Wiki Tools and English for Academic Purposes -Fostering Collaborative and Autonomous Learning in Higher Education

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Abstract
In the second stage of Web evolution, known as semantic Web, collaboration is the key word of most human activities performed on and offline. According to Lev Vygotsky, learners develop socially when they collaborate with their more capable peers. In this context, individuals learn in accordance with their own aspirations to reach the social level they initially planned to attain. As numerous research projects have demonstrated, wiki technology and wiki tools are efficient instruments for implementing collaborative learning in teaching English as a Foreign Language (EFL) and particularly English for Academic Purposes (EAP). Our article will describe the authors’ first attempt at introducing a wiki tool in the process of teaching EAP for EFL undergraduate students in social sciences and the lessons learned from both success and failure. Initially used for course and syllabus management, our wiki project also aimed at enhancing students’ and teacher’s involvement in collaborative online content creation with special emphasis on the participatory dimension of both parties and developing autonomous study skills. The wiki learning platform was designed to support a blended learning approach of the EAP course. Materials were presented in a variety of formats (text, pictures, audio, video, multimedia) embedded in a gradual guided approach (adapted to students’ needs) to learning in a Web 2.0 environment. Wiki generated usage statistics and an end-of-project web-based questionnaire helped us collect important information on students’ computer/internet skills as well as their attitudes to using an online environment for learning English. This is meant to be a first step in investigating the impact of Web 2.0 technologies on students’ learning behaviour and language acquisitions. Our research will move on to a series of experiments designed to create a device to assist teachers in creating a collaborative environment based on learners’ compatibility and affinities drawing on Vygotsky’s social constructivist approach and using methods from the game theory.

Keywords: wiki, collaborative learning, Vygotsky’s theory, Web 2.0, statistical facts

Rezumat
În a doua etapă a evoluției Web, cunoscut sub numele de web semantic, colaborarea este cuvântul cheie al majorității activităților umane efectuate on și off-line. Poartă lui Lev Vîgotski, elevii își dezvoltă competențele/abilitățile sociale atunci când colaborează cu colegii lor mai capabili. În acest context, indivizii învăță în conformitate cu aspirațiile lor de a ajunge la nivelul social planificat inițial. După cum au demonstrat numeroase cercetări recente, tehnologia și uneltele de tip wiki sunt instrumente eficiente pentru implementarea învățării prin colaborare în predarea limbii engleze ca limbă străină (English as a Foreign Language sau EFL) și în special în engleza pentru scopuri academice (English for Academic Purposes sau EAP). Articolul nostru va descrie prima încercare a autorilor de a introduce un wiki în procesul de predare a englezei pentru profesoarele academice pentru studenți non-nativi aflați în anul întâi ai unei facultăți de științe sociale și lecțiile învățate din succesele și eșecurile înregistrate. Inițial utilizat pentru organizarea cursului și a materialelor de studiu, proiectul nostru a mai vizat consolidarea implicării studenților și a profesorului într-un efort comun de creare de conținut online, cu un accent special pe dimensiunea participativă a ambelor părți și dezvoltarea competențelor de studiu autonom. Platforma de învățare wiki a fost concepută pentru a sprijini o abordare de tip „învățare combinată” (blended learning) a cursului. Materialele au fost prezentate într-o varietate de formate (text, imagini, audio, video, multimedia), încorporate într-o abordare graduală (adaptată la nevoile studenților), menită a ghida procesul de învățare într-un mediu Web 2.0. Statisticile de utilizare generate de aplicația wiki și un chestionar de final de proiect ne-au ajutat să adunăm informații importante despre deprinderile de utilizare a calculatorului și a internetului ale studenților, precum și atitudinile lor față de utilizarea unui mediu on-line pentru învățarea limbii engleze. Acest proiect este menit să fie un prim pas în investigarea impactului tehnologiilor Web 2.0 asupra comportamentului de învățare și achiziționarea a limbii străine. În continuare, amm dori să extindem cercetarea noastră prin realizarea unor experimente care să faciliteze realizarea unui mediu colaborativ în baza abordării social constructivistice a lui Vîgotski și a unor metode derivate din teoria jocului.

Cuvinte cheie: wiki, învățare colaborativă, teoria învățării a lui Vygotsky’s, Web 2.0, date statistice
1. WIKI AS A TOOL FOR LEARNING ENGLISH

1.1. General Background

Due to the large circulation of English for communication in most domains, interest for teaching / learning English as a Foreign Language is extremely high. Of late, a series of surveys have focussed on the impact of social media tools on the learning of English. For instance, Schwartz reports (Schwartz, 2003) that wikis have been successfully implemented by 24 universities in Canada, UK, USA, New Zealand, and Germany for distance learning programmes in applied disciplines. However, for the purposes of this research, we have examined only European projects that have introduced social media tools for the learning of the English language in a European Union member country. Extended information is provided in the Study on the impact of information and communication technology (ICT) and new media on language learning, which was conducted between June 2008 and May 2009 (Resnick, 1991). Its main goal was to identify trends, opportunities and practices beyond schools and universities, in professional / working and personal life, including the use of ICT and new media in formal, non-formal and informal language learning. The participant countries were the UK, Greece, Cyprus, Finland, Spain, Hungary, France and Germany. The report emphasises that learning takes place in an environment conducive to learners’ critically evaluating the usefulness of the learning material and determining its potential value for their personal and professional life. Actually, recommendations formulated by the authors of the report concern the best options for qualitatively and quantitatively optimum learning methods in relation to time resources and personal aspirations. Besides cost and age limitations as to the use of ICT in language learning, the survey highlighted another interesting barrier, this time related to attitude, namely for most subjects language learning is “intrinsically related to face-to-face communication and immersion in the target culture, in ‘real’ (physical) rather than ‘virtual’ settings” (Resnick, 1991; Schwartz, 2003). However, while adults seem to use frequently mass media, BBC-like sites and social networks to learn non-formally and informally a foreign language, younger learners (pupils, students) have shown increased interest for Web 2.0 tools such as wikis, blogs, social bookmarking for study purposes in both formal and non-formal settings.

The findings and the recommendations of this ample survey have further substantiated our decision to introduce the wiki as learning environment based on the social constructivist premises mentioned in the introduction, where acquisition of a foreign language can be seen as the result of the collaborative effort of a community cumulated with individual endeavour.

1.2. Local Context

Recent data from Europe’s Digital Competitiveness Report (2009) show Romania both ranking relatively modestly in terms of internet usage and internet skills and having undergone some progress as well. Thus, as compared to 2006, Internet usage in terms of general activities has increased significantly. Yet, less than 38% of the population uses the Internet for communication, from which 19% on a daily basis and the rest at least once a week. Internet usage for educational purposes is still timid, accounting for only 3% of the users. Yet, in comparison with 2006, when 8% of the users accessed the Internet to seek information for learning purposes, in 2009, the percentage increased to 25%, which represents a significant growth if we take into account Romania’s economic situation and the degree of Romanians’ access to technology (Preda, Stanica, Crisan, 2010).

In an optimistic view, we can say that Romanians’ usage of the Internet for daily activities has increased. The authors consider that if the increase of Internet usage in all areas continues at a similar pace with that registered in the interval 2006-2009, a significant advance will become a
reality. Besides being an additional incentive, these data have confirmed that our initiative to implement a collaborative learning platform was a good decision.

In Romania, the present period is defined by attempts to change higher education into a more research and market based system as well as by the accomplishment of the transition to the more flexible Bologna system. In terms of critical competencies, early 21st century policies followed by our country state that “critical thinking, generalist (broad) competencies, ICT competencies enabling expert work, decision-making, handling of dynamic situations, working as a member of a team, and communicating effectively” (Seitzinger, 2006) are required of active members of present-day society.

Pioneering research and projects on the impact of Web 2.0 technologies in teaching/learning in Romanian secondary and higher education by our colleagues Gabriela Grosseck (West University of Timisoara), Carmen Holotescu (Polytechnic University of Timisoara), and Anisoara Pop (Dimitrie Cantemir University in Targu-Mures date back as early as 2003-2004. The results of their research in this area have been an encouragement for the authors of the present study and a sign that small steps taken in the right direction will finally cumulate in a critical mass that would determine the long expected change, especially in terms of attitude towards what currently is called “the learning revolution.”

1.3. Language learning at tertiary level and Web 2.0 tools

In language learning at tertiary level, the traditional teaching methods such as “presentation-practice-production,” followed by communicative, task-based, or project-based methods are gradually being replaced by a “post-method” stage (Harriman, 2010: pag. 78) where a prior analysis of the learning context, together with macro strategies such as maximization of learning opportunities, facilitating negotiation, fostering language awareness, promoting learner autonomy etc. (Kumaravadivelu, 2001, 2006, quoted in Harmer, 2007: pag.78) and reflective practice would ensure optimum results. This way, both teacher and students can participate in curricular and syllabus decision, as well as in choosing the most adequate/efficient methods that take into account cultural, social and personal variables.

Another factor to have played an important role in the change of paradigm in language teaching is the development of digital literacy and of the view according to which, rather than simple assistive tools for transmission of information, technology-enhanced learning environments are conducive to higher cognitive performance. One of the foremost promoters of this paradigm shift, David H. Jonassen, claims that

“Constructivist models of instruction strive to create environments where learners actively participate in the environment in ways that are intended to help them construct their own knowledge, rather than having the teacher interpret the world and ensure that students understand the world as they have told them. In constructivist environments, like cognitive tools, learners are actively engaged in interpreting the external world and reflecting on their interpretations. This is not <active> in the sense that learners actively listen and then mirror the one correct view of reality, but rather "active" in the sense that learners must participate and interact with the surrounding environment in order to create their own view of the subject”

(Harriman, 2007)
Thus, the unprecedented development of collaborative technology and its successful use in language learning at tertiary level (Kommers, 1992; Kovacic, Bubas, Zlatovic, 2007a) has determined us to make a similar attempt to implement a collaborative learning environment believing that local context adaptations in terms of motivation, time and resource constraints are necessary for ESP/EAP curricula to cater for a variety of needs pertaining to general communication, and professional, social and personal development. As to the role of technology, we believe in its role of “improving learner’s learning experience” and “support real world, constructivist, collaborative, problem solving learning experiences” (UNESCO, 2002).

2. WIKI-BASED ENGLISH FOR ACADEMIC PURPOSES COURSE

The course in English for Academic Purposes for undergraduate first year (EFL) students enrolled at the Faculty of Sociology and Social Work of Babes-Bolyai University in Cluj-Napoca is a two-semester, two hour/week practical course. Various factors, mostly economic and cultural, have generated constraints that affect the quality of the learning process, learning outcomes and the student / teacher satisfaction. The most obvious are classes comprising more than 30 students with heterogeneous levels ranging from A1 to C1 (cf. CEFL), and low attendance. Cultural and psychological factors such as fear of change/new and low motivation are beyond the scope of our project but investigations in these areas would certainly bring light to many aspects pertaining to the learning process.

The major characteristics of ESP/EAP courses identified by Carver (Carver, 1983) (authentic material, purpose related-orientation and self direction) are supported by a blended learning approach consisting of face-to-face practical courses (teacher-driven for the input of basic concepts and guided practice in reading / writing / presenting for academic purposes) and individual/ group assignments on wiki based resources. Authentic materials are presented in a variety of formats (audio, video, multimedia) embedded in a gradual guided approach (accompanied by reference links to EAP tutorials from other universities and internet-based activities tutorials adapted to students’ needs) to learning in a Web 2.0 environment. The self direction assumes that learning is not incremental (learners tend to acquire the language system when they are ready, not necessarily in the order they are presented by teachers / course books) and there must be a systematic attempt by teachers to teach the learners how to learn by teaching them about learning strategies. The results of a pre-sessional needs analysis\(^1\) showed that students have a level of general English ranging from A2 to C1 (according to CEFL) and very little knowledge of academic culture such as genres, conventions etc.

Pursuant to wiki theory and the rationale mentioned in the first parts of this study, we created a web platform as extension for the blended learning course in English for Academic Purposes. The wiki platform is based on the wiki hosting service Wikispaces because of its deductible and user-friendly interface that requires only minimum internet skills and can be used after a basic instructional session.

The structure of the wiki space allows for a work-in-progress approach to differentiated learning.

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\(^1\) As seen by Dudley-Evans and St John (1998: pag. 125) a flexible needs analysis should take into account “learners as people, as language users and as language learners” [Dudley-Evans, T., St. John, M.J., (1998). *Developments in ESP: A multidisciplinary approach*. Cambridge: Cambridge University Press].
Its structure consists of a central teacher-generated input area and n adjacent student pages, whose progress on a relatively regular basis by means of user-generated content accounts for organic growth. This makes course management accessible and flexible.

The “teacher area” consists of several pages grouped according to their communicative purpose: (1) course organisation: home page with page descriptions, course rationale and course schedule; (2) tutorials for using Web 2.0 tools and wikiquette rules; (3) course materials consisting of two modules, academic reading and academic writing; (4) support pages and a chat page for synchronous discussions; (5) page history and change notification for all wiki pages; (6) student page structure, membership, wiki and page permissions.

In the adjacent area dedicated to the students, the teacher imposed a uniform format for the student page in order to guide the assimilation of the new instrument for interactive learning. This section is composed of (1) student profile: name, photo, “about me” information (brief presentation (maximum 200 words): bio, interests, ways of spending leisure time - it is recommended that you
spice them up with videos, photos, your own creations, favourite music/books/movies etc., quotes, technology experience etc.), assignments; (2) synchronous (chat widget) and asynchronous (page discussion tab) communication for teacher/student feedback on current assignments and issues related to wiki activity; (3) page history and notifications.

Figure 3 Student page

3. WIKI-BASED ENGLISH FOR ACADEMIC PURPOSES COURSE: A FEW STATISTICAL FACTS

In the first year of implementation, we focussed on finding out whether the wiki environment can foster individual work and knowledge building with a minimum (no compulsory) participation in the face-to-face course meetings. The results our study will be described below.

The group consisted of 38 enrolled students out of which 35 created accounts on Wikispaces and joined Socio12009 as shown in the graph:

Figure 4 Accounts created in the interval February-July 2010 (%)

The majority of the students created their accounts and joined the wiki in March (54%).
The frequency of wiki page views helps to follow the dynamics of the course attendance, namely:

1. in the first part of the semester (February-March) students viewed mainly pages related to course organisation, Web 2.0 technology, frequently asqued questions, wiki rules and the sample student page containing information required to build their individual pages;
2. in the second part of the semester (April-May) students viewed pages with information related to course materials and assignments, namely academic reading and academic writing;
3. finally, in June, when the exam session began, all page views increased significantly their frequency.

All in all, the most visited pages in all interval were the home page, the reading and writing pages. Unfortunately, this interest was not matched by editing activities since wiki usage statistical data show low figures in terms of page edits. Out of the 35 registered members, 19 edited their allocated page with average editing 22 per total. We consider this mainly a consequence of the lack of feedback/interaction such as messages, which registered very low figures in both students’ and teacher’s activity. This weakness definitely needs more attention in the future.

According to the number of page views on the wiki platform, there are 3 categories of students, namely with low activity (below 15 page views), with average activity (between 15 and 30 page visits) and high activity (over 30 page visits). We applied the Kurskal-Wallis test for independent and unequal samples. The null hypothesis of the test is that there are differences in the capacity to assimilate information among the three studied groups.

In terms of wiki activities, we noticed three categories of students: low activity students (below an average of 15 views/month), medium activity students (average of page views between 15 and 30/month) and high activity (more than 30 page views/month). We applied the Kurskal/Wallis test for independent and unequal samples. The null hypothesis is that there are differences between the three categories in terms of information processing. The resulting statistical result is 27,94 based on a p value <0.01 with 2 freedom degrees, which means that we reject the null hypothesis and state that there are differences among groups in terms of information processing related to the number of page views.
Thus, we have tried to determine whether there is a correlation between the views and the number of edits of each student category and for the whole sample. The result obtained and interpreted according to Colton (1974) is (DruganTigan, 2005):

1. In the group that had an average of less than 15 views/ month, we calculated the Bavaria-Pearson correlation coefficient and we obtained $r=0.17<0.25$, which means a weak, almost null correlation, with low association degree, as can be seen from the table and the graph below.

<table>
<thead>
<tr>
<th>page edits</th>
<th>view</th>
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<tbody>
<tr>
<td>page edits</td>
<td>1</td>
</tr>
<tr>
<td>view</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Table 1. Correlation Page Edits/View

The regression line that approximates the tendency of the dot cloud is based on the equation: $y = 0.73x + 297.3$ and of the coefficient of determination $R^2 = 0.029$. This equation has a very low level of trust, with a coefficient of determination of only 0.029, which means that there is a correlation between the two activities only for two users in a hundred.

![Figure 6 Regression line](image)

2. In the group that had an average of [15,30] views, we calculated the pearson correlation coefficient and we obtained $r=0.683$, which means a good correlation which is visible in the table and the graph below:

<table>
<thead>
<tr>
<th>page edits</th>
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<tbody>
<tr>
<td>page edits</td>
<td>1</td>
</tr>
<tr>
<td>view</td>
<td>0.683</td>
</tr>
</tbody>
</table>

Table 2. Correlation View/Page Edits
The regression line that approximates the tendency of the dot cloud is based on the equation $y = 4.752x + 106.1$ and the coefficient of determination $R^2 = 0.465$. The trust level of this equation is good, with a coefficient of determination of 0.465, which means that there is a correlation between the two activities for 4 users in 10 for this group.

3. Within the group with a rich activity, namely more than 30 views/month, the value of the Pearson coefficient was $r=0.14<0.25$, that is a weak almost null correlation, with a low level of association, as shown in the table and graph below.

<table>
<thead>
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<tbody>
<tr>
<td>page edits</td>
<td>1</td>
</tr>
<tr>
<td>view</td>
<td>0.14</td>
</tr>
</tbody>
</table>

**Table 3. Correlation View/Page Edits**

The regression line approximating the tendency of the dot cloud is based on the equation: $y = 0.041x + 46.61$ and on the coefficient of determination $R^2 = 0.018$. The level of trust of this equation is very low, with the coefficient of determination being 0.018, which means that there is a correlation for the two activities for 1 user in 100 for this group.
The conclusion of our statistical analysis is that the great number of students with low interest for individual study based on the wiki resources is mainly due to the low frequency of teacher feedback, low attendance of face-to-face meetings (no compulsory attendance was stipulated at the beginning of the semester) and, finally, the students' own type of involvement in the learning activity, namely slow start and increased frequency after mid-semester and at the end-of-semester intervals, when assessment constraints became imminent.

4. CONCLUSIONS

Due to the transition to the semantic web where most activities are carried out under the sign of collaboration and the results of numerous studies/surveys attesting Web 2.0 technologies' beneficial impact on learning, we have decided to introduce the wiki as a component of a blended learning approach to learning English for Specific/Academic Purposes.

Our research will continue with corrections and adaptations of the wiki platform in order to meet the needs of students by creating a balance of face-to-face meetings and wiki presence, a regular feedback pattern teacher-students and distributing tasks and assessment/self-assessment activities during the semester interval.

A long-term goal would be to identify student profiles based on an interdisciplinary approach (cultural, educational, demographic, language level dimensions) that would allow us to personalise the collaborative learning process into more efficient working groups. This would help us build a determining/defining pattern of relationships based on methods from the game theory that would help optimise the learning process and bring about enhanced professional, social and personal results for all parties involved.

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