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Hands-on tasks in CLIL science classrooms as sites for subject-specific language use and learning

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A B S T R A C T

This paper is concerned with content and language integrated learning (CLIL), i.e. classrooms where a foreign or second language (L2) is used as the means of instruction and where content and language learning objectives merge. More specifically, it explores the potential of hands-on tasks in CLIL chemistry and physics lessons to serve as sites for using and learning subject-specific language, conceptualised as both special concepts and terminology as well as subject-specific ways of constructing meaning. Using discourse analysis, attention was directed to hands-on tasks as well as pre-task and post-task phases. The findings indicate that despite the evident content orientation in the tasks, language matters feature in the handling of the tasks. The pre-task and post-task phases seem more conducive to students engaging in subject-specific language use than the action-oriented hands-on tasks that involved highly indexical language use. Overall, the orientation to language of the subject remained implicit rather than explicit throughout. This indicates the importance of awareness raising so that CLIL teachers can better come into terms with their specific remit in language education as ones in charge of making the language of their subjects visible and approachable to students.

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1. Introduction

This paper is concerned with the context of content and language integrated learning (CLIL) where L2 is used for instruction and where content and language learning objectives merge (for CLIL overviews, see e.g. Dalton-Puffer, Nikula & Smit, 2010; Dalton-Puffer, 2011). It explores Finnish secondary level students' engagement in hands-on tasks in CLIL science (chemistry and physics) lessons instructed in English, with a guiding assumption, advocated by earlier systemic functional research in particular, that different subjects have their characteristic ways of using language to make meaning (see e.g. Coffin, 2006; Schleppegrell, 2004) and that therefore, given the content-based nature of CLIL classrooms, language learning in these contexts should best be approached as attainment of academic and subject-specific vocabularies, genres and ways of constructing knowledge (see e.g. Llinares, Morton, & Whittaker, 2012; Morton, 2010; Nikula, 2012). In this article, attention will be paid to opportunities that hands-on tasks entail for using and learning subject-specific language.

Another choice of perspective, influenced by sociocultural and language socialisation orientations towards language learning in particular (e.g. Duff & Talmy, 2011; Lantolf, 2000; Lantolf & Thorne, 2006; Zuengler & Cole, 2005), is seeing

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learning as social, contextual, participatory and interactional, therefore best examined by close attention to how CLIL students and teachers use language and engage in negotiations to reach shared understandings. Language socialisation perspectives in particular, as Zuengler and Miller (2006: 40) point out, also highlight the interconnectedness of linguistic and cultural learning. In the case of CLIL classrooms, such cultural learning, apart from concerning the general educational and academic culture, also pertains to what could be called subject-cultures, i.e. the need for learners to become socialised into various subject-cultures and their ways of using language. In this article, subject-culture specific language will be studied in the context of language use in hands-on tasks. Learning, for its part, is approached from the perspective of the type of opportunities that hands-on situations seem to offer for learning rather than seeking to identify eventual learning outcomes. As earlier conversation analytic research on language learning (so called CA-for-SLA) in particular has demonstrated, even if interactional data can exhibit participant orientations to learning objects and learning, attesting what in interaction counts as evidence of learning is a more problematic matter (see e.g. Kasper & Wagner, 2011; Seedhouse, 2006).

Exploring CLIL classroom tasks from the perspective of subject-specific language is important not only from the perspective of learners and their developing language repertoires but also from the perspective of teachers and their ways of making subject-specificity salient. In the European context, CLIL teachers are usually subject teachers rather than language teachers. It has been noted several times earlier (e.g. Dalton-Puffer, 2011) that despite the purported double focus on language and content, CLIL is usually content-driven, with the role of language often remaining ambivalent and teachers emphasising their roles as content teachers (e.g. Bovellan, 2014). However, given that CLIL classrooms also entail language learning it would be important for teachers, in the same way as Cammarata and Tedick (2012: 257) argue about immersion teachers, to "revisit and reshape their teaching identity—that is envisioning themselves not only as content teachers but language teachers as well". With the focus on subject-specific language, a main argument throughout this article is that it is useful to envision CLIL teachers' language teacher role in a different manner from foreign language teachers given their specific role in supporting learners' socialisation in the genres and registers of their subjects (e.g. Llinares et al., 2012).

2. CLIL, tasks and the concept of language

It can be argued that there is a close affinity between CLIL and task-based approaches to language learning because a central concern for both is to enhance language learning by engaging students in meaningful language use. In fact, if we consider the core criteria that Ellis (2009:223) suggests as essential for a language-teaching activity to be called a task, namely the primacy on 'meaning', existence of some kind of 'gap' (for information, to express opinion), learners largely relying on their own resources to complete the activity, and a clearly defined outcome other than the use of language, CLIL classrooms can certainly be called task-based environments, and the connection between task-based pedagogies and CLIL has indeed been brought up by researchers (e.g. Escobar Urmeneta & Sánchez Sola, 2009; Lorenzo, 2007).

However, when considering language learning more specifically, the difficulties of mapping task-based language teaching and CLIL emerge. As pointed out above, despite the dual focus on content and language, CLIL teaching tends to be largely content-driven, scheduled as content lessons, and usually taught by subject specialists rather than language teachers (see Dalton-Puffer, 2011). This means that explicit attention to language matters is relatively rare, or at least not necessarily systematically planned in the way for example Lyster (2007) advocates for immersion classrooms by what he calls a counterbalanced approach which involves planned attention to both content and language matters. Hüttner, Dalton-Puffer, and Smit (2013) suggest that, as far as CLIL teachers' and students' beliefs are concerned, both groups perceive of the absence of explicit language management as a success factor that sets CLIL apart from foreign language instruction. As pointed out above, such lack of overt focus on language matters in CLIL classrooms may also relate to teacher identity issues, CLIL teachers often occupying a somewhat uncertain position towards language teaching which they tend to see as a separate endeavour from content teaching (Skinnari & Bovellan, in press).

One probable reason for the uneasiness around language issues in CLIL derives from the way language learning and skills are conceived of and conceptualised: the language-as-system view prevails and language learning outcomes of CLIL tend to be seen in terms of general language skills (see Nikula & Mård-Miettinen, 2014). However, an increasing number of researchers are arguing for the need to approach language skills to be attained in CLIL classrooms from the perspective of subject-specific skills and literacies (see e.g. Llinares et al., 2012; Morton, 2010; Nikula, 2012). As mentioned above, this viewpoint has been promoted by researchers using approaches rooted in Systemic Functional Linguistics in particular but, as Dalton-Puffer, Llinares, Lorenzo & Nikula (2014: 216) argue, CLIL research in fact quite often *has* emphasised the need to acknowledge the field-specificity of language or, in the words of Lorenzo (2007:510) the 'language muscles' developed by each subject. Such contentions are, of course, not specific to CLIL but relate to other attempts to conceptualise the role of language in education, such as Cummins' (1979) well known distinction between basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP). Another example originating from the North American context is the application of the so-called SIOP Model (Sheltered Instruction Observation Protocol) to assist teachers in integrating instruction of content concepts with academic language (see e.g. Echevarria, Vogt, & Short, 2000). The work carried out under the label language across the curriculum on language demands of different subjects is also worth mentioning (e.g. Corson, 1990), especially as the role of language in education is becoming a more and more important consideration worldwide due to challenges posed by the increasingly diverse student populations (e.g. Little, Leung, & Van Avermaet, 2014; Vollmer, 2007).