foreign-language-medium programmes are also possible, as Langner (2003), Nastansky (2004) and van Leeuwen (2004) have emphasized at the programme and institutional level.

ICL can apply to traditional learning as well as innovative learning contexts, but challenges both teaching roles and learning approaches in both. Just as the effective teaching of English for Academic Purposes (EAP), ICL requires an understanding of the language as used in the respective discipline (or disciplines). That entails, among other things, an understanding of the concepts and processes underlying the discipline, its patterns and processes of argumentation, what constitutes evidence, what the generally agreed principles are, and what the characteristics of the relevant genres and sub-genres are. ICL also requires an understanding of what knowing a language means, how language is used to construct and create meaning, that language is more than simply vocabulary in well-constructed sentences, that language production itself is dependent on content knowledge, and that disciplines differ in the way they use language. The last point implies a challenge for multidisciplinary ICL learning. In other words, designing and implementing ICL courses and programmes requires that disciplinary experts understand how the specialist use of language allows them to construct the disciplinary knowledge and expertise, while language experts need to understand that the canon of disciplinary knowledge entails developing a specialized language. In higher education then, where disciplinary territories may be strong (Menard, 1997), this means that content staff and language staff need to work together to coordinate their contributions to an integrated course. In this process it will be necessary for content staff to take the role of language into account in their design of tasks and assignments, and concomitantly for language staff to grasp the overriding impact of discipline knowledge and skills on the language. This suggests limits to

generic training and raises questions about the extent of transferability of skills (Hyland, 2002; see also Dudley-Evans, 2004; Samraj, 2004; Räisänen, 2004).

Let me give you one example of what I tentatively call an ICL course in psychology and English at my university. The particular course dates from 1995-1996 and formed part of the new first-year programme for psychology students. The programme was in Dutch, but almost all the recommended literature was in English. The programme coordinator thought that students would have some problems in handling the literature and thus asked the Language Centre at the university for help. The first part of the academic year was introductory, intended to acclimatize the students to the system of and approaches to learning. Hence the semi-integrated part of the programme was to run from October to April and covered four psychology courses. Although at the outset that the percentage of learning through English would have been less than 50%, so it may not really be called an ICL programme, the coordinator's intention was that the psychology programme as a whole would gradually change from Dutch-medium to English-medium during the second and third academic years. The content goals for the four courses can be summarized as enabling the students to understand the biological basis for psychological phenomena, to understand measurement and conditioning, to understand cognitive processes, and to understand human differences. The goals for the language support were to help easing the students into the reading of psychology literature, enable them to grasp the language of psychology (vocabulary and style), encourage them to discuss the meaning of the texts (constructing and comparing), and to enlarge their basic language knowledge. So far so good.

The general approach to learning was problem-based learning (Schmidt, 1983; Schmidt, 1993), which is a very student-centred approach. Part of this approach (of which more later) involved students discussing 'problems' systematically in small groups. The English support would be run on similar lines, with students discussing the

language and literacy aspects of the respective psychology articles. English would be an adjunct course, scheduled to match exactly the discussions (in Dutch) in the 'regular' courses. This meant that students would not be required to do any additional reading than they were already doing.

All this looks good on paper. The problem was that this course did not work. Let me list some of the reasons. Firstly, part of the reason lay in the student-centred nature of problem-based learning. Since students were to be in charge of their learning, it was not permitted to tell students in advance which articles they should read. That would have made the course teacher-driven, and seriously constrained the normal work in the regular course. Since students were expected to decide themselves which literature to read in the light of the learning objectives they themselves set during their regular course meetings, the upshot during the English adjunct course was that students had read different articles; some had read none, and others only texts in Dutch. Therefore, the hoped-for discussion of argumentation and language matters based on the recommended articles never materialized, except for limited text analysis on the spot. Secondly, content goals and language goals were misaligned. The content goals required that students would read widely and vicariously: learning success in the regular programmes depended on students not all reading the same literature. Students were meant to report back on their findings and compare and synthesize their knowledge; the more widely the small group collectively had read the relevant literature, the better their construction of knowledge on the problem in question. In contrast, the approach to language development was more concerned with text structure and argumentation, the micro-level of vocabulary and syntax in particular. Thirdly, there were unfortunately conflicts with the managing group at the psychology faculty: there was not a coherent line for the programme held by the content staff, and there were disagreements about the aims of the programme, the learning approaches and the implementation; some staff did not agree with role of English, and did not wish to see

psychology moving to English-medium. Fourthly, the English staff were ill-prepared: few of them read the recommended psychology articles in detail (this would have entailed six or seven articles each week, and even then the English tutor could not be sure that the students would choose to read these articles). Moreover, since the articles were often quite complex research articles, the English tutors often did not understand them. Thus, the texts and the process demotivated the language staff. Finally, the English course design did not provide any added value; which meant no incentive for students. However, the students themselves found an added value themselves: they used the English training as preparation for the regular course meeting (which usually took place the next day).

This brief sketch of a failed course is an example of the danger of neglecting crucial factors in designing an effective ICL course. Above all, I would argue that when courses and programmes require the collaboration of staff from a number of different disciplines, as in the case of ICL, then effective design becomes vitally important. The next section highlights the design aspects.

3. Factors in course design

In the design of courses in English-medium education, many factors demand attention: the nature of the learning environment, quality of teaching staff, capacity of the students, assessment and evaluation processes, to name but a few. At the outset it is valuable to remember that, as Jackson, Shaw, & Wisdom (2002) have emphasized, we are concerned with “transdisciplinary knowledge”, in that it is knowledge that is constructed through “day to day application”; it is “contested knowledge” in that it concerns the conjoint application of different disciplines to real world problems such as arising in the world of work (p1). Work done by the Language and Teaching Support

Network: Generic Centre (http://www.ltsn.ac.uk/genericcentre/) has developed criteria for categorizing key factors in course and curriculum design. This section discusses six groups of factors.

The first group of factors cover the philosophy, rationale and conceptions of education. Here, we are concerned with questions such as what it means to learn, what it means to teach, and why we do what we do. We are also concerned with our understanding of education and the learning process, and we are concerned with our conception of disciplinary knowledge and what constitutes codified knowledge (i.e. uncontested knowledge in a discipline). What is codified knowledge, and therefore by implication does not need citing, varies from discipline to discipline: as one of Hyland's (1999: 354) physics informants remarked when referring to assumed (i.e. codified) knowledge, "Nobody cites volcanoes in their papers". However, in collaborative transdisciplinary learning such as ICL, failing to reach a consensus on the philosophy, rationale and conceptions might result in an unsuccessful course or programme.

The second group of factors concern the learning goals for the course or programme. These cover the broad aims of the course or programme, and the specific objectives, that is what the steps to be taken are with the goal of achieving the broad aims. These objectives will cover teaching objectives, curriculum objectives, and student learning objectives. Perhaps the most important here is the intended learning outcomes, which are statements of achievement from the learners' perspective (Jackson, Wisdom, & Shaw, 2003). The learning outcomes specify exactly what students should be or know or be able to do at the end of the course: they connect directly to assessment in that specification of the learning outcomes entails the criteria by which achievement is judged. In an ICL course, the transparent specification of the goals and especially the learning outcomes may not be easy to achieve, partly because the terms used to specify may engender different conceptions in the minds of the parties involved.

Content covers the third group of factors, and here perhaps we may find ourselves on more solid ground. This will usually be determined by the disciplinary experts in the design team, and for a course to be effective this content has to be sufficiently challenging for the students and adequately motivating. The relation between challenge and motivation can be described as an inverted U: if the degree of challenge is too low or too high, then students' motivation will be low (Wilkinson, Swaak, & Foster, 1992; Wilkinson & Foster, 1996). The trick is to adjust the challenge optimally so that students are stimulated to think critically. However, there is more to it than this, since the learning interventions (the tasks, assignments and other educational processes) have to be considered as a whole. This is because students' learning efficacy is affected by the cognitive load (Sweller, 1988). Students are of course different and thus there needs to be scope for learner development and expansion – in this sense course design needs to allow the learners a degree of freedom in what they do and how they do it. For a course to be effective, however, the learning needs to be related to prior knowledge – learning cannot take place in a vacuum. Moreover, in a programme, how the content in any course is related to that in other courses should be clear for the learners: they should see how the present course relates both to courses they have taken previously and to those they may take subsequently, as well as to courses running simultaneously. Effective content learning explicates the links across courses in a whole programme, allowing the learners to construct their own relational knowledge maps.

The fourth group of factors comprises the teaching and learning methods. Content itself plays an important role here because disciplines have their own conventions and traditions about how to teach and how to learn. One cannot ignore the importance of these conventions and traditions. Especially in transdisciplinary courses in an ICL context, conflicts could easily arise and threaten the effectiveness of the learning. For example, practices of teaching in languages may be quite different from teaching

practices in, say, mathematics: moreover, one discipline may have difficulty in recognizing that the teaching methods of another discipline lead to what the first discipline would consider as learning. Teaching and learning methods above all have to do with power relations: who's in charge? The methods also depend on previous experiences, both the instructors' and the students'. In an earlier study we found that language teachers working in a semi-integrated programme tended to revert to a more teacher-centred style when they were faced with uncertainty in a business and economics course (Foster & Wilkinson, 1996). Such tendencies can have adverse consequences for course effectiveness. Teacher performance, just as student performance, depends on a wide range of individual factors: these have to be considered during the design stage too. It may be necessary to invest extensively in teacher acclimatization to working together in ICL programmes, initially even more so than in mono-disciplinary courses and programmes. However, the investment may repay itself handsomely if all parties develop a clear understanding of how the others work and function in their particular disciplines.

Of course, effective design also needs to take the students into account too, the fifth group of factors. Student motivation is particularly important. Students might be intrinsically motivated, i.e. they are motivated by learning and the subjects themselves, or extrinsically motivated, e.g. by the grades they get. The design also has to take the students' aptitude or capacity for study into account. Moreover, we have to consider the extent to which the course design promotes collaboration and cooperation. This is important for preparing for the world of work, since the real-world problems that graduates will encounter in most jobs require collaboration with others to construct possible solutions. The design too has to consider the opportunities to be provided for guidance and consultation with teachers and experts. It is likely that an effective ICL course may require extensive consultation opportunities, as students may not initially

know whom they should address their query to, a content teacher or a language teacher. Indeed, the query may elicit a joint response from both.

The last group of factors discussed here that contribute to effective design concerns the context in which the learning takes place. The learning environment not only comprises the physical location and equipment and materials, but also perceptions and qualities of the teaching staff and the administrative staff. The actual people involved in the educational process play a crucial role in the success or failure of teaching and learning. Furthermore, we cannot ignore institutional and national requirements which are critical to determining what can and what cannot be done. It may be that these requirements specify certain assessment and evaluation processes, which have to be carefully considered in the design process. Finally, we need a good understanding of the external world in which the learners live, in particular the time they have available for studying.

In considering these groups of factors, we may think we can design courses systematically, moving for example successively from philosophy to goals, to content, to methods, to assessment and then to evaluation. However, the reality is much messier: all the factors interact, including factors not mentioned such as the impact of research and external pressures for change. This leads to a condition that I call partially ordered chaos. It is chaos in the sense that changes in any one factor may have an unpredictable impact on others. While the design of a course or programme has to be orderly, however, it must also allow for chaotic unpredictability. Last, I would argue that approaches that are more student-centred may better foster the effective design of integrated content and language programmes, as discussed in the next section.

4. Student-centred learning

Student-centred learning offers scope for effective course design in ICL contexts for a number of reasons. One is that student-centred learning places the emphasis on student responsibility for what is learned, how it is learned, and when it is learned (Gibbs, 1999). It is held that by so emphasizing responsibility for their own learning, students themselves are stimulated to become more effective learners. Students are thus responsible for planning their own learning, determining how and when they interact with teachers and other students, and for researching and assessing their own learning (Cannon, 2000). Nevertheless, it should be noted that while student-centred learning may promote effective learning, the converse can also apply simultaneously: that effective learners take responsibility for their own learning. As De la Harpe, Kulski, and Radloff (1999) have categorized, effective learners have clear learning goals, have a wide repertoire of learning strategies and know when to use them, use available resources effectively, know about their strengths and weaknesses, understand the learning process, deal appropriately with their feelings, take responsibility for their own learning, and plan, monitor, evaluate and adapt their learning process.

One widely applied form of student-centred learning is problem-based learning (PBL). PBL may be defined as any learning environment in which the problem drives the learning, where before students learn some knowledge they are given a problem, and where the problem is posed so that students discover they need to learn some knowledge before they can solve the problem (McMaster website, chemical engineering: http://chemeng.mcmaster.ca/pbl/pbl.htm). The PBL approach applied at Maastricht University is largely as described by Schmidt (1983 and 1993) (see also: http://www.unimaas.nl/pbl/default.htm). In this approach a course team devises course book, commonly known as a 'blockbook' because the year is divided into a series of thematically driven blocks (8 weeks in length). The course book comprises the rationale, aims, procedural details, and a set of problems (tasks, assignments). Students

meet in small groups (roughly 10-14 students) twice a week with a tutor. During the meeting, under a student chair, students discuss the problem applying a systematic 7-step approach (van Til & van der Heijden, 1998): read the problem and clarify concepts to ensure understanding; define the problem; analyse the problem, brainstorm; classify outcomes of the problem analysis (what is known, what isn't); formulate learning objectives; research learning objectives (self-study); report back (synthesis). This approach has been applied with success in many different domains. It is held to be appropriate for language development too (Wilkinson & Geerligs, 1994; see also Wood & Head, 2004).

PBL (and other student-centred approaches) may favour ICL because students are active in using language (defining, describing, explaining, accounting for, differentiating, etc.); students are in charge of own learning (seeking multilingual resources, reporting back in the instructional language); problems can be pre-designed both to elicit content knowledge and to activate and develop language competences; collaborative learning allows mutual help during the PBL process; productive tasks in PBL allow assessment on content and language; and there is limited reliance on staff language ability. The last is particularly important, because the linguistic competence of the staff can be a reason for ineffective course implementation (Hellekjaer & Wilkinson, 2001). However, Klaassen (2001) emphasizes that effective teaching behaviours are probably more important for effective learning than a high competency in language.

Let me illustrate these points through two examples of integrated courses at Maastricht University. The first comes from an English-medium programme in International Business, and the version described here dates from the academic year 2003-4. The whole bachelors programme is in English and nearly half the students come from outside the Netherlands. After an initial period of adjustment and training in the basic

approach to PBL learning in economics and business studies at Maastricht, the first-year students (approximately 450 students) follow an 8-week course entitled "Economics and Business". The learning outcomes of the course are such that students should be able to show that they have gained insight into the fundamental environmental forces influencing decision-making in international firms, the main principles of economics, and an understanding of the interdependence of oil market developments, macroeconomic developments and strategic planning. This is done through the example of one company, an oil "major", Shell. To promote their learning students undertake various tasks using the PBL method. They demonstrate their learning through regular on-line tests, an end-of-course test, and a team project (written assignment). In addition to the content learning outcomes, students are also trained in relevant skills, in this course primarily academic writing. The aim is to introduce students to academic writing in business and economics (at this stage primarily the organizational structure of an essay or short paper). Hence the team project.

The role of language in the course is critical. The entire course is in English, but students receive only incidental feedback and stimulus to language development (tacit development). However, as writing plays an explicit role, since students have to write and present a team project on an environmental analysis of Shell or another oil "major" of their own choosing, students receive a short introductory training course in academic writing through tutors from the English section of the Language Centre. This is a semi-adjunct training course, but the design is coordinated with the International Business staff who devise the topics for two short papers, which serve as practice. The guidelines for writing are made available on an electronic learning environment (Blackboard): the guidelines are not taught as such. Students largely follow a PBL approach to a few 'problems' and jointly achieve solutions through discussion and search of on-line information (Blackboard and the Internet). The short papers serve as practice: the process followed is first draft, peer review, rewrite, feedback from group and language

tutor. The papers are not graded. The topic for the main paper, the team product, is devised by the International Business staff in collaboration with the English materials designers. As mentioned, the main paper in 2004 comprised an environmental analysis of Shell (or another oil firm). For this paper four or five students work together in a team, each student writing separate chapter. They cooperate on the team introduction and conclusion. This latter requirement has the result that team members have to collaborate in designing, revising and editing their separate chapters. The process of writing entails that the team writes a draft, which is then subject to review by their peers and by the language tutor, and then they revise it. Assessment is collaborative with the IB staff rating the project on content and organization (50% of the final grade), and the language staff rating on language, style, mechanics, citing and referencing (50%). This course has been satisfactorily evaluated by the students (Wilkinson, 2004).

The second example comes from Health Sciences, and relates to a course run in June-July 2004. The bachelors programme in Health Sciences is in Dutch with gradual switch to English, though the extent of English at the end of the third year is unknown. In the second year all students (approximately 180) follow a common programme in Dutch till May; then they choose one of three options (which prepare them for seven graduating options in year 3). The three options (June-July) covering health technology assessment, human biology, and psychopathology bring in English. This is the first time that the students have encountered English-medium learning, with the exception of literature. The three options each involved team work with a variable amount of guidance and instruction from the specialist staff. The overall theme of all three was research, and the aim was for small teams of students to write a research proposal (health technology assessment) or a research report (human biology and psychopathology). They would also present their proposal or report in a seminar. In each case it was the students' first encounter with this kind of research work.

Writing these kind of genres (and writing in English) was considered quite a challenge for the students. A short pre-training course was therefore run beforehand (April-May) in English. It was felt that introducing everything at the same time during the June course would have been too demanding. The very short training course comprising 5 sessions in small groups was run by the English section. Because at this stage (April) students had not yet finalized their options for June, we decided to train all students together on the grounds that they in any case would have to write both genres later in their studies. The training focused on awareness raising – after all, we could not expect students to achieve a lot in such a short time. Again a PBL approach was followed in the sessions with various elicitation tasks relating to general academic writing in health sciences, and then specifically on the research proposal and then the research report. What we did was organize small teams in each group, who then choose their own research topic and write a proposal as if for an official funding organization (the Netherlands Organization for Health Research and Development (ZonMw): http://www.zonmw.nl). We focused on the items in the funding application that demanded greater linguistic input. During the subsequent session, the teams peer-reviewed against specific criteria two other teams' proposal. This allowed the tutor some time to review the proposals too. Feedback was on the spot. Teams had the personal option to rewrite their proposal, though this was not required. A subsequent session introduced the structure and organization of research reports, and then the same teams wrote up their own imaginary report. We emphasized here that the aim was on the writing and the organization, not on definitive results. Thus students, if they wished, could conduct a small-scale survey and write that up (they only had a week), or they could imagine that they had conducted the research project they had presented in the proposal, and write an imaginary report. There was quite a wide scope for inventiveness. The same procedure was followed in the final session with teams peer-reviewing the reports of two other teams. Although our brief did not include it, we

added a requirement that each team used five minutes to present their report orally: this gave minimal practice in presenting in English.

During the actual content course (June), the language staff were hardly involved, except at the stage of reviewing the draft papers. Each option had different procedures, but in general the English tutors provided feedback on language, organization, and citing and referencing during a short face-to-face consultation with each team. We were fortunate in being able to allocate one English tutor for each option. There was subsequently joint assessment of final paper, with the content staff rating the content, and the English staff the language. This proved to be more complex than we had imagined for a variety of logistical reasons, and in the case of one option the students failed to submit papers to the English tutor. Nevertheless, the process worked reasonably satisfactorily overall, except that students found the pre-training component inadequate. It was not that the awareness-raising was too little, rather that the students would have preferred much more focus on language (of the 100 students who completed the evaluation form, 60 commented on an open question that they would have liked to have more grammar).

To sum up, these two short examples illustrate how we have tried to integrate content and language in our courses. In fact, in all cases we are now starting with a given (the content programme) and negotiating how to bring in the attention to language. We do not assess the proficiency levels of the students beforehand, which is a drawback since we tend to have quite a lot of students who have very good English and who could do with having a greater incentive. However, even if we did assess levels, it would be unlikely that we could do much about it logistically: we would still have students of varying abilities in the same group.

In terms of the six groups of factors for effective course design (section 3), I would hold that my first example takes all six into account, though improvements are certainly

necessary. In the second example, the fourth group of factors, the student variables, were underestimated, perhaps because this was the first time the course was run. As a result the course as a whole may be seen as less effective than it could have been.

5. Design, implementation, and assessment: constructive alignment

The successful design of a course must combine control and freedom, control in the sense that the goals are clear for the learners, and freedom in the sense that the learners may follow multiple paths to reach those goals. Student-centred learning such as PBL offers both control and freedom and can thus be considered a suitable framework for successful design. Successful design must offer scope for individual learner freedom, that is to say offering a choice of activities, tasks, actions, etc. However, successful design does not imply no design (i.e. total freedom); on the contrary, it entails guidelines to enable learners to identify possible paths towards the aims/goals and objectives, and checks so that learners know whether they have met the objectives. The developer must also ensure that the aims are clearly communicated and that the staff implement the course as intended. This can be ensured through clear instructions, guidelines or notes for the teaching staff. It may be necessary to provide tailored staff training prior to course implementation.

As indicated in section 3, a critical aspect of effective design is the assessment and evaluation of the course or programme. Assessment refers to the methods by which one measures the degree to which a learner meets the aims and objectives set. It covers more than the objective grading of students' work: it covers self-assessment, co-assessment and peer assessment too. Moreover, assessment covers the evaluation of the programme or course, the teachers, the institution, etc. When assessment matches the

aims and the learning, then we may conclude that the course is aligned. This fits in with the theory of constructive alignment.

Constructive alignment entails aligning learning intention with the curriculum, teaching, learning, assessment and resources (Biggs, 1999, 2003). In this process the first question we should ask is: What do we want students to be able to be as a result of learning? This gives us the intended learning outcomes. The intended learning outcomes then serve as objectives for the design of course or curriculum that enables the outcomes to be achieved, and the design of the assessment process that enables the achievements to be evaluated. In brief, this is the 'alignment' part of constructive alignment. The 'constructive' part follows from the current learning paradigm of constructivism (see for example: http://tip.psychology.org/bruner.html), which proposes that what is important is what the learner does: that is, constructing meaning through relevant learning activities. The task for the designer then is to create a learning environment that supports the learning activities. According to Biggs (2003), problem-based learning is "an excellent example of an aligned system, probably the purest example" but he adds, "most approaches to teaching can be aligned more effectively than they are already".

It is important to think of alignment not as something static, but dynamic, just as constructing meaning is a dynamic process. We are designing university courses in a time of increasing mobility and flexibility while our students are demanding increasing choice in their learning. Under such circumstances, as I indicated earlier, designing a course is not neat and systematic, rather it is "a messy iterative process" (Jackson et al., 2003), and the ICL aspect creates additional challenges. Courses may be given at the same or different locations (it could concern a multi-centre course); students may have same or different learning requirements, the same or different objectives, and the same or different learning outcomes. Moreover, ICL courses are likely to have to cope with

variation in the pace and order of learning and in resources available. Students themselves may vary in their L1s, and they have the same or different L2s or L3s: English may be the mother tongue of some students (probably a small minority), the first foreign or second language of others (probably the majority), the third or even the fourth foreign language of still others (e.g. members of ethnic communities who may first have studied the national language and the language of their community). The constellation could vary significantly from year to year for the same course. This poses challenges for language development within content-centred programmes, where language is essential for learning, but where language is often taken for granted. The challenge then is to show what the added value of ICL is in this dynamic, chaotic environment.

Indeed, why should we develop content and language together? First, there is a financial argument. It may be argued that an efficient market would simply to let the language take care of itself. However, that option may mean that students end up being less than effective in communicating their learning in the world of work. Therefore, offering an ICL programme may turn out to be more economical in the long term, providing that opportunities for language development are not missed. The intensive practice available on ICL courses may even allow higher education institutions to claim that they are addressing and meeting the often voiced aims of European politicians that students (and all citizens) should be functionally competent in languages (mother tongue plus two) ("meaningful competence" in the European Commission's Action Plan for Languages[2] (Holdsworth, 2004). Although the initial investment for ICL courses and programmes may be considerable, the return for effective, well-designed ICL programmes in the longer term may far outweigh the initial investment, especially as such programmes may prove very attractive recruitment tools[3].

Second, ICL may also promote goals for education in the early 21st century, where internationalization and globalization are key trends. The problems communities across the world are facing may be similar, but the solutions each community devise differ because of cultural differences, among other things. Being able to effectively understand why these differences arise, through an understanding of the community's language and its culture, could also be an important goal for ICL education. Students with such a competency may be better placed to become effective promoters of economic development and social welfare.

Thirdly, ICL promotes student opportunities. As for example Prokisch (2004) has shown in his work in international tax law education, it is quite possible to integrate sources from a variety of languages by stimulating students to report to their fellow students in the instructional language on sources in languages the others do not necessarily understand. Thus ICL can be used to broaden the scope students have in their education.

Finally, ICL may help to promote life-long learning and indeed a prolonged active mental life: recent research by Bialystok, Craik, Klein, and Viswanathan (2004) suggests that an active L2 prolongs active mental life. According to the researchers, this may be due to the fact that more of the brain is kept active[4].

6. Concluding remark

To sum up, ICL offers institutions challenging opportunities to create new learning environments through collaboration and mobility, and to develop new innovative approaches to learning. At the same time the ICL courses and programmes developed have to be financially feasible within a reasonable time scale. Design and development

costs must be controlled, and courses should not take excessive time to develop. ICL courses have to be reusable as circumstances change. Consideration must be given to the value of the individual elements in courses so that these elements can be adapted for use in other courses, hence reducing long-term costs too. Moreover, ICL courses have to be culturally viable. They have to cope with local cultures and national cultures, organizational and disciplinary cultures, and perhaps emerging transnational and transdisciplinary cultures. ICL courses have to offer students an effective transdisciplinary and linguistic challenge; in this way will they be effectively motivating. Although the additional challenges and initial investment for ICL courses and programmes may be considerable, the return for both higher education institutions and governments that promote effective ICL programmes may far outweigh the initial investment, that is to say if the programmes are well-designed[5].

Notes

[1] The presentation was illustrated by a series of abstract paintings, selected from the Abstract Art Repository (http://abstract-art.com/index.shtml): Yehan Wang: untitled (2000); Stephen Affleck: *The Paths of Color in Time* (2000); Ronald Davis: *Chord* (1983); Patrick Ngoho: *Introflection* (n.d.); Michael Timothy McAlevey: *Always to the Left* (2004); Joyce Blair: *Joyce's Art Pit* (2001). Also: Pieter Breughel the Elder: *The Tower of Babel* (1573). Kunsthistorisches Museum, Vienna.

[2] The Action Plan is available at: http://europa.eu.int/comm/education/doc/official/keydoc/actlang/act_lang_en.pdf

[3] I use the impact these kinds of programmes have had on recruitment at Maastricht University as a guide, especially in the Faculties of Economics and Business Administration and Arts and Culture. In both cases a significant increase in student enrolments followed the introduction of English-medium instruction, mainly from outside the Netherlands. One could argue that English-medium instruction in the latter faculty actually saved the faculty, which was under threat because of falling enrolments.

[4] Earlier research by Kim, Relkin, Lee, and Hirsch (1997) had shown that proficient second-language speakers store the second language knowledge in a different place in the brain compared to their first language. 'True' bilinguals (i.e. people brought up bilingually from birth) store both languages together. In both cases more of the brain is activated during L2 language use.

[5] At the Bilkent 2004 Symposium, a workshop followed this plenary, during which participants worked in small groups to discuss a number of cases of ICL course design. The objective of the workshop was to identify specific factors that needed to be addressed in the design of specific courses in knowledge engineering, business and economics, and health sciences. The cases were varied focusing on a variety of different course factors, such as the following student factors: native speakers of English (exchange students); very large numbers of students who have successfully completed three semesters of English-medium degree education; first-year students with little or no experience of English-medium education. Although the focus of the workshop may have been on the language and literacy aspects, content aspects played a critical role in the choices. Case descriptions are included in the appendix. Further information is available from the author: b.wilkinson@languages.unimaas.nl

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Appendix

Designing integrated content and language courses: Workshop

The workshop aimed to identify the relative weights of different factors that influence the design of integrated content and language courses. Following a paradigm of constructive alignment (instruction – learning – assessment), participants discussed a number of cases and aim to construct recommendations for designers. The cases drew on both familiar and unfamiliar contexts. The workshop aimed to deduce conclusions and recommendations for course design where content and language are integrated in programmes.

Part 1: Factors influencing course design in Turkey.

- Collate the factors that in your group's opinion influence course design in Turkey.
- Which do you consider the most important? Why?
- What are additional factors influencing the integration of content and language in Turkey? Why?

Part 2: Cases

Case 1: Economics

A large school of economics and business administration contacts the language experts with the following request:

- We are obliged to provide an intensive training programme for all our second-year students (n = 700).
- We would like you to propose a training course for these students (2 or 4 weeks).
- The conditions are as follows:
  - The students follow several different programmes in economics, econometrics, business administration, management, etc.; thus they have not had the same previous studies.
  - The students come from a variety of different countries, with just under half from the home country; nearly all are using English as an additional language - very few (<1%) are native speakers of English.

- The students do not have any other courses running at the same time; thus they can work full time on the training course.
- The students have already completed at least 18 months of their degree programme fully in English; thus, they have been successful so far.
- The students have all followed training courses in academic writing in English and regularly produce papers and give presentations in English.
- The students must have good grades in English at secondary school level, or at least IELTS 6 or TOEFL 550 at the start of their respective programmes.
- The students are used to a student-centred approach to learning.
- The school does not have unlimited resources, but will fund a course that looks challenging and motivating, and from which the students can achieve valued competences.
- The school will award 4 ECTS credits for the course, depending on the proposal.

Consider the above request.
What information would you like to know?
What factors would you take into account in designing a course to meet this request?
What rough outline could you propose?

Note: the request does not indicate that the course has to be a language course.

Case 2: Knowledge Engineering

A school of mathematics and computer sciences approaches you with the following request:

- In the months of May-June we will be receiving a small group of foreign students (mainly American) as part of an exchange programme.
- We expect about 20 students, mainly studying computer sciences, engineering, and applied mathematics.
- The students may be juniors and seniors (some may be about to graduate).
- In their own programmes in their home universities they usually have a course in technical writing. However, some may have already followed such a course, others not.
- They are coming for 5-6 weeks.
- While they are here, they will be following a course in systems design and management, which will take up about 40% of their time.

- We would like you to propose a training programme for these students. If possible, could you design a programme that some of our best students could also join?
- This is what we know about the foreign students:
  - They are reputed to be top students from their universities, and very motivated.
  - In their home universities they are used to working on their own, but having extensive contact with teachers.
  - The course could be incorporated into their home university assessment system, where course teachers have a free hand to decide their method of assessment providing the students are notified in advance.

Consider the above request.
What information would you like to know?
What factors would you take into account in designing a course to meet this request?
What rough outline could you propose?

Note: the request does not indicate that the course has to be a language course.

Case 3: Health Sciences

A school of health sciences contacts you with the following request:

- We have about 160 first-year students studying health sciences.
- The courses at present are all given in the language of the environment (national language).
- Most of the literature that they need to read is in English – only the more general literature is in their mother tongue.
- The health science academic staff have commented that students are not reading the basic literature; the students have complained that it is too difficult.
- The school asks you for urgent help in training the students to read the relevant literature.
- The following additional conditions apply:
  - The students must have had English in their secondary school graduating studies, but no grade is specified.
  - Many of the students are expected to be reluctant to speak in English.
  - Most students are from the local country; thus very few foreign students.

- The course that in the school's opinion is best suited to English support is 'Introduction to Epidemiology'; the course starts in six weeks.
- The materials for this course have already been finalized and the principal supporting literature is not in English (the epidemiology staff did not think students would read the English texts).
- The students are expected to be very motivated for their studies, but much less so for English; they do know, however, that much of the literature they will require in the future is in English.
- The epidemiology course lasts 8 weeks, and is quite heavy; and English course would imply an extra workload for the students.
- The school can afford to finance a reasonable English course providing it is not too expensive.

Consider the above request.
What information would you like to know?
What factors would you take into account in designing a course to meet this request?
What rough outline could you propose?

Part 3: Recommendations for the integration of content and language.

On the basis of these cases and from your own or your group's experience, what recommendations would you give to course designers who are going to provide integrated content and language courses?
Limit your recommendations to a maximum of six key points.