Multimedia-Assisted Content and Language Integrated Learning

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This paper presents an evaluation of Clilstore, a web-based service that was designed to assist with the delivery of Content and Language Integrated Learning. Clilstore claims to be a flexible resource that facilitates the authoring and sharing of multimedia materials to suit the teaching and learning requirements of a variety of end users. The language learning requirements of students on an undergraduate Irish language programme at the University of Ulster, Northern Ireland are considered, as is the challenge facing the programme delivery team to develop materials leading to the achievement of the learning outcomes set out in the New Third Level Syllabus for Irish (see www.teagascnagaeilge.ie), a learner-centred syllabus based on the Common European Framework of Reference for Languages. The creation of a sample Clilstore unit is described, and qualitative data collected from group of students on the above programme following testing in a face to face multimedia language laboratory setting is presented. Analysis of this data suggests that using Clilstore units in a technology rich learning environment provides a very effective means of introducing and processing new content, and that the inherent emphasis placed on dictionary consultation by individual users generally leads to a productive and positive learning experience.

Ⅰ. INTRODUCTION

Within the European Union Content and Language Integrated Learning (CLIL) is increasingly being integrated into curricula in a range of educational sectors, from primary and secondary education to vocational educational training and university undergraduate education. However, while the potential benefits of this approach to language learning are widely

recognized, practical challenges in relation to learning environment, teacher training and the development of learning materials represent significant barriers to implementation and adoption. The European Union has made considerable efforts to promote CLIL, not least through the provision of project funding via schemes such as the Education, Audiovisual and Culture Executive Agency's Lifelong Learning Programme. Tools for CLIL Teachers (www.languages.dk/tools) is one such funded project whose aims include the development of a web-based service named Clilstore that enables the creation and sharing of multimedia CLIL materials in 100+ languages. In addition to the software, which is free for teachers and learners, a repository of ready to use language learning units has also been created. These units are graded according to the Common European Framework of Reference for Languages (CEFR), which aids their integration into curricula that are already benchmarked against the CEFR. While the growth of CLIL has taken place as an independent pedagogical phenomenon with a dedicated community of researchers, a need clearly exists to relate these developments to associated fields of enquiry and practice, such as multimedia-assisted language learning and computer assisted language learning, not to mention a consideration of the specific factors relating to its implementation in particular educational contexts and for particular languages.

II. LITERATURE REVIEW

1. Content and Language Integrated Learning

Studies on CLIL generally begin with a definition highlighting that there is a dual focus on both linguistic and content outcomes (e.g. Coyle, Hood, & Marsh, 2010), or relating it to other methods such as immersion education (Dalton-Puffer, 2007). Where the study of a second language forms part of a national curriculum, or where a particular educational institution has a commitment to the acquisition of additional languages, those deciding on the adoption of a CLIL approach can be guided by some well documented successes (see, for example, Lorenzo, Casal, & Moore, 2009; Mehisto & Asser, 2007). The rationale for adopting CLIL, then, is that it is seen as a remedy to the unsatisfactory results or failure of stand alone language and content learning (Dalton-Puffer, 2007). Traditionally, CLIL is viewed from the standpoint of the content teacher delivering their curriculum through a non-L1 language, ideally with delivery being planned jointly by content specialists and language specialists. In a higher education setting where language study forms part of a humanities based programme comprising the

study of literature, history and linguistics etc., this dual focus could theoretically involve a more explicit emphasis on language learning outcomes and language practice in literature modules, for example. On the other hand, it could mean taking a more content-focused approach to linguistic study, whereby all of the communicative skills are developed by engaging with socioculturally and sociolinguistically appropriate material, and grammar in particular is dealt with in context, where the relationship between correct usage and effective communication is highlighted and reinforced.

2. Constitutional Status of the Irish Language

Within the Republic of Ireland the Irish enjoys the status of first official language, as set out in Article 8 of the Irish Constitution (Government of Ireland, ([1937], 2012). Irish is also recognized as one of the 24 official languages of the European Union. Within Northern Ireland and the United Kingdom the Irish language is regarded as a minority language and is only protected by the provisions of the European Charter on Lesser used and Regional Languages (Council of Europe, 1992). In addition, the 1998 Good Friday Agreement, an international treaty that led to the establishment of the Northern Ireland Assembly and new North-South and British Irish working relationships, contains a commitment to promote the Irish language and respect linguistic diversity (Ó Laighin, 2008). Developments such as the 2003 Official Languages Act (Acht na dTeangacha Oifigiúla) in the Republic of Ireland, which put an additional onus on the State to provide services to Irish speakers, and the growth of Irish medium primary and secondary education in Northern Ireland, have increased demand for graduates and highlighted the need for said graduates to be able to offer a broad range of communicative competences in Irish.

3. Undergraduate Irish language Instruction in Ireland

In February 2008 against the backdrop of rising numbers of students opting to study Irish at third level institutions throughout the island of Ireland, and in institutions further afield, a national forum was held at St Patrick's College, Drumcondra, Ireland that aimed to bring together a representative cross section of language teaching practitioners and course administrators from said institutions in order to discuss issues of common concern (for an account of which see Ní Fhrighil & Nic Eoin, 2009). The issues in question pertained to the graduate qualities of students exiting Irish related programmes and their ongoing ability to

make a useful contribution to the Irish language community, in terms of professional/working life and as active users of the language.

Arising from the Drumcondra forum a working group was established to develop a dedicated syllabus for the undergraduate study of Irish at tertiary level, based on Level B2 of the CEFR (Council of Europe, 2001). This new syllabus (published online at www.teagascnagaeilge.ie) would come to reflect a sector wide shift away from grammar based, institutional syllabi (which had increasingly been shown by quality assurance procedures to be inadequate and limited) towards a national task-based, communicative syllabus that would cater for the needs of employers, the Irish language community, and the individual learner in a more holistic way. Students encounter the syllabus via a range of topics that are designed to promote self-awareness, linguistic awareness and cultural awareness. This essentially reflects a CLIL approach, where linguistic aims are pursued mainly via a content based syllabus, whereby the focus on specially created, thematic content covering the language of sociocultural domains from the personal to the professional is itself an innovation.

The provision of sample materials was intended to act as a model by which individual teachers and institutions could eventually create and share their own materials in line with the particular needs of their students, and to keep refreshing the materials used in order to maintain their relevance and currency. CALL techniques can obviously aid effective delivery of the syllabus and the creation of new learning materials; however, this depends on the facilities and expertise available at each institution.

4. Materials Development for CLIL

The question of materials development for CLIL is closely related to the level of institutional support given to the CLIL teacher. In situations where the content teacher works in close conjunction with a language teacher, existing subject materials can be adapted to include a language focus, and classroom activities can be modified so that opportunities can be created for learners to produce meaningful output. However, many teachers are expected to deliver CLIL without having been provided with appropriate materials. Coonan (2007) points out that this state of affairs has its advantages and disadvantages, on the one hand it gives teachers the freedom to innovate and make their own selection of materials, on the other hand the constraints of a national curriculum may prevent this.

It has been noted that while many CLIL studies focus on the type of interaction that occurs in the CLIL classroom and on the language produced, less work has been done on written

output, or discipline specific output in particular (Whittaker, Llinares, & McCabe, 2011), which suggests that ample time may not be being set aside in CLIL lessons for a mixture of both written and oral output. Both written and oral tasks feature in all of the lesson plans developed as part of the sample materials supporting the implementation of the new syllabus for Irish. When designing any CLIL lesson it is important to consider what the inherent characteristics of that lesson will be so that it can correctly be distinguished as CLIL and therefore have a realistic expectation of success when measured against a basic set of CLIL criteria. Coyle's 4 Cs framework for CLIL featuring Content (subject matter), Communication (language), Cognition (learning and thinking) and Culture (social awareness of self and 'otherness') (Coyle, 2007) provides a bridge between the objectives of the CEFR and their practical application.

5. The Tools for CLIL Teachers Project

The University of Ulster is one of a consortium of eight partners in the international TOOLS project (see www.languages.dk/tools), which is currently developing an online multimedia authoring system called Clilstore to support Content and Language Integrated Learning (CLIL). Clilstore is a multifaceted site that (i) caters for teachers who wish to create or find multimedia language learning units to use with their students and (ii) offers a repository of language learning units in a variety of languages which students can access directly and use independently. One of the target sectors of the project is the higher education sector, therefore, an essential part of the research and development phase of the project was to test the suitability of Clilstore as a medium for developing suitable materials for this sector and as a tool enabling effective learning in class.

The following research question is posed in this study:

Can using Clilstore units in class serve as an effective CALL activity leading to the learning outcomes outlined in the new CEFR based New Third Level Syllabus for Irish?

〔Figure 1〕 Entry Point for Learners and Teachers at www.multidict.net

III. METHODOLOGY

1. Participants

The participants in this trial consisted of a group of 18 students in the 3rd and final year of their undergraduate degree programme in Irish Language and Literature. Students in this group, whose first language is English, typically have studied Irish as a school subject for the duration of their secondary education at least, and will aspire to undertaking further study in the language or obtaining work requiring advanced proficiency in the language. All classes on the programme take place in a full immersion learning environment with Irish as the medium of instruction; however, the L1 is used for scaffolding and it is also important that the learners at this level have an advanced knowledge of the relationship between both languages. Classes are designed to introduce and extend the topics and themes set out in the New Syllabus for Irish and to develop the CEFR based competences outlined therein.

2. Research Site

The trial was conducted by the author within a networked multimedia language lab with each student being allocated an individual workstation equipped with headsets. This was an essential component in the trial given that it allowed students to engage in intensive individual learning activity whereby they had complete control over the pace in which they engaged with the audio visual content and also the words they chose to click on in the transcript in order to consult Multidict. Two hours were allocated for the trial in which students would: (i) be introduced to the new topic dealt with in the specially created unit; (ii) be given time to use the materials and complete the set tasks, including group discussion. and (iii) evaluate the materials. As well as being introduced to a new topic during this trial, it was also the first time this group had used Clilstore.

3. Research Design

The aim of this trial was to test the functionality and affordances of Clilstore by using the software to develop and test a sample learning unit that fits within the curricular framework of the host course (the BA Hons Irish Language and Literature) and which meets the learning requirements of the current course participants. There follows a description of the main functionality of Clilstore and of the main features of the sample unit to be trialled with students.

### 1) Authoring of Materials in Clilstore

The authoring interface has been designed to be user-friendly; however, new users are encouraged to read the step by step guides provided on www.languages.dk/tools. In order for Clilstore language learning units to be most effective they should contain a significant amount of text. The reason for this is that a key element of what makes Clilstore a unique language learning tool is the way the software treats embedded texts. At the touch of a button all words are automatically linked to a bespoke dictionary interface Multidict, which places online dictionaries in over 100 languages at the learner's disposal, thereby enabling them to interrogate texts at their own pace and according to their own learning requirements. Once users of Clilstore units click on words in embedded texts, the Multidict interface opens beside the Clilstore unit in split screen format, thereby facilitating easy dictionary consultation for learners.

The majority of the 100+ languages catered for by Multidict will feature multiple online dictionaries, therefore, if a learner is not satisfied with the first result from their search they can simply consult another source.

2) Development of Sample Clilstore Unit

The theme selected for the Clilstore unit to be tested with students was Public Health, and had the following elements built in:

1) An embedded video from the YouTube archive of Nuacht 24, an Irish language news and features service (see www.nuacht24.com). The video features an interview with a GP (Family Doctor) and both speakers, the interviewer and the interviewee, use clear pronunciation and speak accurately. The interview format makes the piece more interesting to follow and the advice given by the GP is relevant and informative, featuring topic specific vocabulary.

2) A full transcript of the video with all words hyperlinked to Multidict.

3) Practice activities created using Hot Potatoes (see http://hotpot.uvic.ca).

4) A link to an online blog in Irish where the main theme 'Swine flu' has been debated in everyday language by native speakers and competent L2 speakers.

5) A link to an electronic questionnaire that allows students to share their views on the
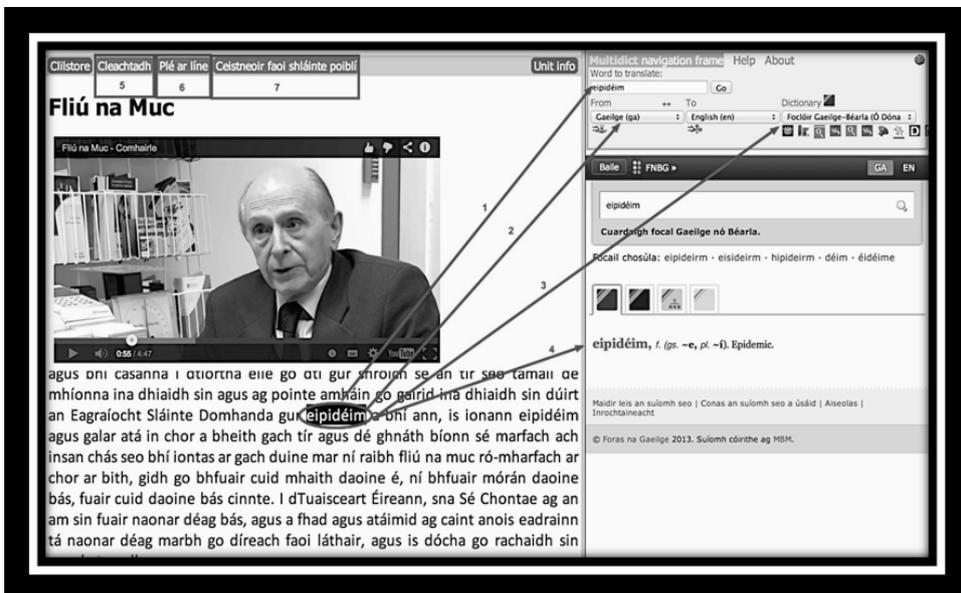
〔Figure 2〕 Clilstore Unit from User Perspective

theme of public health and hygiene. (NB the results of this questionnaire go to a private account, therefore, teachers utilizing this unit will need to create their own survey in order to see the results, but they are free to copy the example provided).

The unit is available online at http://multidict.net/cs/376, and the following summary details how users interact with it (the numbers in the summary refer to the annotation on Figure 2).

3) Summary of Clilstore Functionality from User Perspective

1) Once a hyperlinked word is clicked it appears in the search field.
2) The language of the unit will have been preset by the author, so a bilingual consultation is performed according to the last known pairing (e.g. Irish – English. Monolingual pairings are also possible where a definition is sought as opposed to a translation e.g. English – English).
3) A list of available dictionaries for the source language appears, with the initial result being supplied by the dictionary that has been ranked first for quality and reliability. If the user is not satisfied with the first result they can use the drop down menu or click on the dictionary icons to consult another source (NB the search term does not need to be re-entered but if the user wishes to add additional words, e.g. to check for a phrase, they can.
4) In this example the dictionary has supplied a translation from Irish to English and given grammatical information on gender and inflected forms (plural and genitive).
5) Once the user is ready they can click on the first button, which in this case will take them to Hot Potatoes exercises.
6) The link buttons at the top of a lesson can be used to direct the learner to any url. The second link button here brings the user to an online blog relating to the subject of the unit (public health).
7) The third link button brings the user to an electronic survey, which has been created using an external application (www.freeonlinesurveys.com).

4. Lesson Plan

The objective of the lesson was that students would acquire topic specific vocabulary and develop an awareness of issues relating to the control and spread of flu epidemics. The input material delivered via Clilstore was designed to inform and inspire personal reflection and a

general discussion and debate about public health and hygiene, thereby allowing students to become engaged with the new topic and see how learning and using new vocabulary can improve their communicative competence in the target language. It was envisaged that students would be given a high degree of autonomy during the lesson. The workplan involving learners, computers and the teacher in the trial lesson was envisaged as follows.

〔Table 1〕 Classroom Dynamic during Clilstore Trial

Teacher Role	Learner Role
Teacher shares link to unit and explains the order in which task is to be completed. A short introduction on how to utilize Multidict to optimum effect is also given	Learners follow link and begin to watch video material (listening via headset)
Teacher observes, ensuring that learners are progressing through the material and are not encountering any problems with the software	Learners begin to click on words and consult them in Multidict, making notes as they see fit.
Teacher prompts students to complete first task (Crossword) when ready. Teacher observes strategies used by learners and is available to answer questions.	Learners follow link and complete crossword using personal strategies e.g. returning to transcript to refresh their memory on the topic, using multidict to check definitions of unfamiliar words used in the crossword clues
Teacher prompts learners to complete the second task (reading blog) when ready. Teacher observes strategies used by learners and is available to answer questions.	Learners follow link to blog and read the blog entries, making use of Multidict to check unfamiliar words, making personal notes and asking questions of the teacher where necessary.
Teacher prompts learners to complete the third task (completing survey) when ready. Teacher observes strategies used by learners and is available to answer questions.	Learners follow link to electronic survey and answer all questions, Multidict is available for students to use to help them use appropriate vocabulary correctly.
Teacher accesses electronic survey account and presents results to learners via the broadcast screen feature	Class debates the results of the survey, sharing their reactions to the results.
Teacher focuses on the use of the target language in the survey responses, highlighting any grammatical errors or non-idiomatic usage and also drawing attention to exemplary uses of new vocabulary.	Learners note outstanding issues and positive reinforcement of correct structures.

5. Measurement

In order to adequately address the research question posed above, evaluation focussed on the assessment of the lesson as a CLIL and CALL activity as measured against accepted descriptors and criteria, and the review of the lesson through student evaluation and teacher observation.

1) Evaluation of the Lesson as a CLIL and CALL Activity

When used in face to face teaching Clilstore, like any other technology or resource used needs to address a particular pedagogical need. de Graaff, Koopman, Anikina, & Westhoff's (2007) Observation Tool for Effective L2 Pedagogy in Content and Language Integrated Learning, based on Westoff's 'SLA penta-pie', takes the basic elements of a CLIL lesson to include: exposure to input, meaning focussed processing, form focussed processing, output production and the use of strategies. Clilstore has been designed to facilitate this type of teaching and learning; however, factors such as learning environment, learner need, curricular demands and desired learning outcomes have also to be taken into consideration. Given Clilstore's overt CALL focus, Chapelle's (2001, p. 55) criteria for assessing language tasks provide additional indicators that can inform the planning of lessons featuring Clilstore and the evaluation of its application. Chapelle's criteria (see below) will be used to assess the effectiveness of the trial lesson as a CALL activity.

〔Table 2〕 Chapelle's Criteria for CALL Task Appropriateness

Language learning potential	The degree of opportunity present for beneficial focus on form.
Learner fit	The amount of opportunity for engagement with language under appropriate conditions given learner characteristics.
Meaning focus	The extent to which learner's attention is directed toward the meaning of the language.
Authenticity	The degree of correspondence between the CALL activity and target language activities of interest to learners out of the classroom.
Positive impact	The positive effects of the CALL activity on those who participate in it.
Practicality	The adequacy of resources to support the use of the CALL activity.

2) Evaluation of Lesson by Learners

Immediately following the class students were asked to complete an electronic questionnaire. The questionnaire was designed to collect their views on the effectiveness of the Clilstore software and materials and also to allow them to reflect on the extent to which the lesson in which the materials were used was beneficial to them. The questionnaire contained a mixture of questions aimed at gathering quantitative and qualitative data and was constructed using the same software as the survey used as part of the lesson i.e. Free Online Surveys. The questions posed were as follows:

〔Table 3〕 Lesson Evaluation Questionnaire for Students

Student Evaluation Questionnaire
1. Please rate your level of comfort in using the software. (Rating scale (5 = Very easy; 4 = Easy; 3 = Neither easy nor difficult; 2 = Difficult; 1 = Very difficult)
2. Would you have found the video as easy to follow without the transcript? (Yes/No)
3. Does the software make reading texts easier or more difficult? (Rating scale (5 = Very easy; 4 = Easy; 3 = Neither Easy nor difficult; 2 = Difficult; 1 = Very difficult)
4. The software allowed me to manage more effectively the time available to read the text. (Rating scale 5 = Strongly agree; 4 = Agree; 3 = Neither agree nor disagree; 2 = Disagree; 1 = Strongly disagree)
5. The dictionary interface worked well. (Yes/Generally/No)
6. Would this method of encountering new material and reading texts encourage you to use dictionaries more in other contexts (e.g. when reading books, or hearing new words in conversation or on radio/tv)? (Open text response)
7. What I liked best about the software (Open text response)
8. What I think could be improved (Open text response)
9. How do you think this tool adds to or enhances classroom work?
10. Have you learnt new/ useful vocabulary? Give some examples or explain how you will be able to use any new vocabulary learnt? (Open text response)
11. Other suggestions (Open text response)

3) Evaluation of Lesson by Teacher

Teacher observation focussed on: learner activity while reading the blog; noting of questions/requests for assistance received; and analysis of written language in the survey responses, including error analysis.

IV. FINDINGS AND DISCUSSION

1. Participants' Views on Clilstore

The responses to the Student Feedback Questionnaire are presented below. (NB typos etc. have not been corrected or highlighted):

〔Table 4〕 Responses to Question 1

Question 1: Please rate your level of comfort in using the software

Answer	Responses	Percentage
5 (Very Easy)	7	38.9
4 (Easy)	9	50
3 (Neither Easy nor Difficult)	2	11.1
2 (Difficult)	0	0
1 (Very Difficult)	0	0

〔Table 5〕 Responses to Question 2

Question 2: Would you have found the video as easy to follow without the transcript?

Answer	Responses	Percentage
Yes	11	61.1
No	7	38.9

〔Table 6〕 Responses to Question 3

Question 3: Does the software make reading texts easier or more difficult?

Answer	Responses	Percentage
5 (Very Easy)	10	55.6
4 (Easy)	8	44.4
3 (Neither Easy nor Difficult)	0	0
2 (Difficult)	0	0
1 (Very Difficult)	0	0

〔Table 7〕 Responses to Question 4

Question 4: The software allowed me to manage more effectively the time available to read the text.

Answer	Responses	Percentage
5 (Strongly Agree)	9	50
4 (Agree)	5	27.8
3 (Neither Agree nor Disagree)	4	22.2
2 (Disagree)	0	0
1 (Strongly Disagree)	0	0

〔Table 8〕 Responses to Question 5

Question 5: The dictionary interface worked well

Answer	Responses	Percentage
Yes	12	66.7
Generally	6	33.3
No	0	0

Question 6: Would this method of encountering new material and reading texts encourage you to use dictionaries more in other contexts (e.g. when reading books, or hearing new words in conversation or on radio/tv)?

10 responded by simply writing 'Yes', the remaining comments were as follows:

'It is very easy to use so it may encourage me to use it in the future.'
'Yes because it allows you to see the words in different contexts so you know when to use the words correctly.'
'Yes, as I would then understand fully what I'm encountering instead of having to read between the lines and figure out what I don't understand from the bigger picture.'
'This method would encourage me to use a dictionary during reading but not when tv or radio is involved.'
'Yes, I now know that there are a wide range of online dictionaries available which could be of use to me during my studies'
'Yes, makes things a lot easier.'
'Yes, as it is very handy and quick if you are stuck on one word.'
'it would help with reading because I would usually just skip a word I didn't know instead of looking it up.'

Question 7: What I liked best about the software
'It was very quick and there were no problems getting to the different sites. I didn't have to

click on a different tab to find out the word as it was right beside it.'

'I liked how easy it was to click on a word that I didn't know and it appear directly beside the text and that I didn't have to go in and out of different windows to use it.'

'the helpfulness and the ability to access information more efficiently'

'The software was very user friendly & easy to use. I was also able to find a quick solution to any uncertainties that I had'

'It is very well laid out and gives a few options which would usually have taken time between internet sources and physical dictionaries and the actual text.'

'I liked that everything is on the same page instead of having to keep opening and closing different pages'

'I liked how east it was to use straight away even on my first try without any exoerience of this software.'

'The dictionary was at the side of the transcript and so I didn't need to open a new window or tab to look up the words I was unsure of.'

'The fact it allows you to select a work and automatically translates or explains it to you'

'The ability to click on a word and get a translation into the selected language, this function made is easier to follow and understand texts'

'You are able to look up the new words very quickly therefore you get your work done a lot more quickly'

'The software allowed me to double check the words that I may not have been so sure about, and allowed me to have a better understanding of the text'

'That you just had to click on the word you didn't understand and in the same window the meaning of it came up.'

'I liked how the meaning of the words were on the same page as the writting. saved a lot of time and made me keen to find the meaning instead of avoiding it.'

'it was fast & easy to use'

'Quick and easy to use, didn't take your attention away from the text for long periods of time.'

'The ability to hover over words and click on them as opposed to having to copy and paste them or type them in.'

'that each word is linked so no need to go off looking a dictionary'

Question 8: What I think could be improved

7 responded by simply writing 'Nothing' or 'N/A', the remaining comments were as follows.

'There is not much to improve but possibly if it could have a "top result" feature.'

'I don't think there is a need for improvement.'

'the lay out could be more easier to follow, the information is there yet it not easy to see without looking for it'

'There is always improvement to be made with regards to range of vocabulary. There were a

few obscure words that didn't come up, but I wasn't disappointed because of the amount of help there was there.'

'The speed of the dictionary search'

'Nothing really.'

'The software is already quite good.'

'The fact we are only finding out about it these past two weeks!'

'I cant see many improvements needed to be made but the layout of the page was a bit confusing at times - maybe a pop up service when needing the dictionaries would be clearer.'

'it looks dated'

Question 9: How do you think this tool adds to or enhances classroom work?

'As it is faster than other methods, classroom work would be done quicker'

'I think because this tool is fast and loads very quickly it is easier to get work done in class.'

'it is a lot more direct than other classes and give the opportunity to expand your vocabulary'

'I think this enhances classroom work as you get to complete the work at your own pace and once submitted can view everyone elses' work'

'Today, we interacted much more with the work and the lecturer. Because you were reading, listening to, answering and talking about the work it seemed to sink in more. The whole task was quick and easy.'

'Helps all different skills at the one time'

'It makes it much easier to access the online dictionary instead of having to go and get a paper dictionary'

'It makes it quicker and easier to search words and their meanings too so you aren't wasting a load of time looking up meanings and translations during class.'

'Helps everyone in the class follow the video at the same speed'

'I thought it enhanced classroom work, especially the crossword as it was challenging yet rewarding'

'You learn new vocabulary quickly and easily and it also saves time.'

'it allows me to work more independently as it means i will know the words, and be sure of their meaning.'

'it is very efficient, especially time wise. The work was done quicker.'

'it increases all skills - reading/listening/writting/speaking'

'it gives people the opportunity to looking up the meaning of a word instead of having to ask which a lot of people wouldn't do'

'It allows more time for independent reading/learning. Allows you to tackle problems yourself as oppose to asking the lecturer what a word/sentence means.'

'It allows full understanding of the subject under study.'

'makes it easier and more time effective'

Question 10: Have you learnt new/ useful vocabulary? Give some examples or explain how you will be able to use any new vocabulary learnt?

'I have learned new words for example; ag croitheadh = waving and ainsealach = chronic.'

'yes I have learned a few words in which I do not use for example matáin for muscles which I could use in day to day conversations and gidh for although which I can use in my essays.'

'in the day to day use of the language, it can be see that words have more effect and can be remembered better than if just taken out of a dictionary'

'Yes, I was able to search any words that I was unsure of therefore providing a meaning that i can take note of & use for future reference'

'I learnt words that I wouldn't have been 100% sure of in the past about health in general.'

'previously I might have avoided talking in Irish about my health because I didn't have a wide range of vocabulary. Todays short exercise helped me to widen my vocabulary and more eager to speak in the language. Even though it was a short task the information sunk in because I was immersed in the work.'

'I have learnt more medical related terms'

'no'

'Some of the words can be used in general conversation or when describing symptoms to other Irish speakers.'

'Not really just one word..Pianmhúchóirí'

'I learnt several new words which I will try to use in my everyday speech from now on, e.g. "sraoth-sneeze (Gaeilge)'

'Yes. I learned a lot of new vocabulary to do with sickness etc. I will be able to use these new words in conversation and I will also understand more when reading a text,'

'Yes, matain- muscles tógálacxh- infectious'

'When reading through I wrote down all words I didn't understand, then went back through it and found their meaning. sroich- to reach ulpóg- flu tógálach- infectious matáin- muscles'

'yesi have.'

'not today as the text/video was very basic'

'I have learned medical vocabulary I wouldn't have known before this task, for example, Fabhtú, ulpóg.'

'yes. any vocab ive learnt can easily be used in essays or exams'

Question 11: Other suggestions

No further suggestions made.

1) Analysis of Questionnaire Responses

The following discussion highlights the main themes which emerged from the students'

responses to the questionnaire.

(1) Learner reflection on using the transcript

Written literacy and spelling remain a persistent area of concern at this level, and is one of the desired outcomes of focus on form during class. When we compare the percentage of students who felt that the video would have been as easy to follow without the transcript (61.1%), with the percentage of students who felt that the software made texts easy (44.4%) or very easy (55.6%) to read, we have evidence that all of the students made use of the transcript. The ability to understand the gist of the piece through watching the video alone does not mean that gains in literacy or vocabulary will follow, hence the need for processing of form and meaning through the tasks.

(2) Learner reflection on the efficacy of the software

The question posed in relation to time management when reading the transcript attracted a positive response with 77.8% of the group agreeing or strongly agreeing that the software allowed texts to be read in a time efficient manner. This question could have been broken down further to illicit a response to specific actions such as switching between dictionaries; however, given the age and profile of the group it was decided to leave that type of reflection open and allow the students to offer their own unprompted analysis in the open questions that followed. One third of the group stating that the interface worked well *generally* suggests some equivocation, which was elaborated on further in the open questions; however, 88.9% of students stated that they were comfortable using the software reflecting a very high level of user friendliness.

The students independently commented on the speed/efficiency of the software and its user friendliness, as well as specific areas of functionality (e.g. split screen format, dictionary interface) and its impact on their individual learning. They were also willing to qualify their responses e.g. '*I liked how easy it was to click on a word that I didn't know and it appear directly beside the text and that I didn't have to go in and out of different windows to use it.*', and '*I liked that everything is on the same page instead of having to keep opening and closing different pages*'. Comments on the performance of the software in relation to the time taken to perform dictionary consultations having clicked on a hyperlinked word were interestingly associated with a learning dividend '*You are able to look up the new words very quickly therefore you get your work done a lot more quickly*'. Comments relating to impact on learning were somewhat unexpected but very welcome e.g.

'*The software allowed me to double check the words that I may not have been so sure about, and allowed me to have a better understanding of the text*', and '*I liked how the meaning of the words were on the same page as the writting. saved a lot of time and made me keen to find the meaning instead of avoiding it.*'

(3) Learner reflection on the emphasis on dictionary consultation and vocabulary acquisition

Encouraging students to make use of dictionaries can often fall on deaf ears; however, by encountering dictionaries via the Clilstore unit the students clearly saw dictionary use in a new light, responding overwhelmingly that they intended to make more use of dictionaries in the future. Insights were also gained into the group's reading habits e.g. the student who replied '*Yes, as I would then understand fully what I'm encountering instead of having to read between the lines and figure out what I don't understand from the bigger picture*' points to a pre-existing lack of familiarity with active reading techniques i.e. using Clilstore/Multidict makes the job of reading texts and consulting dictionaries easier but it does not claim to have invented the discipline. Another respondent was more aware of their own omissions in this regard '*it would help with reading because I would usually just skip a word I didn't know instead of looking it up.*'

A small number of students stated that they had not learnt new vocabulary; however, by contributing to the survey that acted as a precursor to the group discussion they had an opportunity to consolidate existing knowledge and develop their communicative competence in relation to the theme of public health at a personal and social level. Some learners noted the type of vocabulary learnt or gave specific examples e.g. '*I have learnt more medical related terms*' and '*I have learned new words for example; ag croitheadh = waving and ainsealach = chronic*'; however, others went further and explained how they intended to apply the new knowledge in the future or how the new vocabulary would allow them to participate in a conversations in new sociocultural domains, e.g. '*I learnt words that I wouldn't have been 100% sure of in the past about health in general*' and '*previously I might have avoided talking in Irish about my health because I didn't have a wide range of vocabulary. Todays short exercise helped me to widen my vocabulary and more eager to speak in the language. Even though it was a short task the information sunk in because I was immersed in the work*' and '*I learnt several new words which I will try to use in my everyday speech from now on, e.g. "sraoth-sneeze (Gaeilge)".* The potential for learning new language and learning how to use new language via the CLIL approach adopted in this lesson is exemplified by the following comment '*in the day to day use of the language, it can be see that words have more effect and can be remembered better than if just taken out of a dictionary*'.

(4) Learner reflection on the impact of Clilstore on the lesson

The following themes emerged from the students' responses on this issue: lesson focus; learning styles; skills development; and classroom dynamic. Regarding lesson focus, the clear import of the comments is that they felt that their class work was completed in a more effective and efficient manner e.g. '*As it is faster than other methods, classroom work would be done quicker*' and '*it is a lot more direct than other classes and give the opportunity to expand your vocabulary*'. As for learning styles, comments such as '*I think this enhances classroom work as you get to complete the work at your own pace and once submitted can view everyone elses' work*' and '*it allows me to work more independently as it means i will know the words, and be sure of their meaning*' demonstrate that the objective of the lesson, the method of content input and processing, and the technical facilities had created a supportive learning environment that motivated the learners to engage in rewarding independent and personal learning but with an important social dimension. Some learners explicitly related the use of the Clilstore unit to enabling them to take on more responsibility for their own learning, and for not avoiding things they don't understand, e.g. '*It allows more time for independent reading/learning. Allows you to tackle problems yourself as oppose to asking the lecturer what a word/sentence means*' and '*it gives people the opportunity to looking up the meaning of a word instead of having to ask which a lot of people wouldn't do*'. The respondents who mentioned the development of multiple skills i.e. '*it increases all skills - reading/listening/writting/speaking*' and '*Today, we interacted much more with the work and the lecturer. Because you were reading, listening to, answering and talking about the work it seemed to sink in more. The whole task was quick and easy*' had clearly grasped in a profound way both the essence of CLIL and the efficacy of the CALL materials. The last comment here also brings in the question of classroom dynamic, with the learner having identified the success of the lesson in facilitating deep and meaningful learning, again one of the key aims of CLIL, which was succinctly summed up by another learner who stated '*It allows full understanding of the subject under study.*'

(5) Learner suggestions for improvement

While reponses in this regard will help the project team improve the service, they also demonstrate how discerning students are when it comes to the question of resources and also how aware they are of what their needs are e.g. the point made about the layout being made easier to follow is valid. The Clilstore screen with video, text and active dictionary interface in split screen does make for a lot of information in one place; however, other users noted that this is specifically what they like about the units, i.e. the proximity of the various media.

Comments on not getting a result for some searches are also valid; however, 100% success for all searches is not promised, indeed trial and error in switching between sources is a feature of the interface that promotes user evaluation of sources and search results. New electronic dictionaries can be added to Multidict for any language as they become available, and as the dictionaries improve independently of the Multidict interface those improvements immediately enrich the user experience within Clilstore as what users see is the native interface of those sites. There was one comment on the speed of the dictionary search; however, this is a factor that can at times be at the mercy of local bandwidth and is not known to be a problem generally, in any case, the speed and efficiency of the software was overwhelmingly praised in the preceding question. One respondent commented on the on the dated appearance of the interface, this is clearly a subjective view and there is always scope for improvement in this regard; however, evaluation done to date by the Tools project team (see www.languages.dk/tools) has not identified the outward appearance of the site to be a barrier to usage, and during the lifetime of the project much work has already been done within the project's means to address the issue of design and appearance.

2. Teacher Observation

As can been seen from the workplan above, provision was made for a mixture of sequential activities from presentation of content, explanation of tasks, independent work and group discussion. Support was given to individuals where necessary and feedback was given to the whole group on the responses given to the open responses to the survey task. While some learners have stated above how they intended to use their new communicative competence beyond class, which is a goal for all learners, the survey task was designed to help students relate to the topic of public health at a personal and social level and to serve as the basis of classroom discussion on the topic. There were 4 questions posed (English translation supplied here): (1) I personally do not bother with the type of advice given by the doctor in this film because I don't think anybody else does (Possible answers: Agree or Disagree); (2) I now have a good understanding of the way flu is spread and I now know how to protect myself (Possible answers: Agree or Disagree); (3) Dilemma: You go out to have a meal in a restaurant and need to use the bathroom, when you get there you realise after that there is no soap for handwashing, what would you do? (a) Wash your hands without soap and return to the table to wait for your food; (b) Wash your hands without soap and leave the restaurant as you are worried about its general level of hygiene; or (c) Request some soap and wait for your meal. (4)

Explain the answer you gave to Q3 (open text response).

Once competed the responses were automatically collated by the electronic survey tool so it was possible to present the results immediately to the group. There was a spread of responses for each question, which made for lively discussion. A clear majority disagreed with the statement in Q1, and agreed with that in Q2. Q3 provided very interesting results with a minority selecting (b) and the remainder split between (a) and (c), this then motivated the group to debate the rights and wrongs of their selection and to offer further reasoning in support of their chosen course of action. The written responses to Q4 were displayed on screen to the group and when their content had been discussed, the language used therein was parsed, highlighting any grammatical errors or inaccuracies in vocabulary usage. The type of constructions used here were mostly value judgments and emotive language using the conditional tense, which is a challenging area of Irish grammar yet one that is best perfected through appropriate contextual usage. There was some evidence in these responses of vocabulary picked up from reading the blog.

In terms of learner strategies, the Hot Potatoes crossword exercise was one area that exposed a variety of approaches amongst the group. The solutions consisted of vocabulary taken from the transcript and the clues were provided using definitions from an Irish-Irish dictionary. The software can give hints in the form of individual letters and once completed a score is given with full marks awarded for a full set of solutions with no hints taken and everything spelt correctly, including the correct use of accents where applicable. Some of the learners opted not to use dictionaries to help them find solutions but instead scanned the transcript and located the solutions through a process of elimination. Others used the previous strategy with some support from the dictionaries and others still used dictionaries but did not consult the transcript. It is interesting to note here that even though some students claimed not to have learnt any new vocabulary, the crossword exercise will still have provided a cognitive challenge in that they will have been forced to recall the vocabulary by way of its definition. Reading the blog entries also exposed a variety of learning styles. An unexpected element here for the learners would have been the fact that they would not have expected to see subject like swine flu being the topic of such heated discussion in a minority language blog. Some learners were content to read a small number of entries and check for definitions of new vocabulary, whereas others were more interested in picking up and following the tread of the discussion and then trying to draw a neighbouring student into conversation on the matter.

3. Chapelle's Criteria Applied to the Evaluation Data and the Lesson Plan

When evaluated against Chapelle's criteria (Language learning potential, Learner fit, Meaning focus, Authenticity, Positive impact, Practicality) we can see that the use of Clilstore, by design, can aid second language acquisition provided that the learning outcomes are well founded and the selection of materials and classroom methodology is pedagogically sound:

1) Language Learning Potential

The language learning potential of this lesson and its associated tasks came primarily from the fact that gaps in subject knowledge were evident for most of the learners (cf. Vygotsky's (1978) notional Zone of Proximal Development) and the input provided by the Clilstore unit allowed for focus on form via the crossword and via feedback on the open text responses supplied by the learners in the survey. The learners were also challenged to incorporate new vocabulary into classroom discussion and to actively reflect on the lesson topic while completing the attitudes survey.

2) Learner Fit

On the basis of learner feedback received and the observed level of engagement of the learners with the tasks, the range of complimentary learning outcomes can be clearly seen to have been achieved in a time efficient manner, and one which allows the learners to easily return to the materials on their own for the purposes of revision. The learners demonstrated their ability to assimilate new vocabulary and use it within existing and new language structures through their written and spoken output. They developed listening skills and dictionary consultation skills while also demonstrating the ability to complete set tasks on time according to the instructions provided. The initial independent consultation of the input material allowed students to self identify areas of weakness in listening skills through stopping and replaying challenging sections of the audio visual input and by checking unfamiliar words in Multidict. The cultural dimension of the CLIL lesson was fulfilled by the prompt provided in the attitudes survey task to reflect on the dilemmas posed at a personal and social level.

3) Meaning Focus

The type of language exploited in this task through the written answers and the follow up discussion involved frequent references to their personal perspective compared to those of the

group, thereby developing the linguistic and pragmatic competence to discuss the topic with an enhanced level of awareness in relation to the personal and social domains. The crossword task was a key activity in facilitating meaning focus, through the cognitive challenge posed by solving the clues and its close association with the content input. This new subject competence was then integrated into the communicative task i.e. group discussion based on survey task results.

4) Authenticity

The functionality of Clilstore allowed the presentation of a video, which was selected on the basis that it features a genuine dialogue about an issue that affects everybody. This was reinforced by introducing the additional blog material and finally brought into the personal domain through the survey task and group discussion. Some learners then explicitly highlighted the fact that the exercise would now make them more comfortable in discussing the topic in the target language.

5) Positive impact

The variety of work completed in this task aimed to exploit and develop a holistic range of skills and competences, a key aim espoused in the New Syllabus. Learner feedback showed that some learners intended changing their approach when encountering new vocabulary in the future and also being more willing to converse on the topic discussed outside of class. The learners were also made aware of the fact that there are professionals in spheres of everyday life who use the target language and who are part of a language community that they are part of or aspire to be part of. This point was also reinforced through reading the discussions of the virtual target language community in the blog. The group as a whole also showed a willingness to solve problems on their own provided that the necessary tools were available.

6) Practicality

The clear benefit of using a Clilstore unit in this lesson was the fact that the input content and the computer mediated tasks were able to be prepared in advance. Rather than having to construct a glossary the dictionary interface allows the learners to check meanings in relation to their own need, meaning that the unit is technically capable of coping with a broad spectrum of unforeseen queries that may arise amongst a group of learners. However, it is difficult to see

how the outcomes of this lesson could have been achieved so effectively outside of the networked multimedia lab in which the class was conducted. While the students have responded positively to the ease of use of the service, the creation of materials using the software has been designed to be equally as easy and every bit as rewarding as using the materials.

Ⅴ. CONCLUSION

This study aimed to test the potential for Clilstore to facilitate the delivery of a complex set of learning outcomes peculiar to students on a higher education course in a minority language. Learner feedback shows that material was correctly pitched to be challenging enough to facilitate learning new vocabulary but also at a level that was comfortable enough to mean that the new topic input could be covered in sufficient depth to allow the additional tasks based on that input to be reasonably well completed. Previously a topic like this may not have received this type of in depth treatment, unless perhaps the text was the subject of a translation or reading comprehension exercise, but like many such topics it had the potential to engage learners given its real world relevance. Prior to the creation of the New Third Level Syllabus for Irish it was concern over incidental language of this type being missing from many graduates' communicative repertoire that led to a remedy being sought to deal with such omissions.

In terms of the potential for Clilstore to develop the learning outcomes enshrined in the New Third Level Syllabus for Irish (i.e. Grammatical Accuracy, Acquisition of Vocabulary, Reading Comprehension Skills, Listening Comprehension Skills, Writing Skills, Oral Skills – Fluency and Pronunciation, and Appropriate Sociocultural Usage), it has been shown that the lesson developed a range of skills. The lesson featured language input, meaning processing, written and oral output, encouraged reflection on a clearly defined theme at a personal and societal level, and the discussion of the topic in the professional domain was witnessed and reflected upon before the learners had the opportunity to debate it from a personal perspective. While students had worked with sample materials from the syllabus previously, with a similar emphasis on exposure to new themes, processing new language, with opportunities for peer interaction and debate and written, oral output comment but they hadn't reacted so enthusiastically or been so immediately aware of the impact of the lesson on their learning.

The learners have portrayed a high degree of insight into their own learning needs and the impact of the lesson based around the Clilstore unit on their own learning, in terms of gains in

specific knowledge, communicative competence and transferrable learning skills. This provides a clear rationale for presenting other topics in the same manner with a reasonable expectation of success provided that variety is maintained in the tasks so that they do not become predictable.

The impact of Clilstore on the classroom dynamic from the teacher's perspective is that it facilitates the delivery a well constructed lesson and seamlessly integrates a complimentary array of assistive technologies. Furthermore, within a relatively large class of young adult learners it provides a means of comfortably facilitating individual and group learning activities thereby helping to ensure that personal and social linguistic and sociolinguistic concerns are attended to. In their own feedback comments the issue of classroom dynamic arose unprompted, which demonstrates that the students clearly sensed a shift in approach that placed them at the centre of the learning experience.

The trial lesson analysed in this study was constructed to address specific curricular requirements, which are framed against the background of a subject and sector wide initiative to promote effective subject learning through learner centered content and language courses. Clilstore proved to be a highly effective tool in promoting active learning during the trial, and the use of computers and web-based technologies had a clearly beneficial impact. While there may be a complex of factors involved i.e. setting and evaluating specific learning outcomes, sourcing and authoring materials, designing a methodology for delivery and ensuring that the physical environment is fit for purpose, it is hoped that the approach outlined above will be replicable and equally as effective for other languages and contexts.

Colpaert (2006) comparing four approaches to online language teaching and learning (technology driven, attributes based, affordances based and pedagogy driven) makes the case for dedicated CALL with collaboration between multidisciplinary teams consisting of language pedagogues, teachers, software engineers, and artistic and instructional designers or alternatively through language teachers who can write programmes working with software developers who have an appreciation of language pedagogy. The Tools project has brought together much of that expertise to offer to colleagues working in a variety of educational sectors a flexible solution and materials that support CLIL and allow local curricular needs to be met. In the present study Clilstore has been shown to be very effective in helping to deliver the content and language aims of the CEFR based New Third Level Syllabus for Irish using a methodology that would be transferrable to other languages and contexts.

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