

The language focus of Science education integrated with English learning

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The main **objective of our work** – designed as a **descriptive-explanatory case study** – is to understand what teaching strategies and classroom interactions have been developed in the CLIL-type “English Plus” (EP) project at one Portuguese state middle school, when Science education is integrated with English use/learning. CLIL is an **educational approach** (Content and Language Integrated Learning) aiming both at learners’ understanding of the specific content and (additional) language acquisition (Coyle, Hood, & Marsh, 2010).

Research on the **integration of Science education and English learning** as well as on the **Language focus for Science education** (Escobar Urmeneta & Evnitskaya, 2014; Bunch, Shaw, & Geaney, 2010;

Sanmartí, 2007; Wellington & Osborne, 2001) is highly relevant, scientific literacy and language proficiency being learning priorities.

Characterization of teachers and students – through interviewing, questionnaire and observation – shows the importance of developing a language-aware teaching approach to improve the subject itself and student learning (Piacentini, Simões, & Vieira, 2016). The **context-derived instrument** shown below has thus been constructed for investigating and supervising teacher planning and classroom practices.

A. Referential framework for Science classroom discourse (Mortimer & Scott, 2003)

B. Science genres and language-based approach (Polias, 2006)

C. Science and English co-teaching in CLIL classes (Valdés-Sánchez & Espinet, 2016)

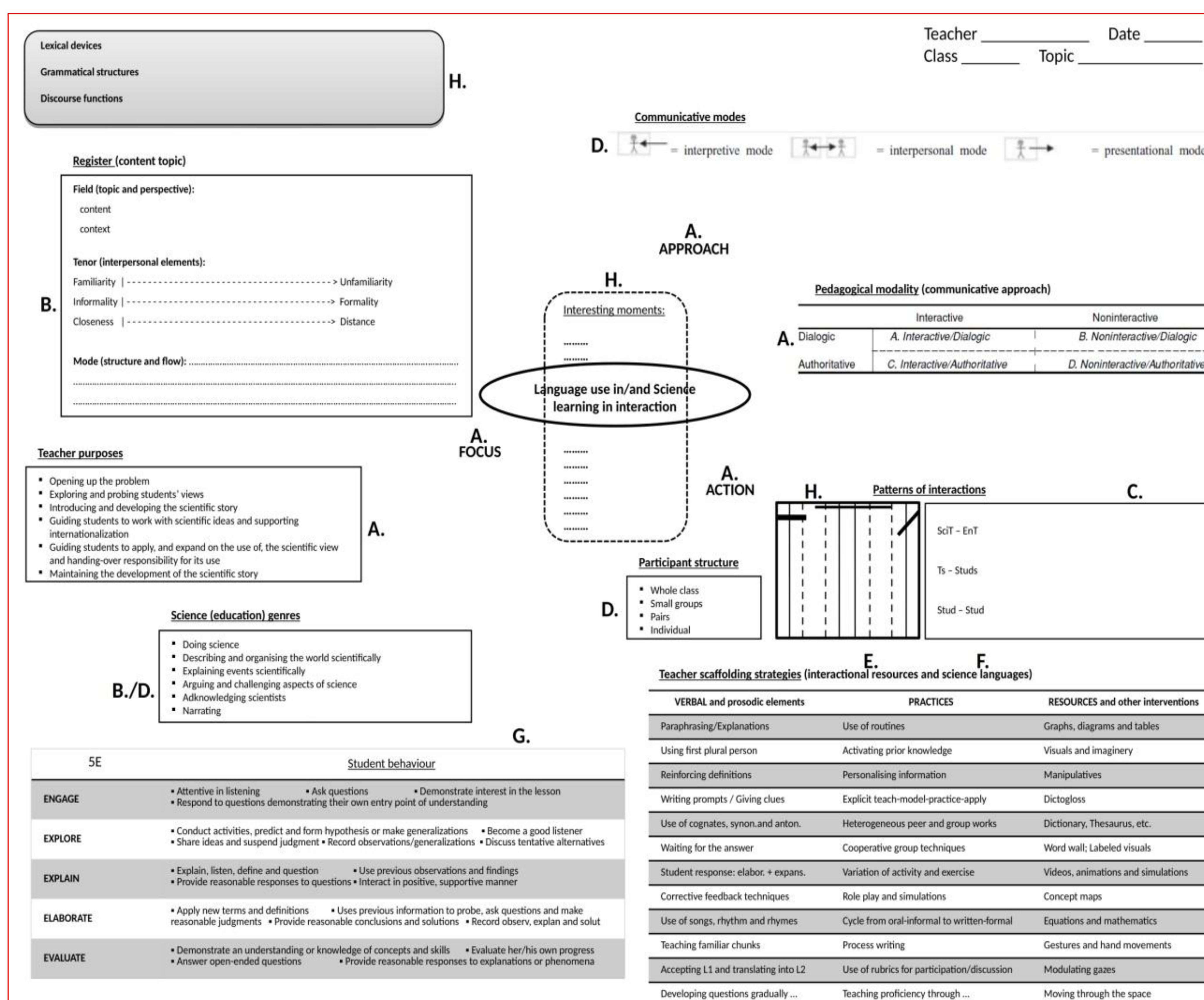
D. Language demands in Science performance of ESL (Bunch, Shaw, & Geaney, 2010)

E. Teacher scaffolding strategies (Escobar Urmeneta & Evnitskaya, 2014; Morton, 2012)

F. Language-focused Science education (Wellington & Osborne, 2001)

G. 5E instructional model in Science education (Bybee, 2015)

H. Relevant episode occurrence; classroom Representation; etc. (researcher contributions)



The tool enables the recording of and reflection on EP-classes in which English is learnt while used as a language of/for Science. Students may actually find difficulties in modalities of (re)presenting Science knowledge and L2-learners have to confront, as any learner does, language demands in disciplines, all this requiring teacher awareness. Also through our instrument, the CLIL approach in the EP project opens a possibility for Content teachers to understand and face the “weight” of language(s) in curricular topics, in favour of a quality Science understanding as well as authentic English practice.

This research requires a better comprehension of the suitability of English as a language and method for scaffolding Science learning and the refinement of the tool itself. Further collaboration with participant teachers will be sought to identify, using our emerging framework, aspects pivotal for this educational integration.

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