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IN-SERVICE TEACHER PERCEPTION OF IWB USAGE & TRAINING IN TECHNOLOGY-ENHANCED CLIL CLASSROOMS

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Abstract

This paper aims at (i) analyzing Primary and Secondary teachers' opinion about the current level of IWB usage in bilingual schools, and (ii) contrasting the results obtained with the level of knowledge and skill in the application of CLIL by teachers who are currently undertaking in-service training in the field of Plurilingualism. Results reveal that teachers from bilingual schools most frequently use low-interaction IWB functions, which is in accordance with the display of early levels of knowledge and skill in the application of CLIL learning strategies. These findings lead us to believe that in-service training design should focus on promoting a progressive curricular integration of technology in bilingual settings.

Key words: IWB, CLIL, technology integration, teacher training, Plurilingualism.

Resumen

Este artículo pretende (i) analizar la percepción del profesorado de Educación Primaria y Secundaria acerca del uso de la pizarra digital interactiva (PDI) en centros bilingües, y (ii) comprobar el nivel de conocimiento e implementación del modelo de aprendizaje integrado de lengua y contenido (AICLE) por parte del profesorado que realiza actividades de formación permanente sobre Plurilingüismo. Los resultados muestran que el profesorado de centros bilingües hace un uso de la PDI limitado a funcionalidades poco interactivas en consonancia con un conocimiento e implementación del modelo AICLE que no alcanza niveles de profundización metodológica. Estos resultados parecen indicar que el diseño de la formación permanente del profesorado debe favorecer una integración curricular de la tecnología de manera progresiva en contextos de enseñanza bilingüe.

Palabras clave: PDI, AICLE, integración curricular de la tecnología, formación del profesorado, Plurilingüismo.

1. Introduction

After approximately two decades since the widespread introduction of Content and Language Integrated Learning (CLIL) in European educational contexts, research has shown that this approach improves foreign language learning (Lorenzo et al. 2010). Dalton-Puffer (2011: 185) considers CLIL "a way to transcend the perceived weakness of traditional FL teaching" including the communicative approaches in language learning. The impact of interactive whiteboards (IWB) in foreign language teaching is widely perceived to improve teaching and learning, adding value to the learner's experience in the classroom and increasing motivation (Kennewell and Morgan, 2003). Moreover, the myriad of applications whose access is enabled through the IWB can even secure the effect on learners that Coyle, Marsh & Hood (2011) finds too difficult to achieve, that is, to motivate and eventually produce a highly skilled plurilingual and pluricultural workforce. However, to our knowledge, there is a scarcity of research concerning claims that

effective IWB usage actually improve CLIL-instruction and what there is may not be completely objective or is inconclusive (Glover, Miller and Averis 2004). The main purpose of this paper is to prove the actual challenges teachers face when using the IWB in bilingual schools. One of the risks is returning to teacher-centered whole-class teaching instead of pursuing communicative task-based or project-based teaching. As regards students, there is a danger of cognitive overload and the risk of spoon-feeding with predesigned presentation materials (Cutrim-Schmid, 2006), reducing interaction and therefore the added stimulation that integrated technology should offer in CLIL settings.

The study also explores the average CLIL knowledge and implementation skills acknowledged by teachers undertaking in-service training on language and methodology. Recent studies (Pérez-Cañado, 2012) prove that there is a lack of empirical evidence concerning the effectiveness of teacher training in bilingual contexts. Thus, our findings will aim to shed some light on this aspect by exploring teachers' perception of their practice, using a six-stage CLIL model as a reference. Hence, we review the main studies dealing with the importance of technology integration and explore the relationship between IWB usage levels and CLIL implementation procedures in bilingual schools. A report of the study conducted with its methodology, main results found and interpretation of those results follows. The paper concludes by pointing out some lines for further research trying to overcome the main limitations of the present study.

2. Interactive whiteboard usage in bilingual schools

In Andalucia, the implementation of Escuela 2.0 Programme led to a series of changes in methodology affecting the usage of ICT in classroom settings, either bilingual or non-bilingual. Schools were provided with IWBs, mainly to be installed in late courses in Primary Education and early ones in Compulsory Secondary Education. However, the frequency and type of use displayed by teachers have varied from lower level to high level depending on several factors, such as the quality of the training received, the type of technological equipment or the activation of a proper maintenance plan. In this sense, Haldane and Somekh (2005) describe a five-scale model which defines the natural evolvement of teaching practice. These scales were derived from group discussions based on observations in practical settings by trainee teachers and tested by subsequent research projects.

Considering these facts, there are different levels of IWB usage which might be in accordance with the average knowledge of CLIL unfolded by teachers. IWB low interactivity functionalities might convey a context where CLIL has not been properly developed to provoke thought among students and actual assimilation of content within the frame of the foreign language. Researchers have tackled the issue concerning the extent to which IWB effective usage stimulates pupils and enhances their attention. In this sense, Wall, K., Higgins, S. & Smith, H. (2005) estimated that visual effects help students understand better as several thinking skills (showing, storing, ordering, labeling and manipulating) are boosted. The ease of use of interactive whiteboards means that teachers have an opportunity to explore new ways to develop topics based on pupils' thoughts and ideas. This might have positive implications for pupil empowerment and effects in the development of self-learning skills. However, Harris, J., Grandgenett, N., and Hofer, M. (2010) consider that subject programmes are still designed according to traditional outlines that do not put technology at the core of content and pedagogy. For this reason, the present study tries to

ascertain the actual level of IWB usage (as the main piece of technology in the classroom) displayed by teachers in bilingual schools, and the degree of curricular and pedagogical integration of this tool.

3. The application of CLIL in technology-enhanced classrooms

As mentioned in the introduction, CLIL was defined as a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language (Marsh and Wolff, 2006). Since 2006 CLIL has received a continued support as the Eurydice report (published by the information network on education in Europe) marked CLIL on the European educational landscape (Pérez Cañado, 2015). Although it had already been noted in 2004-06 Commission Action Plan for promoting language learning and linguistic diversity, it is from this moment that CLIL was seriously taken into consideration as a reasonably cheap and effective educational approach that might improve Plurilingualism policies across Europe. But the contexts in which CLIL may vary widely, and it may be realized differently depending on the socio-cultural settings and educational policies of the countries involved (Coyle, 2007).

In Spain, the introduction of CLIL provides an opportunity to produce a methodological revolution in order to facilitate the development of oral skills and the increased motivation of students as foreign language learning required a radical change in the way foreign languages were taught and learnt (Pavón & Rubio 2010: 54). The interactive whiteboard, used as a visual scaffolding device, can become an effective tool that supports this sustained development of both motivation and oral skills. But it is important to clarify that effective use of any technology is not merely about understanding how to use it from a technical standpoint, but more importantly, how it impacts society and understanding of how it can develop higher order thinking (Rychen, 2002). Additionally, the success of the cognitive engagement CLIL forces students and teachers to, depends on the ability of the CLIL teacher to get the message through the students effectively, without dumbing down the subject content, oversimplifying concepts, principles or worse still, omitting them altogether (Pavón & Ellison 2013: 72). As we can see, the degree of fulfillment of this high cognitive demand is a meeting ground for CLIL (as an educational approach) and IWBs (as a learning technology) that we intend to explore in this article, as technology integration is one of the determining factors in high-quality CLIL programmes.

4. Method

4.1. Objetives and research questions

The Plan to Promote Plurilingualism, a document issued by the Consejería de Educación comprising 72 actions, marked in 2005 a turning point as the need for language learning improvement, at least two second foreign languages at Secondary Education, was widely acknowledged. Since then, CLIL has been adopted as the model for effective content and language teaching in bilingual schools in our region. However, Dalton-Puffer (2008: 139) claims that there is a lack of research on methodological references for CLIL practitioners. To our knowledge, the need for research is met with the scarcity of self-observation techniques implemented by teachers working in bilingual contexts. For these reasons and the aspects mentioned in the previous section, this study aims at (i) diagnosing the current level of IWB usage

displayed by teachers at bilingual schools; (ii) relating it to the actual knowledge and skill in the application of CLIL as stated by in-service training teachers; and (iii) drawing conclusions for a teacher training design which encompases contents from the technology-enhanced CLIL classroom. Thus, this study set out to find answers to the following research questions:

- 1. What is the average level of IWB equipment, usage and training in bilingual schools?
- 2. Does the application of CLIL reflect a fully fledged IWB usage for teachers currently undertaking in-service training?
- 3. Are there specific guidelines for the design of a technology-enhanced CLIL classroom training course?

4.2. Participants

Two teacher samples constitute the participants in this study. The IWB group, was made up of 50 teachers from bilingual schools (teaching linguistic and non-linguistic areas through the foreign language), whereas the CLIL group comprised 38 teachers that were undertaking an in-service training course on L2 language level improvement (above B2 from CEFR) and the mastery of CLIL teaching strategies. Both groups included primary and secondary school teachers, as this study means to extract conclusions regarding technology integration and CLIL application for teachers independently of the grade they teach in.

The sample is homogeneous in regards to their CLIL background, as teachers are actually teaching in bilingual schools or are pursuing in-service training. No relevant information is provided regarding the average socio-economic and cultural background of the schools as there are no participating students in this study.

Bilingual school group	Questionnaire	40 items	50 answers
	1		
In-service-training group	Questionaire	36 items	38 answers
	2		

Table 1. Participants profile

4.3. Data Collection

Data was collected between 01/10/2014 and 31/05/2015 through direct email messages addressed to teachers from bilingual schools who kindly accepted to anonymously complete questionnaire 1. Questionnaire 2 was completed on paper by teachers undertaking a language and methodology course (according to a credited B2 CEFR level and including strategies for successful CLIL implementation). In all, 88 answers were compiled and data was analysed with IBM SPSS Statististics V22.0. Percentages were extracted regarding the overall 76 items included in both questionnaires in order to check whether there were statistically significant similaries or differences among categories describing IWB level use (from 1 "low" to 5 "high") and procedural decisions taken along the stages (from 1 to 6) in the CLIL implementation model used as reference for this study (Appendix 1).

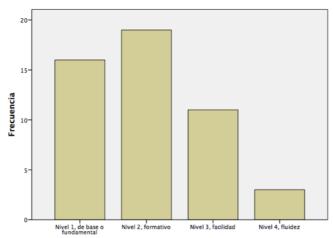
5. Results

Regarding our first research question (What is the average level of IWB equipment, usage and training in bilingual schools?) the data (see Table 2) revealed that IWB usage is prominently used in schools, as 71.4% of the teachers agree on the idea that IWB is used more than once a week; but only 30.6% of them consider that it is used more than 50% of actual teaching time. 30.6% of the answers acknowledge that at least 50% staff members actually use the IWB. In some schools, shortage of equipment has a strong bearing on low IWB usage rates. A wider picture can be outlined by data referring to IWB frequency of usage according to subjects. 41.3 % of teachers consider that IWB is mostly used in subjects taught through L2; English scored number one in 21.7% of the answers, and Science did so for 15.2% of the teachers. The very same percentage was obtained by the answer "Other subjects", whereas only 6.5% of teachers stated IWB was often used in maths. This figure indicates that teachers of maths do not frequently use subject-specific software through the IWB. However, research (Binterová & Komínková, 2013: 95) has proved that using interactive whiteboard elements and mathematical programs, i.e. GeoGebra to deliver maths courses in English at the elementary school level, reached positive outcomes in terms of student and teacher motivation and willingness.

IWB	Research dimensions	Items
IWB equipment	Age, place and IWB models.	1,2,3,4,5,6
IWB usage	IWB frequency of use according to subjects.	7,8,9,10
	IWB usage level.	11,12,13,14
	IWB and key competences.	15,16,17
	Opinion on IWB usage.	18,19,20
IWB training	Type and opinión of IWB training.	21,22,23,24,25,26
	IWB effect on learning.	27,28,29,30
Integrated use of	Curricular integration of technology.	31,32,33,34
technology	Digital skills.	35,36,37,38,39,40

Table 2: Categories in Questionnaire 1

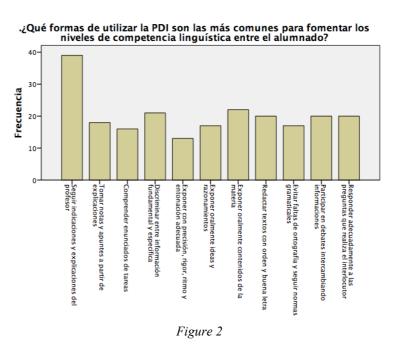
Surprisingly enough, no participant considers that IWB usage has a positive effect on catering for diversity (Item 12), whereas studies (Wall, Higgins and Smith, 2005) prove that meeting the needs of learners with diverse learning styles (aural, visual and kinesthetic) through the use of multiple media is one of the main benefits of IWB usage. Instead, answers were spread among the other three options, being the distribution of percentages as it follows: 42.9% of teachers consider that the IWB offers the visual support that enables better knowledge assimilation; 22.4% of them strike the powerful motivating effect in learning and finally 34.7% of teachers consider that the main value of the IWB is its one-to-one relationship with interaction, as it generally fosters student participation in the classroom.



Elija el nivel de uso de la PDI en el que considera que se encuentra

Figure 1

Item 14 in questionnaire 1 (Figure 1) is based upon the model described by Haldane and Somekh (2005), which classifies teaching from low-level foundation use, where practice replicates what is already possible with display technologies, to best practice full integrated flying use, where teachers prove confidence in technology and interaction is therefore enhanced. In spite of the fact that there is a wide scope for improvement leading up to level 5, participants acknowledge a constrained IWB usage. Supporting teachers' explanations, facilitating content assimilation and creating resources (level 2) were the most favoured uses provided by the interactive whiteboard. These results lead us to think that there is still a need for effective training conducive to levels 3 or 4, which strike a more interactive, multi-faceted use of IWB in a CLIL provision environment. In fact, these researchers suggest that at the highest level of this scale, a new pedagogy emerges where lesson design is constructed with fully embedded interactive technology.



Regarding the promotion of linguistic skills, 81.2% of teachers stated that IWB usage favours oral comprehension when following teachers' instructions and explanations, which is also rather limited in terms of oral interaction. Glover, Miller and Averis (2003) proved the effect of IWB on enhancing the scope of interactivity and learner engagement in the classroom. Most teachers acknowledge that the best contribution of IWB usage to students' learning autonomy consists of its instrumental role in managing oral presentations (36.2%) and setting up collaborative work (26.6%).

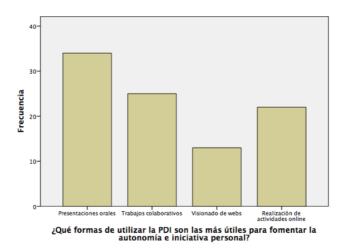
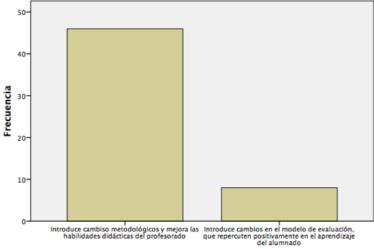


Figure 3

As regards digital skills, 64.5% of participants consider that IWB benefits students' abilities to obtain and select information related to complex issues and reflect or express it correctly. Among the pedagogical benefits of using the IWB in language and content lessons lie facilitating the integration of new media in language classroom (Gray, Hagger-Vaughan, Pilkington and Tomkins, 2005) and supporting the development of electronic literacies (Cutrim-Schmid, 2006). Additionally, Asikainen (2010: 4) reports that we are entering an age where the added value of learning languages, linked with the development of inter-related electronic literacies, is becoming profoundly important. Consequently, CLIL practitioners should be trained for a school context reflecting the so-called knowledge society.

Results from the analysis of items focusing on teachers' training opportunities conclude that 95.8% of them agree on the idea that training has had a positive effect on their own IWB usage, by fostering more positive changes in methodology (85.2%) than in assessment (14.8%). In the same vein, 47.91% of teachers confirm that the overall integration of technology in lessons (either L2 or NLS ones) is a key element for training design now and in the long run. Finally, 33.3% acknowledge that IWB training in bilingual schools can be managed by one or two members of the staff acting as trainers. The same percentage of participants imagine that future requirements of IWB training will be referred to a set of preestablished European digital standards for pre-service and in-service teachers.



¿En qué medida la formación recibida condiciona el uso que el profesorado hace de la PDI?

Figure 4

As for the second research question (Does the application of CLIL reflect a fully fledged IWB usage for teachers currently undertaking in-service training?), results (Table 3) are related to the six categories and research dimensions associated with the application of a CLIL type model (Dale & Tanner, 2012). Pérez-Cañado (2015: 167) affirms that a good training plan is behind high-quality practices in bilingual schools and so it is essential to monitor the effect and evolvement of teachers' training opportunities, especially regarding examples of good practices within the CLIL model. In fact, the underlying theory that guides CLIL-related data analysis is the one offered by Meehisto and Marsh (2011: 36), who consider CLIL to be a cognitively demanding approach, which requires efficient preparation of lessons unfolded along a six-stage route. Every stage and their accompanying scaffolding strategies constitute the set of items in the second questionnaire used in this study, which we intend to comment upon in the following lines. Once activation is managed, CLIL teachers pursue some strategies in order to guide understanding, such as understanding input and encouraging thinking skills strategies. Topic understanding is provided by using different sorts of input (multimodal input) such as texts, pictures, real objects, videos and models, to help learners understand the topic (37.5%). However, only 18.7% of participants always used graphic organizers or other forms of support to help learners understand input.

Stages in lesson CLIL implementation	Research dimensions	Items
Activating	Checking students' prior knowledge	1,2,6
	Scaffolding topic introduction	3,4,5
Guiding Understanding	Input understanding strategies	7,10
	Encouraging thinking skills	8,9,11,12
Focus on language	Developing subject vocabulary	13,14, 16, 17, 18
	Noticing similarities and differences between L1 and L2.	15
Focus on speaking	Using speaking activities.	20,21,24
	Encouraging speaking and interaction	19, 22, 23
Focus on writing	Using writing activities	25, 29, 30
	Encouraging writing	26, 27, 28
Assessment, review and feedback	Giving feedback	32, 33
	Implementing assessing strategies	34, 35, 36,

Table 3: Categories in Questionnaire 2

Encouraging thinking skills also registers the following percentages according to the different actions teachers might unfold in the CLIL classroom. 15.8% of teachers acknowledged that only occasionally had they formulated and used different kinds of questions, some related to LOTS (lower-order thinking skills) and others related to HOTS (higher-order thinking skills) to help learners understand input and process information actively.

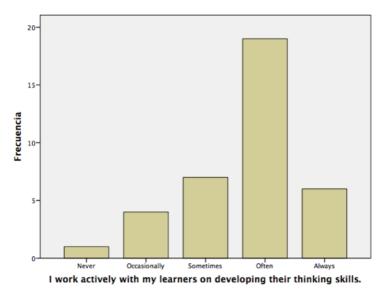


Figure 5

Alternatively, over 75% of teachers stated that they encouraged learners to interact and use a lot of pair and group work, yet only 18.9% of teachers always used a number of strategies or activities to help learners improve their reading and listening skills. Moreover, 10.8% of teachers confirmed that they never or only occasionally worked actively with learners in developing their thinking skills.

As regards the results for our third research question (Are there specific guidelines for the design of a technology-enhanced CLIL classroom training course?), percentages show that most primary and secondary teachers are committed to reflecting on content and language in their lessons, but few of them acknowledge a complete ability to do so. Therefore, the following results might be taken into consideration in order to design specific training for bilingual schools. Thus, IWB effective usage as a result of proper training might help a lot towards guaranteeing a pervasive use of graphic organizers, audio functionalities for listening skills activities and the visual support necessary for developing thinking skills.

Data analysis also confirms that 36.8% of teachers scarcely foster some strategies for developing subject vocabulary, such as using a personal vocabulary file actively or discussing ways of learning words with students (only 15.8% always does so). Few participants (only 2.7% always does so) create speaking activities with information gaps so that learners might need to communicate. About 44.7% of teachers only occasionally promote speaking about the subject for different audiences, either formally or informally. One of the most favoured CLIL writing activity focuses on using graphic organizers to help learners organize their writing, being the underlying strategy that of helping learners move from concrete to abstract language in their writing almost obliterated. Additionally, only 19.4% of surveyed teachers always instruct learners to give each other feedback on their spoken or written language. Finally, 44.7% of teachers have only occasionally used a rubric and an approximately similar percentage do not know how to design this assessment instrument. Hence we observe some definite patterns for language acquisition from teachers' perception of their own application of the CLIL model. According to results from this questionnaire, speaking, writing and assessment categories register the lowest scores, which support Coyle's (2007) idea that the contexts in which CLIL unfolds may vary widely, and it may be realized differently depending on the socio-cultural settings and educational policies of the countries involved.

6. Discussion

The analysis of our data clearly shows that IWB use in bilingual settings is still limited to non-interactive activities, whereas the impact of training was not as positive as expected, mainly because the duration was not adequate and the existing technical limitations at schools. According to Gray, Hagger-Vaughan, Pilkington & Tomkins (2005) language teachers are wary of moves to put them back in front of the board for long stretches of time, seeing the IWB as potentially luring the teacher into a presentation style of teaching leaving the learners in a passive role. On the contrary, CLIL teachers in this study showed themselves most at ease when using the IWB as a presentation device supporting teacher explanations. Further research should be recommended in order to clarify whether this is so because they do not know other interactive applications of content and language lessons, or rather because they feel like using the IWB in such a limited way.

Our data also indicates that IWBs are not widely used, nor its powerful functionalities, which seems to indicate that CLIL lessons have not reached the plateau of cognitive development suggested by Coyle, Marsh and Hood (2011: 54), who claim that CLIL is also associated with the development of skills such as problem solving, risk-taking, linguistic confidence, communication skills, vocabulary, self-expression, spontaneous talk, cultural awareness, and global citizenship. These skills are comprised in the so called 4Cs, essential when planning a CLIL lesson (content, communication, culture and cognition). It is clear

that for CLIL to be effective, it must challenge learners to create new knowledge and develop new skills through reflection and engagement in high-order as well as lower-order thinking. However, it is worth mentioning that according to data analysis it seems that most CLIL teachers are lagging behind this "thinking-skills stage" and therefore so is the accompanying technological development that makes it possible seamless integration of technology in CLIL lessons.

Studies consistently report that more than 40% of the residual variance in measures of student performance is at the class or teacher level (Marsh, 2012). In the same light Schuck & Kearney (2008: 396) consider IWBs a learning technology that can be used effectively according to the pedagogical mindset of the teacher or it can even be used to change the traditional methodological line that is followed in a school. Ultimately, the responsibility for learning how to use interactive whiteboards falls to the individual user and as questionnaire results indicate, most teachers rely either on their fellow teachers or trial and error to learn the technology. Hence the relevance of a high-performing teacher. When the interactive boards arrive, uneven training has been pursued in most cases, resulting in an extended learning curve for the teacher and a poor return on investment for the school. Interactive whiteboards require a dedicated individual who can convey their enthusiasm for the subject to students. The teacher should have an open mind to new teaching methodologies and be versatile enough to incorporate them into his or her curriculum.

Contrary to our expectations the value of IWB as an effective tool to cater for diversity does not seem to be recognised or valued by participants who actually teach CLIL. However, and due to the role of English as an international language, teachers should aim to focus on the multimedia functionalities that the IWB offers and consider visual support as the main driver when learning content and language in an integrated way, according to the dual-focused educational approach CLIL is considered to be (Marsh & Wolff, 2006). Different learning styles and abilities are the norm in CLIL lessons, and technology (in the form of an IWB and its functionalities or even its interplay with mobile devices) is the perfect ally for teachers to provide successful mixed-ability strategies and tasks.

7. Conclusions

Three main findings stand out from the present research study. First, primary and secondary school teachers still need to move ahead from lower level to high level use of technology in bilingual contexts. With regard to the second research question, the results support that in-service teachers consider that further methodological training is needed in order to fully acquire the professional development abilities required to teach in the technology-enhanced CLIL classroom. Finally, relevant training conclusions can be drawn from this analysis, which can be useful in order to design courses that fit in with teachers' current level of IWB usage within the CLIL lesson framework. Integration of technology should be promoted among teachers, as well as a full-fledged methodological model based on the CLIL approach along a five scale route. Levels range from (1) foundation; (2) formative; (3) facility; (4) fluency and (5) flying, according to Haldane and Somekh's five-tiered model in teaching practice. Teachers' full-scale professional development might eventually led to an improvement in learners' acquisition of language and content. Nevertheles, these results should be taken with caution due to the number of teachers who took part in the present research. Therefore, further research is needed in order to explore current levels of

technology integration in CLIL settings. This study has some limitations as it has not covered every bilingual school in the area. The sample is only an estimated 10% of the total number of teachers working in bilingual schools in the province. Thus, it would be interesting to do a follow-up study taking into account results from a higher number of schools and a larger sample. Future studies should include qualitative data to help explore this question, that is, the actual effect of pervasive IWB in CLIL and non-CLIL lessons in order to draw relevant conclusions related to the positive effect, if any, of IWBs as content and language learning facilitators. Teachers should work on how to improve their level of IWB usage, and therefore motivate students more, as merely implementing IWB tasks is not a panacea. The tasks to be carried out in class seem to have a great bearing on student motivation and a possible way to arouse more positive feelings could be by negotiating with students about how to use IWBs in an interactive way. This would foster student autonomy and help to bolster their intrinsic motivation (Lagasabaster 2011). This negotiation process seems worth considering when it comes to further research in the relationship between CLIL and IWB effective usage.

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References

- Asikainen, T. (2010). *Talking the Future 2010 2020: CCN Foresight Think Tank Report. Languages in Education*. Jyvaskyla: University of Jyväskylä.
- Binterová, H. & Komínková, O. (2013). "Using computers in relation to learning climate in CLIL method". *Acta Didactica Napocensia*, 6 (1), 91-106. Retrieved from http://dppd.ubbcluj.ro/adn/article 6 1 9.pdf
- Coyle, D. (2007). "Content and language integrated learning: towards a connected research agenda for CLIL pedagogies". *The International Journal of Bilingual Education and Bilingualism*, 10: 543-562.
- Coyle, D., Marsh, D. & Hood, P. (2011). *CLIL: Content and Language Integrated Learning*. Cambridge: Cambridge University Press.
- Cutrim Schmid, E. (2006). "Investigating the use of interactive whiteboard technology in the English language classroom through the lens of a critical theory of technology". *Computer Assisted Language Learning*, 19, 47-62.
- Dale, L. & Tanner, R. (2012). CLIL Activities with CD-ROM: A Resource for subject and language teachers. Cambridge: Cambridge University Press.
- Dalton-Puffer, C. (2008). "Outcomes and processes in Content and Language Integrated Learning (CLIL): current research from Europe". Werner Delanoy and Lorenz Volkmann (eds), *Future Perspectives for English Language Teaching*. Carl Winter: Heidelberg, 139-157. Retrieved from http://www.univie.ac.at/Anglistik/Dalton/SEW07/CLIL%20research%20overview%20article.pdf.
- Dalton-Puffer, C. (2011). "Content-and-language integrated learning: From practice to principles?". *Annual Review of Applied Linguistics*, 31, 182-204.
- Eurydice. (2006). Content and Language Integrated Learning (CLIL) at School in Europe. Brussels: European Commission.Retrieved from http://www.indire.it/lucabas/lkmw_file/eurydice/CLIL_EN.pdf
- Glover, D., Miller, D. & Averis, D. (2003). "The impact of interactive whiteboards on classroom practice: examples drawn from the teaching of mathematics in secondary schools in England". The Mathematics Education into the 21st Century Project. Proceedings of the International Conference. The Decidable and the Undecidable in Mathematics Education. Brno: Czech Republic. 181-5. Retrieved from http://dipmat.math.unipa.it/~grim/21 project/21_brno03_Miller-Averis.pdf.

- Gray, G., Hagger-Vaughan, Pilkington, R. & Tomkins, S-A. (2005). "The pros and cons of interactive whiteboards in relation to the key stage 3 strategy and framework". *Language learning journal*, 32, 38-44.
- Haldane. M. & Somekh. B. (2005). "A typology of interactive whiteboard pedagogies". *Paper presented at BERA conferences*. University of Glamorgan, Wales.
- Harris, J., Grandgenett, N., and Hofer, M. (2010). "Testing a TPACK-based technology integration assessment rubric". C. D. Maddux (Ed.), *Research highlights in technology and teacher education*, 323-331. Retrieved from http://creativecommons.org/licenses/by-nc-nd/3.0/us/.
- Kennewell, S. & Morgan, A. (2003). Student teachers' experiences and attitudes towards using interactive whiteboards in the teaching and learning of young children. Proceedings of young children and learning technologies conference. Sydney: International Federation for Information Processing.
- Lasagabaster, D. (2011). "English achievement and student motivation in CLIL and EFL settings". *Innovation in Language Learning and Teaching*, 5: 3-18.
- Lorenzo, F., Casal, S., Moore, P., & Afonso, T. (2009). *Bilingüismo y educación. Situación de la Red de Centros bilingües en Andalucía*. Sevilla: Centro de estudios Andaluces. Consejería de la Presidencia, Junta de Andalucía.
- Marsh, D. & Wolff, D. (2006). Diverse Contexts-Converging Goals: CLIL in Europe. Frankfurt: Peter Lang.
- Marsh, D. (2012). Content and Language Integrated Learning (CLIL) A Development Trajectory. Doctoral thesis. University of Córdoba. UCO.
- Mehisto, P., & Marsh, D. (2011). "Approaching the economic, cognitive and health benefits of bilingualism: Fuel for CLIL". Y. Ruiz de Zarobe, J. Sierra, and F. Gallardo del Puerto (eds.), *Content and Foreign Language Integrated Learning*. Bern: Peter Lang, 21-48.
- Pavón, V. & Rubio, F. (2010). "Teachers' Concerns and Uncertainties about the Introduction of CLIL Programmes". *Porta Linguarum*. Vol. 14. 45-58.
- Pavón, V. & Ellison, M. (2013). "Examining teacher roles and competences in content and language integrated learning (CLIL)". *Linguarum Arena*. Vol. 4. 65-78.
- Pérez Cañado, M. L. (2012). "CLIL research in Europe: Past, present, and future". *International Journal of Bilingual Education and Bilingualism*, 15(3): 315-341.
- Pérez Cañado, M. L. (2015). "Training Teachers for Plurilingual Education: A Spanish Case Study". D. Marsh, M. L. Pérez Cañado and J. Ráez Padilla (Ed.) *CLIL in action: voices from the classroom.* Cambridge Scholars Publishing.
- Rychen, D.S. (2002). Key competencies for the Knowledge Society: A contribution from the OECD project definition and selection of competencies. Stuttgart: UNESCO.
- Schuck, S. & Kearney, M. (2008). "Classroom-based use of two educational technologies: A sociocultural perspective". *Issues in Technology and Teacher Education*, 8(4), 394-406.
- Wall, K., Higgins, S. & Smith, H. (2005). "The visual helps me understand the complicated things: Pupils' views of teaching and learning with interactive whiteboards". *British Journal of Educational Technology*, 36(5), 851-867.

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Appendix 1:

Cuestionario 2 **HOW CLIL ARE YOU?** Likert-scale answers ranging from a) Always b) Often c) Sometimes d) Occasionally e)Never (Dale & Tanner, 2012).

ACTIVATING

- 1. At the start of a lesson or topic, I find out what learners know about the topic.
- 2. At the start of a lesson or topic, I find out what language related to the topic learners already know.
- 3. I use visuals (photos, video, drawings, etc) to introduce new topics.
- 4. I use hands-on activities (experiments, objects, etc) to introduce new topics.
- 5. I use graphic organisers (mind maps, tables, charts, diagrams) which learners complete, to find out and organise what learners know about a topic.
- 6. I ask learners to talk to each other when I am activating their prior knowledge.

GUIDING UNDERSTANDING

- 7. I provide different sorts of input (multimodal input) texts, pictures, real objects, videos, models to help my learners understand the topic.
- 8. I formulate and use different kinds of questions some related to LOTS (lower-order thinking skills) and others related to HOTS (higher-order thinking skills) to help learners understand input and process information actively.
- 9. I encourage learners to interact in my classes and use a lot of pair and group work.
- 10. I use graphic organisers or other forms of support to help my learners understand input.
- 11. I use a number of strategies or activities to help learners improve their reading and listening skills.
- 12. I work actively with my learners on developing their thinking skills.

FOCUS ON LANGUAGE

- 13. I use a variety of activities to help my learners to recycle vocabulary related to my subject.
- 14. I help learners notice how language is used in my subject, for example we work together at the grammar or we work on the vocabulary of the subject.
- 15. I help learners notice the similarities and differences between English and their first language.
- 16. In my classes, learners use a personal vocabulary file actively.
- 17. I help my learners learn and use subject-specific terminology.
- 18. I discuss ways of learning words with my classes.

FOCUS ON SPEAKING

- 19. Learners often speak in English during my classes, i.e. I encourage spoken input.
- 20. I use speaking frames or graphic organisers to support learners' speaking.
- 21. I use a varied repertoire of speaking activities.
- 22. I use a lot of pair and group work.
- 23. My learners learn to speak about my subject for different audiences, informally and formally.
- 24. I create speaking activities with information gaps so learners need to communicate.

FOCUS ON WRITING

- 25. Learners often write in English for me, i.e. I encourage written output.
- 26. My learners learn to write different types of texts in my subject.
- 27. I use writing frames or graphic organisers (e.g.diagrams, tables, model texts) to help my learners organise their writing.
- 28. I help learners with the different stages in writing (brainstorming, organising ideas, drafting, editing, etc).
- 29. When learners write for me, they know what the aim is, who their audience is and the text-type they are writing.
- 30. I help learners move from concrete to abstract language in their writing.

ASSESSMENT, REVIEW AND FEEDBACK

- 31. I use a variety of ways to assess my learners on both content and language.
- 32. My learners give each other feedback on their spoken/written language.
- 33. I give feedback to my learners on their language.
- 34. I give marks for my learners' use of language as well as for my own subject.
- 35. I provide clear assessment criteria when learners present or write for me.
- 36. I know how to design and use a rubric.