Scaffolding CLIL – Teaching 'Electric circuits' in French in an English Primary School

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Content and Language Integrated Learning (CLIL) refers to a teaching approach where a foreign language is used as a medium to learn a non-language subject and where both language and subject content play a joint role (Coyle, Hood and Marsh, 2010). CLIL is widespread across Europe in primary schools. Many researchers comment on CLIL's potential to engage learners as it uses authentic subject matter and gives students a need to communicate in and use the foreign language for real purposes: to complete tasks and access content learning (Dalton-Puffer, 2007). Doubts about the effectiveness of CLIL tend to centre on lack of focus on form i.e. the learning of language itself (grammar, syntax, etc).

I teach in a small English, mainstream primary school in London, where French is used as the language of instruction for some 'topic' (science, humanities, music, sport, arts) lessons in the bilingual classes. The school is two-form entry, with Open and Bilingual classes in each year, where in the latter French is used to teach up to 30% of the weekly timetable. The case study is of a science lesson about electrical circuits taught in a year 4 class, where 3 children are bilingual French/English and the other 22 are learning French as a foreign language. As a critically reflective practitioner wanting to better understand and improve my practice, I used the five ways of facilitating (scaffolding) learning in input, process and output proposed by de Graaf et al., (2007).

1*)'Teacher facilitates exposure to input at a (minimally) challenging level'*
Using a challenging but 'comprehensible input' as put forward by Krashen, (1981) was one way I scaffolded. I used edited text from a French website to make it more accessible using tense and words I knew pupils already understood. I provided a keyword glossary, using familiar language to introduce new content and used images alongside the text

2)'*Teacher facilitates meaning-focused processing'*
Pupils said that the teacher was one of the most helpful supports in CLIL and as Springer writes : 'the teacher takes time to remind the pupils of the objectives, to

recapitulate what has been experienced, to be more attentive to pupils' potential difficulties, and to facilitate collaborative work.' (2002:65). I used a 'cyclical lesson structure' with mini plenaries - to revisit what had been learnt so far and where lessons were headed, addressing any misconceptions

3)'Teacher facilitates form-focused processing'

The use of a 'cyclical lesson structure' and recapping also enabled focus on language, the 'form'. I gave students opportunities to practise language in pairs, as a class (chanting) and individually. While the lessons did not particularly teach grammar, when I introduced circuit vocabulary, we spoke about the gender of words, picking up on prior grammatical learning. I recast sentences correctly in L2 and ask students to repeat, using tone of voice to emphasise the corrected part. This light touch principle fits with the ethos of the class, which is about learning through mistakes.

In aiding processing of form, it is important that pupils attempt to voice their ideas and thinking in L2. By having to explain what they had found out in French, this forced pupils to put together sentences using words they knew and highlighted unknown words or constructions. I established 'On parle français' by drawing a French flag on the board to make expectations of L2 use clear. Children mainly responded in French for shorter answers and used a mix of 'franglais' for longer answers. I used prompting in L2 to encourage children to clarify or elaborate answers, referencing familiar language which supported them accessing new language. I encouraged lots of partner talk giving pupils opportunities to interact in L2 and I would focus on particular children during this time and talk with them.

4)'*Teacher facilitates opportunities for output production'*

When scaffolding output, sharing content learning objectives in L2 with students helped them take ownership of learning. I had also given thought to the new French language they would need in lessons: circuit vocabulary and use of negative "ne..pas" construction in Science. I found that an activity where students had to decide 'Est-ce que ça marche ou pas? Pourquoi?' in relation to circuits, where some had key elements missing, was successful in terms of content and language learning. Pupils had to read the circuit scenarios in French, test them out using the equipment and then write down in French if the circuit would work, giving reasons. For example, one student wrote, "Non, parce qu'il ny a pas des piles". Although some

responses were grammatically inaccurate, children could successfully communicate scientific understanding in written French.

Peer scaffolding is also important in producing output in CLIL and the children learnt from each other as they tested ideas and could change thinking according to the suggestions of others and results discovered together. A pupil survey showed pupils valued support from peers highly in CLIL, above visuals, enjoyment or even use of L1

5*) 'Teacher facilitates the use of strategies'*

Pupils said that explicitly teaching vocabulary and language learning strategies were two of the most helpful scaffolds in CLIL lessons. I asked pupils to devise strategies for remembering French circuit vocabulary, so that they would retain and be able to use these words (see appendix 3). I approached the initial vocabulary teaching through graded questioning, but always in the context of a sentence e.g. "Voici une pile, il y a un moteur… Est-ce que c'est une pile? Non, c'est une ampoule." and then encouraged students to use strategies such as cognates, words within words, pictures or rhymes or phrases, to help them memorise. I also asked them to write over dotted lines, in order to link motor memory with spelling.

Activating prior knowledge was a strategy I used and taught learners to use themselves. One way we learnt "une pile", a cell or battery, was to recall previous learning about Michael Faraday, the inventor of the first pile/battery. This cognitive scaffolding: linking new knowledge to something already known, was useful in helping pupils not only to learn the French for battery, but it deepened their understanding of what a battery actually is: a pile of wires (content).

Challenges

I cannot deny that CLIL is a challenge. It takes much longer to plan than L1 topic lessons and more resources are required. Explanation of meaning can be difficult during CLIL lessons as not all misconceptions and ways of explaining can be thought of or prepared for in advance. I had to interact spontaneously during lessons, correcting language and negotiating meaning, giving a synonym, using a gesture, translating into L1 and so on. I felt I used too much English for a CLIL lesson and allowed a mix of French/English from students at times.

Many CLIL critics worry that grammar teaching is lost in CLIL, and it is true that grammar was not a focus of my lessons. I drew pupils' attention to the negative construction of "ne pas", but did not explain in detail. I imagine only some learners would remember how to use "ne pas" in future.

Output production is challenging as pupils' cognitive level may be higher than their L2 level and teachers expect them to discuss and write in L2. Common difficulties among pupils were memorising words and writing, both of these showing that pupils found production of output difficult in CLIL. The time balance between input/output was more input-heavy than in L1 lessons, giving children less time to process, practise and show what they had learnt. I also found it harder to differentiate scaffolding in CLIL, as some children struggled with content and others with language at different times. I spent a lot of time on strategies to learn vocabulary, but I would like to include more strategy teaching in future CLIL.

Conclusion

Although I recognise the limitations of one case study in a rather unusual setting for CLIL, I have experienced rewards and difficulties firsthand. I saw learners 'making meaning and developing concepts in the target language' (Jones and Coffey, 2006:82) and 64% of the class felt that lessons helped them to make progress in both content and language, as one child commented: "they give you more information about electricity and French" .The most common helpful scaffolds identified by pupils were: learning vocabulary, using strategies to learn vocabulary, help from teacher, resources and their peers (appendix 1).The difficulties I encountered were in helping students to produce L2 (that showed their cognitive level and had linguistic accuracy) and in fitting so much into lessons. A survey showed they found output production most difficult: memorising French words and writing, as well as understanding all parts of the lesson in French (appendix 2).

It is clear that for CLIL to be successful, a teacher cannot simply translate a L1 lesson into L2; a different set of pedagogies, which combine good practice in teaching and learning and good practice in *language* teaching and learning, are required to deliver a fully integrated approach and show structured progression in learning. As a primary school teacher and a language specialist, I bring my understanding of

general educational theory and of language teaching theories to the role of CLIL teacher, a combination I feel is essential for successful CLIL teaching.

Arguably, CLIL fosters an attitude of resilience amongst pupils, as the challenge of learning content in French takes them out of their comfort zone. This not only increases their cognitive engagement and potential for learning in lessons (Vygotsky's ZPD) but is also relevant to present debates in education. The 2014 Primary National Curriculum in England (DFE, 2013) places emphasis on teaching for mastery and greater depth, where learners apply learning in a variety of contexts. Some teaching of the Primary Curriculum and foreign languages in L2, could be a very effective way of building in new contexts for learners and helping them to achieve mastery in many subject disciplines.

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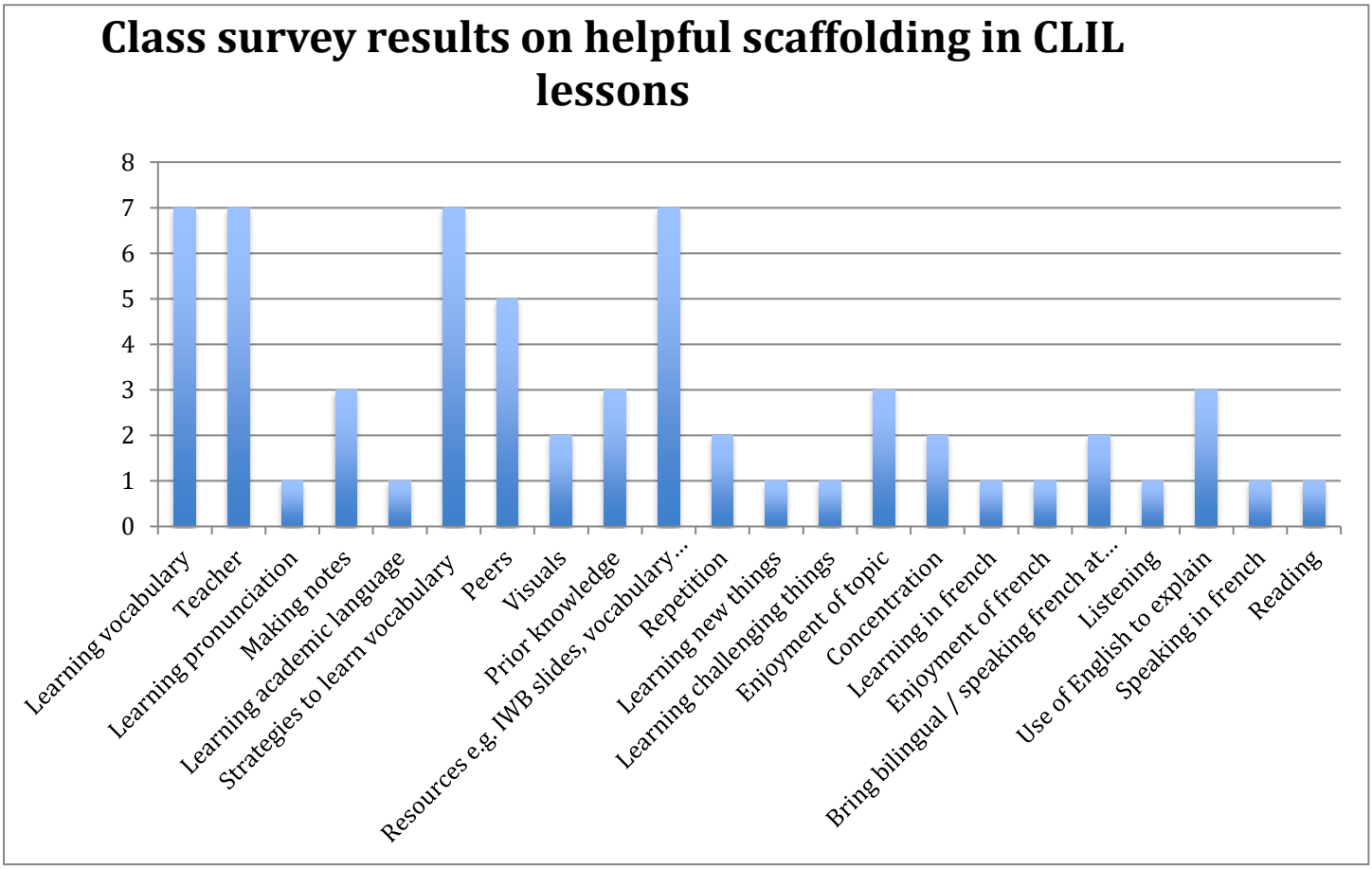
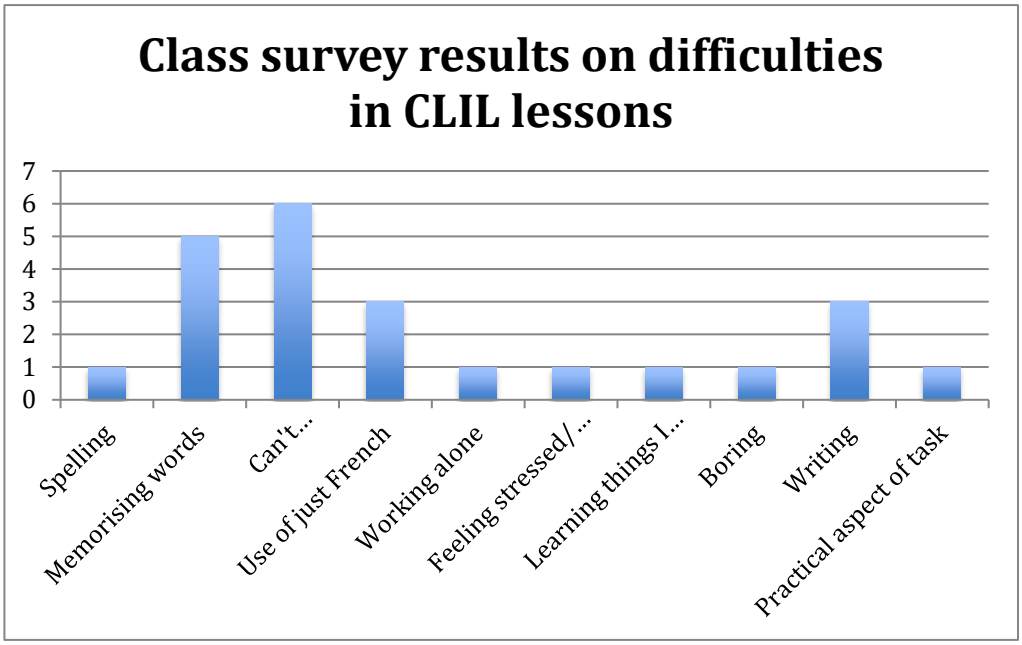
Appendix 1: Class Survey results – helpful scaffolding in CLIL lessons



Appendix 2: Class Survey results – difficulties in CLIL lessons



Appendix 3: Examples of the strategies children used to learn vocabulary in CLIL Science