



Analysing the myth of digital natives in an English course: A higher education collaborative approach

Begoña Montero-Fleta^a, Carmen Pérez-Sabater^b

^a Universitat Politècnica de València- Spain
Department of Applied Linguistics
bmontero@upvnet.upv.es

^b Universitat Politècnica de València- Spain
Department of Applied Linguistics
cperezs@idm.upv.es

Keywords: *Digital natives, Wikis, collaborative learning, active learning, English language learning, grammar.*

Abstract

Researchers nowadays claim that educators must accommodate the learning styles of “digital natives”. Thus, many new and challenging educational experiences have tried to cater for the “singularity” of digital natives. These studies have focused on facilitating the communication between teachers and students using the students’ own language and style. In this context, we analyse the use of a Web 2.0 application in higher education integrated in a traditional language course. The paper questions the technical expertise of digital natives and observes the contribution of Web 2.0 to promote construction of knowledge while developing a proficiency in English. The conclusions signal the rewarding benefits of Wikis to construct knowledge collaboratively and the positive effects on the improvement of linguistic skills. Additionally, the study suggests that the incorporation of new online projects into traditional higher education requires careful planning with consideration given to sound pedagogy so as to lead to effective learning.

1 Introduction

The present research describes a computer-mediated communication approach that incorporates a Wiki platform into an English course calibrated according to the Common European Framework of Reference for Languages (Council of Europe, 2001). The purpose of our study is to observe digital natives’ learning styles in specialized higher education. As Prensky (2001) put forward, digital natives are native speakers of the digital language of computers, video games, and the Internet, people that were born in -or after- the 1990s.



1.1 Rationale in terms of higher education

Since the Sorbonne Declaration in 1998, the priorities for the European Higher Education Area (EHEA) have been to promote policies to improve the quality and relevance of higher education. Specifically, much attention has been paid to learning for the future; in other words, higher education should enhance the competences required to face the challenges of the New Millennium. The philosophy behind the EHEA has required a deep modification of educational models introducing new methodologies aiming at students' life-long learning for either personal or professional purposes. Apart from discipline-specific competences, following the recommendations of the EHEA, students must master generic skills so as to be able to communicate effectively in the international labour market. For the purpose of our research, we would like to emphasize and comment on these priorities posed by the European Higher Education Area: employability skills; i.e., the ability to use new information technologies, learner-centred construction of knowledge, and the development of a proficiency in languages:

(a) Employability skills which entail, for example, the integration of students in groupwork, a fundamental requirement for their later employability. Recruiters often value the candidate's experience working in group settings, and identify team work as one of the core transferable skills valued by employers in the workplace (Elgort et al., 2008). Educational approaches have traditionally paid more attention to individual work than to groupwork; however, groupwork is today considered more effective for promoting student learning and retention than traditional teacher-centred methodology (Montero-Fleta & Pérez-Sabater, 2011).

(b) The ability to use new information technologies, the basics of which should not present a problem for most higher education students, as they belong to the New Millennium and are digital natives (Prensky, 2001). Web applications that facilitate participatory information sharing and collaboration on Web 2.0 can help to create constructivist learning environments that may imply a challenge for students to participate in a more active way in their education. However, some students may be reluctant to use recent Web 2.0 technologies in their studies as a mandatory activity that would be assessed (Anson & Miller-Cochran, 2009).

(c) A shift of the role of the instructors, from providers of information to facilitators of student learning, which involves a change from teacher-centred construction of knowledge to learner-centred. While in the traditional objectivist learning model, which has dominated higher education institutions, experts convey information to novices, in constructivist learner-centred approaches, teachers are facilitators of knowledge (Anson & Miller-Cochran, 2009). In constructivist learning, rather than passively receiving knowledge from the instructor, active learners need to do activities to construct knowledge (Dewey, 1916) and manage their own learning. Construction of knowledge requires an active involvement of the learner by exploring possibilities, inventing alternative solutions, collaborating with other students, trying out ideas and hypotheses, revising their thinking, and finally presenting the best solution they can derive (O'Loughlin, 1992; Cole, 2009).



(d) The development of a proficiency in languages, the acquisition of linguistic and communication skills and the ability to get a message across to others clearly and unambiguously are critical skills for professional success.

The present article takes all these factors into account and provides a new insight into the utilization of innovative Web 2.0 learning spaces in a university degree of Library and Information Science with students born in the last decades of the 20th century, i.e., digital natives. The incorporation of these four priorities in our teaching context will be revealed in Tables 1, 2, 3 and 4.

1.2 Digital natives and digital immigrants: Their new learning styles

The metaphor “digital natives” was coined by Prensky (2001) [¹] to refer to children and young adults that were born into the digital era. Conversely, teachers, who were born before the digital era, are considered “digital immigrants”, immigrants to computers, computer games, and the Internet. The initial binary distinction put forward by Prensky, however, has been defied recently by some scholars who have challenged its technological and biological determinism (e.g., Selwyn, 2009). That apart, researchers have claimed that factors such as the digital divide have not been taken into account in this over simplistic and shallow duality (Brown & Czerniewicz, 2010).¹

Fundamentally, the distinction between digital natives and non-native users of computer technologies implies that current students learn differently compared with past generations (Bennett et al., 2008). Thus, researchers nowadays contend that educators should have to face the demand for accommodating the learning skills of this ‘net’ generation and meet their learning needs. Many new and challenging educational experiences have been developed in the last few years aimed at catering for the “singularity” of digital natives, so that teachers can communicate with students in their language and style (Prensky, 2001). Consequently, the new learning tools provided by the Internet are more prominent than ever in higher education to “meet the connectivity demands that today’s students expect” (Blattner & Fiori, 2009, p. 17).

There is a vast amount of literature on the Wiki technology, although not much research has focused on its educational use. A Wiki website is: “a medium in which a group of individuals can work together asynchronously on an idea and easily capture the essence in a reusable format” (Mindel & Verma, 2006:1). The principles of writing in Wikis echoes Bakhtin’s (1986) dialogic nature of language and complies with the three elements necessary to foster learning described by Tinto (2003): mutual engagement, shared repertoire, and joint enterprise. The collaborative work carried out in a learning community develops a common ground of knowledge, putting into practice authentic tasks, knowledge development, and research or reflection, as reported in a previous article by Montero-Fleta & Pérez-Sabater, (2011).

¹ In 2009, Prensky nuanced this distinction and referred to “digitally wise persons” instead. However, for the purpose of this research we will centre on his original distinction well established in the literature.



The most common pedagogical application of Wikis is supporting writing instruction. The effectiveness of Wikis for collaborative learning and writing has been discussed in some recent studies (Bold, 2006; de Pedro et al., 2006; Leung & Chu, 2009, Lund, 2008). As Lamb (2004: 8) stated: "... Wikis stimulate writing, provide a low-cost but effective communication and collaboration tool, promote the close reading, revision and tracking of preliminary work". The advantages of reflection, reviewing, publication, and of observing cumulative written results are maximized as they unfold. As noted in an earlier paper on Wikis by Montero-Fleta & Pérez-Sabater, (2011), Wikis can be used by a team for joint writing where students engage actively exchanging ideas and can involve learners in their own construction of knowledge. Recent studies have investigated Wikis in language learning contexts, e.g., Mondahl, & Razmerita (2014). Scholarly research has focused specifically on students in primary and secondary schools (see Chang & Schallert, 2005). Positive experiences on collaborative learning and academic pilot studies in English for Specific Purposes have been published by Zorko (2009) or Kuteeva (2011). On the other hand, in more general higher education contexts, these new approaches to teaching and learning are sometimes difficult to implement, since the traditional model of education is deeply rooted in the university. In this sense, some scholars have described unsuccessful implementations of a Wiki-based activity in their learning environment. Cole (2009), for example, had a negative experience in introducing a Wiki technology into an existing teaching format; in her project; she claimed that the activity failed because it was poorly designed and did not motivate students.

At the moment, the use of Wikis to suit the assumed distinct learning styles of digital natives is attracting scholarly attention. Nonetheless, the incorporation of Web 2.0² in the language classroom to develop collaborative authoring through a Wiki approach is still in need of more research (Kuteeva, 2011). Further studies on current learning spaces and the introduction of Wikis to practise other linguistic skills than writing in higher education may be of interest. What is more, the "singularity" described by Prensky (2001) of current university students in specialized learning environments needs to be analysed as some innovative research has recently questioned the distinctive learning styles of digital natives (Bennett et al., 2008). Considering the research gap in our specific teaching context, introducing Web 2.0 tools in the learning process of our students may have an added value, as contended by Frumkin (2005) and Chawner and Lewis (2006). This added value is given by the fact that distributed content management tools are likely to be part of professional practice in information work in the near future, i.e., the field of study of our students.

2 Scope of the study and research aims

This research is in line with The European Higher Education Area (EHEA)'s emphasis on individual responsibility for learning. In language learning, the Common European Framework of Reference for Languages (CEFR) also encourages the development of independent learning. In the present research, the use of Wiki webpages was incorporated in

² Term fully accepted worldwide in the conference organised by O'Reilly in 2004. In that conference, a preliminary set of principles of Web 2.0 were established, being the first principle: "the web as a platform" (O'Reilly, 2007).



an English course as an innovative, technological and collaborative tool, to accommodate education to the skills and interests of digital natives, as suggested by Prensky (2001).

The purpose of this study was to implement a learning model based on constructivist principles and examine the process and product of Wiki interactions and students' involvement. Besides, this collaborative writing project focused on improving English grammar correctness in a higher education environment. The study centred on the learning style of digital natives in technologically oriented learning environments. Both the students' and teachers' feedback on the experience and the benefits of the activity for language learning were analysed. On balance, our research questioned the myth of digital natives, the homogeneous technical expertise of young adults and their need for particular learning styles. The following research questions were the focus of our study:

1. Do Wikis help the integration of digital natives in groupwork?
2. Do digital natives use Wikis proficiently?
3. Do Wikis promote learner-centred construction of knowledge in specialized environments?
4. Do Wikis contribute to the development of a proficiency in grammar?

3 Design of the study

3.1 Participants

The context in which we theorized and described a collaborative learning model was a graduate-level subject in a program in Library and Information Science at the Polytechnic University of Valencia that took place during the first semester of the 2011-2012 academic year. This required subject of English had been taught for the last ten years by the same faculty members, the authors of this study. Since this subject was framed in a technical context, that is, the School of Computer Science and Engineering, it offered us the right context for investigating how digital natives saw the incorporation of new technologies to language learning. The participants in the project were all the students registered in this required subject of English. Their level was lower intermediate, B1 according to the CEFR. At the end of the course, students had to attain the following level in the CEFR scale: upper intermediate or B2. The profile of the participants was young adult students, 45 male and 19 female. Their average age was 23, 60 were 23 and 4 were 22. They were university students born around 1990 in a developed European country and thus, most of them digital natives (95%). These figures were obtained through a simple survey on the students' use of computers and the Internet, which was administered and developed following the questionnaire published by Margaryan, et al. (2011). This survey had shown that all of them used technology on a daily basis and had a positive attitude to the incorporation of new technologies to their university lessons. Interestingly, these students were even more experienced in the use of new technologies than standard digital natives in our country, due to the technical character of their university context. Besides, the fact that 20% of the participants already had a degree in computing evidenced their high technical expertise.

We would like to mention that, as commented above, we chose this sample of participants because they were registered in a subject that the authors had been teaching for approximately 10 years. The participants had experienced so far traditional lecture models in language



learning. In this particular context, a new collaborative model that implied students' involvement in knowledge construction was a challenge for them.

3.2 Methodology: The Wiki project

At the beginning of the course, we administered a diagnostic test to the students which showed grounding grammar deficiencies, mainly in the verb system and the use of prepositions. To solve this problem, we designed and carried out this pilot study over the course of a semester, which consisted in the creation of a grammar textbook. We dedicated 1 hour per week to this task in class during the 15 weeks of the course; at least 1 hour more per week had to be devoted to this activity both at home and in the computer lab. Students' dedication to the subject was the same as in previous courses where the creation of a project with similar characteristics was required, but the use of Wikis was a novelty this time. The project followed the recommendations for level B2 of the Common European Framework of Reference for Languages (CEFR) on grammatical competence. According to the CEFR, grammatical competence is a key issue in communicative language learning. For grammatical accuracy in the level B2 or upper intermediate, the CEFR recommends that the student:

... [should have] good grammatical control; occasional 'slips' or non-systematic errors and minor flaws in sentence structure may still occur, but they are rare and can often be corrected in retrospect. Shows a relatively high degree of grammatical control. Does not make mistakes which lead to misunderstanding (Council of Europe, 2001: 114).

The grammar textbook created by the students was devised as a Wiki product, an example of constructivist learning, since it involved knowledge creation in groupwork. Teams were formed using the results of a diagnostic test from Dave (1992) *Oxford Placement Tests*, so that groups would have a heterogeneous linguistic level. As studied by Montero-Fleta & Pérez-Sabater, (2010), in this way, the students could work collaboratively in teams and learn from the other members of the team. The size of the group is important to reach maximum performance from each and every one of the students. In the pilot study here presented, students worked in groups of four because the results of our previous research had confirmed a better cohesion and intimacy in groups of four students.

Each group was assigned a specific grammar content type as a central topic of research. Individual groups were given the following instructions to create this grammar repository using a Wiki platform:

(1) Study the grammar point assigned. Check grammar books available in the library for information (Grammar points assigned were, e.g., the simple present, the simple past, conditionals, prepositions, linking words, etc.).

(2) Design a presentation of the theoretical content of the grammar point assigned. Highlight its special difficulties.



(3) Develop exercises of your own to put the grammar point into practice, making emphasis on the special difficulties involved. The vocabulary and context of the exercises will be closely related to your field of studies.

(4) Develop keys to the exercises.

(5) Deliver an oral presentation of the material developed. PowerPoint slides may be used.

(6) Your portfolio will include the presentation, exercises, keys, slides and references used. Self-assessment, group assessment and assessment of other groups' presentations will also be included.

To accommodate the learning styles of young adults, a new platform for teaching called PoliformaT was introduced in the university. This platform was used to host the activity. PoliformaT is based on the Sakai Project, an online Collaboration and Learning Environment founded in the University of Michigan and Indiana University. The PoliformaT Wiki website keeps record of the number of contributions over a period of time, hence showing the degree of collaboration and interactivity among members. It also offers the possibility to compare successive versions.

As suggested in the literature on new methodological environments, the teacher's role in technology enhanced language learning frequently tends to change (Rodgers, 2002). The teacher, as part of the constructivist model, is an instructor whose role centres on facilitating information sharing among learners, rather than on transmitting knowledge from teachers to students (Mindel & Verma, 2006). The teacher was always available for clarifications, both on specific content and on problems associated with technology. She involved each student in the process by checking that every student participated in the activity.

3.3 Data gathering tools

Research data were obtained from the following case study:

3.3.1 Process

An analysis based on a Likert scale was run with the respondents' specifications of their level of agreement to each statement in the questionnaire (see Tables 1, 2, 3 and 4), so as to get feedback towards their perception on groupwork and Wiki usability. The items of the questionnaire were chosen according to previous research on technically enhanced language learning by Montero-Fleta & Pérez-Sabater (2010) and by other scholars, such as Felix (2001), Salaberry (2001), Rodgers (2002) and Stepp-Greany (2002).

Moreover, to provide further feedback about the pros and cons of the implementation of the Wiki for collaborative work, students' motivation and attitudes, this research was supplemented with data obtained from a personal interview with the students following the patterns outlined in studies on the area like the one carried out by Bennett and Maton (2010). Thus, the interviews were conducted on a one-to-one basis. All the students were interviewed by the teachers/authors of this research for 5 minutes, 4 times during the course, once every month. They were asked about their learning preferences, attitudes towards technology, motivation and the development of the activity. The interviews were recorded and transcribed.



Concerning the data gathered, the participants explicitly agreed on the use of the data obtained in the study for research and dissemination of results. The following section, therefore, incorporates these data, although some interesting excerpts from these interviews can be appreciated more explicitly in Appendix A, Observations, at the end of this article.

3.3.2 Product

A survey measured students' perception of knowledge acquired. On the other hand, the material produced by the different groups was assessed by the teacher and also by the students. The assessment took place in the final sessions of the course, and was based on each group's presentation of the material collaboratively developed. To make grading simpler, a rubric containing criteria and standards linked to learning objectives was used as a scoring tool of group performance (see Appendix B).

The teacher's feedback on students' involvement was analysed according to their participation in terms of frequency, type and quality of contribution. They were traced on the number of times or length of interaction in the Wiki but mainly assessed for the quality of their contribution (see Appendix C). In addition, students took an achievement grammar test of the level B2 that was compared to the diagnostic grammar test administered at the beginning of the project.

4 Data analysis and discussion

These data are shown in response to the research questions posed and are related to the priorities of the European Higher Education Area (EHEA) mentioned in the rationale section of this article. As mentioned above, the items in each table are based on previous empirical research on language learning with technology (e. g. Felix, 2001). The results of the study are displayed in Tables 1, 2, 3 and 4 with an indication of the number of affirmative answers out of 64 respondents and the percentage they represent.

4.1 Research question 1: Do Wikis help the integration of digital natives in groupwork?

4.1.1 Students' perception

The data revealed that 71.95% of the students considered that the activity was motivating. Students showed a satisfactory degree of collaboration and interactivity among members but nearly half of the students questioned the suitability of the Wiki for groupwork. Moreover, 50% did not agree that the application favoured equal opportunities for participation.

	Strongly agree	Agree	Disagree	Strongly disagree
The Wiki website enhanced collaboration in groupwork.	20 31.25%	26 40.65%	16 25%	2 3.12%
The Wiki saved time in task completion.	16 25.00%	32 50.00%	14 21.87%	2 3.12%



The Wiki was more convenient than emails for groupwork.	12 18.75%	26 40.62%	26 40.627%	2 3.12%
The Wiki website favoured equal opportunities for participation.	14 21.87%	18 28.12%	16 25.00%	16 25.00%

Table 1 Students' perception on Wiki-based groupwork

Regarding the rewarding benefits of Wiki use in collaborative work, most students considered that the Wiki website had facilitated groupwork. As for the time dedicated to this task, most participants appreciated the time saved to construct the final document through successive interactions.

The features available in the platform were not always used successfully. Opinions against the convenience of Wiki projects (40.62%) showed the preference of some students for using email for their information exchange through consecutive drafts and elaboration of a final document. Many more students than expected shared these students' opinions.

An important issue in group assessment is recognizing the individual effort performed (Davies, 2009). As shown in Table 1 students did not agree that Wikis promoted similar contributions in length to knowledge construction from each student. Although the Wiki website recorded the successive contributions to the final draft, respondents were divided when discussing if the Wiki had shown the individual work done. They were particularly interested in the topic since part of their final assessment was going to be based on the extent and quality of their texts uploaded onto the Wiki website. For this reason, half of the students feared being judged as unproductive group members. The instructor had requested the use of the Wiki by all the students in the course; so, personal involvement of every student in every step of the process was expected. It is worth mentioning that some groups distributed roles among members, hindering the presence of some of them in the website. In some cases, a member of the group had been named to play the role of editor-in-chief and was the one responsible for updating the information in the Wiki, although all of them contributed equally. This demonstrated that the students in this group had used the Wiki simply as a repository of the work in progress.

Finally, it is important to comment that, in the interviews, some students stated their preference for carrying out this project individually.

4.1.2 Teachers' perception

From the teacher's point of view, being able to have access to the page history facilitated tracing each student's contribution. Wikis keep a record of the changes made as every version of the Wiki page is stored; and the teacher can revert to an older version of the page to see the



changes made in it. But, nevertheless, tracking down the changes made in successive interactions was a cumbersome task and extremely time-consuming for the teacher. An important fact to take into account regarding the Wiki assessment is that, although Wiki projects are generally devised for collective assessment because of the nature of the tool, in the present approach the students were assessed both for group and individual contribution. In our case, there were short interactions of some students which richly contributed to the final product. Conversely, some students interacted extensively but exhibited low quality contributions that did not improve the ongoing draft much. We were not surprised to see that highly committed Wiki contributors interacted more frequently than other students.

The students' engagement in the Wiki was satisfactory although not unanimous, as in a similar project carried out previously (Montero-Fleta & Pérez-Sabater, 2010); the lecturer checked the progress by accessing the Wiki regularly and gave feedback either verbally or by email on, for example, spelling errors or source citing, as indicated by Holtman (2009). Follow up treatments on Wiki collaboration and active research will require a higher emphasis on the participation of every student in the tasks, entering data, editing other group members' information, and putting into practice organizational and negotiation skills to meet learning objectives.



4.2 Research question 2: Do digital natives use Wikis proficiently?

Unlike Prensky's (2001) premises, the results indicated that for the Wiki website usability, not all the students of this research were at ease using this platform. Table 2 presents the responses to the statements and the equivalent percentage.

	Strongly agree	Agree	Disagree	Strongly disagree
Technical problems were encountered when editing.	10 15.62%	20 31.25%	32 50%	2 3.12%
Technical problems were encountered when using graphics and tables.	10 15.62%	30 46.87%	20 31.25%	4 6.25%
Technical problems were caused by low Internet speed.	8 12.50%	28 43.75%	22 34.37%	4 6.25%

Table 2 Students' perceptions on technical problems with Wikis

Participants complained about the tool. In their opinion the Wiki tool used was unfriendly. Moreover, it did not have any grammar or spelling checker, unlike word processing software. Nearly half of the students reported technical problems in editing when trying to add or correct contents or improve format. They commented on the difficulties when drawing graphics and tables, or about the Internet loading speed provided by the host server. The Internet speed did not depend on the broadband offered by the Internet supplier but on availability of the university host server. In the interviews, most students commented upon the unfriendly interface and the great amount of time dedicated to the activity.

In conclusion, these data imply that, in spite of the digital native character of the students involved in this project, they still encountered difficulties in dealing with technology proficiently, as the study of Cole (2009) also indicated. These results are in relation with recent pioneer research about digital natives and their technological expertise. The innate, expert character of current university students is questioned on the basis that children and young adults do not form a heterogeneous group: in this generation of digital natives there is a diverse and varied group of individuals with different relations to technology (Selwyn, 2009). In parallel, researchers have recently highlighted that this generation of students is fluent in the use of computers for some academic and recreational purposes, but a significant



proportion of current students have “lower computer skills than might be expected of digital natives” (Bennett et al., 2008: 778). In the interviews, the technical problems experienced made some students admit their preference for carrying out this task without a Wiki platform, as it had been carried out in previous years. Their commentaries support the idea of variations and differences in digital expertise and learning styles within this group of digital natives.

4.3 Research question 3: Do Wikis promote learner-centred construction of knowledge in specialized environments?

The quantitative analysis on the students’ perception of the use of Wiki sites on knowledge construction is shown in Table 3.

	Strongly agree	Agree	Disagree	Strongly disagree
The Wiki website was useful to construct knowledge collaboratively.	10 15.62%	30 46.87%	20 31.25%	4 6.25%
It was helpful to read the Wikis of the other groups.	12 18.75%	32 50%	18 28.9%	2 3.12%

Table 3 Students’ perceptions on knowledge construction with Wikis

Most students recognized the usefulness of the Wiki site to share and construct a project collaboratively. The groups’ feedback on the Wikis of the other groups helped to increase motivation and facilitated students’ learning from the work on the different grammar topics covered in the project. Notwithstanding this, few individual students were not happy to share their knowledge with other students; they feared that others might benefit from their knowledge.

On the other hand, the students were asked to report on the frequency of different types of contributions made during the project at the end of the course. In their opinion, new content was the most frequent type of contribution (51%), clarifying ideas and providing examples (13%) was second in the scale, followed by reorganizing information (11%), grammar revision (10%), style (5%), format (6%), and adding references (4%). The page history corroborated that some students were mostly involved in providing new content whereas few students focused more on rearranging already existing information (see Appendix C).

4.4 Research question 4: Do Wikis contribute to the development of a proficiency in grammar?

A vast majority of the students had positive feelings on the linguistic skills acquired through the implementation of the project as Table 4 highlights.



	Strongly agree	Agree	Disagree	Strongly disagree
The Wiki project helped you to learn the singularities of the grammar points dealt with.	34 53%	28 43.75	2 3.12%	0 0%
The Wiki project helped you to have a good command of the grammar units.	30 46.87%	28 43.75%	4 6.25%	2 3.12%
The Wiki project helped you to develop the theoretical and practical content required.	30 46.87%	34 53.1%	0 0%	0 0%

Table 4 Language improvement through Wikis

The findings demonstrate that our students' perceptions were very positive towards the benefits of the project carried out. In parallel, the results of the grammar achievement test administered at the end of the course confirmed the students' positive perceptions because they were much better than those obtained in the diagnostic test: a 15% improvement rate was observed. Therefore, the final assessment confirmed the teachers' initial intuitions that the project would make students pay closer attention to grammatical correctness and text organization, in line with the study carried out by Kuteeva (2011). What's more, at the end of the course, the results of the final grammar achievement test were slightly higher than those obtained in this same subject during the previous years. For example, during the course 2010-2011, 75% of the students passed, while in the year of the project, 2011-2012, 85% of the students were able to succeed.

On the other hand, throughout the interview with the students, many of the participants singled out that the approach had helped them improve grammatical correctness when writing in English. Students learned by delving into the grammar point assigned and by elaborating clear examples on this grammar point using vocabulary related to Library and Information Science. This enhanced the assimilation of the theoretical content and the integration of English writing skills into their professional field. Referring to topics of their degree and using specific vocabulary was important to most participants. Additionally, it is interesting to notice that our students enjoyed taking advantage of having the opportunity to learn from the work done by the other groups.

Feedback on the final project of all the groups involved gave rise to lengthy discussions supported by clarifications provided by the participants where linguistic skills were put into practice. For the students, a vital factor influencing the quality of the final product was



audience awareness. Being aware that all their peers would read their projects online forced them to pay closer attention to form and correctness, in accordance with the research on online writing published by Abras (2002) and Kuteeva (2011).

On the whole, the collective work carried out by the students implied a participatory approach to constructivist language learning that connected students across space and time. The Wiki approach created a student-centred learning environment which produced student-driven course content, a repository of topical knowledge for further use that supplemented and extended delivered material, as observed by Cole (2009). This knowledge repository may serve as the starting point for future projects carried out in the same subject on subsequent years, following the indications of Anson and Miller-Cochran (2009).

5 Conclusion

In general, the study has presented positive outcomes to the research questions posed, but certain data have surfaced in the study that we had not foreseen. The present approach provided the students with the opportunity to experience the implementation of online technologies in higher education for knowledge construction with further applicability in professional environments. However, unlike the very positive engagement of students in a previous research on the topic (Montero-Fleta & Pérez-Sabater, 2010), in the present study, the introduction of new paradigms and practices to language learning in higher education was partly successful. This research may break the myth of digital natives, as highly computer skilled young adults encountered technical problems in the tasks devised to meet their particular learning styles, a conclusion unforeseen in our technologically oriented learning context.

Regarding the suitability of Wikis to promote learner-centred construction of knowledge accommodating the learning styles of young adults, we can conclude that both teachers and students agreed on the rewarding benefits of Wikis to construct knowledge collaboratively in the language classroom. Yet, some reluctance shown by students posits that university students' involvement in digital technologies is not homogeneous in contrast with popular portrayals of digital natives as technical experts with distinctive learning styles, as other recent research suggests (e.g., Bennett et al., 2008; Selwyn, 2009; Margaryan, et al. 2011). This may be due to the newness of the task. The previous lack of experience with the website may have prevented them from taking full advantage of its features. As for language development, both students and teachers thought that the project undoubtedly had a positive effect on the improvement of linguistic skills and grammar awareness.

In general, it is finally worth mentioning that our research is in the line of thought of scholars such as Bayne and Ross (2007) who claim against the over simplistic binary metaphors in education of "digital natives" and "digital immigrants". They have adeptly noted that what is really important is to continually rethink the project and purpose of education. In this concern, our conclusion will not be that our students are not more engaged and interested in computers than previous generations, or that incorporating technology in the language class is not an effective learning tool. What we would like to imply is that the use of technology alone does not improve achievement and motivation among digital natives; it also necessitates a methodology which is pedagogically sound and leads to effective learning, real life



communication, and projection into the professional world. Incorporating new online projects in a traditional higher education course requires careful planning with consideration given to sound pedagogy so as to lead to effective learning (Murray et al., 2007; Leung & Chu, 2009). In the same way, in our opinion, the methodological emphasis to meet current students' needs may be due to the fact that university administrators want to create a culture of enterprise. As posited by Bayne and Ross (2007), it is part of a market driven campaign that is colonising the public discourse of the university these days.

Further implementations of our approach will encompass the data obtained in this experience and will count on improved defined process guidelines to overcome the problems raised in this study. Moreover, follow up research could address conflicting topics in Wiki-based assignments such as percentage of the Wiki content creation in the final course grade. The debate about the myth of digital natives, the homogeneous technical expertise of these students in specific contexts and their particular learning styles can be further analyzed using other parameters such as the use of simulations and computer games, tools frequently claimed to be the learning preferences of digital natives.

6 References

- Abras, C. (2002). The principle of relevance and metamessages in online discourse: Electronic exchanges in a graduate course. *Language, Literacy and Culture Review*, 1 (2), 39-53.
- Anson, C.M., & Miller-Cochran, S.K. (2009). Contrails of learning: Using new technologies for vertical knowledge-building. *Computers and Composition*, 26, 38-48.
- Bakhtin, M. (1986). *Speech Genres and Other Late Essays*. Austin, Tx: University of Texas Press.
- Bayne, S., & Ross, J. (2007). The 'digital native' and 'digital immigrant': A dangerous opposition. Paper presented at the *Annual Conference of the Society for Research into Higher Education (SRHE)*, Brighton, Sussex. Retrieved December 2, 2014, from http://www.malts.ed.ac.uk/staff/sian/natives_final.pdf [04/14/12]
- Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39 (5), 775-786.
- Bennett, S., & Maton, K. (2010). Beyond the 'digital natives' debate: Towards a more nuanced understanding of students' technology experiences. *Journal of Computer Assisted Learning*, 26 (5), 321-331.
- Blattner, G., & Fiori, M. (2009). Facebook in the language classroom: Promises and possibilities. *International Journal of Instructional Technology and Distance Learning*, 6 (1), 17-28.
- Bold, M. (2006). Use of Wikis in graduate course work. *Journal of Interactive Learning Research*, 17 (1), 5-14.
- Brown, C., & Czerniewicz, L. (2010). Debunking the 'digital native': Beyond digital apartheid, towards digital democracy. *Journal of Computer Assisted Learning*, 26 (5), 357-369.
- Chang, Y.F., & Schallert, D.L. (2005). The design for a collaborative system of English as foreign language: Composition writing of senior high school students in Taiwan.



- Proceedings of the Fifth IEEE International Conference on Advanced Learning Technologies (ICALT'05)*, Kaohsiung, Taiwan, 774-775.
- Chawner, B., & Lewis, P.H. (2006). WikiWikiWebs. New ways of interacting in a web environment. New ways to communicate in a web environment. *Information Technology and Libraries*, 5 (1), 33-43.
- Cole, M. (2009). Using Wiki technology to support student engagement: Lessons from the trenches. *Computers & Education*, 52, 141-146.
- Council of Europe (2001). *Common European Framework of Reference for Languages*. Retrieved December 2, 2014, from http://www.coe.int/t/dg4/linguistic/cadre_en.asp [02/02/12]
- Dave, A. (1992). *Oxford Placement Tests*. Oxford University Press.
- Davies, W.M. (2009). Group work as a form of assessment: Common problems and recommended solutions. *Higher Education*, 58 (4), 563-584.
- Dewey, J. (1916). *Democracy and education*. New York: The Free Press.
- De Pedro, X., Rieradevall, M., López, P., Sant, D., Piñol, J., Núñez, L., & M. Llobera (2006). Writing documents collaboratively in higher education using traditional vs. Wiki methodology (I): Qualitative results from a 2-year project study. *The Fourth Congress of the Internacional Congress of University Teaching and Innovation*, Barcelona, Spain. Retrieved December 2, 2014 from http://uniwiki.ourproject.org/tiki-download_wiki_attachment.php?attId=98&page=Uniwiki-Congressos
- Elgort, I., Smith, A., & Toland, J. (2008). Is Wiki an effective platform for group course work? *Australasian Journal of Educational Technology*, 24 (2), 195-210.
- Felix, U. (2001). A multivariate analysis of students' experience of Web-based learning. *Australian Journal of Educational Technology*, 17 (1), 21-36.
- Frumkin, J. (2005). The Wiki and the digital library. *OCLC Systems & Services*, 21 (1), 18-22.
- Holtman, L. (2009). Using Wikis in the teaching of a short course on the history and philosophy of science. *Journal of Instructional Technology and Distance Learning*, 6 (1), 29-36.
- Kuteeva, M. (2011). Wikis and academic writing: Changing the writer-reader relationship. *English for Specific Purposes*, 38 (1), 44-57.
- Lamb, B. (2004). Wide open spaces: Wikis, ready or not. *EDUCAUSE Review*, 39 (5), 36-48.
- Leung, K., & Chu, S.K.W. (2009). Using Wikis for collaborative learning: A case study of an undergraduate students' group project in Hong Kong. *The International Conference on Knowledge Management*. The University of Hong Kong, Hong Kong, 1-14.
- Lund, A. (2008). Wikis: A collective approach to language production. *ReCALL*, 20 (1), 1-20.
- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56 (2), 429-440.
- Mindel, J., & S. Verma (2006). Wikis for teaching and learning. *Communications of the Association for Information Systems*, 18 (1). Retrieved December 2, 2014, from <http://aisel.aisnet.org/cais/vol18/iss1/1>
- Mondahl, M., & Razmerita, L. (2014). Social Media, Collaboration and Social Learning-a study of Case-based Foreign Language Learning. *The Electronic Journal of e-Learning (EJEL)*, 12(4), 339-352.



- Montero-Fleta, B., & Pérez-Sabater, C. (2010). A research on blogging as a platform to enhance language skills. *Procedia-Social and Behavioral Sciences*, 2(2), 773-777.
- Montero-Fleta, B., & Pérez-Sabater, C. (2011). Knowledge construction and knowledge sharing: a Wiki-based approach. *Procedia-Social and Behavioral Sciences*, 28, 622-627.
- Murray, L., Hourigan, T., & Jeanneau, C. (2007). Blog writing integration for academic language learning purposes: towards an assessment framework. *Ibérica*, 14, 9-32.
- O'Loughlin, M. (1992). Rethinking science education: Beyond piagetian constructivism toward a sociocultural model of teaching and learning. *Journal of Research in Science and Teaching*, 28 (8), 791-820.
- Oreilly, T. (2007). What is Web 2.0: Design patterns and business models for the next generation of software. *Communications & strategies*, 1 (7). Retrieved December 2, 2014, from http://mpira.ub.uni-muenchen.de/4578/1/MPRA_paper_4578.pdf
- Parker, K.R., & Chao, J.A. (2007). Wiki as a teaching tool. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 57-72.
- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*. MCB University Press 9 (5). Retrieved December 2, 2014, from <http://www.webster-city.k12.ia.us/phocadownload/administration/principal/Digital%20Immigrants.pdf>
- Prensky, M. (2009). H. sapiens digital: From digital immigrants and digital natives to digital wisdom. *Journal of Online Education*, 5 (3), 1-9.
- Rodgers, C.R. (2002). Seeing student learning: Teacher change and the role of reflection. Voices inside schools. *Harvard Educational Review*, 72 (2), 230-53
- Salaberry, R.M. (2001). The use of technology for second language learning and teaching: A Retrospective. *The Modern Language Journal*, 85 (1), 39-56
- Selwyn, N. (2009). The digital native - myth and reality. *Aslib Proceedings*, 61 (4), 364-379.
- Stepp-Greany, J. (2004). Student perceptions on language learning in a technological environment: Implications for the new millenium. *Language Learning & Technology*, 6: 165-180.
- Tinto, V. (2003). Learning better together: The impact of learning communities on student success. *Higher Education Monograph Series, 2003-1, Higher Education Program, School of Education, Syracuse University*, 1-8.
- Zorko, V. (2009). Factors Affecting the Way Students Collaborate in a Wiki for English Language Learning. *Australasian Journal of Educational Technology*, 25 (5), 645-665.



7 Appendix A. Observations. Excerpts from the interviews shown as in the original:

1. Integration of digital natives in groupwork.

“In the past, every time we had to be part of a groupwork, we had to meet one day just to put together ideas, another day, to reformulate them, another day to add more points, again to eliminate other things and again to change some points” (Javier, male student, aged 23).

“I was the one who most contributed. Many students accessed the Wiki a number of times but just to edit or correct minor thoughts” (Carmen, female, aged 23).

“In our case I was in charge of making the changes in the Wiki, so it seemed that I myself performed all the work but it is not true. I uploaded the information but all of us worked” (Borja, male, 23).

“I continuously receive and receive mails from friends and colleagues, so I’d rather use email tool for collaborative work” (Juan, male student, aged 23).

2. Digital natives and proficient use of Wikis

“Although at the beginning it was a bit hard, I am an expert now with Wikis” (Manuel, male, 23).

“We were more used to interact via email and we communicated via mail and once the content was presentable we uploaded it in the Wiki” (Jose Manuel, male student, aged 23).

“I often preferred to use my personal email to share my work with my team members and also with the teacher” (Teresa, female student, aged 22).

“I believe it should have a friendlier interface and more text edition options. To publish the information was time consuming” (Pedro, male, 23).

“At the beginning I had problems in editing the information and making it attractive but after a few attempts problems were solved. It is also true that some days the loading speed was really slow” (Alfredo, male, 22).

3. Wiki promotion of learner-centred construction of knowledge in specialized environments.

“You demand yourself more and more in content and presentation just wanting to be the best group, we tried to be the real authors of the material presented avoiding copying from others” (Francisco, male, 23).



“I loved gossiping on other groups and checking on their work” (Emilio, male, 23).

“Sometimes it is not clear who brings new content and who corrected some small things from them” (Iván, male, aged 23).

4. Wiki’s contribution to the development of language proficiency.

“I have learned a lot trying to find the right words for our Wiki” (Luisa, female, 23).

“I don’t like grammar much, I like computers, but it is good to know the language well” (Toni, male, 23).

“I hate grammar and the topic I had to prepare but I must say I have learnt a lot” (Christian, male, 23).



Appendix B. Teacher’s and student’s grading of the grammar textbook.

PRODUCT ASSESSMENT				
	Poor	Fair	Good	Very good
Grammar correctness				
Accuracy of ideas				
Theoretical content				
Examples provided				
Illustrative exercises				
Organization of ideas				
Vocabulary used				
Creativity				
References				
Keys				
Presentation				
PPT slides				
Solving questions				
Portfolio presented				

Appendix C. Teacher’s and student’s grading of contribution to groupwork.

ASSESSMENT OF CONTRIBUTION TO GROUPWORK				
Clarifying ideas	Reorganizing information	Grammar revision	Style and Format	Adding references