CORELL: Computer Resources for Language Learning

Issue 3, 2010

A refereed international online journal of research on computer resources in foreign language learning

ISSN: 1988-1746
MONOGRAPH

LanguageQuests in Language Education

Ton Koenraad (editor)
Introduction

Ton Koenraad
Hogeschool Utrecht University of Applied Sciences

The third issue of CORELL is a collection of selected papers on the subject of WebQuest (WQ) in Language Education. As representative of the TalenQuest team, the project that originally developed the LanguageQuest concept, (Talen = Languages in Dutch) I have gladly accepted the GIAPEL (Grupo de Investigación y Aplicación Pedagógica en Lenguas) research group’s invitation to act as guest editor for this Monographic issue.

Since its foundation in 1991, the GIAPEL has focused on the development of autonomy in language learning and has engaged in research on learning styles and the cognitive and pragmatic strategies involved in the process of acquiring, learning and using second languages. The conviction that ICT can be used as a useful resource for effective language learning has led the GIAPEL to explore how to develop autonomous language-learning skills in hypermedia environments. In the CIBERTAAAL project (Cybergenres and technologies applied to autonomy in language learning) the GIAPEL group carries out research on three planes: the analysis of digital texts, the study of the students’ hyperreading strategies and of their attitudes to online learning, and the design of web tasks for language learning. The ultimate purpose is to help foreign language learners develop an autonomising reading competence (for an explanation of the concept see Luzón, this volume) which enables them to construct meaning from digital texts effectively. Since well-designed WQs can provide support for and meet the criteria of major Second Language Acquisition (SLA) theories, the WQ format is used in the CIBERTAAAL project as a model for the design of webtasks that support autonomous language learning and multiliteracies competences. Results from the CIBERTAAAL project have been presented in the 2008 issue of this journal. In addition, the GIAPEL group is editing the volume “Digital Genres, New Literacies and Autonomy in Language Learning” (to be published by Cambridge Scholar Publishing), where several researchers explore the relation between these three concepts. Some of the contributions to this volume propose language learning tasks that integrate the development of autonomous learning and of new literacies.

The ambition for this monograph was to try and bring together research, practitioners’ reports and data on the use and development of the WQ model in language education. After all, although the relation of the WQ concept to learning theories and educational approaches is well documented, there is relatively little empirical research addressing questions related to instructional design, educational practice and implementation issues such as: how can the design and instructions of the various WQ attributes be optimized?; how do teachers and students go about doing WQs and what are the actual learning effects? And also, what teacher behaviour is helpful, because – although the WQ format supports the organisation of the learning process - the teacher’s role is still vital, particularly in how and when scaffolding tools are offered and interventions realised. Research (Van den Branden, 2006) and communications with practitioners show that applying WQs and project-based teaching in the language classroom is in fact a complex activity as for most (in-service) teachers this involves a triple innovation:

1 A search for ‘WQ’ in ERIC (Education Resources Information Centre) produced 101 hits in March 2010. Most of those are links to theoretical papers, reports of experiences of individual teachers, a limited number of case studies and some qualitative research. Only six publications address modern language education and/or language development.
understanding and adopting a content-oriented, task-based approach in language teaching
- extending personal ICT and materials design skills
- acquiring new or other classroom and task management skills

So as to serve a wide variety of educational professionals both in terms of roles (researcher, (student)teacher, teacher trainer, curriculum specialist, material designer) and sectors (primary, secondary, vocational, tertiary) the following objectives were defined for the publication:

a) supporting practitioners at secondary and university levels to implement LanguageQuests by informing them on useful and interesting insights into implementation issues and descriptions of actual practices and experiences with available resources
b) supporting teacher educators to implement LanguageQuest production & assessment modules by describing actual training practices in this area
c) providing researchers with a review of Web- and LanguageQuest related research covering issues like effectiveness and elaboration on theoretical underpinnings.

In an attempt to arrive at a good mix of contributions the Call for papers was distributed both in professional communities of researchers and practitioners as they were seen as the primary target groups of this WQs in Language Education issue.

LanguageQuests: the first decade

Before introducing the various, interesting contributions to this issue I would like to use the occasion to present a brief overview of the TalenQuest project’s rationale and results and report some personal, small-scale exploratory research into user perceptions of usability and effectiveness of one of the project’s results: the LanguageQuest Assessment instrument.

As stated on the QuestGarden site the WQ model’s main goal was and still is […] to create lessons that make good use of the web, engage learners in applying higher level thinking to authentic problems, and use everyone’s time well.

Inspired by the structured approach of the WQ format (Dodge, 1995) as a potential help to modern language teachers to relate learning to the real world the Dutch National Bureau for Modern Languages started the TalenQuest project in 2000. This state-funded project aimed to develop the concept 'LanguageQuest' as an innovative approach in language education. Developments contributing to the project’s conception were:

- the arrival of Internet allowing more topical and attractive materials than in printed form
- pedagogical trends in Europe encouraging more autonomous and competence-based learning requiring customized (self-access) materials for a variety of learners and learning styles.

The project’s main goal was to adapt the WQ concept to the specific requirements motivated by theoretical insights from second language acquisition (SLA)-research resulting in improved task design and methodology for realistic, content-oriented, functional, task-based foreign language learning. The project’s results included a collection of model LanguageQuests, a website providing registration facilities for published WQs, an HTML-
WQ template customized for the production of LanguageQuests and a rubric for the assessment of the pedagogical qualities of WQs for language acquisition and the LanguageQuest Assessment Tool (LQAT).

This instrument, in the Netherlands also known by its Dutch name ‘the yardstick’, consists of three sets of criteria. In addition to the essential components of a WQ as specified by Dodge (1995), two sections address language learning in particular (Koenraad & Westhoff, 2003).

It was developed to encourage and professionalize digital materials selection activities among practitioners by supporting users to:

- estimate the potential effect of a WQ on language acquisition
- improve available WQs in terms of better language acquisition outcomes
- adapt or design an effective LanguageQuest

With the realization of the agreed deliverables the LanguageQuest project formally ended in 2004. However, thanks to grants for coordinating tasks and the generous contributions of volunteer team members the original project group could continue till 2009. During this period some key activities were carried out: moderating related websites, handling the assessments of submitted WQ products and developing contributions to further dissemination.

With the adoption of the project results by Kennisnet, the Dutch national educational network and content provider for schools, project targets at a national level had been realized and wider dissemination in Europe was realized through the EU-project ‘Moderating Intercultural Collaboration and Language Learning’ (MICaLL) and the Council of Europe. The Council of Europe’s European Centre for Modern Languages (ECML) supported the LanguageQuest team to coordinate the project LQuest: “Task-based second language acquisition with the help of Internet resources” in the strand “Innovative approaches and new technologies” of the 2004-2007 round of the four-year projects programme the Centre runs. In addition to a central workshop accessible for all member states, one of the results of this LQuest project is a web portal to develop and support a European community of LanguageQuest professional assessors, developers, and practitioners. It provides facilities for hosting and locating LanguageQuests in various languages. For more information consult the web portal pages at: www.lquest.net.

The ECML project also helped the team to validate LQAT and produce a user-friendly, online version, currently available both in an English and German edition at the original TalenQuest site. Users with the intention of assessing a concept or published version of a WQ can access the LQAT page and are invited to provide some data such as an e-mail address so that the scoring results can be stored and distributed by e-mail. To share assessment activities and facilitate ‘getting a second opinion’ multiple e-mail addresses can be submitted. Users then score the various rubric items (n= 19) presented to them as questions in a web form. After completion of all rubric items a total score is calculated leading to none or possibly three quality stars. For more detailed information about the various stages and individual results of the LanguageQuest project see Koenraad (2008).

WQ and Teacher Competences

The definite ending of the project also makes one wonder whether the LanguageQuest project has had the impact on the professional community as originally intended. Questions that come up in this respect are, e.g.: is the WQ concept seen as having a place in language teaching and learning? To what extent are WQs actually being used in mainstream language
education. Are LanguageQuests being used in language teacher education and/or elaborated on in methodology courses. Is the LanguageQuest Assessment Tool used and does it actually help teachers in selecting and/or designing Quests?

The global increase over the past years of sites that offer practical help and online tools to teachers for the design, construction and hosting of WQs, the availability of WQ repositories and the amount of publications, if only in the TESOL Quarterly database, suggest that the professional community of language teachers has well recognized the potential of Internet as a powerful digital learning environment for language learning and the opportunities it offers in presenting learners of modern languages with challenging tasks to be solved by exploring and using web based resources.

In an attempt to further substantiate these observations I analysed data related to content consultation, contribution and general web traffic for Dodge’s QuestGarden and the NL WebQuest site run by Kennisnet, the Dutch national school net. QuestGarden, an online authoring tool, community and hosting service that is designed to make it easier to create WebQuests, serves an international community of teachers. In March 2010 it reported a total of 82726 visits and a membership representing 141 nationalities of which a fair share seems to have an American or Canadian background. No information is available on the total number of available WQs, but with an estimated number of more than 100 newly published WQ-products every fortnight the database must be substantial. Languages other than English, as represented in the title or description, at the time of writing were: Spanish (n=289), Portuguese (n=81), French (n=50) and German (12). Listed under Modern Foreign Languages / English as a second language were 1261 items, but these include WQs that are also allocated to other categories such as Art/Music or Social Sciences. Closer inspection has led us to believe that some 25% of the registered WQs are dedicated MFL products.

An analysis of the visit statistics of the Dutch Kennisnet WQ site, hosting a repository of WQs for a great variety of subjects and educational sectors, over the past 6 months, presents a fairly representative picture of actual, current use of the facilities.

The monthly average of visits, lasting at least half an hour, to the index of the WQ pages is approximately 3.000. The LanguageQuest pages, a sub-site of the WQ site, are visited less frequently, some 375 times per month on average. In the data collection period pages offering the 3 different language versions of the online Language Quest Assessment Tool were accessed 368 times.

**Table 1. Kennisnet WQ site.**

<table>
<thead>
<tr>
<th>Visits WQ-index</th>
<th>WQ Search</th>
<th>WQ Report</th>
<th>WQ Maker</th>
<th>LQuest Pages</th>
<th>LQAT Pages</th>
</tr>
</thead>
</table>

Furthermore a trend can be observed in a number of European countries that more and more schools, facing an increasingly diverse school population, want to develop their own or

---

2 The current search engine could not handle a request to this effect.
customise available instructional (e)materials to serve the needs of their students. An example of a state-funded initiative to help schools and individual teachers with the customisation, production and standards-based exchange of instructional materials and facilitate the development of related policies and staff competencies is the Dutch WikiWijis project.

These trends and the related changing business models used by educational publishers in which mixes of textbook content and additional e-learning materials are offered to individual schools call for new teacher competences. We believe that the LanguageQuest project’s efforts and instruments can contribute to the development of these competences as they can help raise quality awareness levels and support practitioners in the selection and adaptation of integrated educational materials, also in a more general sense.

From the LanguageQuest website statistics on the use of the online LQAT version and content contributions we can infer that currently it is in teacher education that the most active LQAT users can be found. Understandably so as the assessment and production of LQuests provide relevant and realistic tasks in language teacher education programmes and methodology courses in particular. And when student teachers analyse and/or design Quests the tool is helpful to scaffold these activities and organise/rationalise evaluation procedures. It also provides situated learning opportunities to refer back to theory. Besides, the LQuest web facilities and the quality assured contents can be easily integrated into initial and in-service training.

From conversations with colleagues in my own organization and other teacher education institutions I understand that the majority of Dutch language student teachers are confronted with the WQ format during their studies. Typical activities related to the introduction of the WQ concept in teacher education are (confer Zlatkovska and Stoks, this Volume):

- experiential learning: student teachers complete a WQ in a learner’s role
- reflection on this experience to raise awareness of process and design features and related own beliefs about language learning
- processing of theoretical input (learning theories, SLA insights, instructional design principles)
- defining criteria, doing assessment tasks
- adapting and/or designing a WQ
- providing motivated feedback on peer products

Ideally, one of the curriculum tasks also expects student teachers to try out their WQ designs in practice. Generally this appears to be more easily realisable in Master Programmes and in-service courses where participants often have their own teaching practice (confirmed in personal communication by NL colleagues and Stoks (this Volume). Other facilitating conditions include internet access in pupils’ home so that computer lab scheduling problems can be avoided and WQ activities can be set as homework assignments (although not necessarily appreciated by the pupils involved). Further research would be needed to find out if, in general, the introduction to the WQ concept in teacher education has its intended effect: students involved would be expected to use relatively more WQ products and/or complex, integrated tasks in their later teaching practice.

The current introduction of action research tasks in our teacher education curricula hopefully will contribute to the necessary increase (Seegers, 2007: 17) of WQ related instructional design and implementation research.

For me personally the question of the adoption of the WQ approach by practitioners and effectiveness of the LQAT has been particularly intriguing. Without proper funding for research I decided to do some small-scale data collection in my own work context and practice to find out more about LanguageQuest use in local school practice and user
appreciation plus perceived effectiveness of LQAT. The majority of the participants of the courses I personally coordinate in the Utrecht University Summerschool and the Master Programme of the Language Department at the Faculty of Education of Hogeschool Utrecht University of Applied Sciences have 10 or more years of teaching experience. From the intake questionnaires administered over the past two years (n = 158) it appears that 70% of these practising teachers of modern language never or only rarely make use of WQs in their teaching. Responses to other ICT-use related questions lead one to conclude that the integration of ICT in the language classroom in general is still at a very early stage.

To give a few examples: no to only rare use is reported of applications such as e-mail (47%), presentation software (68%), authoring tools (e.g. HotPotatoes, Fun with texts, etc.) (77%), text chat (87%) and voice chat (88%), wiki (81%), blogging (89%) and virtual learning environments (60%).

A comparable distribution shows in data collected from intake questionnaires I have used for recent workshops on interactive whiteboards at conferences and for language teachers, university language centres and modern language departments at secondary schools.

In one of the activities in the ICT & Language Education module of the Master Programme at Hogeschool Utrecht participants are to assess a set of 4 TL-WQs and arrive individually at a personal Top 3, ranking them on their personal criteria of expected usefulness for their language teaching practice. The results were collected with the help of an online questionnaire (version A).

Then the rationale for the LanguageQuest concept and the related theoretical underpinnings were presented and students were asked to read and discuss Koenraad & Westhoff (2003). After this students were expected to assess the same sets of Quests again but this time using the LQAT. These results were also collected with an almost identical questionnaire (version B). Slightly less than half of the respondents (47%) reported that they made changes to their personal Top 3 after using the LQAT. To study the effects in more detail we analysed the assessment results of the two largest groups, the teachers of English (n=14) and French (n=13). In both groups the average ranking order indeed appeared to have changed and in the English group this also led to a change for the number One position.

When asked for explanations for their changes of opinion typical reactions indicate that a more objective judgement could be made because more and other aspects are taken into consideration or get more attention compared to e.g. personal criteria such as a focus on layout. A (translated) quote to illustrate this point:

Yes, during the first session interest in the topic also played a role. And also the way the whole WQ was structured. ‘Vamos a festeljar’ is brief, simple with a clear structure and is interesting (the topic appeals to me). ‘Quién tiene el poder’ is more elaborate. At the time I thought the more elaborate the greater the chance that pupils lose attention. Now it appears that I should also take other aspects into consideration.

Asked about the difficulty level of the assessment task respondents’ reactions indicate that the activity is perceived as slightly less challenging when done with the help of LQAT. Students were also invited to comment on this course activity. Various students, in particular those for whom the WQ concept was new, reported as most challenging elements in their task:

- assessing the suitability of the resources in terms of difficulty level of the textual information with respect to the target group
- ranking products that differ in so many aspects, e.g. lay-out, content and instructional quality of the task description, potential appeal of the task for the target group, task completion time, detail of process description, quantity of resources, etc.

Many students also testified that it had been an educationally valuable experience. We translated one typical comment by way of example;

As I have not worked with WQs yet, I took ample time to study everything well. First through the eyes of the pupil, then from a teacher’s perspective. As a pupil I think it is a pleasant way to occupy oneself with language. It offers a nice and useful alternative to the textbook. The Quests were very clear and not too difficult for the pupils. As a teacher, I think, one needs to have a clear idea of what one hopes to achieve. That is what I find challenging: although WQs look attractive, are well structured and communicate well what the idea is, it looks by no means easy to me to design a WQ. So far I have always thought my ICT skills were at a reasonable level, but looking at these WQs I realised that I need to upgrade and learn a lot of new skills.[...]

The degree of difficulty also seems to correlate with the average time spent on the task: slightly more than 30 minutes per Quest in the first round versus less than 20 minutes using LQAT. It should be noted however that this difference can, of course, also be attributed to the fact that the contents of the Quests involved were already known: instructions were read, resources consulted, etc. On the other hand, from the time spent on the task and comments made by students who were introduced to the WQ concept and had used LQAT before (most of them in their Bachelor programme) we can infer that, as the LQAT categories and criteria are internalised over time, the assessment procedure can be done more efficiently and consequently takes less time.

Typical reflections on the task procedure and the use of the LQAT were that, although time consuming, the LQAT helps to:

- realise what the educationally relevant elements are
- be more critical when selecting materials
- provide arguments for one’s choices

One of the statement sums it up nicely:

Using the LQAT has made me aware of the things I actually think are important. When you have no or hardly any experience with WQs one is easily impressed with a product. When analysing (that is what LQAT helps you to do) I discovered that I want to stress totally different things. My previous number One Quest did not get a single star the second time round! It was a great experience and I am happy with the tool; I will definitely use it when I am going to design a Quest myself and in case I adopt an available WQ.

**LanguageQuests: future developments**

One of the dimensions and variables on which WQs can be categorized is the technology involved in the provision of source materials and/or tools for the production of task results. Whereas the first generation of WQs was generally based on (static) information in Internet
pages an increasing number of WQs currently integrate Web 2.0 applications such as Blogs and Wiki’s. As also pointed out by Stoks and Vickers (this Volume) the affordances of web-based technologies provide opportunities for the WQ concept to further evolve and keep up with the expectations of the current and future, digital native, student cohorts.

Of late, also so-called cross-media Quests start appearing. One specific variant is based on the Alternate Reality Game, a special type of problem solving game, in which a variety of (communication) technologies are used to involve users and support their collaboration. Digital technologies are utilised as a communication tool for international, multilingual, peer student communities that have to solve a puzzle by working as a massively, multiplayer, collaborative group, possibly also in multiple languages. In the EU project ‘ARGuing’ quests of this type have been developed and their potential for language education can be tested.

Another recent development is the integration of the use of 3D virtual environments. Howard Vickers coined the term SurReal Quest for this specific genre and elaborates on its design approach in this Volume. His earlier publication (Vickers, 2007) inspired the cross-media, interactive narrative WQ ‘Panique à Bord’, one the pilots in the ViTAAL project, using 3D virtual worlds for language learning. The Panique à bord’-Quest, set on board of the virtual version of the Titanic in Active Worlds, presents a detective-like problem solving task involving integrated training of language skills and triggering oral, synchronous interviews with the avatars of the story characters (Visser & Koenraad, 2009).

Figure 1. 3D Titanic SIM with additional objects for the Panique à bord’-Quest.

In one of the other ViTAAL experiments a virtual version of the Language Village was implemented. This format is targeted at empowering a current, real-life assessment practice for lower secondary education in use in the Netherlands and some other (EU) countries (Koenraad, 2008).

To conclude, target group can also be seen as a categorising dimension. As testified by Luzon and Fernández Fontecha (this Volume) WQs - if specifically designed - can well be
used for special forms of language education such as language for specific purposes and in content and language integrated learning programmes.

**The current CORELL issue: WQs in Language Education**

We are pleased to have the teacher education perspective well represented in this monograph as - in addition to design quality- the role of the teacher when learners are doing a WQ, or integrated tasks in general for that matter, is complex as also shown in the research by Segers, Droop and Verhoeven (this Volume).

We start off with Emilija Zlatkovska’s contribution ‘WebQuests as a Constructivist Tool in the EFL Teaching Methodology Class in a University in Macedonia’ as we expect it to be helpful for readers who are not so familiar with the WQ format and its pedagogical underpinnings. And also because it highlights the relevance of the initial training and professional development of teachers when implementing WQs in education.

Hoping that her study will support the Macedonian government in its attempts to modernize national education by introducing constructivism and technology in schools and the preparation of teachers the author decided to research the introduction of the WQ format in a methods class in the EFL teacher training program in her university.

Referring to the publicly expressed concern that—while currently there are computers provided in both primary and secondary schools—teachers are not appropriately trained to even use them not to mention implement technology in their teaching Zlatkovska is convinced of the urgency and relevance of the introduction of technology training in teacher education.

One of the arguments being that due to lack of training in using technology in the teacher training programs, the student teachers resemble their previous teachers rather than the new generations of students who are highly skilled in using technology.

While any technology tool can be used to demonstrate incorporation of technology in teaching, Zlatkovska has opted for the WQ concept because of its possibility to blend with the constructivist principles of learning and thus offering opportunities to demonstrating the connection between technology and constructivism in teacher preparation programs.

She believes that WQs can help instructors better understand the social-constructivist theory and find place for incorporating technology as part of their teaching thus offering an alternative to a teacher-centred approach to learning and accommodating current student generations’ learning styles that lean towards teamwork, experiential activities, multitasking, and the use of technology.

In her paper she describes the design of her research of a pilot study mapping the way four university professors responsible for the EFL teaching methodology course were introduced to the WQ concept and the use of technology to promote higher-order learning. The author documents how she only offered guidance so that each instructor could take ownership of the project and feel empowered with using the technology. Zlatkovska concludes by reporting some first preliminary results as this research is still ongoing.

Another contribution in the domain of the initial education of teachers of modern languages - but in a different cultural and educational setting- is the paper by Gé Stoks, a teacher trainer who works at the Department of Teaching and Learning of the University of Applied Sciences and Arts of Southern Switzerland. Where Zlatkovska finds herself at the introductory stages of WQ implementation Stoks’ wide experience with WQ design, implementation and training allows him to reflect on actual practice and evaluate returns on investment.
He describes in detail how the introduction of the WQ concept to student language teachers at his institution has evolved over the years. Student experiences and the challenges they face when designing their own WQ are well documented.

To reduce the time and energy spent on technical aspects and to help students focus on content the institution offers an alternative to working with an HTML-template for WQ production in the form of a two-year subscription for the Questgarden website (http://questgarden.com). To provide an even wider audience for the student products they are also published at the website www.aspti.ch/WQ. Stoks draws attention to the fact that these WQs have all been developed in the target language, pointing out missed chances for many Dutch WQs for modern languages on the Dutch TalenQuest site using Dutch as language of instruction as this greatly reduces their usefulness and above all effectiveness for foreign language education.

Students are also stimulated to design WQs on literary subjects. As literature is seen as an important element in the modern languages curriculum in the upper secondary schools (licei) in Ticino to gain access to foreign culture media-enhanced literature teaching was introduced as a master’s thesis topic.

In addition to issues like the alignment of WQ topics to the textbooks used in the placement schools and the design and integration of Focus on Form elements, Stoks addresses the problem of assessing the effectiveness of WQs and pupils’ progress and discusses the fundamental question of return on investment in terms of language acquisition versus the effort and time needed for (student) teachers to design and for secondary pupils to complete WQs.

The next three papers deal with WQ design for a variety of specific needs, purposes and target groups: English for Specific Purposes (ESP), Content and Language Integrated Learning (CLIL) and language and content knowledge development in primary education.

With empirical research on WQ’s effectiveness and implementation issues being so rare (also see Stoks and Segers et al., this Volume) Mará José Luzón-Marco’s paper ‘Webtasks for Learning Professional and Academic English: Adapting the WebQuest Model’ is a highly valuable contribution. She introduces the concept ‘wreading competence’, specific skills where reading and writing competences meet, as a key element in a methodological approach that can prepare ESP students to work and communicate in a hypertextual, multimodal, interactive and multicultural environment. Drawing on a wide variety of WQ-related research the author elaborates the WQ design criteria specifically for English for Specific Purposes (ESP) and puts forward clear arguments for the relevance of contextualized and authentic tasks, high quality input and rich resources and learner supports. In the second part of the paper the theoretical concepts and related design principles are operationalized through the detailed description of a real course task.

Another contribution from Spain is Almudena Fernández Fontecha’s paper from the University of La Rioja on WebQuests for Content and Language Integrated Learning (CLIL). The author introduces the term CLILQuest as a special type of LanguageQuest to serve a specific role within CLIL settings. She positions the concept within the framework of task design in general and the literature on Web- and LanguageQuest in particular. Arguments are put forward why and how integration into the curriculum through a superior unit is a fundamental feature of this learner-centred activity.

Taking the non-linguistic content of the topic as a leading principle she proposes specific design elements to promote:

- use of authentic processes and materials
- use of Web 2.0 technologies
- learners’ reflection on their own processes and decisions while doing a task
Focus on Form activities
meaningful use of language as triggered by the real-like purpose of the CLILQuest.

The description of the task taxonomy, the related CLILQuest typology and their specific roles in the teaching Modules is made more accessible for the reader by illustrating these concepts as applied in a concrete course on climate change. Finally the author concludes that implementation experiences are needed to test the proposed design and effectiveness of the CLILQuest to see if it can function as a key part of a technology-enhanced model of Content and Language Integrated Learning.

Even though the use of WQ is widespread throughout the world, empirical research on the impact on learning and the cognitive requirements is scarce and gives little information about how a WQ could be integrated into the schools. It is also for this reason that we are happy that Eliane Segers, Mienke Droop and Ludo Verhoeven submitted their contribution reporting results from the WQ research they are involved in at the Radboud University in the Netherlands.

In their study ‘Integrating a WebQuest in the primary school curriculum using Anchored Instruction: effect on learning outcomes’ the authors address a number of design and implementation issues in WQs for primary education (in the Netherlands) that aim to combine the promotion of content knowledge and language development. At first an overview is presented of the literature of the empirical research that was published on the use of WQ, resulting in a way to integrate WQs in the school curriculum. Segers et al. report experimental research aimed at unraveling child characteristics that contribute to the learning effects of doing a WQ, taking into account the differences between teachers and grades. Based on the finding that learning gains can differ significantly between groups even though the WQ used was the same and the teachers all received the same guidance from the researchers the importance of the teacher’s role is stressed: the learning experience must be orchestrated and the WQ needs embedding in the day-to-day activities in the classroom. In her conclusion Segers and her co-authors qualify their results by pointing out that they are based on the use of merely one WQ in one school.

The final paper in this monograph describes opportunities for task and activity-based foreign language learning supported by recent technological developments.

In his contribution ‘VirtualQuests: Autonomous and Dialogic Language Learning with 3D Virtual Worlds’, Howard Vickers, initiator of Avatar Languages, elaborates on VirtualQuest, a concept also described as SurReal Quest in one of his earlier publications (Vickers, 2007). Vickers describes how the use of 3D virtual worlds can extend the concept of immersion in language education as it can support an experiential, dialogic approach to language teaching as advocated in the Dogme methodology. The authors covers aspects of this process-based, learner-centred approach with its focus on conversational communication such as its motivational power by serving immediate needs of the learner, the relation to simulation as a procedure and the promotion of learner autonomy.

By exploiting the social and communicative features of 3D virtual worlds language students can be sent on information quests throughout the 3D universe which require them to interact with native speakers of the target language in addition to pursuing traditional internet research. Output related task components require students to present their information e.g. in an audio or video podcast. This combination of web-based research and virtual social interaction allows learners to practice their language skills in a pedagogically significant manner. In the second half of the paper Vickers compares the characteristics of the LanguageQuest and VirtualQuest models and discusses the implications for learner and teacher behaviours.
Conclusion

We would like to thank the authors of the papers for their contributions. Their collective effort has led to the realization of our ambitions: to serve a diverse readership and cover a variety of aspects such as introduction to the LanguageQuest concept in teacher education, effectiveness and implementation issues and related teacher competencies in educational practice and learner autonomy related literacies. We also greatly appreciate the work done by the reviewers. In our view this collection offers an interesting insight in the way the LanguageQuest concept has been adopted and is being further developed and adapted to serve a diversity of specific needs, purposes and contexts.

References


Dodge, B. 1995. Some thoughts about WebQuests. [http://WQ.sdsu.edu/about_WQs.html]


Segers, E. 2007. Literatuurstudie WebQuests. Radboud University Nijmegen [A literature review study of WebQuest research commissioned by the Dutch Institute for Curriculum Development, SLO]


Websites

Active Worlds
http://www.activeworlds.com/

ARGuing for multilingual motivation in Web 2.0
http://arg.paisley.ac.uk/

Avatar Languages
http://www.avatarlanguages.com/home.php

European Centre for Modern Languages
www.ecml.at

ECML LQuest Project

Kennisnet
http://corporate.kennisnet.nl/international/about

LanguageQuest Assessment Tool. Online, English version at the TalenQuest site:

LQuest Net (LQuest Community of Practice)
http://www.lquest.net

TalenQuest Project

Utrecht SummerSchool: Designing Activities for the 2.0 Language Classroom

WikiWijs
http://wikiwijsinhetonderwijs.nl/english/

WebQuest Page / WebQuest Garden
http://WQ.sdsu.edu/  http://questgarden.com/
Abstract. Government leaders, educators and the general public in most countries in the world, especially those less economically developed, believe that combining English language proficiency with skills in information technology will facilitate success in life (Warschauer, 2000, as cited in Fang & Warschauer, 2004) and provide the potential for that country’s population to connect to the rest of the world. Based on this belief, the education systems of many non-English speaking countries, among which the Republic of Macedonia, emphasize English language learning and development of technology skills in the schools from the earliest age. The term technology, as used in this study, refers specifically to the usage of computers and the Internet. However, although the Macedonian government has invested in equipping all schools with computers, the teachers are not using the computers as part of their teaching. This ongoing case study investigates whether introducing WebQuests as part of the Teacher Training curriculum at the university level can facilitate the integration of English language teaching and technology while simultaneously promoting a more student-centered, constructivist approach to teaching. The author will present only the literature review on which she draws on for the current study and the methodology she used. At this point, findings of the study will not be presented as the study has not been completed, yet.

Keywords: WebQuests, EFL, teacher training, constructivism, technology.

1. Introduction

While education in Macedonia has recently seen the promotion of a shift toward a more student-centered teaching paradigm, the struggle to fully implement this change still remains. Although teachers in Macedonia state that they practice student-centered teaching and arrange students in groups and pairs; it appears that most class activities and materials are still teacher-controlled. Teachers use government-mandated textbooks in primary and secondary schools, and books chosen by instructors at the university level. Students are expected to memorize information transferred to them from the teachers. Unfortunately, by the time most students graduate, the information they have learned has been lost since there is little application of the knowledge presented in class. In addition to this, there is an apparent gap between the ideas that the Macedonian government is promoting for a change leading to greater integration of technology in the schools and the preparation of the teachers for the implementation of that change.

While currently there are computers provided in both primary and secondary schools, the main concern of the teachers is that not only have they not been appropriately trained in the use of the new technology, they have received no training in how to implement it in their teaching. This statement is supported by a pilot study conducted by the current researcher (Zlatkovska, 2008), in which two university professors, who taught an EFL teaching methodology class in Macedonia, were interviewed. Findings from that study indicated that the student teachers in the class observe some demonstration of the use of technology in teaching such as tape recorders, videos, printed materials from the Internet, and some trial software programs. No training is given to these student teachers however on how to incorporate technology, specifically computers and the Internet, in their teaching practice as a tool to engage their future students in independent, student-centered learning. Also, rather
than receiving instruction in how to move toward more student-centered learning, these pre-service teachers learn to follow the examples of their own teachers and remain in control of the class. There is additional resistance to this paradigm shift by the teachers who are comfortable as lecturers, exercising their power as “knowledge givers.” According to Kaufman (2004) teachers across disciplines are resistant to change due to the “prior educational experience that contributes to teachers’ beliefs about teaching and learning” (310).

According to Strommen and Lincoln (1992, as cited in Matushevich, 1995), as a result of the lack of training in using technology in teacher training programs, student-teachers resemble their previous teachers rather than the new generations of students who are highly skilled in using technology. These authors assert that as a result, estrangement between the schools on the one hand, and the society that pushes for change on the other hand, will occur.

With the introduction of technology in Macedonian society, more teachers use various resources and handouts from the Internet to supplement their teaching. However, it is still only the teacher who demonstrates whereas the students are not required to utilize the technology neither as learners nor as part of their classes in their teacher training programs. It is the current researcher’s assumption, based on her own lived experience as a student in that educational system, that the instructors in the teacher training programs in Macedonia provide lectures to the pre-service teachers about the characteristics of social constructivism without enacting the practice themselves. The current researcher views social constructivism and usage of technological tools such as WebQuests as a way to familiarize students and promote principles of social-constructivism in teaching thus initiating a more student-centered classroom. While any technology tool can be used to demonstrate incorporation of technology in teaching, the current researcher chose WebQuests due to the possibility they provide to blend with the constructivist principles of learning.

A knowledge of the current situation in Macedonia, where computers are being installed in schools across the country and English is taught as a foreign language from first grade, in conjunction with an understanding of the popularity that WebQuests enjoy among practitioners, lead to the creation of the current study.

The purpose of this study is to investigate whether introducing WebQuests as part of the Teacher Training curriculum can facilitate the integration of English language teaching and technology while simultaneously promoting a more student centered, constructivist approach to teaching. The current researcher will observe whether there is any change in the approach to teaching when a technology tool such as WebQuest is implemented by EFL teaching methodology instructors teaching to future teachers of English as well as the plausibility for those prospective EFL teachers to use the tool as part of their future employment.

The current researcher will present the literature review and the methodology that has been used to conduct the study. Since the current study is still ongoing, no findings will be presented at this stage.

2. Literature review

The current study mainly draws on Brown and Warschauer’s (2006) recommendations in research they conducted with pre-service teachers. They found that students in a teacher training program were not sufficiently exposed to technology integration as part of their teacher preparation program but that they demonstrated a positive attitude toward using technology while teaching. These authors saw a need for university instructors to “upgrade” their technology skills to a level that would allow incorporation of the new technologies in their teaching in order to develop higher order thinking skills in their students. This finding
matched with results from previous research studies (Kluever, Hoffman, Green, and Swearingen, 1994, as cited in Brown and Warschauer, 2006, Albirini, 2004). According to Kulik (2003, as cited in Brown and Warschauer, 2006), “the use of technology to promote higher-order learning can only occur when classroom teachers are trained to embrace new technologies and blend them intelligently into their curricula” (601). In their study, Brown and Warschauer (2006) recommend incorporating learning about technology integration in teaching in the teaching methods courses and the placement of teacher candidates with technologically proficient mentors to further develop this skill during their teaching practicum.

The introduction of technology in the teaching methods class is noteworthy especially if we consider the impact that computers and the Internet have on the new generations of students entering the education system. According to Oblinger (2003), the “Millennial generation”, generally defined as students born after 1982, differs from previous generations in specific characteristics. These “new” students “gravitate toward group activity and are fascinated by new technologies” (Oblinger, 2003:38). They are actively engaged on the Internet playing videogames and chatting, actions which do not coincide with the traditional lecture style practiced by older generations of teachers in most classrooms. The new generations’ learning styles lean toward teamwork, experiential activities, multitasking, and the use of technology (Oblinger, 2003). For these young learners, technology is a natural part of their everyday environment (Matusевич, 1995). The younger the students, the more likely they are to have the higher exposure to technology and use of the Internet, which creates greater disparity between the students’ learning styles and the teachers’ knowledge of and ability to use technology.

In 1987, Reigeluth warned educators that the rapid spread of technology and continuous societal change would eventually make the current educational system outdated, especially from children’s perspective. According to Naisbitt (1982, as cited in Reigeluth, 1987), the new society will require a person who possesses the ability to analyze, solve problems, evaluate, think critically, and take initiative and responsibility for his or her learning and decision making. Current teachers and teacher educators need to consider this when preparing to teach the newest generations of students. It is teachers’ responsibility to combine technology and content in a way that stimulates the kind of development that prepares students for the future in which they will be living.

As Lewandowska-Tomaszczyk, Osborne, and Shulte (2001) have noted, in the 1980s, most of the computer programs in use supported the traditional, more frontal method of teaching and most CALL programs instead of being interactive, were closed systems which followed the drill and practice pattern. However, since the 1990s there has been a shift in the educational paradigm. In this new paradigm, the focus is more on the learner, learner autonomy, lifelong learning, and using computer technology and Internet resources. In educational settings there is a push for a shift from teacher/institutional-centered to learner-centered classrooms and a “move away from the old, classical paradigm of inflexible course content and frontal classroom teaching” (32). This shift in thinking aligns with the principles of constructivism which, according to Matusевич (1995), is supported by the use of modern computer technology.

Bonk and Cunnigham (1997) have explained that technological changes have significantly restructured the way people live, learn, and communicate. Students come to school already having had significant experiences with self-directed learning, a fact which has encouraged a shift toward social constructivism in learning theory. This theoretical stance focuses on the importance of culture and social context for learning. In sum, as described by Bonk and Cunnigham (1997), social constructivists promote: 1) learning environments that reflect real-world, authentic problems that will allow students to solve these as they develop their interests
and knowledge; 2) building on previous knowledge and not only individual but also common, group interests and experiences in activities that are both process and product oriented; 3) using activities that promote dialogue, interaction, justification and elaboration of one’s stand through discussion and questions, meaning and knowledge negotiation, and collaboration; 4) using technology to facilitate the generation of ideas and knowledge building; and 5) assessment embedded in real-world tasks and problems focusing on collaboration, group processing and sharing of findings, but also continual and less formal. These are all features that are readily available when using computer technology and the Internet. Constructivism also rejects rote learning and the notion of transmission of knowledge from instructor to student, and emphasizes the learners’ participation in constructing their own knowledge by building on existing knowledge and experiences (Heibert, 1991). The characteristics of social constructivism are naturally consonant with the new generation of students learning styles.

“Computer, video, and wireless technologies have provided optimal media for the application of constructivist principles to learning and teaching…” (Perkins, Schwartz, West and Wiske, 1995, Bransford, Brown and Cocking, 2000, Beatty, 2003, all as cited in Kaufman, 2004:306). Educators worldwide have began to recognize the impact of social constructivism for learning in a technological environment “because the potential for collaboration and negotiation embedded within it provides the learner with the opportunity to obtain alternative perspectives on issues and offer personal insights; in effect, to engage in meaning making and knowledge negotiation” (Duffy and Cunningham, 1996, as cited in Bonk and Cunningham, 1997:33). In order to introduce constructivism and technology in schools, Kaufman (2004) recommended promoting the connection between technology and constructivism in teacher preparation programs. While she does admit that changes happen gradually and there are many factors that will influence the development of this connection, if the right opportunities are provided to the students, especially through course work, there is room for developing and implementing constructivism in language education courses.

Although computers have been used for language teaching since 1960’s it is since the 1990, with the emergence of CALL, that teachers have became more concerned with constructivist use of technology (Lee, 2000). Lately, there has been an increased interest in web-based activities for language learning due to the abundant amount of information sources offered on the Web.

2.1 What are WebQuests?

According to March (2008), Bernie Dodge had an idea about incorporating the WorldWide Web into the classroom and he coined the term “WebQuest” for the activity he designed. Dodge (1997) defined WebQuests as “an inquiry-oriented activity in which some or all of the information that the learners interact with comes from resources on the Internet, optionally supplemented with videoconferencing” (1).

Educators believed that the original definition failed to capture the meaning and theoretical underpinnings of the WebQuest concept. Therefore, Tom March (2008), a co-creator of WebQuests, reconceptualized and expanded the definition of WebQuest as follows:

A WebQuest is a scaffolded learning structure that uses links to essential resources on the World Wide Web and an authentic task to motivate students’ investigation of a central, open-ended question, development of individual expertise and participation in a final group process that attempts to transform newly acquired information into a more sophisticated understanding. The best WebQuests do this in a way that inspires students to see richer thematic relationships, facilitate a contribution to the real world of learning and reflect on their own metacognitive processes (seventh paragraph).
According to March (2008), a good WebQuest prompts the learner to apply higher order thinking skills (analysis, synthesis and evaluation). Thus, the activities in WebQuests should engage students in a real life problem which is divided among group members with each assigned a manageable task, and should direct them toward achieving the set learning objectives. Learners apply pre-existing knowledge to construct new knowledge individually or as part of a group. March recommends that the task in a WebQuest be set in the form of a question or a problem, ongoing contradiction or debate, or encouraging research. In other words, the task should be set in a way that would ask the learners to apply previous knowledge and go beyond fact memorization. In addition, the task should be constructed in such a way as to motivate learners by being authentic and relevant to their real-life needs. The teacher’s role is one of a facilitator, exercising his or her presence as much as it is needed by the students. Scaffolding and cooperative learning are the most important components. It is clear that the principles that guide the creation of WebQuests reflect constructivist philosophy (Johnson and Zufall, 2004).

Dodge (1997) distinguished between two levels of WebQuests: short term, designed to be completed in one to three class periods, and long term, designed to take between a week and a month to complete. Each WebQuest generally contains six parts:

- **Introduction** - builds on learner’s previous knowledge and experience. In this section the instructor provides background information and can explicitly mention specific new concepts or principles to prepare the learner for the lesson. According to Teclehaimanot and Lamb (2004), this part should be interesting, motivating, relevant and timely to provide an incentive for learning.
- **Task** - is a scaled down doable variation of a real-life situation. This focuses on what the learners will do and what they are expected to create as a final product once they finish all of the activities. “The task requires synthesis of multiple sources of information, and/or taking a position, and/or going beyond the data given and making a generalization or product.” (Johnson and Zufall, 2004:1)
- **Information sources** - points to information from the WWW, this information needs to be specific and carefully selected by the instructor. Information sources can include web documents, experts available via e-mail or real-time conferences, searchable databases on the net as well as books and other documents available to the learners in hard copies.
- **Process** - includes “detailed activity description, step-by-step instructions, timelines and checklists. Resources such as assignments, questions, links to website resources and descriptions of requirements” (Teclehaimanot and Lamb, 2004:6). It is in this section that the instructor needs to provide most of the scaffolding for learners to accomplish the tasks successfully.
- **Guidance or also called “learning advice”** - is where the instructor provides additional advice presented through “description of how information or notes should be organized, guiding questions or directions to follow” (Teclehaimanot and Lamb, 2004:7), by giving the students templates, timelines, concept maps, and other information.
- **Conclusion** - brings closure and summary of what has been. According to Teclehaimanot and Lamb (2004), it can also encourage students to go beyond what they have learned.
- **Evaluation** - describes the evaluation criteria needed to meet performance standards. Usually, there are explicit directions that will tell the learner how he
or she will demonstrate the knowledge gained. Typically the instructor creates a rubric to evaluate the final product and learners will have access to this from the very beginning.

2.2 WebQuests and Constructivism

Among the many technological tools available, WebQuests emerge as an example of a powerful means for supporting the principles of constructivism (Matusevich, 1995, Dodge, 1997, Vidoni & Maddux, 2003, Godwin-Jones, 2004, March, 2008) in language teaching. According to March (2008), WebQuests are “a way to integrate a number of sound learning strategies”, among which he mentions constructivism, “while also making substantial educational use of the Web” (2).

WebQuests tend to be student-centered with teachers scaffolding the students through the learning process. In other words, they “foster cooperative learning through guided discovery” (Godwin-Jones, 2004:10). WebQuests are usually “group activities with an end goal of creating a document that collects, summarizes and synthesizes the information gathered” (Godwin-Jones, 2004:9, Vidoni and Maddux, 2002). They provide the opportunity for students to engage in “constructivist activities resulting in shared learning experiences and new knowledge based on inquiry-oriented language use and Web research skills” (Godwin-Jones, 2004: 9). A WebQuest can be developed around an authentic topic relevant for students’ everyday life.

There are a number of articles describing the successful implementation of WebQuests in a particular classroom or program (Vidoni & Maddux, 2003, MacGregor & Lou, 2006, Ikpeze & Boyd, 2007, Manning & Carpenter, 2008). However, these articles primarily describe personal accounts of successful usage of WebQuests or are recommendations regarding the “greatness” of WebQuests and suggestions of ways to use them in teaching.

Very few articles are available that discuss the implementation of WebQuests in teaching EFL (Koenraad, 2002, Prapinwong, 2008) and only a few that discuss the usage of WebQuests in training pre-service teachers (Johnson & Zufall, 2004, Manning & Carpenter, 2008). However, hardly any studies promote introduction of WebQuests as a constructivist way of teaching EFL. Much remains to be researched to document the integration of WebQuests in teaching EFL and promoting constructivist learning principles.

2.3 WebQuests and language learning

One recent study that dealt specifically with the integration of WebQuests in the learning of English as a foreign language (EFL) is Prapinwong’s 2008 study which explored the use of WebQuests in an EFL classroom in Thailand. She worked with an instructor who implemented two WebQuests in an EFL college-level reading class over a two month period of time. The results from Prapinwong’s study showed that the learners made a statistically significant gain in the vocabulary tests after the WebQuests. Overall, the students engaged more and were motivated due to the interaction with the Internet and the WebQuests as a tool, but they expressed feeling overwhelmed with the complexity of the resources presented. The current researcher took the findings of Prapinwong’s study in consideration when conducting her study. These findings should be considered when using WebQuests with EFL students.

The students also stated that WebQuests are more fun and engaging and that they preferred this to the traditional lecture based teaching. The teacher expressed both a positive attitude regarding the use of WebQuests but also concerns regarding the constraints imposed by the
school mandated curriculum and assessment. The teacher expressed that she would have felt more confident had she been more familiar with WebQuests and could have made a better transition from a lecture-centered to a student-centered classroom where her role was more of a facilitator. In sum, Prapinwong found that “the use of WebQuests does not create a magic tool for effective language learning in every context” (164).

While participants did express positive attitudes and were very optimistic, Prapinwong recommends further research of the students’ observed behavior while engaged in the WebQuest tasks. Additionally, she recommends careful examination of the Internet resources offered and using a small number of Web sites that are simpler in nature in order to help students adjust to this kind of technological tool. Also, the teacher should not assume that the learners are technologically savvy and should offer guidance and support in the process. Moreover, the teacher should be well trained and embrace the constructivist methodological principles that are supported by the usage of this tool. However, Prapinwong does not promote complete abandonment of direct teaching principles in classes where WebQuests are utilized. Prapinwong’s study is exploratory in nature and her findings cannot be generalized due to the small number of participants. Further research on the use of WebQuests in the area of EFL is needed in order to gain more concrete results and to promote the usage of this tool in the teaching and learning of languages.

Another project related to WebQuests and teaching languages is the Dutch project “TalenQuest” (Koenraad, 2002). “TalenQuest”, “talen” meaning language in Dutch, was initially created with the key objective of customizing the WebQuest concept for foreign language learning and teaching. Koenraad (2002) claimed, based on some of his previous research, that “the language teaching community is still relatively unfamiliar” with the concept of WebQuests and there are not many WebQuests for English as a second or foreign language or for other languages. In spite of this, he saw the efficacy of using WebQuests in the field of language education. “The goal of the Talenquest project is to replace the fossilized content of textbooks with real-world, dynamic content designed for use at a variety of skill levels” (Koenraad, 2002, as cited in Godwin-Jones, 2004:10).

3. Methodology

An exploratory case study was undertaken to investigate the implementation of an Internet-based constructivist technological tool, the WebQuest, in an EFL teacher training methods class. The study is ongoing and some parts have already been completed. Currently, the study is in its final stage of data collection. The current researcher worked with three EFL teaching methodology faculty members at a private university in Macedonia to expand their understanding of social constructivism as a learning approach and at the same time help these instructors find a curricular space for technology in their teaching through the incorporation of a WebQuest as a tool that demonstrates the features of social-constructivism. One of these instructors participated in the pilot study conducted by the researcher. The current study builds on that initial effort by examining the actual incorporation of WebQuests in the teaching methodology courses taught by the three faculty members.

The exploratory approach will allow for examination of an issue that has not been investigated previously in Macedonian higher education. Since little is known about using WebQuests in EFL education in general, the exploratory approach seemed to be the best fit for this study.
4. Research questions

This study is exploratory in nature with the goal of examining the following research questions:

1. How do teacher educators view the differences in language teaching before and after implementing the WebQuest as a tool in the EFL teaching methods course?
2. What are some resources that the EFL teaching methods class instructors employ on their own during implementation of the WebQuest in teaching?
3. How did the EFL methods class instructors perceive their experience with the WebQuest as an instructional tool and what is their understanding of the tool once implemented in their class?
4. What are the thoughts and experiences of the students participating in the EFL teaching methods class as part of this study with regard to the WebQuest tool?

5. Participants and site

The study is being conducted at a large private urban university in Macedonia in early 2010. The research focused on training the EFL teaching methods instructors in using a WebQuest as a way to blend teaching English and technology at the same time expanding their understanding of social constructivism as a new paradigm in teaching through the usage of this constructivist tool. In addition it intended to demonstrate the use of WebQuests to the students in the EFL methodology class as a tool they could use as part of their future profession.

5.1 Research procedure, data collection and data analysis

Following Carspecken’s (1996) recommendation for qualitative research, this study will follow the five-stage design but focus primarily on the first three stages. The first stage involves compiling a primary record that is built through observations and intensive note-taking, audio-, and, if possible, video recording. During the second stage known as “preliminary reconstructive analysis”, the researcher will begin to analyze the primary data that has been collected. The third stage is dialogical data generation which is developing interview protocols and conducting interviews with the participants. The data collected with the interviews may challenge the data gathered via the observation process. In stage four, the researcher examines the relationships that may potentially exist among the site and other sites such as cultural products or societal norms. Finally, the last stage focuses on using system relations to explain findings. Stages one and three are focused on data collection and stages two, four, and five involve the data analysis process. According to Carspecken, these stages are overlapping and recursive rather than sequential.

Some parts of the current study have already been completed whereas others are still in progress or will be completed in near future. To begin, the researcher conducted pre-implementation of WebQuests interviews with the instructors in order to obtain information about their current approach to teaching and their understanding of social-constructivism. Next, the researcher observed two classes taught by these instructors and audio and video recorded the classes to the extent that this was possible. In those cases where videos had been recorded, they were used to develop post-class discussion with the instructors about the approach to teaching as well as to introduce the idea of social-constructivism along with the usage of WebQuests. Parallel to the observations, the researcher set meeting times during
which she introduced the WebQuest tool to the three teachers individually and guided them through the process of creating a WebQuest that they can use in their class with their students as a way to demonstrate social-constructivist principles. Constructivist methodology was discussed in order to make the connection between the constructivist theory and WebQuests.

The researcher and the instructors met three times in order for the researcher to train the teachers and help them develop a lesson plan that incorporated social-constructivist principles as described in the previous section through the use of WebQuests as a methodology for teaching English and a way to integrate technology in teaching. The researcher only offered guidance so that the instructors could take ownership of the project and feel confident with using the technology. The instructors will implement the WebQuest with only one of their groups even though they have several groups so that they can have a better control of the activity they will prepare. During and post reflection interviews of the implementation of the WebQuest will be conducted which will explore the challenges, advantages, and disadvantages the teachers see as well as any strategies they would use for future implementation. Additionally, conversation about the instructors’ perceptions of social-constructivism before and after implementing the WebQuests will take place. Instructors have also been asked to write a journal in which they reflect about their experience throughout the entire process. Finally, the researcher will conduct focus group interviews with students who will participate to obtain their opinions regarding the implementation of WebQuest. The students’ interviews will focus on the advantages and disadvantages they perceive with using WebQuest, whether WebQuests helped them understand social-constructivism, and whether they see this tool as something they would potentially use in their classroom in the future. The feedback from the students will be compared to the feedback obtained from the instructors. At this point, the during and post implementation interviews with the instructors and the student interviews have not been completed, yet.

The researcher audio/video recorded all interviews that have occurred until now in addition to taking thick field notes, as recommended by Carspecken (1996). The semi-structured interviews took maximum 90 minutes with the instructors and will take up to 60 minutes with the students. The researcher will follow the same methodology for the additional interviews that will take place in the near future.

All interviews and observations will be transcribed and coded. In order to ensure validity and trustworthiness of the study, besides using multiple recording devices, the researcher will be using peer-debriefing to check for possible biases. Also, member checks on the record will be conducted to ensure accurate interpretation of the teachers’ experiences.

The research process is still ongoing. The next step is for the professors to implement in their classrooms the WebQuests that they created. Once the last feedback regarding the usage of WebQuests is obtained from the instructors as well as the students, I will proceed to complete the analysis of the data and finish the write-up of the findings from this study.

6. Conclusion

WebQuests may prove to be a positive first step toward incorporating technology in instruction and at the same time reflecting the principles of constructivism, a theory that the current researcher strongly believes should be promoted in the education system in Macedonia as an alternative to the current more frontal approach to teaching. While constructivism is not prescriptive and represents a learning theory, the principles that represent the theory can still serve as a guide for instructors to refocus their teaching and change their current dominant roles in the classroom. The current researcher believes that WebQuests can help instructors better understand the social-constructivist theory and find a curricular space for incorporating
technology as part of their teaching. Perhaps the use of WebQuests can open the door for incorporating other technology tools in teaching while accommodating the needs of new generations of students who are currently or will come into classrooms. It is possible that using WebQuest as a constructivist internet based tool will also help meet the school modernization and technology incorporation push currently underway by the Macedonian government as part of an attempt to reach the modernization standards set by the most developed countries in the world.

More research is needed as to how WebQuests can promote social-constructivism in teaching. The first step, as recommended by a few researchers (Kaufman, 2004, Brown & Warschauer, 2006), is implementing WebQuests to promote the constructivist approach in the teaching methods class and examine how the instructors of this classes and the pre-service teachers receive and respond to this innovation. The teachers who will implement this innovation should be the focus of the study because their beliefs and feelings about the innovation will affect the attitudes of their students toward the implementation of constructivist teaching through the use of WebQuests as a technological tool. At the same time, the research should consider the context in which the WebQuests will be incorporated as well as the larger classroom and societal factors that will influence the acceptance and promotion of the constructivist approach through the use of WebQuests as a technological tool in the EFL classroom. Hopefully, this study will help to clarify some of these issues.

The current researcher hopes that this study will contribute to bridging the gap between teaching and using technology by incorporating specific technology training blended with the constructivist principles in the methods class in the EFL teacher training program in Macedonia.

In addition, it is hoped that this study and initiation of the integration of this type of technology will provoke some change in the more traditional teaching paradigm that is still in place and move teachers’ thinking toward a more constructivist model. Finally, I hope that the findings of the study can contribute to the nascent but growing body of research that deals with the implementation of an Internet – based constructivist tool such as WebQuests in the EFL teacher training context.

7. References


WebQuests in the Training of Teachers of Modern Languages

Gé Stoks

Department of Teaching and Learning of the University of Applied Sciences and Arts of Southern Switzerland (DFA/SUPSI)

1. Context

WebQuests (WQ) have been part of the training of teachers of modern languages at the DFA/SUPSI, formerly Alta Scuola Pedagogica, in Locarno in the Italian speaking part of Switzerland since 2002. After completing their university studies, our students follow a one-year or two-year master's to become teachers of English, French or German at the middle school (scuola media) or at upper secondary general education institutes (gymnasium/liceo). Apart from general education modules, practice in schools and a master’s thesis on action research carried out during the year, the course contains eight modules of general language pedagogy (didattica delle lingue), one of which is focused on the development of a WQ. WQs should be developed as an example of a task-based or content-oriented approach in a digital environment (Stoks 2002) or as a literary WQ for upper secondary general education.

In this article our experiences with WQ in teacher education will be described. I will address practical concerns and issues related to the role of WQs in foreign language education, both as examples of task-based learning and as tools in the teaching of literature.

2. Seven years of WebQuests for modern languages

When we introduced the development of a WQ in our training course back in 2002, students had to use the template made available at the WebQuest website (http://webquest.org) in the United States. We translated the English version of the template into French, German and also Italian and uploaded them, with permission from the authors in San Diego, to the WebQuest site of the journal Babylonia to enable both our students and subscribers to Babylonia to work in the language they had studied.

From the start, student teachers tended to focus more on the technical aspects of the development process than on the principles of task-based language learning (TBL) and the contents of the WQ. In those first years we noticed that the nicer the WQ looked from a technical point of view, the weaker the contents and vice versa.

Students used the HTML editor Dreamweaver, software available on the institute’s network. Some may argue that Frontpage or a simpler HTML editor would have been better, but in this way, students also learnt to use Dreamweaver in a context relevant to them. Previously students had to take a module on new technologies, but one of the problems was that the applications were not subject-specific, which some students felt to be rather frustrating.

More recently we have given students a two-year subscription for the Questgarden website (http://questgarden.com). Since it is much easier to develop a WQ on this website, students tend to focus more on the contents of the WQ. Using Questgarden greatly reduces the time and energy to be spent on technical aspects. Questgarden offers a $20.- two-year subscription, and we request the formation of a closed group so that students can work together and leave comments on each other’s WQs while the work is in progress.

In order to focus more on the content aspects of the development process we have also introduced the LanguageQuest analysis tool (Koenraad, 2002 or www.talenquest.nl). Prior to
developing a WQ themselves students have to analyze a WQ with this tool. Although useful, it is frustrating that not a single WQ on the Dutch TalenQuest site has been awarded the maximum score of three stars, even two stars are rare, so that an excellent example of a LanguageQuest is still lacking. Students tend to be less critical and sometimes give three stars themselves to the WQ they have analyzed. Subsequently they develop their own WQ.

One problem is that students find it increasingly difficult to find a suitable topic. Most students like to develop the WQ around a topic treated in the textbook in their teaching practice. Since the module is always offered in February and March during the second part of the academic year, the topics addressed in the textbook are usually the same each year. This is a major problem in lower secondary education, where the textbook is more strictly followed than in upper secondary. Nonetheless our WQ website shows that many student teachers have found topics of interest to the pupils in their teaching practice. Due to availability constraints of computer labs or other institutional restrictions it is not always possible to carry out the WQ with a class. Contrary to the TalenQuests on the Dutch site (www.talenquest.nl), our WQs have all been developed in the target language, whereas many Dutch WQs for modern languages are actually in Dutch, which greatly reduces their usefulness and above all effectiveness for foreign language education.

The development of a WQ is generally appreciated by the students, although not everybody manages to complete it in the allotted time. This is mainly due to the fact that they tend to start developing the WQ without having a clear idea of what they wish to do. They must hand in a proposal and outline the contents of the WQ, which are discussed in class, but it frequently happens that they get stuck and have to change the topic after two sessions. They then have to complete the WQ mainly at home and as a result have less technical and content support from the trainer. However, everybody has to complete their WQ in order to obtain the credits for the module. We occasionally allow students to work in pairs but we do not encourage it. We tend to allow it when students have very little affinity with the technology and are scared off by the technical aspects. However, it also happens that a student (or his or her partner) has the programming skills to develop a WQ without using a template. We try to get the message across that it is the content that counts and the content that is principally assessed. Technical problems can usually be easily resolved by the trainer.

3. Literary WQs

Last year we introduced the development of literary WQs. In the upper secondary schools (licei) in Ticino literature is a very important element in the modern languages curriculum. It is even officially stated that languages are not primarily learnt for communication but to gain access to foreign culture and literature. For the students who wish to become upper secondary language teachers it is important to have a sound knowledge of the literature of the language they have studied at university, but also of ways of presenting literature in ways suitable to the age and development of young adults in secondary education.

Last year we suggested as a topic for their master’s thesis media-enhanced literature teaching. Most students chose to introduce a literary topic or writer by means of a WQ. These WQs have also been published at www.aspti.ch/webquest and on the Questgarden website where lots of other literary WQs or WebQuests based on literature may be found. Examples so far include literary WQs in German and in English as foreign languages, our students’ mother tongue usually being Italian.

The WQs were again developed in Questgarden. An interesting point was that the students also developed a platform for student products and exchanges, either in the form of a wiki or a blog. This turned out to be a solution to the problem of publishing student results.
4. Challenges

The general advantages of WQs and their role in foreign language learning have been explained elsewhere (Dodge 2001; Stoks 2002; Westhoff 2004; Koenraad 2002; Luzón 2007). Its main advantage is that, ideally, a WQ provides students with the opportunity to access and interact with authentic language and language materials. Motivational factors for both student teachers and students in secondary school are the use of media and the fact that the product can be published on the web.

However, we have also found that developing a WQ is very time-consuming, even with such tools as a wysiwyg interface at Questgarden. Another question that students sometimes ask is whether it would not be easier to give the students the task on paper or in a Word document with a list of links. I find this question hard to answer when I look at some WQs and wonder indeed if it would not be easier.

WQs are often fairly easy to use in a given context. We insist that student teachers specify objectives, learner profile, evaluation criteria, etc. on the teacher pages to explain the WQ and its procedures to others, once it has been published. Although some of our student teachers have received positive feedback from other teachers who have tried out their WQ, these remain few and far between. Sometimes colleagues in the same region use the WQ, because they have the same textbook and the topic is suitable to their learners. Analyzing existing WQs, for instance on Questgarden or the Dutch TalenQuest-site, the conclusion is often that the WQ ought to be adapted to local circumstances, as has actually been done in one instance, when teachers in an in-service training course on WQ, adapted a WQ originally published on the Dutch site (Trendy Handy).

WQs also tend to get outdated fairly fast and links become extinct. Students should be warned. Last year one of our students developed an interesting WQ on the Ingeborg Bachmann literary prize organized in the city of Klagenfurt in Austria. The short-listed authors are presented in a multimedia way with readings, interviews, text excerpts and presentations. However, during the year the website was changed to get ready for the new prize in 2009. The student managed to download the videos and text excerpts to keep them available for the WQ. This might have been foreseen, but it is an obvious problem that topical contents are short-lived and change rapidly making the WQ extinct, even though downloading the contents and making them available on another server is a possible solution.

As far as the WQ as an example of a task-based approach in a digital environment is concerned, we have noticed that the “focus on form” aspect that should be part of the didactic itinerary is often left out or left to the teacher’s initiative after the content-specific elements have been addressed. We haven’t found a satisfactory solution to this problem, neither in our own experience nor at other WQ-sites. In some instances students have included exercises created with the Hot Potatoes authoring tool (http://hotpot.uvic.ca/), but the results are not really satisfactory examples of focus on form activities.

The WQ project is usually appreciated by the students, but not much is known about the lasting positive effects on language learning. The question as to whether the time spent on a WQ is effective in terms of language learning is not easily answered when we discuss it with the students, in spite of the fact that one can analyze the criteria put forward by Westhoff (2004), but (student) teachers are often uncertain as to the effects of the WQ. The latter is probably also due to the difficulty of assessing learning in a project-like context such as that of a WQ. Teachers used to assessing students’ progress by means of textbook-based tests often feel insecure when they have to determine the effects of a WQ in which not all students learn the same (as they believe to be the case when student study for a test on a chapter in the textbook).
In literary WQs student teachers felt that they had invested too much time in developing a WQ. Time they might have better used to prepare lessons focused on the literary work itself. The same applies to the secondary school students, the target group of the WQ. It may have enhanced their motivation, but that is something that is hard to assess. Generally positive, though, was the use of wikis and blogs to enable students to exchange materials and opinions, even though it was not always possible to motivate students to read and criticize their classmates’ work. The project tended to last too long and the curriculum doesn’t allow so much time for a single project. In addition, some student teachers felt the WQ distracted students from the literary work and its analysis.

5. Conclusion

After several years of experimenting with WQs I would say that I am less positive about its effects than I used to be. The motivational factor of using computers and internet in the classroom is decreasing since more and more students spend a lot of time on Facebook and related social network sites and are no longer so easily thrilled by a WQ-project in class. The effects on language learning remain hard to measure, though there are complaints that students lose too much time making nice presentations in Powerpoint. A positive development seems to be the use of wikis and blogs to enable students to share the outcomes of their research on the web, even though the experiences are mixed. We have decided to repeat the WQ experience once more this year, both for the TBL-WQs and the literary ones.

6. References

Webtasks for Learning Professional and Academic English: Adapting the WebQuest Model

María José Luzón-Marco
Universidad de Zaragoza, Spain

Abstract. Upon accessing the labour market many graduates need to use English to communicate in professional situations and act strategically to adapt to new communicative situations. They also need to be digitally literate and be able to use the new types of texts and new forms of constructing meaning that are constantly emerging on the Internet. The WebQuest format (Dodge, 1995) affords the design of learning activities that can be integrated in an ESP course to help meet these needs. In Luzón and Ruiz-Madrid (forthcoming) a model of webtask which draws both on SLA principles and on research on digital textuality and new literacies is proposed. The purpose of this paper is to show how this model can be used to help students of ESP develop: (i) the discursive competences they will need to function effectively in an ever changing workplace context, (ii) learning autonomy, and (iii) new multiliteracy competencies.

Keywords. Webquest, ESP, autonomy, electronic literacies

1. Introduction

European higher education faces the challenge to prepare learners for a dynamic workplace scene which requires the development of new competences. In this scene graduates will probably need to use English to communicate effectively in professional settings, to strategically adapt to new communicative situations, to collaborate in the construction of knowledge, and to manage in a multicultural socioeconomic context where new types of texts and new forms of constructing meaning are constantly emerging. In this context, courses of English for Professional or Academic Purposes should be concerned with three important issues: (i) empowering students with the knowledge and strategies that will enable them to use English to communicate effectively with professionals of a specific discourse community; (ii) preparing students for lifelong and autonomous learning, so that they can cope in a world where communicative situations are constantly changing; (iii) helping students become multiliterate, and train them in the active and strategic processes of meaning construction that they will need in order to understand and produce the high variety of texts of society today (including electronic texts).

WebQuests (Dodge, 1995) can be used as an integral part of a course intended to help students develop skills for autonomous lifelong learning and electronic competences. The WebQuest has become a popular web-based activity for language learning (see Koenraad 2002, forthcoming; Luzón 2002, 2007; Pérez 2006; Richards 2005; Simina and Hamel 2005). An interesting project in this area is the LanguageQuest project 1, aimed at adapting WebQuests to the specific requirements of SLA (Koenraad 2006) and using this format for designing realistic, content-oriented functional tasks for language learning. Along this line, the purpose of this paper is to show how the WebQuest format can be adapted to help students of other disciplines develop the discursive competences they will need to function effectively in an ever changing workplace context. I first examine the implications (i.e. the new challenges and new opportunities) of the new sociocultural, economic and technological context for the design of ESP courses. I then discuss criteria for the design of a Webtask that

---

1 For a detailed description of the project and the results, see the project website (http://www.talenquest.nl).
places emphasis on the development of new competences and autonomous learning. And finally, I show how these criteria have been taken into account for the design of a webtask for the course “Technical English for Chemical Engineering”.

2. New challenges and new opportunities for ESP courses

In the first issue of the *Journal for Academic Purposes*, Hyland and Hamps-Lyons (2002: 2) claim that EAP (English for Academic Purposes) involves grounding instruction in an understanding of the cognitive, social, and linguistic demands of specific academic disciplines. This takes practitioners beyond preparing learners for study in English to developing new kinds of literacy: equipping students with the communicative skills to participate in particular academic and cultural contexts.

This statement of aims could be extended to apply to any ESP course: teachers should equip students with the communicative skills and competences to participate in particular sociocultural contexts. As Bhatia (2001) states, “If the ultimate goal of LSP is to contribute to the development of students as competent professionals, discursive competence must not be viewed entirely on its own, but essentially embedded in professional practice”. Bhatia considers that discursive competence includes the notions of textual competence, generic competence and social competence (Bhatia 2004: 144). Textual competence refers to an ability to both “master the linguistic code” and “use textual, contextual and pragmatic knowledge to construct and interpret contextually appropriate texts” (Bhatia 2004: 141). Generic competence is “the ability to respond to recurrent and novel rhetorical situations by constructing, interpreting, using and often exploiting generic conventions embedded in specific disciplinary cultures and practices to achieve professional ends”, and social competence “incorporates an ability to use language more widely to participate effectively in a wide variety of social and institutional contexts” (Bhatia 2004: 144). Therefore, in order to help higher education students develop the discursive competence that they will need to participate in professional communicative situations, it is essential to examine the features of the current workplace context.

Current workplace has been described as focusing on transdisciplinary knowledge, which “includes a wider, more temporary set of practitioners, collaborating on a problem defined in a specific and localized context” (Gibbons et al.: 11–12). It, therefore, gives priority to multidisciplinary expertise (Bhatia 2008) and to collaborative teamwork and knowledge sharing (Hakkarainen 2009). In addition, the current workplace context, characterised by increasing mobility, makes it difficult to identify the situations in which students may need to use English. Thus, one of the most important capacities that students should develop is the capacity for autonomous learning that enables them to learn in constantly changing contexts (Blin forthcoming). Students need to be capable of grasping and mastering the specific textual and generic competences as they meet the need for them. Workplace has also become multicultural (Bhatia 2008: 170), hence the need to prepare students to cope in a multicultural environment.

The focus on transdisciplinary knowledge and the dynamic nature of contemporary workplaces is reflected on the complexity of the real world of discourse: discursive practices and genres are not static, but dynamic, hybrid (Bhatia 2004) and integrated into genre ecologies, where “intercoordinated genres intermediate each other and any change in the ecology (…) can change the entity dynamic” (Spinuzzi 2003: 119). As Bhatia points out (2004: 25):
In many of the existing analyses of genre one tends to focus on typically identifiable and largely ideal instances of genres; (...) the real world of discourse... is complex, dynamic, constantly developing and often not entirely predictable. There are regularities of various kinds, in the use of lexico-grammatical, discoursal, and generic resources; there are rhetorical situations, which often recur, though not exactly in the same form, or manner; there are expert and well-established users of language in specific disciplinary cultures who try to exploit, appropriate, and even bend generic expectations in order to be innovative and effective in their use of language.

A genre-based task-oriented approach to ESP teaching and learning, which takes account of the complexity of real life discourse, can help students develop multidisciplinary discursive competence. Devitt (1993: 577) describes genre knowledge in the following way: “Knowing the genre means knowing not only, or even most of all, how to conform to generic conventions but also how to respond appropriately to a given situation”. In order to achieve this purpose, genres should not be presented prescriptively, but as flexible cognitive structures that can be manipulated. Devitt (2004: 192) argues for the need to teach “genre awareness”, i.e. “a critical consciousness of both rhetorical purposes and ideological effects of generic forms” which "may enable writers to learn newly encountered genres when they are immersed in a context for which they need those genres”. Johns and Swales (2002: 25) provide some guidelines on what to teach, “from the very beginning of post-secondary education and perhaps earlier” for students to be “academically literate”, which can help to achieve this genre awareness:

Faculty in all classes needs to encourage student awareness of the texts, language, research questions, and methodologies of the discipline that the class represents. If possible, the pedagogical genres of these classes should be more disciplinary than school-based. Students should be assigned to research texts, practices, language, and other aspects of academic disciplines. They should learn to observe, analyse, ask questions, and if possible, negotiate their tasks to enhance their success.

Within literacy classes, students should be assigned a variety of writing tasks, requiring a number of inter-textual and formal textual experiences. Students should be encouraged to write in different genres and under different conditions.

We should encourage student meta-awareness of the social nature of genres.

Finally, learners also need to develop the new literacies of today society. They need to become multiliterate and be able to access and use information in different modes. Kasper (2000: 106) states that “to be considered multiliterate, students today must acquire a battery of skills that will enable them to take advantage of the diverse modes of communication made possible by new technologies and to participate in global learning communities”. This involves becoming electronically literate. Kasper draws on Shetzer and Warschauer’s (2000) concept of electronic literacy as the ability to use electronic tools for communication, construction, research, and autonomous learning. Communication involves mastering the pragmatics of various forms of synchronous and asynchronous communication. Construction involves the ability to work individually or collaboratively to write and publish information on the Internet. Research encompasses a range of navigation, reading, and interpretation skills, including how to effectively search the Internet, how to evaluate information that you find, and how to critically consider multimedia information. Thus, being electronic literate involves engaging in new thought processes, in order to interact with new text formats (e.g., hypertext and interactive multiple media), new reader-related issues (e.g., new purposes or motivations for reading a text, high-level metacognitive skills) and new activities (e.g., publishing online, participating in online synchronous and asynchronous exchanges) (Coiro 2003).

The WebQuest format provides ESP teachers with a learning tool which may contribute to addressing the concerns discussed above: helping students to communicate in
multidisciplinary workplace contexts and develop genre awareness, promoting lifelong and autonomous learning and fostering the development of new literacies.

3. Webtasks to develop learning autonomy and electronic literacy

Research on WebQuests for language learning has focused on the SLA criteria that they should meet (Koenraad 2002, Pérez 2006). The research carried out by the GIAPEL group starts from the assumption that in order to develop a framework for the design of language tasks in an online environment, it is necessary to look to Second Language Acquisition (SLA) principles (see González Lloret 2003; Koenraad 2002; Zhao and Lai 2007), but also to take into account the affordances and constraints of the new medium, the features of digital textuality (i.e. multimodality, hypertext, interactivity) and the type of new thought processes engaged in when interacting with and through online texts (Coiro 2003; Hampel 2006; Salaberry 2000; Shetzer and Warschauer 2000). Language teachers should devise ways to prepare students to learn, work, interact and communicate in an open, dynamic, hypertextual, multimodal, interactive and multicultural environment.

In this section I present a new model of webtasks which aims at the development both of linguistic and semiotic skills and high-order capabilities of information elaboration and management. The task described here is intended to develop the students’ *wreading competence*, which we define as the ability to understand the pragmatic, discursive and semiotic features of online texts, harness their affordances and interact with them in various ways, find relevant information in different semiotic modes within and across these texts, and relate and meaningfully use such information in order to achieve a specific purpose, complete a task or produce an output (Luzón and Ruiz-Madrid, forthcoming). In this new context, it is necessary to facilitate the development of specific skills where reading and writing competences meet to become an integrated wreading competence: i) linguistic and semiotic skills (e.g. the ability to understand the lexico-grammatical and pragmatic features of texts, the ability to relate different semiotic codes with different purposes), ii) cognitive and metacognitive skills of information elaboration and management (e.g. the ability to use search tools to locate valuable and relevant sources of information, the ability to evaluate the usefulness of online information in relation to one’s purpose). We consider that in order to design online tasks that help promote autonomous learning and electronic literacies, three aspects are of paramount importance: the task itself, the resources and the learning supports.

3.1. Contextualised and authentic tasks

Constructivist theory posits that successful learning occurs when tasks are authentic and contextualised within a framework of negotiated objectives and instructional goals, thus focusing on learning that is relevant for students. Proponents of content-based instruction (Brinton et al. 1989; Pally 2000), genre-based teaching (Johns 2002; Johns and Swales 2002) and teaching language as a situated practice (e.g. Belcher 1994) stress the need to embed linguistic material in the activities for which it is used to achieve disciplinary purposes.

ESP WebQuests should reflect the kind of communicative situations in the students discipline, and engage students in cognitive processes necessary to manage these communicative situations, e.g. students will need to use their background knowledge of the

---

2 The model of Webtask presented here is a result of the research carried out by members of the GIAPEL group for the CIBERTAAAL project (Cybergenres and technology applied to autonomous language learning) (HUM2005-05548). For a much more detailed description of the model see Luzón and Ruiz-Madrid (forthcoming).
discipline to assess the situation, identify problems, use a variety of primary sources to find and articulate solutions or answers, evaluate the relevance of these sources for their purposes, and synthesise and transform information to produce an output (e.g. a written report, a presentation) as a response to the situation described in the task. A WebQuest designed with these criteria in mind can be nicely integrated within a genre-based approach to ESP, where emphasis is placed on getting students familiar with the values of the disciplinary community and developing their genre awareness.

Since anchor in practice is, therefore, paramount to effective learning, Luzón and Ruiz-Madrid (forthcoming) regard the following three criteria as essential for language learning webtasks: (i) Students should interact with resources (and audiences) in the same way and for similar purposes as they would do in real life; (ii) students should engage in the same cognitive and metacognitive processes as those required by tasks that users of online media carry out in the real world (e.g. synthesising information from multiple texts, problem solving, evaluating information; (iii) The task should be functionally designed, and socially contextualised.

3.2. High quality input and rich resources

By “rich resources” we mean authentic resources, resources that reflect the textual complexity of the web and resources that promote interaction and facilitate sharing. The need to seek authenticity in materials and tasks is agreed upon by ESP researchers and teachers and is clearly illustrated by the use of case studies in ESP teaching (e.g. Jackson 2002). When teaching ESP, it is important to work with a variety of genres used by the discourse community and design tasks which involve “interactions that are consistent with the original communicative purpose of the authentic text” (Mishan 2004).

Resources should also reflect the textual complexity of the Web (e.g. multigenrelicity, hybridity, multisemiotics, multifunctionality, interactivity), in order to train learners to manage this complexity. Coiro (2003) characterizes digital texts as “hypertextual networks” that explore a variety of new formats and have features which require new thought processes for making meaning: “Web-based texts are typically nonlinear, interactive, and inclusive of multiple media forms”. Thus, training students into multiliteracies involves the use of resources which raise students’ awareness towards the complexity of digital genres, their intertextual links with genres in traditional media, the interactive affordances of digital texts, the multiplicity of semiotic systems and the multiplicity of languages and cultures that get linked and in the web.

Finally, resources should not only be presented as sources for information, but also as tools with which students can interact and do things. The potential combination of multiple media and the multifunctionality of digital texts implies that online resources take multiple forms and can be used to perform a great variety of actions. Thus, students should be encouraged not just to get information in a passive way, but actively engage in finding, assembling and repurposing content to meet their needs. It is necessary to show students the options for action that texts and tools offer and prompt them to interact with texts in such a way that they learn how to engage with these texts.

3.3. Learner supports

When designing webtasks, appropriate support should be built in to help students manage the complexity of online information and resources and develop learner autonomy. Webtasks can be designed as activities for guided discovery, through which learners can make decisions on learning goals and the teacher can provide guidance as needed during the different stages
of the activity. The flexibility of the hypertext enables the integration in webtasks of learning supports to guide learners and the design of feedback mechanisms which are responsive and sensitive to their individual needs (Luzón 2006; McLoughlin and Oliver 1998; Ruiz-Madrid 2005). Support should include linguistic support, technology and medium-related support and tools for cognitive and metacognitive strategy development.

When engaged in a webtask it is essential for the learners to get help to understand texts with unfamiliar vocabulary and grammar. Building linguistic support for an Internet-based activity where students are encouraged to follow their own paths and explore resources may seem quite a challenge. For this reason, rather than developing support for a specific text, it is important to provide background content and linguistic (lexical) knowledge on the texts they may use and to help students become aware of and use the support that Internet offers. In this regard, it is interesting to point out that many digital texts have elements that facilitate comprehension, including, for instance, visual and graphical aids, videos, links to online glossaries, links to easier texts on the same topic or to translations. In addition, other supportive elements can be embedded in the webtask: links to online dictionaries (both general and discipline/field specific), links to easy texts providing background information, etc. Internet collaborative and communication tools also provide great opportunities for teacher and peer support, which can be harnessed when designing the webtask. Opportunities for scaffolding at the micro-level, i.e. moment-to-moment interactional work (van Lier, 2007) can be created in the task by having students collaborate, comment and offer feedback on each other's work.

Students also need support to use new technologies and understand digital textuality. Webtasks could be designed to train students to work in a non-linear environment and interact with online texts in various ways, to use search tools (e.g. search engines, electronic databases) in order to locate valuable and relevant sources of information, or to use online texts as interactive resources to do things (i.e. searching for information, viewing videos, registering for services, participating in polls, collaborating in text construction, etc.). Students can also be provided with tools that help navigation and avoid disorientation problems, e.g. guides to evaluate the accuracy and reliability of online information, or guides to use specific Web2.0 tools that will be necessary for the task.

Finally, students need support to develop cognitive and metacognitive strategies. Appropriate activities to develop cognitive strategies are those that require, for instance, analysing, synthesising, comparing and classifying Internet resources, analysing different perspectives on an issue, deducing, generalising and drawing conclusions. Support may include tools that help students process information from different sources and in different formats (e.g. notetaking guides, organisation charts). An important aspect here is training in metacognitive strategies (i.e. skills used for planning, monitoring and evaluating the learning activity) which enable learners to be aware of their cognitive skills and use these skills to learn. To develop metacognitive strategies, a language Webtask could ask students to: (i) set their own learning goals, (ii) plan how to develop the task and assign sub-tasks, (iii) select the resources in accordance with their objectives, (iv) reflect on whether they are following the right learning path and accessing the right resources while doing the activity, (v) evaluate both the learning process and the outcome of the activity and assess what they have learnt. Tasks should offer the students the opportunity to make choices and choose the most convenient path to complete the task. When students are more knowledgeable about a topic that their teachers (as is very often the case with ESP students) learners can be given the option of looking for, selecting and evaluating their own materials and resources in order to fulfil the learning goals of a task. Incorporating tools for self-assessment and reflection is also a form of metacognitive scaffolding which helps learners to link the learning process to their objectives and thus motivates them to take responsibility for their learning. The results of self-
assessment can help learners improve their work, reflect on their learning process and choose the most convenient strategies to achieve the intended outcomes.

4. “Writing up a recommendation report on environmental issues”: A webtask for English for Chemical Engineering

In this section, I describe how the WebQuest format has been adapted to design an online task for the course “Technical English for Chemical Engineering”. This is a course for undergraduate students in the 4th year of the Chemical Engineering degree at the University of Zaragoza. Existing course requirements include the submission of a writing assignment at the end of the course, after students have completed previous shorter writing assignments. The texts that students have to write for their final assignments are reports (in this case recommendation reports) because this is one of the fundamental genres of engineering writing. Students are also asked to deliver a short oral presentation at the end of the course. During the course students are exposed to different types of academic and professional genres, and they are asked to carry out different activities aimed at developing their genre awareness. Students enrolled in the course form quite a heterogenous group, with very different levels, from high-intermediate to low-intermediate. However, they all have a reasonably good level of computer literacy and also have a good background knowledge of the topic of the task (Environmental Chemistry). Students access the webtask in the online component of the course “Technical English for Chemical Engineering”, hosted in the WebCT environment. The course in the WebCT offers the students further material to practice different skills, files on different aspects dealt with in the course (e.g. information on various genres of technical writing) and assignments that can be downloaded from the site and submitted via e-mail.

4.1. Task

The course “Technical English for Chemical Engineering” is intended to get students familiar with the discourse practices in their discipline and the webtask is a tool to help achieve this objective. Students put into practice what they have learned in the course, but they also explore disciplinary genres on their own and have to engage in cognitive activities necessary to communicate in their discipline, such as synthesising, comparing, evaluating, etc. One way to develop the students’ awareness of disciplinary genres is to have students carry out research and write a text on a topic related to their discipline, and even encourage them to work on research papers/ reports that they have been assigned in other courses (Flowerdew 2005; Warschauer 2002). In this webtask students are asked to write a report on an environmental issue. All learners have already studied “Environmental Technology”, a compulsory subject where they study topics like water pollution, air pollution, waste, and so on. In this subject, students work on the contents of environmental technology, but not on the discourse they need to talk about these contents, or share the results of research.

The following paragraphs show how the task is presented:

You have to write a recommendation report on an environmental issue of relevance for your city, autonomous community or country. You can also report on research carried out for any other course, but you have to adapt it to the requirements of the assignment.

You work for a branch office of Green Life Technologies, Inc. (GLT), a new environmental engineering consulting firm. The regional government (DGA- Diputación General de Aragón) will get funding from the European Union to develop some environmental projects if they are approved by the European Commission. The DGA has commissioned you to prepare a report in which you present a problem/ need within the field of Environmental Engineering and make recommendations to solve it. You will also have prepare an oral presentation of the report.
Possible topics are offered as a way of illustration (e.g. a recycling plan for the city or for an institution within the city, water quality treatment, plan for hazardous waste management, environmental impact of the tram and of the underground, the closing down of nuclear plants in Spain), but students are encouraged to choose their own topic and to ask for the help of discipline teachers for this purpose. To make sure that the topic is relevant, at the end of the fifth week of the 15-week course, students have to send an e-mail to their instructor including the issue on which they are going to work, an outline of the steps they are going to follow and any question they may have. This way instructors make sure that this is a long-term project on which students start to work from the beginning of the course.

4.2. Resources

Since the ability to effectively search and locate relevant information is an essential component of electronic literacies, students are encouraged to look for their own resources and to make use of the high variety of resources on the Internet, not focusing only on written texts. However, they are given links to a few websites which may help them define the issue and start the research, with a brief description of each of these sites. The following fragment shows how one of these resources is described.

**EPA** (the website of the United States Environmental Protection Agency) (http://www.epa.gov/). There is a section on new media, where you can explore different types of material (podcasts, blogs, video and audio files). Some sections of special interest are the following:

- “Learn the issues” where different environmental issues, with a high number of links to documents on these issues, are explored.
- “Resources: Scientists and researchers”. You will find here a great deal of resources for scientists and researchers in Environmental Engineering, including the “Science Features Archive”, where different projects and research are reported.

This is an excellent website for starting research on Environmental issues and problems. It includes a great deal of information, which can be accessed by selecting the audience at which the information is aimed (e.g. business and non-profits, concerned citizens, scientists and researchers, students and educators), multimedia (videos with the transcript option, photos, podcasts), interactive elements (e.g. polls), web 2.0. tools to encourage online sharing, and so on (see Figure 1).
Since it is necessary to show students the options for action that texts and tools offer and encourage them to interact with digital texts in various ways, the Resources Section in the webtask includes some activities that help students reflect on the nature of Internet resources. In the first one they are asked to go the EPA page (http://www.epa.org) and explore it in order to evaluate its relevance for their research and to analyse how they can use it most efficiently. For that purpose they have to answer questions like the following: What modes does the text use (e.g. oral/ written)? Is the text in this page linear or non-linear, interactive or non-interactive and does it affect the way you access the information? Where in this page can you find relevant information for your research? What do you need to do to get that information?

In the second activity, they are asked to access the official blog of the EPA (http://blog.epa.gov/blog/) and one of the following wikis (Envirowiki: http://wiki.envirowiki.info/Main_Page, Greenlivingpedia: http://greenlivingpedia.org) and answer questions that help them reflect on their knowledge of texts (see Anstey and Bull 2006), e.g. Have you seen a text like this before? What was it used for? How did you use it? What characteristics of that text are similar or different to this one? If this text is similar to other texts (both online and offline) you have seen or used, how might that help you use this text? How could you use the blog/ the wiki for your research?

In addition to providing links to some websites where students can find useful information, the Resources Section also provides links to (and information about) tools that students can use to interact with others to get and share information and complete the task (e.g. blogs, Diigo, Google docs).
4.3. Learner support

4.3.1. Linguistic support

Since the topic and the resources for the webtask are selected by the students, it is difficult to provide linguistic support for specific tasks. Linguistic support is, however, provided in different ways.

First, the activity draws on the content of other subjects of the students’ discipline. Students are, therefore, familiar with the concepts and, since they have to read bibliography in English for these courses, they are also familiar with a large part of the vocabulary they will find in the texts. In addition, the activity is fully integrated into the “Technical English for Chemical Engineering” course. Designing the webtasks as an integral part of the course is essential to contextualize it, and, additionally, helps to the comprehension of the input. That way, many of the linguistic elements that students will need to understand the input (and also to produce the output) have already been studied in the classroom before completing the task.

In the course students work with several texts dealing with Environmental Technology and they study the vocabulary in this area. They also receive instruction on the writing of recommendation reports and on the preparation and delivery of oral presentations. Students’ attention is focused on the communicative purposes of these genres, their structure and their lexico-grammatical features.

The webtask “Writing up a recommendation report on environmental issues” is hosted in the WebCT course “Technical English for Chemical Engineering”, an online companion of the classroom course, where students can get extra practice and materials. The WebCT course includes two components that are especially useful for the task and that are dealt with in the course practical sessions: Online Dictionaries (including links to different types of online dictionaries and information/activities on how to use them) and Oral Presentations. In the webtask students are encouraged to use these components of the online course when necessary.

Other supportive elements are embedded in the webtask, e.g. links to online dictionaries, links to information on genres that they are likely to encounter when completing the task, links to real examples of recommendation reports. For instance, in the first step of the process, after telling students that the websites in the resources section can help them to choose a topic and identify a problem, they are reminded to use electronic dictionaries if they do not understand any word and they are provided with two links to general dictionaries and two links to environment dictionaries. Step 6 of the process, where students are asked to write the first draft of the report, includes a link to a document on the WebCT course with information on the rhetorical structure and the language used in recommendation reports. They are also provided with links to sites with information on how to write recommendation reports. Finally, since previous research (Flowerdew, 2005) has stressed the need to have students analyse the genres of their discipline, students are asked to compare two recommendation reports on the same issue, i.e. the convenience of redeveloping Nobbys Lighthouse (Australia), which can be accessed online.

Collaborative and communication tools are also used by students to get teacher and peer support. Collaborative apprenticeship (where students provide scaffolding for each other) is a form of learning highly facilitated by new technologies (Warschauer 2002). In this webtask students are encouraged to use Google Docs to provide feedback and collaborate in the joint construction of the recommendation report.
4.3.2. Technology and medium-related support

The webtask includes scaffolding to help students work in a non-linear environment, search for and evaluate the relevance and usefulness of information, and use tools that will be necessary for the task.

Since in this webtask students have to look for their own resources they need strategies for effective searching. Students are in the 4th year of an Engineering degree and most of them are, therefore, quite familiar with search tools. However, there are two aspects on which they need training: the choice of search terms (or keywords) and the evaluation of information. In step 4 of the task they are told to search for relevant information which helps them solve the problem/issue they have proposed and evaluate websites. As Figure 2 shows, they are asked to reflect on the right search word and to take several criteria into account when evaluating information.

Search for relevant information and evaluate websites. You will need to find information on the following aspects:

1. Places where they had the same problem or a similar problem
2. How the same problem/ or a similar problem has been solved in other places
3. Advantages and disadvantages of the possible solutions

**Searching for information.** Be careful when choosing search term(s).

a. Think of the topic you want information on. What key concepts is it a part of or related to?
b. What key words do you think will appear on the site you want?
c. You need to restrict your search. Think of compound nouns and collocations (e.g. “water treatment”, “oil spill”, “domestic water”, “waste management”) that will help you to restrict your search.

**Searching for multimedia files.** If you want to find multimedia documents go to “Play Audio Video” ([http://www.playaudiovideo.com/index.htm](http://www.playaudiovideo.com/index.htm)), a multimedia search engine.

**Evaluating information.** You have to be careful to use relevant, accurate, reliable and current information.

- Authority: Is there an author? Is the author qualified? An expert?
- Accuracy: Is the information reliable? Is there an editor or someone who verifies/checks the information?
- Objectivity: is the information biased?
- Currency: is the page dated?
- Coverage: which topics are covered?
- Relevance: is the information on the page relevant for your purpose?

The following documents will help you to evaluate the webpages.

- Evaluating websites: net.tutor
- Evaluating webpages

Keep careful notes on each of the resources you use, with the following data clearly indicated:

- Authority.
- Currency.
- Coverage: summary of specific details and information relevant for the task.

Figure 2. Step 4: Search for and evaluate information.
When students are asked to use a Web tool for a specific purpose in the completion of the task, they are given information on how to use such a tool. For instance, in step 5, after students have searched for and evaluated information, they are asked to share their information in order to find the best solution to the problem. Diigo is suggested as a tool to exchange information on their resources. Students are asked to go to the Diigo website, explore the tool, and answer questions such as: Have you used this technology before? How could you use it in this task? In case they are unfamiliar with the tool, they are provided with links with information on how to use it, both in English and Spanish. Similarly, when students are told to use Google docs or to design a PowerPoint presentations they are offered links with information on Google docs and, since they all are already familiar with PowerPoint, on how to design an effective presentation.

4.3.3. Development of cognitive/ metacognitive strategies

Although autonomy is promoted by giving students control on important decisions (e.g. the choice of topic and of resources, the procedure to carry out research and the distribution of tasks among the group members), this is not an unguided activity. The Process Section provides a detailed guide on how to proceed to complete the activity, with the different steps to follow. Support also includes tools that help students process information from different sources and in different formats. For instance, the webtask includes a notetaking guide and a model of comparison chart, which will help students when analysing, comparing and synthesising information.

In order to develop metacognitive strategies, students are asked to (i) choose their own topic for research, which reflects their own interests, (ii) plan how to develop the task and assign work, (iii) select the resources in accordance with their objectives, (iv) evaluate both the learning process and the outcome of the activity and assess what they have learnt.

Self-assessment and self-evaluation have been included in several ways. In step 7 all the members of the group are asked to proofread the document for correct grammar and structure. Students are also provided with two evaluation charts (one for the recommendation report and one for the oral presentation) with the criteria that will be used to evaluate their output, and that they should use to revise such output (see Table 1 below). The use of Google docs is proposed to help students produce a joint document.

<table>
<thead>
<tr>
<th></th>
<th>Beginning</th>
<th>Developing</th>
<th>Accomplished</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction and background</strong></td>
<td>No real introduction. Unclear purpose or purpose undefined. Background is not relevant.</td>
<td>The introduction is adequate, although it could have been better developed. The background is relevant but too general/ vague or too long</td>
<td>The introduction clearly states the purpose and the outline. The background is very relevant to audience interests/ needs</td>
</tr>
<tr>
<td><strong>Body of the report</strong></td>
<td>The body is too short. The points have not been fully developed. The different solutions are not compared.</td>
<td>The body contains some good points, but they have not been fully developed.</td>
<td>The body contains good points that are well developed. It is very well structured with relevant ideas well connected.</td>
</tr>
<tr>
<td><strong>Conclusion and recommendations</strong></td>
<td>There is no conclusion or recommendations or they are not based on the findings presented in the body.</td>
<td>The conclusion and recommendations are adequate, although they could have been better developed.</td>
<td>The conclusion contains a good summary of the main points and provides recommendation based on the data.</td>
</tr>
</tbody>
</table>
There are many mistakes in spelling and grammar, and there are no transitions. Difficult to follow and errors interfere with coherence.

There are some mistakes in spelling but they do not usually interfere with communication.

Grammar and vocabulary choice is usually accurate. Comprehension is not impeded. Wide range of grammar and vocabulary.

<table>
<thead>
<tr>
<th>Grammar and Structure</th>
<th>Use of resources</th>
<th>Originality and documentation of all information cited</th>
<th>Evidence of the involvement of the entire group</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are many mistakes in spelling and grammar, and there are no transitions. Difficult to follow and errors interfere with coherence.</td>
<td>The resources used should be accurate, objective, current and relevant. Use of different types of media (sound, transitions, graphics, pictures, video)</td>
<td>Provide a list of all the pages/online resources that have been used with a brief description of each page. <strong>AVOID PLAGIARISM.</strong> The texts should not include sentences or fragments from other texts.</td>
<td>When handing in the report, each student will include a page outlining his/her contribution</td>
</tr>
</tbody>
</table>

**Table 1. Criteria to evaluate the recommendation report.**

Finally, in the last step of the task, students are asked to evaluate their learning process by reflecting on several questions (see Figure 3)

- State the main problems you faced while tackling the assignment. Were you able to overcome these problems? If so, how? If you were not able to overcome these problems, what would you need to do it?

- Evaluate your own learning by deciding how well you were able to...
  - find relevant information on the Internet, including multimedia information
  - understand the texts that you needed for your research
  - understand audio and video information
  - share information with the other members of the group
  - write the report
  - prepare the oral presentation

**Figure 3. Self-assessment of the learning process.**

**5. Final comments**

In this paper I have attempted to illustrate how the WebQuest format can be adapted to design webtasks that help students of other disciplines develop the literacies they will need to function effectively in an ever changing workplace context. This format can be used to design tasks that: (i) teach students to understand, respond to, and produce different types of disciplinary texts, (ii) prepare them for autonomous and lifelong learning, and (iii) train them in the strategic processes of meaning construction that they will need to work in a digital environment. In order to design online tasks that teach students electronic literacies and help them to get familiar with the discourse practices of their discipline and to develop strategies for autonomous learning, careful attention should be paid to the task itself, the resources and the learning supports. The webtask presented in this paper is intended to have students explore disciplinary genres and engage in cognitive activities necessary to communicate in their discipline. Space for learner autonomy is created by letting students choose their topic or research, find relevant resources, decide their learning pathway and evaluate the outcome and the learning process. Sufficient scaffolding is provided so that students can complete the task.
and develop autonomous learning and electronic literacies without feeling overwhelmed: the task integrates different types of linguistic support, technology and medium-related support and tools for cognitive and metacognitive strategy development.

6. References


The CLILQuest: A Type of Language WebQuest for Content and Language Integrated Learning (CLIL)

Almudena Fernández Fontecha
University of La Rioja (Spain)

Abstract. Results of recent studies on teachers’ perceptions on the provision of Content and Language Integrated Learning (CLIL) in Spain reveal a lack of methodological tools that guide CLIL teaching particularly in syllabus planning and delivery (Fernández, Pena, García, & Halbach, 2005; Fernández Fontecha, 2008b). Needs in this line are also noted in similar European CLIL settings (Räsänen, Kaasik, Mathews, Oresik, and Sentocnik, 1996; Hartiala, 2000; Llovet 2007). With the purpose of providing an instrument for implementing CLIL, in this paper we propose the CLILQuest, a special type of Language Webquest (Koenraad & Westhoff 2003; Pérez Torres 2006) with a specific role within a CLIL setting. The CLILQuests are embedded in thematic modules. These modules are means for categorizing the declarative and procedural knowledge behind a CLIL subject. The instrument to make learners practise these types of knowledge is the CLILQuest. As an application at developmental stage, the CLILQuest should be examined in practice and its defective parts replaced or improved.

Keywords. LanguageQuests, Content and Language Integrated Learning (CLIL), CLIL syllabus; CLIL implementation, CLIL tools, Computer Assisted Language Learning (CALL).

1. Introduction

In recent years, a large body of research has examined the positive effects of Computer Assisted Language Learning (CALL) in learning the different language skills. To mention a few, positive evidence of the use of the new technologies has been found on listening comprehension (Brett 1997; Hoven 1997; Grgurović & Hegelheimer 2007; Ramírez & Alonso 2007), on reading comprehension (Chun & Plass 1997; Lin & Chen 2007; Murphy 2007), on socio-cultural aspects (Crook 1996; Herring 1996; Kramsch & Andersen 1998; Osuna & Meskill 1998), or on vocabulary learning (Chun & Plass 1996; Laufer & Hill 2000; Al-Seghayer 2001; Wood 2001; Ma & Kelly 2006).

Concerning the implementation of CALL, there exists a vast wealth of the literature that includes recommendations, guidelines, criteria, and checklists guiding CALL design (Hubbard 1988, 1992, 1996; Hémard 1997; Clifford 1998; Peterson 1998a, 1998b; Levy 1999; Chapelle 2001; Ferney & Waller 2001; Gimeno-Sanz & Davies 2002; Colpaert 2004).

For Warschauer (1996), and Warschauer and Healey (1998), CALL has evolved into three distinct phases: Behaviouristic CALL (beginning of the 1960s – end of the 1970s); Communicative CALL (end of the 1970s – 1980s), and Integrative CALL (end of the 1980s – beginning of the 1990s). As regards Integrative CALL, Warschauer (1996) refers to two examples of integration: (1) integration of language skills in a task, and (2) integration of meaningful and authentic communication into the language learning curriculum. The author notes that at least two technological developments that arise in this phase, multimedia technology and the Internet, can help achieve these types of integration.2 Warschauer and

---

1 Financial support from FEDER and the “Ministerio de Ciencia y Tecnología” through grants HUM 2006-09775-C02-02 and HUM2006-09775-C02-01/FILO is gratefully acknowledged by the author.

2 As an advocator of an interpretative revision of CALL, Bax (2003) re-examines the interpretation of CALL phases given by Warschauer (1996) and Warschauer and Healey (1998) and provides some amendments and clarification. Among others, Bax’s (2003) considers that the rationale for identifying a third phase and calling it
Healey (1998) point to the fact that task-based, project-based, and content-based approaches to language learning lead to this new stage in the use of technology in L2 learning. In general, the literature supports the relationship between Task Based Language Teaching (TBLT) and CALL. A large part of the constructivist philosophy of learning is shared by both approaches. Many works have combined TBLT and CALL (Doughty & Long 2003; Skehan 2003; Ros i Solé & Mardomingo 2004; González-LLoret 2005; Hampel, 2006). However, we find very few sample experiences of the use of CALL in combination with other popular successful approaches to L2 teaching such as Content and Language Integrated Learning (CLIL)\(^3\) (Opp-Beckman 2002; Reinhardt & Isbell 2002). In fact, the link between both approaches has been very recently suggested in the literature (Pérez Torres 2006; Levy 2007; Stoller 2008).

In order to approach the provision of CLIL through the use of Information and Communication Technologies (ICTs), we put forward here a technology-enhanced framework for CLIL implementation based on the idea of the CLILQuest. The CLILQuest restricts the scope of the generic Language WebQuest to a CLIL context. In so doing, it attempts to improve CLIL implementation through a systematic use of the new technologies. As a corollary, it also serves to offer an adequate setting for CALL integration into the curriculum. The CLILQuests are integrated into a superior unit called Module, which attempts to endow L2 teaching with cohesion and flexibility.

2. The CLILQuest

2.1. CLIL and CALL compatibility

In recent studies on Spanish CLIL provision, teachers report shortcomings in CLIL methodological aspects, such as the lack of precise guidelines and instruments to implement this L2 approach adequately (e.g. Fernández, Pena, García, & Halbach, 2005; Fernández Fontecha, 2008b). Research conducted in the European context reveals the same tendency among CLIL European teachers (Räsänen, Kaasik, Mathews, Oresik, and Sentocnik, 1996; Hartiala, 2000; Llovet 2007).

CLIL and CALL are two means of enhancing foreign language education. Both may operate under the same constructivist perspective (Met 1998). CALL and, in particular, our model of CLILQuest, may enhance CLIL by providing support to most of its main features. Specifically, CALL, by means of the CLILQuest, provides CLIL assistance in the following aspects:

- Quantity and quality of foreign language exposure, and authenticity of materials: through adequate CALL activities the learner is exposed most of the time to foreign language input. The Internet facilitates the access to authentic samples of oral and written language of any sort of genre and register, whether formal or not. In so doing, it complies with Cummins’s (1984) distinction of BICS and CALP, i.e. Basic Interpersonal Communicative Skills and Cognitive Academic Language Proficiency. Furthermore, the emergence of the Web 2.0 in the field of L2 learning (Thomas 2009) allows learners to practise naturally

\(^3\) Based on the success of bilingual programmes, in which learners are exposed to the teaching of non-linguistic contents in a foreign language, in the last years, CLIL has been receiving increasing attention by many researchers and practitioners in the field all over the world (e.g. Ruiz de Zarobe & Jiménez Catalán, 2008; Dafouz & Guerrini 2009).

their L2 skills in a CLIL context while receiving actual feedback and evaluation from other learners and users.

- Visual support: CALL may integrate a wide variety of enriched visuals, e.g. graphics, conceptual maps, geographical maps, and knowledge organizers that may include animation and sound. Video can be easily integrated as well.

- Cooperative learning: CALL supports both collaborative and individual work through the resolution of tasks. E-learning and blended-learning technologies promote communication through a series of synchronous and asynchronous computer mediated communication (CMC) tools. Again, the use of Web 2.0 and technologies such as Google Wave (http://wave.google.com) are particularly valuable here.

- Language learning skills and higher-order thinking skills: by means of adequate tasks, CALL may help learners develop their language learning skills (Oxford 1990; Chamot & O’Malley 1994), as well as higher-order thinking skills (Bloom 1956; Marzano 2001).

- Motivation: many learners use the new technologies on a daily basis. The resources found on the Internet and the new modes of presenting the instruction may offer an array of possibilities for motivation enhancement.

- Contextualized language: the Internet offers learners the chance to deal with language in context, for example, through the creation of some constructivist learning environment (Jonassen 1994).

- Content accessibility: the Internet facilitates content accessibility through large databases and repositories of all type of materials. For teachers as materials developers, these web resources are extremely useful.

- Learning by doing: the new technologies may easily create the conditions for exploratory learning and problem-based language teaching. The constructivist models of learning and WebQuests are good samples of learning by doing. The postulates of constructivism and WebQuests may lend support to the development of CALL tenets.

2.2. Definition

In order to enhance CLIL appropriately, CALL requires some device that ensures systematic instruction and facilitates the detection and integration of each of the above-mentioned aspects. With that purpose in mind, and mostly based on constructivist principles of instructional design, we have adapted Koenraad and Westhoff’s (2003) model of TalenQuest to the creation of the CLILQuest.

The term CLILQuest bears a resemblance to the name of WebQuest (Dodge 1998a, 1998b; March 2000b, 2003) since like a WebQuest, a CLILQuest is a learner-centred activity based on inquiry-oriented or problem-based learning tasks that tap into the resources available on the Internet. More specifically, like a TalenQuest, or Language WebQuest (Koenraad & Westhoff 2003, Pérez Torres 2006), the CLILQuest involves the use of web-based tasks within a foreign language model. In particular, the WebQuest involves the use of web tasks in a CLIL environment.

Like the WebQuest, the CLILQuest is accomplished in a collaborative environment. Besides, it is developed through the concept of task, which encloses the main purpose of the CLILQuest. Likewise, it specifies the participants’ roles, and contains scaffolding techniques available for the learner at different parts of the process. Similarly to the WebQuest, the CLILQuest is product-oriented, i.e. learners have to create, write, plan, and obtain a product.
Within a constructivist view of the field of instructional design, the CLILQuest draws upon Jonassen’s (1994) Constructivist Learning Environments (CLEs). Like a CLE, and also the WebQuest, our CLILQuest aims at being active, constructive, collaborative, intentional, complex, contextual, conversational, and reflective. Specifically,

- The CLILQuest pursues active learning, which requires deep processing of information. Questions requiring just cut-and-paste answers do not fit into this model. March’s (2000a, 2003) idea of transformation of knowledge is the maxim to follow here.
- It encourages learners’ construction of their meaningful knowledge by activation of prior knowledge and integration of the new.
- It offers collaborative learning environments through the integration of CMC tools. It makes extensive use of computer mediated communication forms, i.e. the most traditional CMC tools such as e-mail, chat, forums, or weblog, and those which present more sophisticated features and possibilities of communication such as e-portfolios, online conferences, wikis, or whiteboarding. Jonassen (1994) views this worldwide sort of communication as underpinning the transmission of cultural learning, another factor of utmost importance for CLIL.
- It promotes the work based on goals as they are a means of activating thinking.
- It does not forget about higher-order thinking, which is one of the objectives of CLIL (Mohan 1986; Chamot & O’Malley 1994). On the other hand, allowing for higher-order thinking may smooth the progress towards achieving Cummins’s Cognitive Academic Language Proficiency (CALP).
- It embeds learning tasks in real contexts with a real-like purpose, a similar idea to March’s (2003) real world loop, against which learners are encouraged to test their newly constructed knowledge. This idea accords well with CLIL recommendations in favour of learners’ exposure to authentic language.
- Finally, the CLILQuest attempts to provoke learners’ reflection on their own processes and decisions while doing a task.

Following the language-specific models of WebQuests developed by Pérez Torres (2006) and Koenraad and Westhoff (2003), as well as Doughty and Long’s Task Based Language Teaching (TBLT) methodological principles, the CLILQuest allows the teacher’s use of Focus on Form (FonF) techniques (Doughty and Williams 1998; Skehan 2003). In addition, based on these authors, our CLILQuest is based on a meaningful use of the foreign language. The real-like contexts we define for each CLILQuest, the authenticity of the materials, the use of Web 2.0 technologies, and the real-like purpose of the CLILQuest favour this meaningful use of language.

An important principle noted by Doughty and Long is the need to consider the task, rather than the text, as the unit of analysis. Thus, in our model, the tasks within each CLILQuest become the units for measuring learners’ achievement. The teacher should evaluate both the work done in groups and the individual work carried out by each of their members. Although learners are given common roles in working groups, each learner should find his/her own individual role within each group to undertake his/her task.

Apart from this ground shared with other sources in the literature, the CLILQuest has the following distinctive features:

A fundamental part in the CLILQuest is the need to integrate it into the curriculum through a superior unit. This is an idea already noted by authors such as Hardisty and Windeatt (1989) and Salaberry (1996). Pérez Torres (2006) also refers to this integration into a broader unit as a requirement for the proper use of the WebQuest. Nonetheless, this issue is still left unsolved.

In the literature, the CLILQuest is the last step of a framework or sequence of distinct categories: Topic, Subtopic, and Module. This is what we call Content and Language Processing Sequence (CLPS) (Fernández Fontecha, 2008a). In short, by means of this structure, we set out to provide CLIL teachers with a means for systematizing the integration of both content and language before CLIL delivery. Each category of the CLPS sequence corresponds to a more concrete stage of content organization than the preceding category. The topic is the most abstract category of the CLPS. It is the basis for the definition of subtopics, modules, and CLILQuests. The Subtopics are the units of content into which the topic is divided. A crucial feature in selecting a subtopic is that it should render the essential information of the topic. At the end of topic instruction, learners are expected to have been exposed to a great deal of the topic’s most relevant information through a series of subtopics. To provide an example, while a typical topic in CLIL could be environmental issues, some valid subtopics for this topic could be climate change, nature and biodiversity, or environment and health.

On the other hand, influenced by Martin’s (1990) notion of module, the Module in our model depicts a further degree of specification in content processing. It is the smallest unit of content ready for study, which is conveyed through the CLILQuests. It is a representative outline of the issues that the subtopic can approach. The main strength of the module is that it serves to categorise the contents of the subtopic by arranging them into two types of knowledge: 1. Declarative knowledge, found in the Background Knowledge Axis; and 2. Procedural knowledge, found in the Practical Knowledge Axis. These are the four types of modules profiled here:

**Background Knowledge Axis**

1. *Introductory Module*: The purpose of this category of modules is to introduce the main concepts and ideas of the subtopic. Modules of this kind must be especially motivating in this initial phase in order to draw students’ attention towards the subtopic presented. A critical characteristic of Introductory Modules is that they should activate learners’ background information on the subtopic.

2. *Core-Knowledge Module*: Some theory is introduced in each module. Nevertheless, Core-Knowledge Modules contain purely theoretical knowledge. Accordingly, they can be considered the heart of the modular structure.

**Practical Knowledge Axis**

3. *Case Module*: Case Modules develop the subtopic through concrete examples. Their main purpose is to depict the reality behind the background knowledge of each subtopic. It also bears a strong resemblance with some constructivist designs, such as case-based learning design (Oliver, 2001), where students have to apply previous knowledge to solve a specific real-like case.

4. *Awareness Module*: These modules attempt to develop the same procedural knowledge as Case Modules. Learners apply the knowledge acquired in the Background Knowledge Axis to problems related to their lives. This type of module aims to raise students’ awareness towards subtopic-specific problems. Awareness Modules are particularly important for the teaching of moral contents.

The CLILQuest is the last manifestation of the topic. The CLILQuest design involves the incorporation of the contents selected previously in the subtopic. It is the main unit of work for learners and serves to carry out the requirements of each module.

Although the models of language WebQuests developed by Koenraad and Westhoff or Pérez Torres already presuppose the integration of linguistic and non-linguistic contents, the
CLILQuest strengthens this integration by being included in a CLIL model, given the philosophy behind this approach to L2 learning. Thus, the CLILQuest emphasizes the role played by the non-linguistic content in foreign language teaching. Embedded in a module, the CLILQuest inherits the module characteristics. In that sense, through the different CLILQuests of the modular structure, the learner can practise a type of factual and conceptual knowledge along with the procedural knowledge required to get a full idea of the contents they have to learn.

Through the CLILQuest the four language skills can be approached holistically (Enright & McCloskey, 1988). However, some order can be brought to the skills which gradually emerge in the instruction. Thus, while in general in the first parts of a CLILQuest learners mostly use their receptive skills, e.g. they would have to search for information or perform some scanning or skimming; at the end of the CLILQuest, they need to make use of their productive skills in order to create the CLILQuest expected outcome, for instance, writing a report. Furthermore, our CLILQuest does not follow the typical pre- during- post- language skill structure found in Pérez Torres (2006) or Willis’s task (1996). Our CLILQuest is created around the non-linguistic content of the topic, and although it includes some necessary FonF parts, the non-linguistic content is still guiding the execution of the CLILQuest.

2.3. Components and structure

The structure that we propose for the CLILQuest simplifies the original model of WebQuest in some parts and completes it in others. It does not include the assessment rubric part of Dodge’s model because it is at a developmental stage that needs further refinement. Undoubtedly, in future developments of this model, evaluation should be necessarily incorporated. So far, this is the description of the CLILQuest structure:

- A guide section, which includes the presentation of the overall task, also called task type, and the specification of the participants’ roles. Within this section, the teacher may include an introduction of the subtopic, or simply introduce the subtopic through face-to-face communication.

- The task type is the central part of the CLILQuest. As explained in the next section, its scope is broader than that of the specific task, renamed here as quest. It may correspond to one of the constructivist learning designs found in Oliver (2001) or a mixture of them. It includes Dodge’s introduction or open-ended question, and the task itself, where the participants’ roles are specified. It opens the CLILQuest, provides learners with the necessary contextual information, summarizes the quests through which the CLILQuest is developed, and attempts to engage learners in the CLILQuest.

- A test section previous to the quest accomplishment and whose main goals are to assess learners’ knowledge about the subtopic, and to introduce the subtopic’s keywords and concepts as a Focus on Form technique. It serves to activate the learner’s background knowledge on the subtopic and to make them connect foreign language terms to their equivalent L1 terms. Along with the test section, the teacher may provide some direct instruction on the subtopic’s core topics. Although this section is placed at the beginning of the quest accomplishment, the teacher could also introduce it at different parts of the CLILQuest. Thus, in our opinion, it would be adequate to place the same previous test section of the CLILQuest or new tests at the end of the CLILQuest to assess what the learners have learned. Some questions found in this section work as FonF questions that directly address the learner’s attention towards the foreign language. Other questions are text comprehension questions. In this section, the teacher may modify the authentic input of the selected sources to adapt it to the learner’s foreign language level. Learners will
mostly focus on terminological issues, collocations, discourse markers, and other language-related aspects that may help them manage well with a specific quest.

- A development section including the different quests, which are the specific tasks through which the CLILQuest task type is developed. For each quest, the different sections are specified: the teams, the main goal(s), the intended outcome(s), a list of web resources, and a documentation part where the different scaffolds and other useful files are made available for the learners.

- The process part in Dodge’s model is covered here by the quests. Each quest can be understood as a step forward to solving the CLILQuest. The quest is a subtask with its own steps and its own outcome. Quests are undertaken either by one specific working group or by several groups. They may be sequential, i.e. all the groups may accomplish one quest after another, or simultaneous, i.e. different working groups carry out different quests at the same time. The final quest of each development section represents the conclusion of the CLILQuest; it is where all the quests converge. The final quest is usually a public exposition of results.

- The list of web resources available for each quest is carefully selected having the learner’s foreign language level in mind. The language found in the list of websites is authentic and has not been modified. The reason is that the websites are included for search purposes only. They serve to show the content behind the subtopic. In most cases, when working with these websites, the learner does not need to understand everything, but just to skim the information contained in the website or to scan data relevant to solving the task. It is through the test sections that learners work more specifically with the subtopic’s keywords and concepts in the foreign language.

- The outcomes are the tangible results of their investigation through the quest. They may be visible to the rest of learners and the teacher, or only to the teacher. Learners may be asked to comment on them in public.

- Finally, all CLILQuests may also be supported by a section of general scaffolds or web resources. This section may include search engines, dictionaries, thesauri, glossaries, templates, advanced organizers, links to the forum, online conference, or chat.

The role of the teacher is vital in each part of the CLILQuest. His/her work will consist in guiding and providing support at any time. S/he should control that each learner is doing his/her part, and that the schedule is met. Apart from the parts s/he has to design, s/he has to be aware of the moment when some kind of FonF technique should be used. Figure 1 shows the structure of the CLILQuest.
2.4. Task taxonomy

The task type is the heart of a CLILQuest. It contains the critical information that identifies the CLILQuest. The task type, and by extension the CLILQuest, has to share the main features of the module to which it belongs. In this section, we discuss the use of an adequate taxonomy of tasks to suit the module requirements, and describe the types of tasks attributed to each module.

Dodge’s (2002) WebQuest classification lacks consistency in the sense that the creation of the different categories does not follow any known criteria. Some tasks are more specific than others and can be subsumed within the most generic group. Dodge (2002) himself agrees on this fact in saying that “It’s likely that the task in a given WebQuest will combine elements of two or more of these task categories”; however, he does not develop a further taxonomy to include this distinction.

In Dodge’s taxonomy, we identify at least two different groups of tasks. The first group embraces tasks of the following types: retelling, compilation, consensus building, persuasion, analytical, and judgment. This group contains tasks that promote thinking skills as, for example, analysis; a lesser number of skills than the second group (e.g. consensus, persuasion, and judgment); or less sophisticated higher-order skills than those promoted in the second group (e.g. retelling or compilation). Based on these features, and to distinguish them from the tasks in the second group, we shall call them minor tasks. They can merge with the tasks of the second group.

The second group involves tasks whose solution depends on the activation and use of a larger number of skills or more sophisticated processes of higher-order skills than those triggered by the tasks in the former group. To establish a contrast with the task in the first group, the tasks in this group receive the name of major tasks. They are mystery tasks, journalistic tasks, design tasks, creative product tasks, self-knowledge tasks, and scientific...
tasks. Thus, it would not be very difficult to notice that a detective may require compiling data on some investigation just as a journalist may need to find information on a particular news item. Similarly, the participants in mystery or scientific tasks may need to reach some agreement on how to solve a case or how to carry out the research; or a self-knowledge task will require the learner to analyze situations related to his/her own life. Table 1 shows our classification of Dodge’s taxonomy.

<table>
<thead>
<tr>
<th>MAJOR TASKS</th>
<th>MINOR TASKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mystery tasks</td>
<td>Retelling tasks</td>
</tr>
<tr>
<td>Journalistic tasks</td>
<td>Compilation tasks</td>
</tr>
<tr>
<td>Design tasks / Creative product tasks</td>
<td>Consensus building tasks</td>
</tr>
<tr>
<td>Self-knowledge tasks</td>
<td>Persuasion tasks</td>
</tr>
<tr>
<td>Scientific tasks</td>
<td>Analytical tasks</td>
</tr>
<tr>
<td></td>
<td>Judgment tasks</td>
</tr>
</tbody>
</table>

Table 1. Further classification of Dodge’s taxonomy of tasks.

In order to meet the specific requirements of each module, we need more generic tasks than Dodge’s major tasks. In Long’s (1998) terms, we need task types, that is to say, more abstract and superordinate categories that agglutinate specific tasks. The more generic the task type is, the better it may render the critical features of a specific type of module. In addition, a more generic category may encompass a wider variety of specific tasks to develop the contents of the module. In practical terms, this is very useful in order to alternate different specific tasks within a module as long as the general features of the superordinate category are maintained.

The tasks in Dodge’s taxonomy are instances of superior categories of task types that can be included in a more general framework. With that purpose in mind, we adopt Oliver’s (2001) classification of constructivist learning designs as an appropriate model of task types in which Dodge’s types can be embedded.

Oliver identifies four main types of designs: problem-based learning, project-based learning, inquiry-oriented learning, case-based learning, and role-playing learning. In our view, Dodge’s tasks can be taken as instances of these task types. The integration is flexible: some tasks can fall into more than one task type. In Table 2, we display the integration of both taxonomies.

Oliver’s problem-based learning design is a task type that can be present in any of Dodge’s major tasks, but specifically in journalistic, mystery, and scientific tasks. In any of these tasks, the learner needs to solve a problem that requires the activation of prior knowledge and an elaborated solution. The same three tasks can further fit into the definition of an inquiry-oriented task. This task type resembles doing real science since it requires observation, questioning, explaining, analyzing, and drawing conclusions, among other skills. Therefore, mystery and scientific tasks are preferred within this type. However, general journalists and more usually science journalists have to make use of much the same skills. A third option for this set of tasks is the case-based task type. Whether journalistic, mystery, or scientific task, the teacher may design a concrete problem situation for each of them. Learners will need to apply their prior knowledge on similar situations to the new case. The connection between the problem, inquiry, and cased task types through Dodge’s three tasks is not unusual since the two latter types are variations on the first type (Oliver 2001). As for the project-based task type, it finds two examples in Dodge’s design tasks and creative product tasks. Despite minor...
differences between these two tasks, in both, learners are engaged in designing and creating new products. Before that, they will need to discuss the ideas, explore new ideas and concepts, and test them. Finally, Dodge’s self-knowledge task can be naturally associated to the role-playing task type. This type draws the attention to the learner’s affective component.

<table>
<thead>
<tr>
<th>OLIVER’S CONSTRUCTIVIST LEARNING DESIGNS</th>
<th>DODGE’S TAXONOMY OF TASKS (Further classification)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task types</td>
<td>Major tasks</td>
</tr>
<tr>
<td></td>
<td>(Any task)</td>
</tr>
<tr>
<td></td>
<td>Journalistic</td>
</tr>
<tr>
<td></td>
<td>Mystery</td>
</tr>
<tr>
<td></td>
<td>Scientific</td>
</tr>
<tr>
<td>Problem-based:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design tasks / Creative product</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Project-based:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Inquiry-oriented:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Case-based:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Role-playing:</td>
<td>Self-knowledge</td>
</tr>
<tr>
<td></td>
<td>Retelling</td>
</tr>
<tr>
<td></td>
<td>Compilation</td>
</tr>
<tr>
<td></td>
<td>Consensus building</td>
</tr>
<tr>
<td></td>
<td>Analytical</td>
</tr>
<tr>
<td></td>
<td>Judgment</td>
</tr>
</tbody>
</table>

Table 2. Integration of task types and specific tasks.

In this model, the relationship between Dodge’s major tasks and minor tasks is kept: minor tasks can merge with major tasks. This can only take place once these major tasks are arranged into each of the five task types of Oliver’s taxonomy.

Task types allow for a complete integration of thinking skills. Despite minor differences of taxonomy categorization, all the traditional thinking skills can take place in any task to a greater or lesser extent. If we take for instance Bloom’s (1956) taxonomy of skills, we observe that the whole set of skills, including less cognitively demanding and more cognitively demanding skills, is present in each task type. The same claim cannot be made for Dodge’s minor tasks. Some of them match just one of Bloom’s skills, e.g. the analytical task corresponds to the analysis skill. Others involve a fewer number of skills than the major tasks, e.g. consensus tasks are mostly based on the evaluation skill. Finally, other minor tasks involve less sophisticated higher-order skills than those promoted in the second group, such as retelling and compilation tasks, which only require knowledge and comprehension skills.

2.5. CLILQuest types

We may distinguish CLILQuests according to two main criteria: (1) the type of knowledge involved, and (2) the type of relationship existing between them.

Inspired by the distinction of types of knowledge put forward in Anderson and Krathwohl’s (2001) adaptation of Bloom’s (1956) taxonomy of educational objectives, we have defined four types of modules, as we have already explained above: Introductory, Core-Knowledge, Case, and Awareness Module. While Introductory Modules and Core-Knowledge Modules encourage declarative knowledge, Case and Awareness Modules involve procedural knowledge. According to these distinctions, we identify four types of CLILQuests for each of the four modules. Each type receives the name of the module to which it belongs and inherits its features. Thus, the task type of an Introductory CLILQuest serves to develop factual knowledge, the task type of a Core-Knowledge CLILQuest involves conceptual knowledge, and the task types of a Case and an Awareness CLILQuest introduce procedural knowledge.

Following Oliver’s (2001) constructivist learning designs, in some cases it is easy to establish a correspondence between one or two task types and a category of modules. This is what happens with the case-based and role-playing task types, which meet the requirements of Case and Awareness Modules, respectively. This match does not mean that other types of CLILQuests cannot be developed within those two categories of modules. If well designed, any of the four task types or a combination of them may suit the purpose of each category of modules. Moreover, in order to better engage learners in the work, they will have to play different roles in each CLILQuest.

As regards the sort of relationship that one CLILQuest has with another CLILQuest, we should say that it can be either dependent on or independent. CLILQuests depend on others are those which need the outcomes of another CLILQuest to be developed. Their input is the output of another CLILQuest. This dependency may occur between CLILQuests within modules or between CLILQuests across modules. On the other hand, in undertaking an independent CLILQuest, learners do not necessarily rely on the outcomes of another CLILQuest. Figure 2 shows the integration of CLILQuests within the modular structure.

![Figure 2. CLILQuest integration within modular structure.](image)

2.6. Sample programme: CLILQuests on climate change

At www.clilcall.com/dokeos[^4] we offer a sample implementation of the subtopic of climate change within the topic of environmental issues. The programme addresses Spanish

[^4]: The user needs to register in order to obtain the instructions about how to enrol on the course *Climate Change* within the category *CLIL*. The website is best viewed in Internet Explorer 7.
baccalaureate learners of English as a Foreign Language. Students at this age are already familiar with the terminology of environmental issues since part of this topic has already appeared in the contents of Secondary education subjects.

As the instruction delivery mode in this implementation we have used Dokeos\(^5\), an Open Source Learning Management System (LMS) based on constructivist principles. It offers the teacher the integration of synchronous and asynchronous communication tools, such as videoconferencing, forums, blogs, wikis, chat, groups, diaries, or e-mail, within one single user-friendly interface. In our opinion, the use of this or any other LMS is a very appropriate way of displaying and delivering a programme of CLILQuests in the educational practice.


Figure 3. Course on climate change in Dokeos (www.clilcall.com/dokeos): presentation.

In this programme, each module is developed through one CLILQuest. In each of them, the learners are the agents of their own learning; they have to play different roles, for example, scientists, politicians, researchers, and work cooperatively to solve some problematic situations. In each CLILQuest, they have to accomplish a number of goals. We provide them with some scaffolding in each quest. In many cases, they have to make use of CMC techniques to solve the tasks. Each CLILQuest consists of the parts mentioned previously:

- A guide section, which contains the presentation of the CLILQuest task type and the specification of learners' roles.
- A test section for the Introductory CLILQuest and Core-Knowledge CLILQuest.
- A development section, which contains the different quests through which each CLILQuest is developed.
Figure 4. Guide section for an Introductory CLILQuest: Task type and roles.

Figure 5. Sample FonF test in Core-Knowledge CLILQuest.

For each quest we specify the participating teams, the main goal of the quest, the intended outcome, the time allotted to its accomplishment, a list of web resources (if necessary), and a documentation section that encompasses scaffolds and documents required for the quest’s accomplishment. The learner may find this information in the documents folder included in the LMS toolbar. This folder also contains other general scaffolding tools useful for any CLILQuest, such as note-taking templates or lists of connective devices. For every CLILQuest, a list of reference web resources such as dictionaries or thesauri is also made available.
In order to accomplish each quest successfully, learners will need to make use of their metacognitive, cognitive, and social-affective strategies. Some of the scaffold tools designed attempt to enhance these strategies. Apart from the note-taking template, based on Cornell’s note-taking system (Pauk 1962), we have developed another template that the learners may find helpful when taking notes from the websites they have to review. They are also provided with a sample to-do list template and an event schedule planner for organizational planning. All quests are based on group work, a social-affective strategy in Chamot and O’Malley’s (1987) CALLA model. Individual work is also possible at some moments of quest accomplishment. With the purpose of expanding this collaborative work, some CMC tools such as forum and e-mail communication are made available to learners. Some quests offer Dimdim free web meeting service available at www.dimdim.com, which may host events that enhance learners’ participation.

In this programme, all the CLILQuests intend to enhance the use of all language skills. Obviously, some quests involve a higher use of specific language skills. However, most quests require the learners’ use of productive skills, such as writing and/or speaking. Prior to the production of the outcomes, learners will have practised their receptive skills at the moment of scanning and/or skimming necessary information and listening to some aural input.

In the CLILQuest within the Introductory Module, learners have to organise The First International Youth Conference on Climate Change. It is a product-based and inquiry task type CLILQuest where the factual knowledge behind it consists of the main terminology and specific details about the fields of environment and climate change. This CLILQuest is made up of five quests. Quests 1 to 3 are simultaneous quests carried out by different working groups; each of the quests 4 to 6 are accomplished by all teams sequentially.

The two simultaneous quests designed for the Core-Knowledge CLILQuest help the learners build on the factual knowledge of climate change that has been previously acquired.
It also helps them expand their knowledge by working with conceptual knowledge on the same topic. The task type identified for this CLILQuest is mainly of an inquiry type. The learners are keynote speakers that must take part in the previous conference. They have to do some scientific research on a specific climate change issue. Learners have to prepare PowerPoint presentations and speeches about global warming, ozone problems, greenhouse effect, and dangers to ecosystems. For that purpose they will use academic and scientific language. The conference closes with a round table on the following topic: “Do you believe in global warming?” The event can be delivered either using face-to-face or online mode via Dimdim software.

As its name implies, the task type in the Case CLILQuest is case-based. Through it learners apply the acquired knowledge to solve two concrete actual situations: Mr Achim Steiner, the current Executive Director of the United Nations Environmental Programme (UNEP), and Mr Stavros Dimas, the current European Commission’s Commissioner for Environment ask for learners’ help to solve two cases: (1) the case of the desperate journey of a mother elephant and her calf in the South African desert, and (2) the death of a polar bear in the Arctic. The four linguistic skills are practised in this CLILQuest: e.g. the learners have to watch and listen to some videos, write and speak about the resolution of the two cases and the evidence provided. There will be four different teams solving the different quests: researchers of the CSI environmental unit, scientists of the Nobel-awarded Intergovernmental Panel on Climate Change (IPCC), Greenpeace activists working in the Thin Ice project, and a team of the BBC Earth film. Figure 3 displays the description of Quest 2 in the Case CLILQuest (Case Module) of this sample programme.

Figure 7. Case CLILQuest: Quest 2.

The Awareness CLILQuest tries to raise the learners’ awareness of the impact that their behaviour can have on climate change. This is a case-based task type where learners have to find out their ecological and carbon footprints by making use of some ecocalculators. Later on, they have to find appropriate ways to improve the negative effect of that behaviour. They
will find out what a green home is. There are three teams working here: two working teams of eco-designers, and a group of green-living experts that will evaluate the eco-designer’s works.

3. Conclusion

Taking into account the potential benefit that the use of the new technologies may have for CLIL implementation, here we have proposed and described the CLILQuest as a key part of a technology-enhanced model of Content and Language Integrated Learning. We consider that one of the strengths of the model we propose here is the way that the CLILQuest achieves cohesion and integration into a superior unit through the structure of four modules. To be more precise, we can distinguish at least four different levels at which cohesion is attempted in this model:

- The CLILQuest portrays the essence of the module to which it belongs. It cannot be done outside a module. The different CLILQuests of a module aim at developing learners’ same type of knowledge, whether declarative or procedural. For example, through the different Case CLILQuests, the learner knows s/he has to cope with the procedural knowledge of a subtopic.
- A CLILQuest has internal cohesion. The quests within each CLILQuest are not independent of each other. They belong to a sequence of connected quests in which each has a function. The work done in one quest is essential for the work that has to be done in others. This interrelation requires CALL to be used obligatorily and in a natural way, i.e. the learners must make use of technological resources in order to solve the CLILQuest through the accomplishment of its quests.
- A module has internal cohesion. When modules consist of more than one CLILQuest, a further degree of cohesion and integration is intended. The general outcome of a CLILQuest may be essential for the development of another CLILQuest within the same module.
- There is also cohesion across modules. Here, the general outcome of a CLILQuest in one module can be the input of a CLILQuest in a different module. In this sense, we are not linking CLILQuests but modules. As an example, based on the factual knowledge of a subtopic, in an Introductory Module the learners may organize a conference on a given issue that may be later held in the first CLILQuest of the Core-Knowledge Module.

One of the recurrent problems of the use of a programme of activities into the school life is time. Very often, teachers complain about the mismatch between the list of contents to be taught and the amount of school time allocated for their instruction. We may point to flexibility as one of the most useful features of the model presented here. The teachers may opt to use the CLILQuest as the only educational tool for a whole course or to use it in combination with other online or offline tools. S/he may also consider the use of CLILQuests either as in-class or out-of-class work. No restrictions to the use of this tool are imposed in this regard.

The modular structure of this framework permits the design of a variety of CLIL programmes that may fall easily into any schedule. To mention but a few, one topic could be taught within one month, one term, or even one year. The teacher could also consider the implementation of three subtopics over the three terms of the year, one subtopic per term. Each of these options has its pros and cons. For example, dealing with one topic within a month or a term prevents a detailed study of the topic. On the other hand, teaching a topic...
over the course of one year allows greater detail but it is a monothematic approach, which can be discouraging for those learners who do not like the topic. It is the teacher the one who should decide on the use and scheduling of modules and CLILQuests over the academic year. Moreover, although the design of a programme such as this requires considerable time and effort, the modules and the CLILQuests can be quite easily recycled and substituted for others that can serve the same purposes.

Although the CLILQuest is grounded in known models of Language WebQuests, we are fully aware of the need of implementation and evaluation of this proposal in the actual classroom. Some possible areas for further development are noted here: for example, the framework should be refined to provide specific recommendations on evaluation. As explained elsewhere, an evaluation section should be included in the structure of the CLILQuest. Another aspect that deserves special attention is the means of coping with the different types of Focus on Form. We have only suggested a way to include some FonF part in the CLILQuest through the test section; however, we are aware that further explanation is needed to determine when, where, and how the different types of FonF should be applied in the accomplishment of the quests. In sum, the CLILQuest is awaiting for real implementation and some classroom action-research that may provide feedback on its validity and suggest replacement and improvement of its defective parts.

4. References


Integrating a WebQuest in the Primary School Curriculum Using Anchored Instruction: Effect on Learning Outcomes

Eliane Segers¹, Mienke Droop², and Ludo Verhoeven¹ ²
¹Behavioural Science Institute
²Expertisecentrum Nederlands (Expert Centre for Language Education)
Radboud University Nijmegen
The Netherlands

Abstract. Based on a literature review, a means for integrating WebQuests in day-to-day school activities is introduced using principles of Anchored Instruction. Following these ideas in an effect study, including 109 children in 4th, 5th and 6th grade, significant learning gains were found, with a large effect size. Differences in learning gain were found between groups of children from different teachers, and reading comprehension was an important predictor of learning gain. The study gives strong support for a more integrated approach in which learning to search for meaningful information and processing this information is part of the more general educational curriculum.

Keywords. Applications in subject areas, elementary education, improving classroom teaching, teaching/learning strategies, evaluation methodologies.

1. Introduction

Computers have a place in education nowadays. In some schools more than in other schools and in some schools more integrated into the day-to-day activities than in other schools. Many schools have computers with an Internet connection, and thus the computer is often used as a tool to gather information about all different kinds of topics. Children in the upper grades of primary school seem to prefer to use the Internet, and not books, when they have to write a text (Segers and Verhoeven, 2003).

However, finding relevant information on the Internet is not an easy task for them. A review study by Kuiper, Volman and Terwel (2005) revealed several problems for children when searching the web for information. They have difficulties with the large amounts of texts, and focus on collecting factual knowledge. They furthermore pay little attention to reading and processing the information, and have difficulty in assessing the relevance of the information found and the reliability of the website.

A possible means to overcome these problems is to offer a layer of structure between the child and the Internet (Segers and Verhoeven, 2009). This allows the children to focus on the learning task and less on the searching task. The concept of a WebQuest is promising in this line of thought. A WebQuest is an inquiry-oriented activity in which the information that one needs can be found on pages on the Internet that are linked to in the WebQuest (Dodge, 1995).

A WebQuest consists of a series of web pages, and starts with an introduction to a particular topic and some background knowledge on the topic (Dodge, 1995). The next page describes the task to be done. Sources of information are then listed, which are most often links to web pages needed to perform the task. The fourth page describes the process to be gone through to accomplish the task. The description of the process is broken down into individual steps and followed by a guidance page that often presents questions about the information presented in the different web pages. The WebQuest ends with a conclusion, which usually summarizes the learning experience. Also a rubric is provided at the end, that helps children to evaluate their own work and often a page with guidelines for the teacher is included.
The concept of a WebQuest is based on well-established educational theories such as those of Marzano (1992) and Bloom (in Marzano and Kendall, 2007), in which the development of higher order thinking skills (analysis, synthesis and evaluation) is stressed. The idea also leans to the constructivist ideas of children constructing their own knowledge. The instructional ideas behind the concept of the WebQuest fit in the most established theories of instructional design as summarized by Merrill (2003) in the ‘first principles of instruction’: learning is enhanced when the learner is involved in solving real problems, when prior knowledge is activated, when new knowledge is demonstrated to the learner and is being used by the learner, and finally, when the new knowledge is being integrated into the world of the learner.

Even though the use of WebQuest is widespread throughout the world, empirical research on the impact on learning and the cognitive requirements is scarce (Abbitt and Ophus, 2008) and gives little information about how a WebQuest could be integrated into the schools.

In the present study, we will therefore first present a literature review of the empirical research that was published on the use of WebQuest, resulting in a way to integrate WebQuests in school. Second, a study will be described, in which a WebQuest was introduced in a primary school in The Netherlands, following the lines of the literature review. The study aimed at unraveling child characteristics that contribute to the learning effects of doing a WebQuest, taking into account the differences between teachers and grades.

2. Empirical research on WebQuests

A first relevant study on the learning impact of WebQuests was performed by Milson (2001). In a qualitative case study, 23 6th graders did a WebQuest on Ancient Egypt. It was noted that, even though the WebQuest provided the relevant Internet links, children were still inclined to search for answers themselves via Internet search engines, thinking this would be the easier way to find an answer to a question, since in some engines; one can type in an entire question. Milson was optimistic (though with reservations) at the end of the study, because teachers can guide the children to show behavior that is asked for in a WebQuest. This is clarified by stating that the teacher in this study made sure the children indeed read all questions and web pages and engaged them in higher level thinking.

Another qualitative study was conducted by Wagman (2005), who gave a very thorough description on the implementation of a WebQuest in a high school in a Latin course. Forty-six pupils, about 15 years of age, took part in this project. They were motivated and showed learning gains in the course of the project. Unfortunately, no control group was enrolled. Wagman observed that children with weak reading skills had difficulties in going through the amounts of text. In interviews, the pupils indicated that they would prefer a combination of learning by own experiences and by teacher guidance.

A third qualitative study involved six fifth-grade students (i.e., five girls and one boy). Ikpeze and Boyd (2007) addressed the overload of information that children can encounter when working with the Internet in general, but also in WebQuests. One advantage of the WebQuest detected by the authors was that it appeared to help bridge the gap between content literacy and technological literacy. Children were not just learning to deal with technology, but were using the technology to enhance their learning. The importance of the teacher was again highlighted.

King (2003) performed the first study on WebQuests with a more experimental design. An experimental group (n=30) and a control group (n=30) of students in teacher education were divided in groups of 5 to 6 persons. Their assignment was to construct a WebQuest for children in grade 6. The experimental group had an extra day to visit the group the WebQuest was designed for and instruct them on the use of the WebQuest. Before and after the

assignment, the expectations of the students about the effectiveness of computer-based instruction were measured with a questionnaire. It turned out that the expectations of the experimental group remained the same, whereas the control group had higher expectations in the end. Working with the children thus diminished the expectations. However, students in the experimental group did design a better WebQuest according to the researchers. Knowing the focus group thus leads to the design of better material. Stinson (2003) emphasized the same thing in her article on experiences of making WebQuests by students in teacher education.

MacGregor and Lou (2004) added something to the traditional WebQuest. They compared two groups of fifth graders (n=26 in each class) who did a WebQuest on endangered species. One of the groups received additional support in the form of a concept map that needed to be filled with information they found on the Internet. This group showed the highest learning gains; giving this extra form of structure proved to be successful.

Gaskill, McNulty, and Brooks (2006), compared the use of WebQuests to conventional instruction in two intervention studies. In the first study, WebQuest and conventional instruction conditions in the study of science were compared in a high school history setting and the conventional instruction condition was found to produce higher learning gains than the WebQuest condition. In the second study, university students in a WebQuest condition were found to gain just as much knowledge as university students in a conventional instruction condition. Differences between the conventional instruction conditions in the two studies may, however, explain the discrepant results. In the conventional intervention in the first study, for example, a movie was shown, a very experienced teacher told stories and there were group discussions. In the WebQuest condition, the children worked individually at their computer and there were no interactions.

In a multiple case study, Kanuka, Rourke, and Laflamme (2007) examined five different communication methods, which included the use of WebQuests. The participants were university students, and it was found that in both the WebQuest and debate methods of communication, the students posted more messages, reflecting the highest level of cognitive involvement. Unfortunately, the learning gains demonstrated by the students were not assessed.

Allan and Street (2007) studied the use of a WebQuest in 87 university students by using a questionnaire. Sixty percent of them believed the WebQuest indeed promoted higher order thinking, while 40% felt their learning was at a lower-order level. The authors drew attention to the work of Young and Wilson (2002) who proposed to add two stages to the WebQuest, based on the theory of anchored instruction (Bransford, Sherwood, Hasselbring, Kinzer, and Williams, 1990). In anchored instruction, a common knowledge base is introduced and discussed in class, e.g. a movie that helps getting children intrinsically motivated. Then, the learner is invited to help solve a ‘real world’ problem. Several studies proved the effectiveness of this principle, e.g. Kinzer, Gabella, and Rieth (1994), and Glaser, Rieth, Kinzer, Prestidge, and Peters (1999). An informal review by Ruzic and O’Connell (2003) found in general positive effects of anchored instruction, especially for children with learning problems.

The first of the two stages Young and Wilson (2002) proposed to add focuses more on the introduction and pays more attention to activate prior knowledge and the second is to enhance the conclusion part by having children share and compare their work. Allan and Street (2007) concluded that the addition of these two levels led to major shifts in learning level, as reported by two different groups of students (one who had a WebQuest with these extra levels and one who did not).

Segers and Verhoeven (2009) compared learning gains of 229 6th graders after doing a WebQuest on Ancient Rome in either a condition in which the Internet sources were provided or a condition in which they had to ‘Google’ to find answers to the questions in the WebQuest or their own questions. It turned out that girls had similar learning gains in both conditions,
but that boys only showed significant learning gains in the WebQuest with Internet sources condition.

The above presented studies did not focus on the use of the rubric at the end of a WebQuest. By using this rubric, children can evaluate their own work. Via the rubric, the child is asked to revise his or her own work. Rewriting one’s work is not that common in primary schools, and especially not based on the child’s own comments. Allal and Chanquoy (2004) showed that direct instruction is needed for children to be able to give feedback on their own work or that of peers. Rijlaarsdam, Couzijn and Van den Bergh (2004) argued that children should review the work of peers, need specific guidelines (these could be in the form of a rubric) and preferably should have more than one reviewer.

Most WebQuests, finally, also include a teacher page. The role of the teacher when children are doing a WebQuest is complex. Children need to become ‘web-literate’. Ikpeze and Boyd (2007) finally argued that a WebQuest should not be seen as an isolated activity, but should be integrated in what goes on in the class. The teacher often has the role of a coach in these situations (Leu, Kinzer, Coiro, and Cammack, 2004).

3. The present study: combining WebQuest and Anchored Instruction

Integrating the knowledge from the literature described above, mainly using the ideas of WebQuests and Anchored Instruction leads to a means of integrating a WebQuest in the day-to-day school activities. It builds on the principles of learning put forward by Merrill (2003), including theories of Anchored Instruction (Kinzer et al. 1994; Glaser et al. 1996) but extending the ideas of Young and Wilson (2002), and strongly emphasizes the idea that a computer-based activity should not be an isolated activity (Ikpeze and Boyd, 2007). Furthermore, emphasis is being laid on working in small groups (Glaser et al. 1996), the use of concept maps (MacGregor and Lou, 2004), interaction with the teacher (Leu et al. 2004), reviewing the own work and/or that of peers (Allal and Chanquoy, 2004), and presentation of the work to the class and others (Merrill, 2003).

In an effect study, we put this integrated approach to the test. Research questions were:

- Which child characteristics are related to these learning effects?
- What are the learning gains of a WebQuest when integrated into the curriculum, taking into account grade and teacher, and controlling for child characteristics?

4. Method

4.1. Participants

Children from one school situated in a city in the south of the Netherlands participated. The school population mainly consisted of children speaking Dutch at home and with at least one parent born in The Netherlands. Four groups with a total of 109 children were involved. Each group consisted of children in 4th, 5th and 6th grade, which is quite common in a so-called Jenaplan school. The group consisted of 54 boys and 55 girls. The average age in 4th grade was 9;7, in 5th grade 10;8 and in 6th grade 11;9. Fifteen to 20% of the children had immigrant roots. The children had a normal IQ, as controlled for by the Standard Progressive Matrices (Raven, 1965).

The children were familiar with the computer, because of a lesson series at school aimed at learning children to use the computer. They indicated to use the computer between 30 minutes

to an hour per week in school, and the same amount of time outside school for school purposes. Only 1 child reported not to have a computer at home, 27% had their own computer and 72% could use a family computer. Over 90% considered themselves ‘quite good’ to ‘very good’ (4-point scale) in the use of MS Word and the Internet, and 87% surfed the Internet at least a few times per month.

4.2. Materials

In order to gain information about the language skills of the participants, the Taaltoets Allochtone Kinderen (TAK; Language test for immigrant children, Verhoeven and Vermeer, 1993) for children in grade three to six was used. The TAK is a diagnostic instrument to measure Dutch language skills from immigrant and non-immigrant children. The TAK consists of seven subtests that can be used to assess different language skills. In the present study, four subtests were used: (1) definition task; (2) receptive vocabulary task; (3) text reading task one and two. These four subtests were chosen because they assess the language skills that are expected to be important in understanding written texts, draw conclusions about the text or summarize the text, and orally present this to another person.

The definition task was assessed orally. The participant was asked to give a definition for 25 words. It was taken into account that children learn to define words in two phases. During the first phase, a word is characterised (e.g., ‘when you are blind, you walk with a stick like this’) and in the second phase a word is defined (e.g., ‘blind means you cannot see’) (Verhoeven and Vermeer, 1993). The receptive vocabulary task assessed the understanding of words in written language, which is an important component of reading comprehension. The participant was asked to choose the meaning of a word out of four choices. In total, the task contained fifty multiple-choice questions (Verhoeven and Vermeer, 1993). Text reading task one assessed the understanding of coherence between sentences as expressed by connection words such as because, then, or after. The participant was presented with two texts in which these connection words are deleted. In forty multiple-choice questions the participant was asked to choose the correct connection words. Text reading task two assessed the understanding of meaningful relationships between sentences in a written text as expressed through the central elements of the sentence, such as nouns, verbs, and adjectives. The participant was presented with two texts in which these central elements are deleted. In forty multiple-choice questions the participant was asked to choose the correct central element (Verhoeven and Vermeer, 1993).

A Knowledge Test with 17 open questions was developed to gain insight in the children’s knowledge of the Middle Ages. The first question was to indicate the time period, then there were seven ‘What …’questions (e.g. ‘What is a serf?’), four ‘How..’questions (‘How did you become a knight?’), and five ‘Why..’ questions (e.g. ‘Why did many people die of the plague in the middle ages?’).

The child received 2 points for a completely correct answer, 1 point for a partly correct answer and 0 points for a wrong answer. The knowledge test was scored by the first author of this article, kappa interrater reliability between first and second author was .818, indicating a good interrater reliability.

4.3. WebQuest

The WebQuest (http://www.webquests.nl/matrix/wq092/) used was designed by the authors for the present study. The WebQuest consisted of the following sections: introduction, task, process, guidance and resources, evaluation of task performance, and brief conclusion.
In the Introduction, the children were told they were real writers now and were to write a follow-up story for the movie they just had seen. As a real writer, their Task was first to do some research about the Middle Ages. In order to do so, they performed the WebQuest and had to choose at least three out of the following eight topics: from kings to farmers, the plague, the monastery, witches, knights and castles, education, food and drinking, cities and living, and could add their own questions as well.

The Process section described how they had to search for information, write a piece of work about their research, evaluate that, write a story, etc. The guidance and resources section provided example questions (‘how…’, ‘what…’) as well as links to webpages. The questions were open-ended where possible and prompted the children to higher order thinking in that for example the past was taken into the present (e.g. ‘Why is it not like that nowadays?’). In the evaluation section, children were asked to evaluate their own work, by looking again at the content, the design, their writing style, spelling and grammar and the length of the text. The conclusion repeated the learning goal.

4.4. Procedure

The whole project took place in a period of 5 weeks. Before the start of the project, the teachers were given instruction by the researchers about how to implement the WebQuest. During the 5 week period, the first and second authors were in the school frequently, to guide the teachers, and answer any questions.

In the first phase (orientation) the topic was introduced. The children watched a movie situated in the Middle-Ages in two groups. After this they discussed the movie in their own groups, and made a concept map in small groups on the Middle Ages and aspects of the Middle Ages they saw in the movie. These concept maps were later on discussed in the whole class. They also thought about questions they wanted to find out about the Middle-Ages, and read several texts together with the teacher on the topic. In this phase, background knowledge is activated, and through the movie a common knowledge base is created.

In the next phase, the WebQuest entered the stage. In class, the children further worked on the topic via small writing or reading assignments which were discussed in small group discussions guided by the teacher. At the same time, the children work in dyads on the WebQuest. Children worked in dyads composed by their teachers. Each group worked for about 5 hours in the computer room of the school. When the children worked on the computer the teacher walked around and helped when necessary. The activities in the class and the activities on the computer were complementary. In this phase the role of the teacher was. In this process, the teacher takes on the role of a coach, and makes sure that attention is paid to the web-literacy skills of the children, but also to give instruction and guidance in the process of reading and writing for information purposes.

When the work was finished, a revising phase was entered, in which the work was evaluated. Children also needed to return to the phase of searching and working with information because additional information could be needed in order to revise the work. Then, in the final phase, the children presented their work to others, in the form of posters, talks, and a medieval market for parents and other visitors.

5. Results

The first question was which child characteristics were related to the learning gain. Correlation analyses showed that the learning gain was positively correlated to ‘Text reading task 2’, \( r = .249, p = .017, n = 94 \), and a negative correlation with Prior Knowledge was found.

$r=-.364, p<.001, n=98$. Text Reading Task 2 was found to correlate significantly with all other measures of linguistic ability. This task thus reflects a general linguistic ability, and will further be referred to as Reading Comprehension.

The second question aimed at finding out what the learning gains were as measured by the Knowledge test and how these were related to grade and teacher. Learning gains from pretest ($M=10.32, SD=4.347$) to posttest ($M=17.01, SD=5.465$) were significant, $t(97)=12.610, p<.001$, and with a large effect size, $d=1.364$.

A univariate analysis of variance with score at posttest as the dependent variable, Teacher and Grade as between-subjects factors, and the significant child characteristics (Reading Comprehension, and Prior Knowledge) as covariables, revealed main effects of Reading Comprehension, $F(1, 80) = 9.279, p = .003, \eta^2_p = .104$, Prior Knowledge, $F(1, 80) = 9.866, p = .002, \eta^2_p = .110$, and Teacher, $F(3,80) = 13.625, p < .001, \eta^2_p = .338$. There was no interaction between Grade and Teacher ($p = .105$). The adjusted $R$ squared of the model was $.528$. Descriptives can be found in Table 1.

Pairwise comparisons of the different teachers showed that the group from teacher D scored higher at posttest than children from the other three teachers (after controlling for Text Reading Task 2, Raven IQ, and Prior Knowledge). The group from teacher A also scored above the group from teacher A.

Table 1. Mean scores (and standard deviations) at pretest (Prior Knowledge) and posttest, and Reading Comprehension (RC) in the different teacher groups.

<table>
<thead>
<tr>
<th>teacher</th>
<th>pretest</th>
<th>posttest</th>
<th>RC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (n = 25)</td>
<td>11.56 (3.926)</td>
<td>17.75 (5.296)</td>
<td>29.92 (5.083)</td>
</tr>
<tr>
<td>B (n = 22)</td>
<td>9.82 (3.887)</td>
<td>12.42 (4.010)</td>
<td>27.75 (6.215)</td>
</tr>
<tr>
<td>C (n = 21)</td>
<td>8.58 (4.221)</td>
<td>15.96 (5.287)</td>
<td>29.60 (3.979)</td>
</tr>
<tr>
<td>D (n = 25)</td>
<td>10.50 (4.918)</td>
<td>20.93 (4.415)</td>
<td>29.36 (4.801)</td>
</tr>
</tbody>
</table>

6. Discussion

The aim of the present study was to investigate an optimal way of implementing a WebQuest in the day-to-day school activities. A literature review led to an approach in which principles of Anchored Instruction were combined with the use of a WebQuest. In an effect study, we found learning gains when implementing a WebQuest this way. Children in different grades equally benefited from the WebQuests: all grades showed a substantial learning gain, although there were differences at both pretest and posttest between grades. More remarkable was the difference in learning gain between the four teacher groups. In one group, learning gain was significantly below that of the other groups, even though the WebQuest was the same and the teachers all received the same guidance from the researchers. As for differences between the children, it seemed that, Reading Comprehension in the sense of understanding meaningful relationships between sentences was most important for learning gain.

The fact that integrating a WebQuest in the day-to-day school activities turns out to be successful is not surprising. The WebQuest concept has been shown to be effective before, and so have the principles of anchored instruction. There is no reason why combining these should not be beneficial. How large the effect is, as compared to doing a WebQuest in isolation is unclear. In a study using another WebQuest in isolation and another type of knowledge test (Segers and Verhoeven, 2009), the effect size was smaller than in this study (.66 vs. 1.36). Many different circumstances could have influenced the difference in effect.
though. One, for example being that children spend more time on the subject when it is integrated into the curriculum, so this comparison should be regarded with caution.

The main point we want to stress in this article is that a WebQuest is a tool that can be used very effectively, but needs the teacher to orchestrate the learning experience (cf. Kinzer and Leu, 1997) and the WebQuest needs embedding in the day-to-day activities in the classroom (cf. Bransford et al., 1990). The importance of the teacher is again stressed in the results of the present study, as differences in learning gain between the group cannot be explained by the WebQuest, but by the activities of the teacher. Follow-up research is necessary to unravel what caused the difference. As for child characteristics, reading comprehension was the most important factor related to learning gain. This measure correlated, however, with other child characteristics measures, and thus seems to tap a more general school performance; reading comprehension is a basic ability for learning (Verhoeven and Perfetti, 2008).

Unfortunately, we did not observe the whole process in all four groups, so cannot explain difference between classes by differences in style between the teachers. We also did not assess other capacities, besides language skills and nonverbal IQ, children may need to be able to deal with the flow of information and the processing of multimedia texts. We also realize that in this study, we have not been able to fully grasp the process of knowledge acquisition, and have not been able to disentangle teacher effects and WebQuest effects. Future research should address this issue further.

A second limitation was that we did not have a control group. We studied the effectiveness of implementing a WebQuest, and studied what child characteristics influenced the effect, as well as differences between teachers. It would take another study to compare the effectiveness of this trajectory with a more traditional approach, e.g. without a WebQuest. However, since the Internet seems to have taken its place in schools and is not going to be abandoned - because children need to be able to deal with this medium anyhow - it is perhaps more fruitful to study how it can be implemented optimally (cf. Segers and Verhoeven, 2009).

A final limitation of the study was that this was the first time both teachers and children in this school worked with a WebQuest and thus had to become acquainted with the concept. Furthermore, the results are based on the use of one WebQuest in one school, and one thus needs to be careful to interpret these to other populations using other WebQuests. The WebQuest contained questions trying to elicit higher order thinking, but many children did not seem to be engaged in higher order thinking or thinking of own questions when working on the computer, but tended to quickly fill in the example questions, sometimes without reading the information sources. With help of the teacher, deeper thinking and reading of the sources was supported.

To conclude, a WebQuest needs to be embedded in the day-to-day activities in class (cf. Ikpeze and Boyd, 2007), using principles of Anchored Instruction. Implementing computer technology in classroom is not an easy task for a teacher and many factors can influence the degree of success. By just using any ICT-learning environment as an isolated activity one discards many possibilities. The practical implication of the present study is that strong support is given for a more integrated approach in which learning to search for meaningful information and processing this information is part of the more general educational curriculum (Verhoeven et al., 2006), and the integration of classroom activities with the use of the Internet thus makes traveling on the Web a more meaningful experience.

7. References


Dodge, B. 1995. Some Thoughts about WebQuests. [http://edweb.sdsu.edu/people/bdodge/Professional.html]


VirtualQuests: Dialogic Language Learning with 3D Virtual Worlds

Howard Vickers
Avatar Languages

Abstract. The incorporation of 3D virtual worlds into WebQuests offers a more exploratory approach to language learning, where the learner engages in social, immersive and creative activities as part of the quest’s research. This model for experiential learning leads the teacher to play a facilitator role and to focus more on responding to students’ needs, rather than preemptively teaching. Dogme language teaching, with its focus on dialogic learning and emergent pedagogy, offers guidance in drawing on virtual world experiences for WebQuest-based language classes.

Keywords. 3D, dialogic learning, Dogme language teaching, LanguageQuest, Second Life, virtual worlds, VirtualQuest.

1. Introduction

The WebQuest model offers an inquiry based learning approach where much of the research takes place online (Dodge 1997). As such, WebQuests are a task-based method where learners are guided through the use of the web to discover and explore a topic. LanguageQuests adopt this model to more specifically reflect the needs of language learners. This article explores how the LanguageQuest model can be further adapted to take advantage of the exploratory and experiential learning opportunities available in virtual worlds.

The incorporation of 3D virtual worlds into inquiry based learning models changes the nature of the learning experiences and necessitates a less structured style of teaching than normally used with task-based or quest-based learning activities. Dialogic approaches to language teaching, such as Dogme, are especially relevant for helping teachers to draw upon virtual world experiences for the language learning opportunities that emerge.

2. Just add 3D

Virtual worlds are immersive and social environments where learners can visit relevant locations online and meet with others for real-time (voice or text) conversations. Virtual worlds therefore add a very different quality to online research; whereas the 2D web is rich in (text, audio, image and video-based) content, the 3D web adds a sense of location and real-time social interaction.

Virtual worlds such as Second Life have themed areas, which are frequented by many visitors. Locations may be replicas of real life places (London’s Chelsea, Moscow’s Red Square, Barcelona’s Plaza Real and central Paris, to name a few), areas with specific themes (space museum, shopping malls, political campaigns) or areas with a fantasy or imaginary design. A visit to Moscow’s Red Square, for example, allows learners to experience moving around the Kremlin, St Basil’s Cathedral and the GUM department store, in a way not possible even with panoramic photos, let alone simple 2D images. Visiting Red Square in Second Life is also a social experience because it is frequented by Russians and so offers opportunities to meet and talk with them. The combination of conversations with a specific population (eg Russians) in a relevant context (eg Red Square) allows for learning situated in an immersive and social context.

These virtual world explorations can also be documented by the student as part of the
quest's output: the text-based conversations can be copied, the voice and movement can be recorded as video, and screen-shots can be taken to gain static images. Research therefore changes from the consumption of text, audio and video, to include the actual production and sharing of this media.

3. VirtualQuests and learning experiences

The incorporation of 3D virtual worlds not only adds another dimension to the quest, but also changes the nature of the learning experience. Virtual worlds allow for a much more experiential learning process, where the specific outcomes are less well predicted before the activities and where the learners themselves shape, and indeed determine, the activities through which they learn. Virtual worlds offer three main types of learning experience: social experiences, immersive experiences and creative activities. Meeting others in a 3D virtual world is clearly a social experience where the learner interacts with others to discuss or jointly explore their surroundings.

3D virtual worlds also offer an immersiveness that is more easily and flexibly achieved than is possible in the physical world. Learners can visit replicas of real places in Second Life or become immersed in a fantasy world – again, perhaps in Second Life or in a game-like world such as Entropia. These immersive experiences can be reflected upon by the student and discussed with others (either while immersed or later in a conventional classroom situation).

Second Life allows considerable scope to modify one's (avatar's) appearance and the virtual environment. As such, students can explore and research through the creation of virtual objects, such as clothing, buildings or landscapes. Virtual worlds also allow students the freedom to explore their own identities and to take on new ones. Immersion can therefore be much more than the immersion in a new context, but also the adoption of different roles for oneself and representations of oneself within the new context. Virtual worlds offer exploration opportunities both internal and external to the learner, which in turn offer conversation and language learning opportunities.

4. Simulations and the pedagogical foundations of VirtualQuests

In many ways VirtualQuests are similar to simulations and share similar pedagogical foundations. Simulations are problem driven activities within a realistic setting (Hyland 1993) and have two key characteristics: participants have functional roles (eg survivor, judge or politician) and they are given a problem to solve in their role (Jones 1995). Simulation is, then, at first glance the same as role play. Yet, significant differences include the lack of scripted characters for the players (everyone plays themselves) and the focus is on communicative output rather than the practice of specific forms. Simulations benefit language learners because they improve both fluency and the integration of skills through “whole-task practice” (Littlewood 1981 cited in Hyland 1993); they also increase active participation in a low risk situation (Hyland 1993), where students are under less pressure to achieve accuracy.

VirtualQuests differ from simulations because both the set-up and control of the process lie very much with the student. VirtualQuests therefore offer the student greater autonomy in the design stage, the research activities, and the final output. However, VirtualQuests and simulations share a similar focus on communicative performance (in preference to a focus on form) and they both offer low stress contexts for language use. Indeed both simulations and VirtualQuests offer a realism that is difficult to obtain in a conventional classroom; in the case
of simulations, they have been so engaging that the "feeling of representivity fades" for the participants in what for them has become a new reality (Crookall & Oxford 1990 cited in Davis 1996).

5. Autonomy, relevance and motivation

VirtualQuests offer the learner considerable autonomy throughout the quest, from the initial planning to the project outputs; learners are thus able to choose the topic, the research approach and the nature of the project outputs. Keller’s motivation model considers four qualities that lead to increased motivation: the student’s interest in the topic and activities; the relevance to the student’s life; the expectation of success and the satisfaction in the outcome (Keller cited in Liuoliënë & Metiūnienë 2006). The autonomous nature of VirtualQuests takes the student closer to meeting these conditions, because the students are able to make choices to ensure that they are interested in the subject matter and the process and to make sure that the quest is relevant to their lives; their control over the project also ensures that it is of an appropriate level so that they can take satisfaction in its successful completion.

Simulations have been found to increase participation because the format lowers the risk of making mistakes through providing a safe environment (where communication is prioritized over accuracy). VirtualQuests also offer low-anxiety situations, where students may carry out research within a virtual world without peer or teacher assessment in the moment. Likewise the reality of virtual world interactions may foster the increased engagement apparent in simulations, which is due to the sense of reality students feel; although virtual worlds present learners with an environment that is essentially fictitious (even if a replica of a real-life location), the social interactions with other users of the virtual world are real.

6. Emergent pedagogies, dialogic learning and Dogme

Social interactions in virtual worlds clearly offer learners informal routes to socially constructed learning. However these virtual world experiences can also be drawn upon in more formal class-based learning and Dogme language teaching offers some guidance in this. Dogme language teaching is a communicative approach that encourages the teacher to focus on conversational communication among learners rather than using published teaching materials as the lesson’s content (Thornbury 2000). The approach considers that learning opportunities naturally arise in conversations according to the needs and interests of the students. As such, the teacher responds (to the learners’ needs) rather than preemptively teaching according to a set syllabus (Meddings & Thornbury 2009). Dogme draws upon dialogic learning through its centering of the lesson and its content in the conversation between students and with the teacher. Indeed, Dogme considers teaching itself as a conversation in similar terms to Tharp and Gallimore, who see teaching as conversing and conversing as teaching (Meddings & Thornbury 2009). Conversations create space and content for language learning opportunities to emerge according to the immediate needs of the learners. As such, Dogme teaching does not seek to plan in advance which particular skills, lexis or grammar are to be taught; instead these areas of teaching are 'uncovered' through the conversation. Since the conversation is the content for the classes, there is limited need for external materials (especially in the form of textbooks) to be brought into the lesson. Dogme places considerable emphasis on the relevance of lesson content to students’ lives in order to promote greater motivation for language learning. The central role of the students’ own voices within the lessons keeps the conversation relevant to their needs and wishes; from the topic of
conversation, to the nature of the language (vocabulary, structures, situational phrases) being learned.

7. Dogme and VirtualQuests

Dogme language teaching therefore offers teachers guidance on how to incorporate virtual world experiences into the language learning process. As conversation is the learning medium (rather than externally produced materials or textbooks), it provides a structure for drawing upon learners’ experiences, impressions and opinions to generate language learning opportunities. Dogme is particularly relevant for language learning with web 2.0 tools. Web 2.0 technologies (such as blogs, wikis, Wikipedia, Google Wave, twitter and of course virtual worlds) firmly place the user at the center of the online experience. As such web 2.0 learners are able to participate in discussions online, connect with others worldwide and create (rather than just consume) public information. Precisely because Dogme focuses on student created content, the combination of conversation and relevant content as the medium for learning and the student's specific and immediate needs, it is very well suited to 2.0 language learning. Language learning with virtual worlds, such as when used in a VirtualQuest, are a more immediate and experiential extension of learning with other web 2.0 applications.

8. VirtualQuests vis-à-vis LanguageQuests

VirtualQuests and LanguageQuests are certainly not mutually exclusive approaches to the WebQuest model in language education. Indeed, a VirtualQuest quest is most likely merely an aspect of a broader LanguageQuest project. However, the addition of 3D virtual worlds into the research mix, considerably changes the nature of research being carried out. Likewise the teaching style changes to accommodate the different range of language learning activities. The table below sets out how the aims, design and outputs of a VirtualQuest and LanguageQuest can be quite different. This in turn has implications for the teacher's role as discussed below. However, both LanguageQuests and VirtualQuests share a communicative, student-focused and, above all, student-defined approach to language learning.

Table 1. Comparison of web-based course, LanguageQuest and VirtualQuest.

<table>
<thead>
<tr>
<th></th>
<th>Web-based Course</th>
<th>LanguageQuest</th>
<th>VirtualQuest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td>Online course</td>
<td>WebQuest adapted to suit needs of language learners</td>
<td>Exploratory WebQuest incorporating 3D virtual worlds</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>Learning / practising language items (e.g. past tense) or functions (introducing oneself) in mind.</td>
<td>Create a product (report, video, play, exhibition, holiday plan).</td>
<td>Create content for future learning and promote conversation for language emergence opportunities.</td>
</tr>
<tr>
<td><strong>Task types</strong></td>
<td>Closed tasks with limited solutions.</td>
<td>Open tasks with variety of feasible and acceptable solutions.</td>
<td>Student-defined tasks whose solutions are seen as opportunities for further learning.</td>
</tr>
</tbody>
</table>
### Results

| Correct / Incorrect | Products are evaluated on the basis of criteria: various results are acceptable. | Products are not necessarily evaluated, but reflected upon by the student with the teacher's guidance. |

### Resources

| All resources provided by designer. | Initial resources provided as starting points. | Resources can be suggested by teacher; student explores environments and discovers resources. |

### Activities

| Tasks often designed for specifically provided materials. | Task control mostly through the product specifications. | Little control of tasks; tasks lead to the project output, which can become content for future lessons. |

Adapted from Koenraad & Westhoff, 2003

### 9. Extending the learning phases and the changing role of the teacher

Dogme language teaching extends the language learning phases of a LanguageQuest, because students are encouraged to create the content (in effect the materials) for subsequent lessons: the LanguageQuest output (project work by the student in the form of text, video and/or audio), can be continued in a Dogme lesson as the starting point for future lessons. The Dogme dialogic approach draws on the quest outcomes to explore the language skill issues that have arisen. In this sense, the quest product is merely an intermediary product, or just part of the lesson process.

Dogme can increase the student’s participation in their own learning, because they are involved with the quest planning and preparation. Since virtual worlds are exploratory experiences, it is the student who decides where to go and who to speak with. The planning phase of the quest is therefore another communicative learning opportunity for the learner.

### 10. Learning phases of LanguageQuests and VirtualQuests

The learning phase in a Dogme approach is also different in nature, because Dogme draws on emergent pedagogies, where the learner's inherent learning capacities are activated so that language skills will emerge (internally) rather than be acquired (externally). As such, language learning affordances, or opportunities, arise from the 'conversation' or lesson content; this is quite different from the teacher preemptively teaching an aspect of language (lexis, grammar, etc), as is conventionally the case. The teacher's role becomes more focused on facilitating these learning opportunities through responding to the student's communicative needs throughout the lesson (Meddings & Thornbury 2009). In terms of focusing on form, the teacher will continue to draw the student's attention to linguistic elements, but only as they arise incidentally in lessons (Long 1991 cited in Meddings & Thornbury 2009).
Table 2. Comparison of learning phases in both a LanguageQuest and a VirtualQuest.

<table>
<thead>
<tr>
<th>LanguageQuest</th>
<th>VirtualQuest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conception (educator)</td>
<td>Conception (educator)</td>
</tr>
<tr>
<td>Quest design (educator)</td>
<td>Quest planning process (learner)</td>
</tr>
<tr>
<td>Preliminary quest planning (learner)</td>
<td></td>
</tr>
<tr>
<td>Research and production (learner)</td>
<td>Research and production (learner)</td>
</tr>
<tr>
<td>Product evaluation (educator)</td>
<td>Product as content for subsequent lessons (learner)</td>
</tr>
<tr>
<td>Reflection (learner)</td>
<td>Reflection and dialogue for emergence (learner)</td>
</tr>
</tbody>
</table>

11. Flexible approaches to virtual worlds

The VirtualQuest has thus far been presented as a component in a logically sequenced project, whereby the student plans activities (including virtual world based research) with a specific output (eg a report or presentation) in mind. However, informal virtual world experiences also lend themselves to incorporation in other ways. Virtual world activities that were not intended as research can subsequently be reflected upon and included in a quest-like project.

Pierre Moussy, a student at Avatar Languages, drew upon his previous interactions in Second Life when preparing for a conference presentation, in which he discussed his experience using the 3D virtual world for informal language practice. In this case his virtual world experiences were included in the presentation project only retrospectively. Furthermore the output of his work was a presentation given within Second Life at the annual SLanguages 2009 conference on virtual world language learning. His presentation is available at http://www.slanguages.net/archive.php.

This article presents the use of virtual worlds at the research phrase of a project with a clear WebQuest format (design, research, and output). However, as the above example shows, virtual worlds offer opportunities for informal learning and practice that can be included at other phases, including the final presentation within a virtual world itself.

12. Conclusions

VirtualQuests offer opportunities to draw upon the communicative and motivational benefits of simulations, within the context of a LanguageQuest project. VirtualQuests naturally focus on dialogic learning through the creation of a low-risk, yet realistic, environment for communicative language work. There is also considerable flexibility in terms of when and how the virtual world experiences are incorporated into a quest project. However, these same opportunities also require certain responsibilities on the part of both the student and the teacher: greater learner autonomy inevitably leads to increased responsibility for one’s own learning; that similarly requires the teacher to enable a more autonomous learning process. In this way, the role of the teacher becomes increasingly that of facilitating a reflective and exploratory conversation, which leads to language learning opportunities. Dogme’s focus on the role of conversation as content and its foundations in emergent pedagogies, places it well to offer teachers some guidance in this.
References


