European Association for Computer-Assisted Language Learning

THE EUROCALL REVIEW

Volume 27, Number 1, March 2019

Editor: Ana Gimeno

Associate Editor: David Perry

ISSN: 1695-2618

http://polipapers.upv.es/index.php/eurocall

Table of Contents

Research paper

Foreign Language Learning in Knowledge Forums: using a Knowledge Building Forum in an EFL Classroom

Marni Manegre*, Mar Gutiérrez-Colón and Mercè Gisbert*****
Universitat Rovira i Virgili, Tarragona, Spain

*marnilynne.manegre@estudiants.urv.cat | **mar.gutierrezcolon@urv.cat | ***merce.gisbert@urv.cat

Abstract

This paper presents the first phase of a study conducted to analyze Knowledge Building forums for evidence of second language acquisition. This study is an analysis of the posts within an existing forum in search of evidence of foreign language learning. The analysis found that the collaborative writing project shows evidence that the students passed through the stages of construction of knowledge within their foreign language classroom, however factors, such as confounding variables, inconsistencies in error types, and the small number of posts by the participants made it challenging to determine whether there is evidence of language acquisition for each student. The forum posts show evidence of knowledge acquisition, but further investigation is required to determine whether collaborative writing in knowledge forums is effective for foreign language acquisition.

Keywords: Knowledge-building forums, second language acquisition, online collaborative learning, knowledge building, English as a foreign language.

1. Introduction

Knowledge Building (KB) results from decades of research on the knowledge creation process where children share their insights, solve problems, and create expertise collectively (Bereiter & Scardamalia, 2014; Bereiter & Scardamalia, 2010; Bielaczyc & Collins, 2005; Scardamalia & Bereiter, 1991). Children can work together to create knowledge (Bereiter & Scardamalia, 2010) and they do so while addressing problems in various topics, including when conversing in a foreign language. The Knowledge Building International Project (KBIP) was created based on the notion of the classroom-as-a-knowledge-creation-organization where participating grade schools have been working together internationally in computer-assisted learning environments (Montane, Amoros & Gisbert, 2017; Laferriere, Law & Montane, 2012). Participating students collaborate with others around the globe using a common language, which, in many of these collaborative international forums, is English. While the majority of the research on KBIP focuses on the collective acquisition of knowledge based on the discussion of the topics in the forum, second language acquisition (SLA) has not been extensively studied. This paper presents the results of the first phase of an experiment designed to determine whether knowledge building in classrooms can facilitate foreign language acquisition.

Scardamalia and Bereiter (1994, 1991) coined the term knowledge forum to identify the software designed for knowledge building communities to be used in classrooms. The idea for the knowledge forum was based on the system proposed by W. Edward Deming (1986), the System of Profound Knowledge. This system suggests that, in order for businesses to run efficiently, each employee should be viewed as an integral component of the business. While this was designed as a proposal to revolutionize businesses, it also applies to education. When students work together, they become engaged in the learning process (Johnson & Johnson, 2009). They make purposeful advances and learning becomes conscious and intentional (Kim, Tan & Bielaczyc, 2015; Bielaczyc & Collins,

2005). When testing the knowledge building approach in grade 2 and grade 4 classrooms, Chuy, Scardamalia, Bereiter, Prinsen, Resendes, Messina, Hunsburger, Teplovs & Chow (2010) found that it resulted in a deeper understanding of the theoretical progress, the connections between theories and facts, and the role of ideas in scientific theory. In general, students not only learn factual information from each other, but they also develop a deeper understanding of the process of connecting theories and facts together, or as Nami, Marandi & Sotoudehnama (2018) state it: "Collaboration is considered as a necessary condition for cognitive development" (p.377).

The term *knowledge building* is often used interchangeably with constructivist learning and inquiry learning with a focus on individual knowledge construction. Individual learning is a by-product rather than the focus of community learning (Scardamalia & Bereiter 2006). Knowledge building first appeared in the learning science literature, conveying knowledge creation ideas similar to those in the organizational literature (Scardamalia & Bereiter 1991, Scardamalia, Bereiter, Brett, Burtis, Calhoun & Smith Lea, 1992) demonstrating knowledge as the product of purposeful acts of creation created through building ideas out of ideas (Bereiter & Scardamalia 2014). Analysis of discourse in mathematics students found that students identified multiple rules for the problems, provided meaningful justifications for them and revised their conjectures regarding rules over an extended period (Moss & Beatty, 2006)

These studies demonstrate that when children work together, they develop a stronger understanding, not only of the topic they are discussing but also of the knowledge building process.

1.1. The Knowledge Building International Project procedure

The KBIP methodology, as used in the classroom for this study, is consistent among participating classrooms, and is outlined by the Consell Superior d'Avaluació del Sistema Educatiu (2015) as follows. First, a theme or a real problem, which the students find interesting, is introduced to the students in a learning and knowledge-construction community. Second, cognitive tools, such as categories or scaffolding, are utilized to identify the students' knowledge of the topics, development of ideas, and any issues raised that require further attention. Third, the 12 principles of the co-production of knowledge are applied, and learning is achieved through participation (Bereiter & Scardamalia, 2010). These principles are further defined in Table 1 below. Finally, the teachers should attain adequate leadership qualities and behave as stimulators of learning, guides for the knowledge-construction process, facilitators, researchers, assessors, and modulators as required by the students to assist in the students' acquisition of expertise, since, according to Chen-Chung, Pin-Ching & Shu-Ju (2016), "flow theory and strategic motivation framework are useful constructs for displaying student engagement in learning" (p.105).

Within this current study, the following questions will be explored. Can children become more proficient in their L2 (second language) using the 12 steps of knowledge building in the KBIP forums than when immersed in traditional lecture-style classrooms? Is it possible to determine the acquisition of the second language from analyzing the existing posts within a forum, or is a study with a more extensive scope necessary to assess SLA?

This paper has been divided into sections to explain the main concepts behind the study, explanations of knowledge building through collaboration, followed by online collaborative learning in foreign language education, and finally computer-supported collaborative writing. Following these chapters, the preliminary study will be presented where the data from a forum was examined to check for evidence of SLA and to potentially answer the above questions. The findings are reported, along with suggestions for further studies.

1.2. Knowledge building through collaboration

A *knowledge community* is defined as an organized group or assembly of people who engage in knowledge related activities (Paavola, Lipponen & Hakkarainen, 2004). As the definition of collaborative learning may vary, the stages of construction of knowledge also vary from the 12 KB principles identified by Scardamalia and Bereiter (1994, 1991). Gunawardena, Lowe & Anderson (1997) identified five stages of the construction of knowledge, which are: sharing and comparing information, discovery and exploration among inconsistency of ideas/concepts/statements, negotiation of meaning and

construction of knowledge, testing and modification of proposed synthesis, and agreement and application of new meaning. Kimmerle, Moskaliuk, Brendle, & Cress (2017) analyzed the stages people go through when reaching decisions or shared opinions on collaborative writing tasks. They conducted a quantitative analysis using inferential statistics and determined that the five stages identified by Gunawardena et al. (1997) are, in fact, three main stages: knowledge introduction, restructuring, and shared opinion. The scaffolding identified by Scardamalia & Bereiter (1991, 1994, 2006) frames the individual contributions and uses registration and communication supported in holding constructive discussions. The majority of these principles, which relate to the discussion, creation, and clarification of ideas fall into the first stage of the construction of knowledge.

The following table shows how the 12 KB principles align with the stages of the construction of knowledge.

Table 1. Comparison of the 12 KB Principles with the Stages of Construction of Knowledge.

Knowledge Building Principles (Scardamalia & Bereiter, 1991)	**Five Stages of Construction of Knowledge (Gunawardena et al., 1997)**	**Three Stages of Construction of Knowledge (Kimmerle et al., 2017)**
1) Real Ideas, Authentic Problems – problems arise from an effort to understand the world	1) Sharing and Comparing Information	1) Knowledge Introduction
2) Improvable Ideas – advance ill-conceived ideas to improve them		
3) Idea Diversity – improve ideas through comparison, combination and alignment with other ideas		
4) Rise Above – work with complexity, diversity, & messiness to improve ideas		
5) Epistemic Agency – participants recognize personal and collective responsibility for knowledge building efforts		
6) Community Knowledge – aim to produce knowledge as a value to others		
7) Democratizing Knowledge – all participants are legitimate contributors to shared goals.		
8) Symmetric Knowledge of Advancement – expertise is distributed within and outside the community	2) Discovering and Exploring Among Inconsistency of Ideas	
9) Pervasive Knowledge Building – creative working with ideas		
10) Constructive Use with Authoritative Sources – report	3) Negotiate Meaning and Construction of Knowledge	2) Restructuring

and understand the sources of knowledge		
11) Knowledge Building Discourse – knowledge is defined and transformed through discussion	4) Testing and Modification of Proposed Synthesis	
12) Concurrent, Embedded, and Transformative Assessment – the community has an internal assessment	5) Agreement and Application of Meaning	3) Shared Opinion

1.3. Online collaborative learning in foreign language education

To better understand online collaborative language learning, it is best to establish the definition of an online learning community. An online learning community is located on the Internet and is designed to facilitate learning amid its members by encouraging interactions among them (Cook & Smith, 2004; Zhan, Xu & Ye, 2011). People share knowledge in these communities and work together to help others acquire knowledge and share information (Cook & Smith, 2004). Online learning communities are built to support both in-classroom learning or formal learning, such as the KBIP, and informal learning.

Formal learning and in-classroom learning studies are advantageous to informal learning studies because formal learning environments most often provide the researcher with access to the participant data. Informal learning communities, such as blogs or social networking sites (SNS) tend not to allow the researchers access to the data and analytics. Therefore the findings are often based on qualitative data collected through questionnaires and interviews (Lin, Warshouer, & Blake, 2016; Stevenson & Liu, 2010)

Thus, early research on language learning in SNS focus on attitudes, usage, and progress, instead of the acquisition of vocabulary, advancements of knowledge of grammar rules, and fluency in the L2 (Stevenson & Liu, 2010; Pinkman, 2005) Informal learning has no limits on space and time and therefore is common in language learning. Such examples occur when language learners engage in conversations, listen to the radio, read news online, or watch movies. Through these methods, they are able to learn without intention (Comas-Quinn, Mardomingo & Valentine, 2009).

2. Computer-supported collaborative writing

In the field of L2 studies, there have been many approaches to analyze collaborative writing, but none of these studies have focused on individual L2 learning: according to Bikowski & Vithanage (2016), technology-enhanced collaborative tools have evolved significantly, but research in this field focuses primarily on specific aspects, such as the relationships between pairs, the technological tools used, and the environment. Bikowski & Vithanage state that "no research has been published to date; however, focusing on the possible individual English language learning gains via technology-enhanced collaborative writing projects" (p. 79).

While the knowledge forums in the KBIP are set in a formal classroom learning environment, the participants often behave similarly to those participating in an informal learning environment, where people also acquire knowledge unintentionally when they participate in collaborative online activities (Thorne, Black & Sykes 2009). Not only do the students show gains in literacy, but they also show evidence of stronger collaborative writing skills with improved content and organization, especially in foreign language contexts (Yim & Warschauer, 2017). These findings suggest that knowledge forums would assist in foreign language acquisition and production due to the contributing of, building on, and development of foreign language knowledge.

The current study aims to determine whether children can become more proficient in their L2 using the 12 steps of knowledge building in the KBIP forums and the stages of construction of knowledge. The first phase of this study is presented below where the data within existing forums were analyzed for evidence of foreign language acquisition.

2.1. The study

This study was conducted to analyze existing data in KBIP forums for evidence of SLA, and it is an ad hoc analysis of the posts of the students to determine whether there is any evidence of language learning. The discussions were created between October 2015 and February 2016, and, at the time of the discussions, there was no study set up to monitor the participants' actions nor create any pre- and post-testing. The hypotheses are as follows.

- Because students feel more comfortable in online discussions than face-to-face discussions (Al-Jarf, 2007) an increase in their writing skills (syntax, spelling and acquisition of vocabulary) in their L2 should be observed.
- The information in the forums will determine how and when the 12 KB principles and the three stages of knowledge construction take place in relation to SLA.

3. Method

3.1. Sample

The sample for the study consists of a group of 35 secondary school students of a Spanish school, who are bilingual in Spanish and Catalan. The students were in the same grade and they were approximately 16 years old at the time of the study. These students participated in an online collaborative learning project (Knowledge Building International Project) together with a group of 35 Greek secondary students in the framework of a European project, which is referred to as COMconèixer in the Catalan region of Spain.

3.2. Procedure

Both the Spanish and Greek students participated in the knowledge forum within a classroom environment. They engaged in several discussions on the topics of historical Mediterranean fashion and archaeology and all of the posts were in their L2 (English). According to the teachers, the students were given instructions on how to use the KB tool, which is necessary, because, in order to have effective online communication, students should be given explicit information about the platform and methodology, as well as trained in that specific communication technology (Heiser, Stickler & Furnborough, 2013, p.231). They then entered the questions in the forum and, through the course of the semester, they responded to the questions and built on the ideas.

All of the posts in the forums were sorted by date and time in a spreadsheet to follow the flow of ideas of the students. The sorting of the posts occurred more than 12 months after the students participated in the forum. At the onset of data sorting, there was little information on the students' English language exposure or level of English. To find further information, the participants were given a questionnaire to understand their linguistic backgrounds better. The questionnaire was conducted digitally in Catalan to ensure the students understood the questions. It inquired about the participants' native languages, languages spoken with family members, exposure to English outside of the classroom, and their history of foreign language learning.

3.3. Data analysis

Each post was checked first in Google for evidence of copying from a website and second with a plagiarism checker in order to determine whether the posts were novel, created using the students' own words, since SLA cannot be determined from copied text. Therefore, it is necessary to remove such posts from the analysis. The posts were then checked for grammatical errors using a digital grammar checker, which identified syntax and orthographic errors, and then for repetition of chunks, learning phrases from peers, and modifications to language over time. This was done through following the flow of ideas, as each forum post was time-stamped and the ideas were built on in sequential order.

In conjunction with any posts removed due to copying, the posts from the students in the Greek school were removed and excluded from the study, as there was no permission statement to work with the data from this school. Fortunately, the posts from the Spanish students were mainly novel posts, and all but two of these posts were analyzed in the study.

4. Results

As explained in the former section, only the posts from the students in the Spanish school were analyzed. While there were 35 students in the class, only 12 of the students entered posts in the knowledge forum (see Table 2).

Table 2. Participation.

School and location	# of students	Forum participation	Participation in discussions without posting the Forums
Kalamata, Greece	35	21	14
Sant Pau, Tarragona	35	12	23

Only the responses from these 12 students could be included. Of these 12 students, ten are female and two are male. They are all in the same grade and were around 16 years old at the time they participated in the forum. Therefore, they should all be at the same developmental stage.

There was a total of 52 posts from the Spanish and, with the exception of two posts, all of the posts provided novel descriptions using the students' own words to provide further information. Thus, all but two of the posts from the Spanish students were eligible for analysis.

The posts per student were then isolated to determine the frequency the students were participating in the forum (see Table 4).

Table 3. Number of posts per student.

# of posts	1	2	3	4	5	6	7	8	9	10
# of students	2	2	2	1	1	1	1	1	0	1

The mean number of posts by student is 4.33 and the median is 3.5.

The questionnaire data revealed that there are confounding variables, which could influence the production of English in the posts. Some of the students have private English tutors after school, some have travelled to English-speaking countries, and three of the students claim to be native speakers of English and speak English in the home (see Table 3).

Table 4. English language background.

L2 Background	Number	Travel to English speaking countries	Private English tutor
Native English Speaker	3	2	1
Non-Native English Speaker	9	4	3
Total	12	6	4

Finally, the error types were analyzed by running the posts through an English language digital grammar checker. The data was sorted by participant to determine whether there were any trends and whether any errors were consistent amongst the participants. (See Table 5).

Table 5: Types of errors per student.

Error Type	Total	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
Punctuation or Comma Use	20	0	2	3	7	1	4	0	2	0	0	1	0
Spelling Error	19	1	1	2	3	4	3	0	2	0	2	0	1
Word Order	16	1	0	1	3	0	4	1	1	1	1	2	1
Singular/Plural Inflection	9	2	1	1	2	0	2	0	0	0	1	0	0
Incorrect Word	8	1	1	1	1	0	0	0	0	0	1	2	1
Incorrect Verb Tense	8	1	0	0	0	0	1	0	0	0	3	1	2
Capitalization Error	7	0	1	0	2	1	1	0	1	0	1	0	0
Missing Pronoun	6	1	0	0	0	0	0	0	1	0	1	1	2
Missing Determiner	5	1	0	1	0	1	0	0	2	0	0	0	0
Missing Conjunction	4	2	0	0	1	0	0	0	0	0	0	1	0
Total	102	10	6	9	19	7	15	1	9	1	10	8	7

5. Discussion

Once we removed the posts from the Greek students and the copied posts, the remaining posts in the forum were few in number (mean 4.33/student) with inconsistent errors. The number of errors and types of errors were not consistent amongst the participants and the majority of errors appeared similar to what is seen when using mobile devices, such as an omission of punctuations, or typos (Cingel & Sundar, 2012).

Since we were not present in the classroom while the students participated in the forums, we were not able to observe how the students arrived at their main questions for their forum nor how they organized their ideas and built on the ideas to discover new information. It is, however, easy to determine which posts fall into the Three Stages of Knowledge Construction (Kimmerle et al., 2017) as these posts can be simplified to say when the questions are introduced, how they are answered, and when the students arrive at a shared opinion (See Appendix A).

The students were working in groups and only one person from each group was posting in the forums; therefore, we cannot determine from this analysis the full extent to which students discovered and explored ideas and negotiated meaning, as in the Five Stages of Construction of Knowledge (Gunawardena et al. 1997). We also cannot effectively identify when the students advanced from one Knowledge Building Principle (Scardamalia & Bereiter, 1991) to the next, since a large portion of their idea sharing came from group discussions prior to the post entries.

6. Recommendations for further research

It is best to use a design containing both method triangulation and data triangulation (Sun, Franklin & Gao, 2015; Brantlinger, Jimenez, Klinger, Pugach & Richardson, 2005). Brantlinger et al. (2005) coined the term *method triangulation* for the use of multiple research methods to explore a research question, which includes collecting both qualitative and quantitative data. Once the topic is determined for use in the forum, a pre-test, post-test, and delayed post-test may be created to test the participants' knowledge of vocabulary relating to the subject, relevant grammar at the participants' CEFR (Central European Framework of Reference) level, and general knowledge of the subject.

In conjunction with using method triangulation, it is recommended to use data triangulation. *Data triangulation* was coined by Brantlinger et al. (2005) to refer to the use of multiple data sources to explore a research question. To analyze whether an increase in performance between a pre-test and post-test is statistically significant, T-Tests and Cohen's D may be used. Any data not initially collected for the purpose of the study could be analysed for any interaction effect (using an analysis of variance) and to see whether there are any correlations between this data and other variables.

7. Conclusion

The present study analyzed data in a discussion forum where the participants were writing and collaborating using their L2 (English). We were able to identify through this analysis how the students moved through the Three Stages of Knowledge Construction (Kimmerle et al., 2017) from the posts in the forum, but without classroom observation, we could not precisely identify how the students moved through the Knowledge Building Principles (Scardamalia & Bereiter, 1991). Even though we could not identify the moments the students transitioned through the Knowledge Building Stages, we were able to determine when the students' ideas passed through the Three Stages of Construction of Knowledge (knowledge introduction, restructuring, and shared ideas). We believe, therefore, that those students who did participate developed knowledge on the topic of historical fashion based on their forum discussions within a foreign language classroom. However, due to the small sample size, confounding variables, inconsistencies in error types, and the small number of posts by the participants, there is not enough information within these forum posts to provide an accurate measurement of foreign language acquisition for each student.

References

Al-Jarf, R. (2007). Teaching Vocabulary to EFL College Students Online. *CALL-EJ*, 8(2). 1-16. *http://econf.uob.edu.bh/conf1/pdf%20files/133.pdf*

Bielaczyc, K. & Collins, A. (2005). Technology as a catalyst for fostering knowledge-creating communities. A. M. O'Donnell, C. E. Hmelo-Silver & J. van der Linden (Eds.), *Using technology to enhance learning*. Mahwah NJ: Lawrence Erlbaum Associates.

Bielaczyc, K. & Collins, A. (2006). Fostering knowledge-creating communities. A. M. O'Donnell, C. E. Hmelo-Silver & G. Erkens (Eds.), *Collaborative Learning, Reasoning, and Technology.* Mahwah NJ: Lawrence Erlbaum Associates.

Bereiter, C. & Scardamalia, M. (2010). Can Children Really Create Knowledge?. *Canadian Journal of Learning and Technology / La revue canadienne de l'apprentissage et de la technologie, 36* (1). Canadian Network for Innovation in Education. doi: 10.21432/T2ZP43

Bereiter C., Scardamalia M. (2014) Knowledge Building and Knowledge Creation: One Concept, Two Hills to Climb. In: Tan S., So H., Yeo J. (Eds.) *Knowledge Creation in Education. Education Innovation Series,* pp. 35-52. Singapore: Springer. doi: 10.1007/978-981-287-047-6_3

Bikowski, D. & Vithanage, R. (2016). Effects of Web-Based Collaborative Writing on Individual L2 writing Development. *Language Learning & Technology*, 20(1), 79-

99.https://scholarspace.manoa.hawaii.edu/bitstream/10125/44447/1/20_01_bikowskivithanage.pdf

Brantlinger, E., Jimenez, R., Klinger, J., Pugach, M. & Richardson, V. (2005). Qualitative Studies in Special Education. *Exceptional Children*. 71(2), 195-207. doi: 10.1177/001440290507100205

Chen-Chung, L., Pin-Ching, W. & Shu-Ju, T., (2016). An analysis of student engagement patterns in language learning facilitated by Web 2.0 Technologies. ReCALL 28(2), 104-122. doi: 10.1017/S095834401600001X

Chuy, M., Scardamalia, M., Bereiter, C., Prinsen, F., Resendes, M., Messina, R., Hunsburger, W., Teplovs, C., & Chow, A. (2010). Understanding the nature of science and scientific process: A theory building approach. *Canadian Journal of Learning and Technology, 36*(1). doi: 10.21432/T2GP4R

Cingel, D. P. & Sundar, S. (2012). Texting, techspeak, and tweens: The relationship between text messaging and English grammar skills. *New Media & Society.* 14(8).https://journals.sagepub.com/doi/10.1177/1461444812442927

Comas-Quinn, A., Mardomingo, R. & Valentine, C. (2009). Mobile blogs in language learning: Making the most of informal and situated learning opportunities. ReCALL 21(1), 96-112. doi:10.1017/S0958344009000032

Consell Superior d'Avaluació del Sistema Educatiu (2015). Avaluació del projecte COMconèixer. Barcelona, Departament d'Ensenyament, Consell Superior d'Avaluació del Sistema Educatiu, col·lecció 'Documents' 32. http://cdl3.cdl.cat/COMconeixer/docs/Avaluacio_Projecte_COMconeixer.pdf

Cook, J. & Smith, M. (2004). Beyond formal learning: Informal community eLearning. *Computers & Education*. 43(1-2), 35-47. doi: 10.1016/j.compedu.2003.12.003

Deming, W. E. (1986). *Out of the Crisis. MIT Press*.

Gunawardena, C. N, Lowe, C. A., & Anderson, T. (1997). Analysis of a Global Online Debate and the Development of an Interaction Analysis Model for Examining Social Construction of Knowledge in Computer Conferencing. *Journal of Educational Computing Research.* 17(4). doi: 10.2190/7MQV-X9UJ-C7Q3-NRAG

Heiser, S., Stickler, U. & Furnborough, C. (2013). Student training in the use of an online synchronous conferencing tool. *CALICO Journal*, 30(2), 226-251. doi: 10.11139/cj.30.2.226-25

Johnson, D.W. & Johnson, R.T. (1999). Making cooperative learning work, *Theory Into Practice*, 38:2, 67-73. doi: 10.1080/00405849909543834

Kim, B., Tan, L., & Bielaczyc, K. (2015). Learner-generated designs in participatory culture: What they are and how they are shaping learning. *Interactive Learning Environments,* 23(5), 545-555. doi: 10.1080/10494820.2015.1067974

Kimmerle, J., Moskaliuk, J., Brendle, D. & Cress, U. (2017). All in Good Time: Knowledge Introduction, Restructuring, and Development of Shared Opinions as Different Stages in Collaborative Writing. *International Journal of Computer Supported Collaborative Learning.* 12(2), 195-213. doi: 10.1007/s11412-017-9258-6

Laferriere, T., Law, N. & Montaine, M. (2012). An International Knowledge Building Network for Sustainable Curriculum and Pedagogical Information. *International Education Studies*, 5(3), 148-160. doi: 10.5539/ies.v5n3p148

Montane, M., Amaros, C. & Gisbert, M. (2017). The COMknowledge project: evaluation of methodological aspects of the project based on pupils' perceptions. *Unpublished conference paper.*

Moss, J. & Beatty, R. (2006). Knowledge building in mathematics: Supporting collaborative learning in pattern problems. *International Journal of Computer Supported Collaborative Learning,* 1(4), 441- 465. doi: https://doi.org/10.1007/s11412-006-9003-z

Nami, F, Marandi, S.S., Sotoudehnama, E., (2018). Interaction in a discussion list: An exploration of cognitive, social, and teaching presence in teachers' online collaborations. *ReCALL,*30(3), 375-398. doi: 10.1017/S0958344017000349

Paavola, S., Lipponen, L. & Hakkarainen, K. (2004). Models of Innovative Knowledge Communities and Three Metaphors of Learning. *Review of Educational Research.* 74(4), 557-576. doi: 10.3102/00346543074004557

Scardamalia, M. & Bereiter, C. (1991). Higher levels of agency for children in knowledge building: A challenge for the design of new knowledge media. *Journal of the Learning Sciences, 1,*37-68. doi 10.1207/s15327809jls0101_3

Scardamalia, M. & Bereiter, C. (1994). Computer Support for Knowledge Based Communities. *Journal of the Learning Sciences 3(3*), 265-283. doi: 10.1207/s15327809jls0303_3

Scardamalia, M. & Bereiter, C. (2006). Knowledge building: Theory, Pedagogy, and Technology. In K. Sawyer (Ed.) *Cambridge Handbook of the Learning Sciences,* pp. 97-118. New York: Cambridge University Press. doi: 10.1017/CBO9781139519526.025

Scardamalia, M., Bereiter, C., Brett, C., Burtis, P.J., Calhoun, C., & Smith Lea, N. (1992). Educational applications of networked communal database. *Interactive Learning Environments. 2*(1), 45-71. doi: 10.1080/1049482920020105

Sun, Y., Franklin, T. & Gao, F. (2015). Learning Outside of Classroom: Exploring the Active Part of an Informal Online English Learning Community in China. *British Journal of Educational Technology.* doi: 10.1111/bjet.12340

Thorne, S., Black, R. W. & Sykes, J. M. (2009). Second language use, socialization, and learning in internet interest communities and online gaming. *The Modern Language Journal, 93*(1), 802-821. doi: 10.1111/j.1540-4781.2009.00974.x

Yim, S., Warschauer, M., (2017). Web-Based Collaborative Writing in L2 Contexts: Methodological Insights From Text Mining. *Language Learning & Technology, 21*(1), 146-165.
https://scholarspace.manoa.hawaii.edu/bitstream/10125/44599/1/21_01_yimwarschauer.pdf

Zhan, Z., Xu, F. & Ye, H. (2011). Effects of an online learning community on active and reflective learners' learning performance and attitudes in a face-to-face undergraduate course. *Computers & Education*, 56(4), 961- 968. doi: 10.1016/j.compedu.2010.11.012

APPENDIX A

Sample forum posts

Knowledge introduction

I need to understand - Can you tell something about building materials in Tarragona, Verona and Messinia

Restructuring

My theory - The materials we can see are rocks. Limestones, marble, cement, wood, and different thing made out of clay.

My theory - In their buildings 600- 250BCE, the Greeks used mud brick, wood, cane, stone, fired clay, tar, weak mortar.

Shared ideas

Putting Our Knowledge Together - Romans used limestones to build the majority part of the buildings, but they also used different materials like marble, cement, wood, and different things made out of clay. The rocks are between 23 and 5 years old. Fossils can help us to know where does the rock come from, its environment, when it was formed. We can also know the age of the rock by calculating the level of radiation that they have. People involved in building materials were soldiers, salves, sculptors and engineers.

Research paper

How Do Different Keyword Captioning Strategies Impact Students' Performance in Oral and Written Production Tasks? A Pilot Study

Long He
Iowa State University, USA

lhe@iastate.edu

Abstract

As an increasingly popular format of input, the affordances of audio-visual materials have been widely studied. Past research has provided evidence that audio-visual input combined with different captioning strategies could benefit learners in terms of vocabulary learning, listening comprehension, and the development of grammatical knowledge. However, there is a lack of research on how manipulating captioning conditions could help learners use their own linguistic resources to produce L2. Comparing the effects of three captioning techniques, L1 glossed keyword captioning, keyword captioning, and no captioning on English learners' oral and written recall of a short video, this pilot study aims to test the instruments and the data collection methods. The tentative results suggest that L1 glossed keyword captioning might have worked better in facilitating students' oral and written production of the keywords than keyword captioning and no captioning. The study also shows that L1 glossed keyword captioning might be more useful than keyword captioning and no captioning in helping students comprehend and reproduce the content of the video. Suggestions for further research on this topic are presented in the final part of this paper.

Keywords: Audio-visual input, keyword captioning, gloss, recall, oral and written production tasks.

1. Introduction

Though Krashen's (1985) argument that second language (L2) learners just need comprehensible input to activate their built-in syllabus and that L2 acquisition relies entirely on input proved to be controversial, researchers have widely accepted the essential role of exposure to L2 input in second language acquisition (SLA). L2 input is especially crucial for implicit learning. As Ellis (2015) puts it, "Implicit learning is a slow process that requires massive exposure to the second language" (p. 36). Previous studies have investigated the effect of different types of input (e.g., audio, written, and visual) on learners' L2 acquisition. One type of input, audio-visual input, has attracted sustainable interest from researchers in SLA.

A main strand of research on audio-visual input centers on the effect of using native language (L1) or L2 subtitles or captions to enhance language learning. Markham (1999) defines subtitles as "on-screen text in the native language combined with the second language soundtrack" and captions as "on-screen text in the second language combined with the second language soundtrack." In this study, L1 caption refers to native language captioning, and L2 caption refers to second language captioning.

Multiple studies have examined the effectiveness of L1 and L2 captions in facilitating learners' vocabulary acquisition and listening comprehension. Koolstra and Beentjes (1999) compared the effects of watching L1 captioned television programs and watching

English television programs without captions on Dutch children's incidental acquisition of L2 English vocabulary. The results showed that the children scored higher in the vocabulary test and word recognition test in the L1 caption condition. The fact that the audio-visual input combined with L1 captions enables learners to hear the English words, read the Dutch translation, and infer meanings from the visual images facilitates Dutch children's vocabulary acquisition. Rodgers and Webb (2017) conducted a similar study but used 10 episodes of a TV series. Their results revealed that L2 captions were especially useful in aiding comprehension when the content was difficult. Focusing on L2 Spanish, Markham, Peter, and McCarthy (2001) investigated how three different caption conditions, i.e. L1 English captions, L2 Spanish captions, and no captions, influenced learners' performance on a written summary task and a multiple-choice task. The results again showed that learners under the L1 captions condition performed considerably better than the other two pairs. Winke, Gass, and Sydorenko (2010) explored the use of captioned videos in listening activities and concluded that L2 captioned videos were more effective in facilitating novel vocabulary recognition and overall comprehension.

The previously mentioned studies have documented positive effects of captioning on L2 learning, but they did not include procedures to draw learners' attention to target words or phrases. In his Noticing Hypothesis, Schmidt (2001) claims that "people learn about the things they attend to and do not learn much from the things they do not attend to" (p. 30). In other words, it might be easier for learners to acquire more salient language features in the input. Hypothesizing that keyword captioning presents less information and thus could keep students' attention on the linguistic message, Guillory (1998) investigated how different types of captions, L2 full captioning, L2 keyword captioning, and no captioning, impact learners' comprehension. The results showed that both full captioning and keyword captioning had a positive effect on comprehension. Montero Pérez et al. (2014) studied the effects of two types of captioning, namely L2 full captioning and L2 keyword captioning. They found that the full captioning pair scored higher on the global comprehension questions than the no captioning and the keyword captioning pair. They also reported the participants' preference for full captioning. In a later study, Montero Pérez et al. (2018) compared the effects of three captioning techniques, full captioning, keyword captioning, and L1 glossed keyword captioning, on vocabulary learning. They found that the students in the L1 glossed keyword captioning pair performed the best in both the form recognition test and the meaning recall test. The findings suggested that the access to meaning through L1 glossed keyword captioning could help students to make form-meaning connections. In their eye-tracking study, Lee & Révész (2018) enhanced the captions by boldfacing the target grammatical structure and observed the advantage of textual enhancement in directing learners' attention to the grammatical feature. The results suggested that the enhanced captions could facilitate learners' development of grammatical knowledge.

Past research has provided evidence that different captioning strategies could benefit learners differently in terms of vocabulary learning, listening comprehension, and the development of grammatical knowledge. However, there is a lack of research on how manipulating captioning conditions could help learners use their own linguistic resources to produce L2. Swain's (1985) Output Hypothesis proposes that language acquisition requires not only comprehensible input but also output production. When discussing the importance of output, Nava & Pedrazzini (2018) provided further explanation:

While exposure to input that is made comprehensible for a learner is a needed starting point for SLA, it is in itself insufficient to satisfy all the demands of acquisition. Engaging in second language production, through both speaking and writing, is thus held to be crucial for acquisition, particularly if a learner wishes to increase their proficiency towards more native-like accuracy (p. 156).

Considering the benefits of audio-visual input combined with captions in assisting language learning and the importance of output in improving language proficiency, it is worthwhile to explore how different caption strategies, combined with audio-visual input, could aid students' oral and written production. The current study aims to investigate how utilizing different captioning options could influence learners' output task performance. In other words, this study compares the effects of L1 glossed keyword captioning, keyword captioning, and no captioning on English learners' oral and written recall of a short video.

The pilot study also aims to test the instruments and data collection methods. The purpose of using keyword captioning was to draw learners' attention to those words that would pose a challenge to learners' comprehension. The purpose of using L1 glossed keyword captioning was to help learners make form-meaning connections (Lee & Révész, 2018). The following two research questions guided this study.

> Research Question 1: How do the three captioning conditions influence the students' use of the keywords in their oral and written production?
>
> Research Question 2: How do the three captioning conditions impact the overall quality (based on correctly produced idea units) of the students' oral and written production?

2. Method

2.1. Participants

The participants included a female high school English teacher and six 11th grade high school students with an average age of 15.5. The teacher, a native Chinese, had been teaching English at the same school for about 12 years. The students were native speakers of Mandarin Chinese and were enrolled in the same English class. All the participants had received four years of classroom English instruction. The English teacher selected the six participants because they had similar scores from the achievement test taken at the beginning of the semester. Prior to the study, the students took the bilingual mandarin version Vocabulary Size Test developed by Nation and Beglar (2007). The results suggested that the students' vocabulary size was comparable, averaging 1,500 word families. Based on the students' performance on the achievement test and the vocabulary size test, the English proficiency level of the students was close to B2 level in the Common European Framework for Reference (CEFR). The teacher randomly assigned the students into pairs to complete the production task under three captioning conditions, L1 glossed keyword captioning, keyword captioning, and no captioning.

2.2. Video selection

The audio-visual input used in this study was a two-minute video on the cultural differences between China and the UK. To select a video that could spark the students' interest, the researcher provided the students four topics to choose from. The four topics included how to improve memory, global warming, the best way to practice English, and cultural differences between China and the UK. The students needed to select two topics of their interest. The last topic was selected for this study because all the students chose that one.

The video was recorded by a native speaker of British English, and it contained 394 word tokens. The Vocabulary Profiler, which was developed by the University of Hong Kong and based on Paul Nation's Word Frequency Lists, was used to determine the difficulty level of the vocabulary. After running the video transcription in the web-based software, it was found that about 88 percent of the words were from the first 2,000 word families. Therefore, it was anticipated that the video should be mostly comprehensible to the students. However, given the speech rate, 197 words per minute, the video should still be challenging to the participants.

2.3. The two types of captions

Two types of captioning strategies were used in this study; keyword captioning and L1 glossed keyword captioning. Figure 1 and 2 are screenshots of the two types of captions. Montero Pérez et al. (2018) defined *keyword* as one word or a string of no more than four words that are essential for the meaning making of a sentence. In this study, the researcher worked with the teacher to select 31 keyword types. iMovie was used to combine the audio-visual input and the captioning. In the keyword-captioned video, the keyword appeared at the lower right corner of the video. In the L1 glossed keyword captioning condition, the keyword and its L1 translation appeared at the lower right corner of the video. In both conditions, the keyword was synchronized with the speech, meaning each keyword appeared when spoken. The presentation duration of the keyword ranged from one to two seconds depending on its length.

Figure 1. Keyword captioning.

Figure 2. L1 glossed keyword captioning.

2.4. The task

The task in this study required the learners to watch a 2-minute video clip twice and then discuss with a partner to produce a written recall of the content of the video in English. Ellis (2018) reemphasized that "...learners must notice new features in the input and also notice the gap between what they attend to in the input and their current interlanguage systems in order to learn" (p. 202). This provided the rationale for watching the video twice. For the first watching, the students were expected to focus on the general meaning of the video clip and notice what might be new (the keywords) to them. During the second watching, the students had the opportunity to pay more attention to the gap between the new information and their own interlanguage systems so that they could deepen their understanding of the video.

In the discussion phase, the students needed to mobilize their own linguistic resources to communicate with each other regarding what information they each had gleaned from the video. During this phase, the student could interact with the partner to negotiate meaning. In his Interaction Hypothesis, Long (1983) claims that meaning negotiation facilitates L2 acquisition because learners obtain comprehensible input when they negotiate meaning. Meaning negotiation also allows learners more time to process the input (Ellis, 2018). While producing the written recall, the students needed to co-construct meaning and achieve a communicative outcome. Since the teacher needed to record the discussion, the three pairs of students completed the task separately in the teacher's office. The total time for the task was 25 minutes.

2.5. Procedure

Two days before the teacher invited the students to her office to do the task, the researcher sent the teacher the following table and discussed the questions she had about the steps via a Zoom meeting. After the Zoom meeting, she completely understood how to direct the students to complete the task.

Table 1. Step by step instructions for the teacher.

Step 1	**Step 2**	**Step 3**	**Step 4**	**Step 5**
Tell the students that they need to watch a video, discuss in pairs, and reconstruct the content of the video on paper as a pair (1 min.)	Play the video for the students for the first time (no notes; 2 mins.)	Play the video for the students for the second time; ask students to take notes. (2 mins.)	Ask students to work together to reproduce the content on paper. Encourage them to use their own linguistic resources and provide as much detail as possible. (**record** the discussion; 15 mins.)	Collect the **notes** and **written work** from the students

In the first step, the teacher briefly introduced the task and informed the students that they would need to discuss the content and produce a written recall. The rationale behind

informing the students about the oral and written production task beforehand was that they could be more focused on the audio-visual input. The teacher invited the first pair of students to the office where they watched the video under the L1 glossed keyword captioning (L1GKC) condition. The teacher asked the students to pay attention to the global meaning of the video during the first watching, and instructed them to take notes during the second watching. After spending five minutes watching the video, the teacher asked the students to spend another five minutes to discuss what had been going on in the video. At the same time, the teacher encouraged the students to use their own linguistic resources and started to record the discussion. Lastly, the students spent ten minutes to complete a written recall together. After the first pair of students completed the task, the teacher invited the keyword captioning (KC) pair to her office to do the task and then the no captioning (NC) pair. The teacher followed the same steps for all three pairs of students.

2.6. Data collection and data analysis

There were three sets of data in this study, namely the notes after the second watching, the recording of the discussion, and the written recall. The teacher recorded the discussion using her phone and collected the notes and written recall after the students completed the task. Then she put the data from each pair into a separate zip file and sent me the data. After receiving the data, the researcher transcribed the recordings.

To answer the first research question, the researcher read through the transcription and the written recall and counted the places where the students correctly used a keyword or paraphrased a keyword. The notes were to check the students' uptake of keywords they noticed and help interpret the data. To evaluate the overall quality of the students' oral and written production, Riley and Lee's (1988) idea unit analysis method was adopted. According to Riley and Lee, an idea unit refers either to a simple sentence, a basic semantic proposition, or a phrase. Based on Riley and Lee's criteria, the researcher divided the transcription into 35 idea units. Then the same criteria were used to count the correct idea units in the students' oral and written production. If the students paraphrased the idea units, those idea units were also counted as correct. If the idea units produced were correct but not mentioned in the video, those idea units were not counted.

3. Results and discussions

This section presents the results of this pilot study. After analyzing the notes, transcription of the students' discussion, and the written recall, it was found that the L1GKC pair was able to produce and paraphrase more keywords than the other two pairs in both oral and written production. Though the KC pair noticed more keywords than the NC pair, the two pairs' keyword use in the discussion and written recall was similar. The overall quality of the oral and written production follows the same trend with the L1GKC pair producing more correct and accurate idea units than the other two pairs.

3.1. Use of keywords in oral and written production

The first research question concerns how different captioning strategies impact students' use and paraphrasing of keywords in the discussion and written recall. Table 2 presents students' notes after the second watching. The researcher transferred the notes directly to the table without correcting the misspelling or translating the words written in Chinese. Table 3 is a summary of keywords used or paraphrased in oral and written production by the three pairs, and keywords in the video. The notes were used to help interpret the data in Table 3.

Table 2 shows that the L1GKC pair wrote down 19 of the 31 keywords appeared in the video. The KC pair registered 15 keywords, while the NC had only 6 keywords. This indicates that keyword captioning, with or without L1 gloss, might have facilitated students' noticing of the keywords. It is also worth mentioning that both the L1GKC and KC pair noted down only 5 words that are not keywords in the video, but the NC pair wrote down 7. To put it into perspective, non-keywords account for 20 percent and 25 percent of the notes by the L1GKC and KC pair respectively, while they constitute 54 percent of the notes by the NC pair. This suggests that keyword captioning could effectively draw students' attention to the target feature. Another interesting finding is that one of the students in the L1GKC pair wrote down some of the keywords in L1 instead of L2. This signals that the student was paying attention to the meaning of the keywords.

Table 2. Summary of students' notes.

Pair 1 (L1GKC)	SA: China, build dense, food, massive, quaint, bowls, manners, chopstick, complete, food waste, ju…, spit, queuing, finish, host, adible, instinct	n=19
	SB: Billion, China, massive 巨大 , food, different, doesn't sit will with, increct with, 小 册 子 (pamphlet), queuing, 懊 恼 (frustrate), 发 脾 气 (lash out)	
Pair 2 (KC)	SA: Check out, quaint, complete, lead to, host, edible, sit well with me, improve, manner, government, spit, don't mind	n=15
	SB: Billion, check out, UK, China, way to eating, chopstick, food waste, host, manners, government, spitting, queuing	
Pair 3 (NC)	SA: 80,000, food, chopstick, finish, hostess, manners, don't mind, queuing	n=6
	SB: People, village, 80,000, food, chopstick, round, table, manners, queuing, skeap	

Table 3. Keywords used or paraphrased in oral and written production by three pairs, and keywords in the video.

Pair	**Keywords used/paraphrased in oral production**	**Keywords used/paraphrased in written production**	**Keywords in the video**
L1GKC	SA: manners, many people, big bowls, wasted food, communicate with others, government, spread the thin book	Crowded, big bowl, host, don't know how much food the people will have, wasted, manners, government, spread the thin book, spitting, queuing, angry	dense, flats, billion, check out, quaint, massive, communal bowl, interact with, complete, lead to, food waste, judge, finish, host, edible, doesn't sit well with, improve, manners, common, government, release a pamphlet, inform, spit, throw litter, don't mind, frustrate, queuing, skip to the front, control my british instinct, lash out, queue jumper
	SB: queuing(wrongly pronounced), can't stand		
KC	SA: check out, don't mind, improve	Manners, food waste, spitting, government	
	SB: manners		
NC	SA: don't mind, manners, finish, host(er)	host(er), manners, skeap the queuing, throw rubbish	
	SB: manners, queuing, skip the queuing		

According to Table 3, the L1GKC pair used or paraphrased 9 keywords in their oral production and 11 keywords in their written production. In contrast, the KC pair used only 4 keywords in both the oral and written production. For the NC pair, 6 keywords were used in oral production and 4 in written production. Even though the KC pair noticed more keywords based on their notes, the students under that condition either were not able to or at least did not use or paraphrase most of the keywords in their production. The tentative results of this pilot study show that L1 glossed keyword captioning might have worked better in facilitating students' oral and written production of the keywords than keyword captioning and no captioning. A more detailed analysis of the transcription and

written recall revealed that the access to meaning provided by L1 gloss enabled the students to paraphrase some of the keywords. For example, the L1GKC pair paraphrased "dense" as "crowded" in their written production and used "spread the thin book" in the place of "release a pamphlet", for which one student used Chinese in the notes, in both oral and written production. The pair also used "angry" for "lash out". In comparison, in the KC and NC pair, no students paraphrased any of the keywords.

3.2. Overall quality of oral and written production

The second research question examines whether the overall quality of the oral and written production by the three pairs differs. The overall quality of the discussion and written recall was assessed based on how many correct idea units (35 in total) the students produced. Figure 3 shows that the L1GKC pair produced about twice as many idea units as the other two pairs. The KC pair and the NC pair, however, did not differ in terms of idea units in both oral and written production.

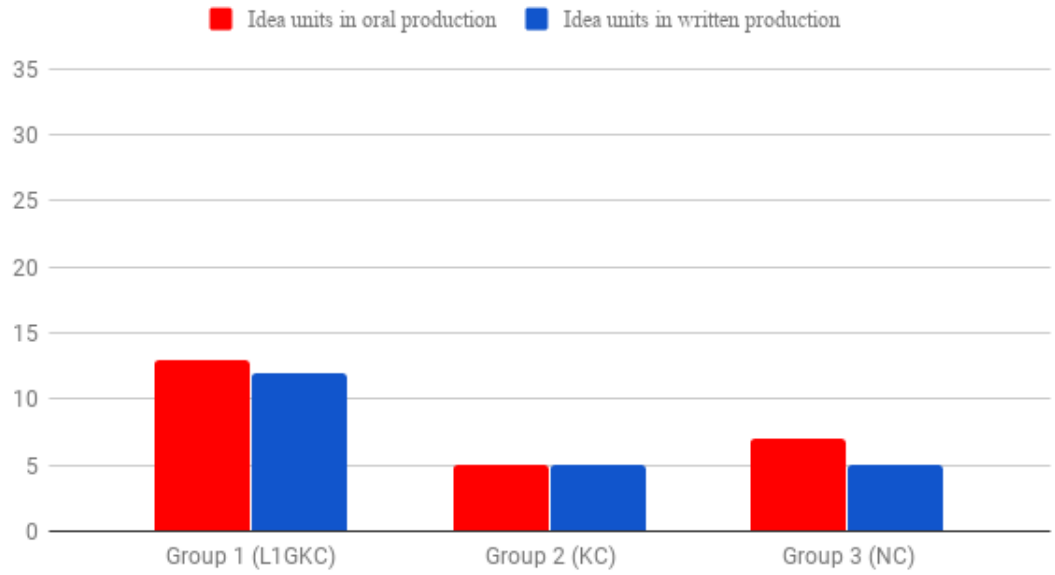


Figure 3. Idea units in oral and written production.

A closer look at the oral and written production data revealed that the L1GKC pair had a better comprehension of the video compared with the other two pairs. In the oral discussion, the students in the L1GKC pair had the following conversation:

B: *He says it can be more…talk with…*

A: *During the eating, they will communicate with others, right?*

Even though student B misspelt "interact with" as "increct with" under L1GKC, the student understood the meaning and used "talk with" in the discussion. That seemed to help student A to produce "During the eating, they will communicate with others..." which corresponded to "Everyone has to interact with each other in order to complete the meal..." in the video. However, the students in the KC pair did not mention this at all in their discussion. The NC pair produced the following utterance "In the UK, the people more outgoing than Chinese. When they meeting, they could say hello each other" which might have resulted from either pure guessing or misunderstanding of the content.

The L1GKC pair not only had more idea units but also had more accurate production in the written recall. In correspondence to "I really like this way of eating...but on the flip side it does lead to more food waste because it's much harder to judge just how much food you should actually cook," the L1GKC pair wrote "I like the way to eat, but it will waste food. Because the host don't know how much food the people will have." Though the students did not use the word "judge" and only wrote down "ju" in their notes, they were still able to reproduce the meaning. In comparison, the KC pair put down "And

Chinese can't allow food waste," and the NC pair wrote "when you go to others' house, the hoster would make you eat the food."

The results suggest that L1 glossed keyword captioning might be more useful than keyword captioning and no captioning in helping students comprehend and reproduce the content of the video. Though having successfully drawn student's attention to the keywords, keyword captioning did not increase students' understanding of the video. The only difference between the L1GKC pair and the KC pair was that students in the first pair had access to the meaning of the keywords through L1 gloss. This might have provided the much-needed information for the learners in the L1GKC pair to decode the speech and construct meaning, leading to a better grasp of the global meaning of the content.

4. Limitations and future research

Considering the purpose of the study was to test the instruments and data collection methods and there were only one pair of students in each captioning condition, the power of any statistical test will be very limited, so no statistical analyses were conducted in this pilot study. As a result, the findings of this pilot study should be interpreted with caution. The future study (In progress) will involve more participants and add the statistical tests to compare the data. Another limitation of the pilot study is that some students might have prior knowledge about the topic chosen, making it possible that these students might have performed better because of their familiarity with the topic rather than the different viewing condition. In the future study, a survey on students' prior knowledge of the video topic will be carried out to eliminate this effect. Another factor to consider is the difficulty level of the input itself. Even though the L1GKC pair did the best among the three pairs, the learners in that pair only produced a little over one third of the total idea units in the input. The L1GKC pair did capture the main ideas of the video, but their oral and written production lacked details. The fast speech rate (around 198 words per minute) of the video might have caused some trouble for the students. When selecting the video for the future study, both vocabulary and speech rate will be considered.

The current study did not solicit the students' and the teacher's opinions about the task. The learners' and teacher's feedback could provide insights into how they interact with the task and how the task should be modified to suit their needs. For example, after analyzing the survey questions, Montero Pérez et al. (2014) found that learners perceived the keyword as too distracting because they focused too much on the keywords and missed what was being said. Given the scope of the study, the researcher only investigated three captioning conditions. It will be beneficial to explore how other types of captioning, e.g., full captioning and L1 glossed full captioning, influence students' understanding of the content and their performance in the oral and written recall task.

Another research direction could be to rearrange the timing for the second watching of the video. This study adopted an input-input-output sequence, meaning the students watched the video the second time immediately after the first watching and then completed the production task. However, Nguyen and Boers (2018) argue that using an input-output-input sequence, where the learners work on the production task immediately after watching the video and then watch the video the second time, could help students notice the gaps between their production and the input content. As a result, they could focus on the information they need during the second watching. Thus, it is worthwhile to test whether using the input-output-input sequence could generate results that are different from using the input-input-output sequence.

5. Conclusion

In this study, learners under the L1 glossed keyword captioning condition better used and paraphrased the keywords in their discussion and written recall than learners under the other two captioning conditions. Learners under L1 glossed keyword captioning condition also produced more correct and accurate idea units than learners under the other two conditions. The results of this study indicate that L1 glossed keyword captioning has the potential to better promote learners' performance in the oral and written production task after watching a video clip. One implication of the study is that by integrating L1 glossed keyword captioning into the audio-visual input, the teacher might be able to facilitate students' understanding of the keywords and comprehension of the video content and promote learners' oral and written production. Considering the growing popularity of

audio-visual materials in L2 teaching and learning, further research concerning how to effectively integrate audio-visual input into L2 classrooms is needed. To achieve more accurate and generalizable results, the future study will recruit more pairs of participants, select a video whose topic is not familiar to the participants, and consider the vocabulary level and speech rate of the video.

References

Anthony, L. (2014). AntWordProfiler (Version 1.4.1) [Computer Software]. Tokyo, Japan: Waseda University. Available from http://www.laurenceanthony.net/software.

Ellis, R. (2015). *Understanding Second Language Acquisition* (2nd Ed.). Oxford: Oxford University Press.

Ellis, R. (2018). *Reflections on task-based language teaching.* Bristol: Multilingual Matters.

Guillory, H. G. (1998). The Effects of Keyword Captions to Authentic French Video on Learner Comprehension. *CALICO Journal, 15*(1-3), 89-108.

Koolstra, C. M. & Beentjes, J. W. J. (1999) Children's vocabulary acquisition in a foreign language through watching subtitled television programs at home. *Educational Technology, Research and Development, 47*(1): 51-60.

Krashen, S. D. (1985). *The Input Hypothesis: Issues and Implications*. New York: Longman.

Lee, M. & Révész, A. J. (2018). Promoting Grammatical Development through Textually Enhanced Captions: An Eye-Tracking Study. *Modern Language Journal*. https://doi.org/10.1111/modl.12503.

Long, M. H. (1983). Native speaker/non-native speaker conversation and the negotiation of comprehensible input. *Applied Linguistics, 4*, 126-141.

Markham, P. L. (1999). Captioned videotapes and second-language listening word recognition. *Foreign Language Annals, 32*(3), 321-328.

Markham, P. L., Peter, L. A. & McCarthy, T. J. (2001). The effects of native language vs. target language captions on foreign language students' DVD video comprehension. *Foreign Language Annals, 34*(5): 439-445.

Montero Pérez, M., Peters, E. & Desmet, P. (2018). Vocabulary learning through viewing video: The effect of two enhancement techniques. *Computer Assisted Language Learning, 31*(1-2), 1-26.

Montero Pérez, M., Peters, E. & Desmet, P. (2014). Is less more? Effectiveness and perceived usefulness of keyword and full captioned video for L2 listening comprehension. *ReCALL, 26*(1): 21-43.

Nation, P., & Beglar, D. (2007). A vocabulary size test. *The Language Teacher, 31*(7), 9-13.

Nava, A., & Pedrazzini, L. (2018). *Second language acquisition in action: Principles from practice*. London; New York, NY: Bloomsbury Academic.

Nguyen, C. D. & Boers, F. (2018). The Effect of Content Retelling on Vocabulary Uptake from a TED Talk. *TESOL Quarterly, 52* (1), 1-25. doi: 10.1002/tesq.441.

Riley, G. L., & Lee, J. E. (1996). A comparison of recall and summary protocols as measures of second language comprehension. *Language Testing, 13*(2), 173-98.

Rodgers, M.P.H. & Webb, S. (2017). The Effects of Captions on EFL Learners' Comprehension of English-Language Television Programs. *CALICO Journal, 34*(1), 20-38.

Schmidt, R. (2001). Attention. In Robinson, P. (ed.): *Cognition and Second Language Instruction*. Cambridge: Cambridge University Press, pp. 3-32.

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass &C. Madden (Eds.), *Input in second language acquisition* (pp. 235-253). Massachusetts: Newbury House.

Winke, P., Gass, S., & Sydorenko, T. (2010). The effects of captioning videos used for foreign language listening activities. *Language Learning & Technology*, *14*(1). 65-86.

Website review

WeShareScience 101: A Website for Creating Video Abstracts

Sara Nezami Nav
Oklahoma State University, USA

snezami@oksatte.edu

Abstract

The video abstract genre is becoming a major platform for disseminating recent research, and websites such as *We Share Science* (http://wesharescience.com) provide researchers with opportunities to create them. In this review, a detailed description of the website is put forward along with its teaching and learning potentials for research writing, specifically in L2 settings. The researchers who publish their videos on this website come from different language and disciplinary backgrounds, so it is of interest to see how it can potentially benefit L2 learners. The review reveals the benefits along with the drawbacks that teachers will need to address if interested in implementing the website in their course for L2 students.

1. Description

We Share Science is a website that provides a very nice space for researchers to share their research ideas and to expose them to the public for discussion. The website exhibits and distributes research from across different disciplines through a social media platform and an online annual international science fair. These two services and their potential to boost language learning in L2 student-researcher populations are of main concerns in this review. Upon entering the website, a corpus of all the previously uploaded research abstracts and description videos are accessible for users. These videos are available even without logging in to the website which can provide the opportunity for people to evaluate whether the website fits their needs before starting to use it.

In the top, right hand corner of the website page, there are four main tabs; login, menu, share and browse (Figure 1). The login tab is for users to enter their personal account on the website. The menu tab leads the users to different main functions of the website such as advanced search of videos, participating in the science fair and getting involved in the website, creating a course using the website for instructors, sharing the website and using the support page. The share tab allows users to have access to making and sharing videos and creating notebooks of their favorite videos on the website. However, these functions are accessible only after logging in. In the creating a video section, the criteria for the appropriate videos for sharing are clearly described. Finally, the browse tab provides users with the opportunity to search for the already existing videos by discipline or by topic. Users can also search for the fund research or trending video abstract categories, and the search box enables users to search for specific videos. One concern regarding the search functions of the website would be that there is no difference between the simple search bar on top of the page (Figure 1) and the function of advanced search under the menu tab. In other words, the advanced search does not include the criteria for narrowing down the search findings.

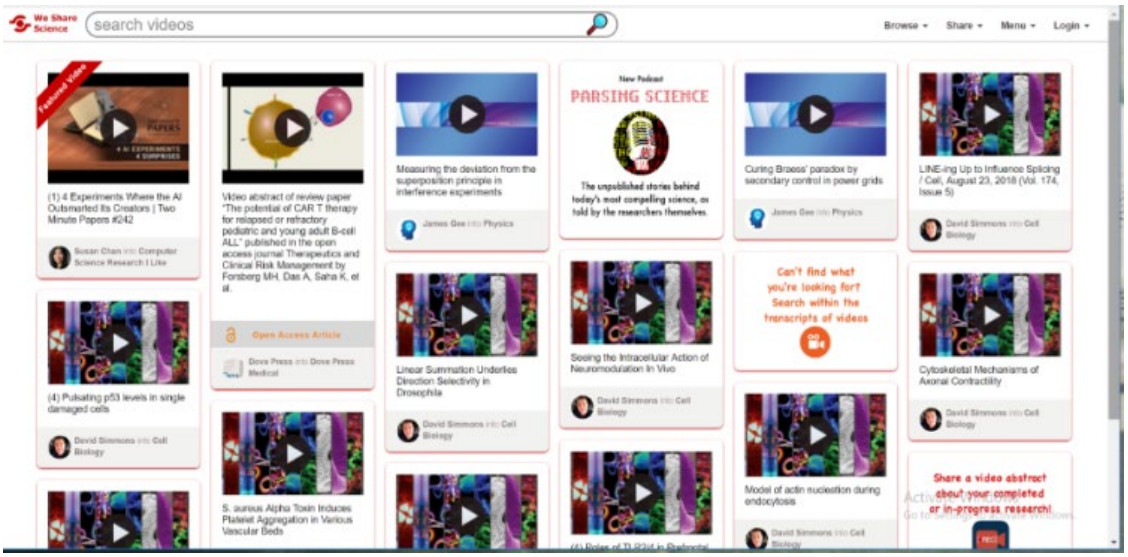


Figure 1. The Website's Interface Including the Browse, Share, Menu and Login Tabs.

In addition to the social media platform, the website links users to the 5-Minute Science Fair, which is a competitive way for researchers to showcase their research ideas. On this platform, the past fairs, their winners and the sponsors for the competitions are found. There are multiple agencies and organizations that support the fair financially, and *We Share Science* encourages other organizations to support the fair. Currently, there are three groups of sponsors who donate money for the best videos and winners in the fair funds: Diamond Sponsors ($5000 or more), Platinum Sponsors ($500 or more), and Gold Partners (in-kind assistance). There are also prizes for the videos with most Facebook likes and most tweets. A detailed description of the ten rules for competition and submission and the four main judging criteria including presentation, comprehension, innovation, and application can be found on the same page. On the website, it is also mentioned that web analytic services are the future aspiration to communicate different related organizations services' decisions to researchers. However, this opportunity is not yet available. Furthermore, in the past science fair section where the past fairs and their winners are described, there seem to be no updates after 2015 and the last science fair seems to have been held in that year so it is not clear if the science fair happens on a yearly basis or not. If so, it would be better to update the events on the website.

In this website, people can share their own research ideas or other researchers' studies by creating short (i.e., no longer than 5 minutes) videos and pinning the videos to the website. Most of the tabs, links, and services are available even without creating an account. However, for users to benefit from the website's services such as following other researchers, chatting with friends and followers and most importantly sharing their videos, it is necessary to log into the website. As stated in the website, this function is possible by either an already existing Facebook or Twitter account or by requesting a username and password from the *We Share Science* team. However, despite what is stated on the website, there seems to be no option for people to log in with their Facebook account.

As long as a system allows the use of one of Firefox, Safari, Opera, SeaMonkey, Internet Explorer (v10+) or Chrome browsers, creating videos is possible in three different ways. The first option gives users the access to different video making tools and tutorials. The second option gives users the possibility to create slides using external software such as PowerPoint and record their narration. Users, then, can accompany the narration and slides and upload their files to the website. In the third option, users can use a webcam or a recording tool to record videos and then upload the files to the website for others to watch. This third option provides access to Screencast O Matic recorder which is a java supported tool and a non-java tool which is Free Online Screen Recorder. If users use the Chrome browser, the first two options would not be applicable. In all these cases, there is an easy way to share videos on *We Share Science* by using a browser add-on called

"Share in". By installing this add-on, it is easy to pin the appropriate videos from different websites to the *We Share Science* website with only one click. The description of how to install this add-on and other widgets for blogs and websites is provided in Share It Buttons page.

The website's interface is very user-friendly, and it is easy to navigate through different tabs and sections. After users log in to the website, they will have access to a chat box on the bottom, right corner of the page that enables them to talk with their followers on the website or the researchers whom they follow. This has provided an interactive interface for users and an easier, faster way to discuss ideas with the community of researchers. In their profiles, users are free to share photos, quotes and other types of materials under the label of User Content, the protection of which is the user's own responsibility based on terms of use and privacy. One more interesting feature is that, if a user cannot find their intended video, they can search within transcripts of the videos to find the one they want. The search-in-video-transcripts feature is powered by the spoken data technology which turns speech into text and by entering appropriate keywords, users can find their desired videos from transcripts.

2. Teaching and learning potentials

Most technological advancements were not initially designed for use in L2 language classrooms; however, they could very well be adapted to this context. While, *We Share Science* is not a website that claims to be developing linguistic competence in learners, course developers, teachers and students could very well use it for this purpose. To further elaborate on how this website can be used in an L2 language classroom, a description of teacher and learner activities are put forward.

Under the share tab and in the make a video page, there is a section called "For Instructors," where four major types of assignments are described, and teachers and course developers can utilize them for their students and use them in their L2 research writing programs. One of the positive aspects of this section of the website is that the grading criteria for every assignment are included. The first assignment includes the analysis of research articles in which it is recommended that instructors ask students to create three short video abstracts for three research articles with a special focus on the content rather than the slides or visuals. Students are required to describe the main sections of the papers in their videos. Then, they will upload the videos on YouTube or Vimeo and pin them to WeShareScience.com. The videos should be accompanied by the names of the researchers and the title of the articles. Next, they will copy and paste the URLs in a word document and upload them on their classroom Dropbox folders. The grading criteria for this assignment are 20% for research background, 30% for what the researcher(s) did, 20% for what they have learned, 20% for application of research and 10% for the creativity in presentation. The second assignment is synthesizing three research papers drawing the major themes from every article and finding the relevance among the three. Then, the three paper's basic elements, their relations, and their shared value should be described in a video abstract. This synthesis video should not be longer than 8 minutes and the recording and submission will be the same as in the first assignment. The grading criteria are described as 15% for the quality of the papers, 15% for the summary of every research, 20% for the description of what the researchers have learned, 30% for the synthesis, 10% for applications and 10% for creativity in presentation.

The next assignment asks students to report their own research in progress creating a video abstract in which they describe the basic elements of their research and the value of the results. The creation and submission are similar to the assignments above. The grading criteria for this assignment will better explain what instructor have to expect in this assignment; 20% for research background, 30% for they have done or will do, 20% for the results they already obtained or will obtain, 20% for the value and application of the research and 10% for creativity in creating their video. The website then connects users to TED-Ed tools to create their own lessons around their desired video(s). As it is mentioned in *We Share Science,* TED-Ed can provide instructors with an opportunity to create their questions around videos, finding extra resources and having an online discussion on their desired topics. *We Share Science*welcomes any new ideas for assignments and lesson using the website's resources.

The students will need to create their videos in four major steps. In step one, students will create slides. As slides are limited in space, they are required to summarize their research ideas by breaking down a research paper into its main elements (e.g. the purpose, questions, method, results, discussion, and implications). However, the options for creating the videos on the boundary of the website itself are limited so this can restrict students' creativity in major ways. For instance, there is no room for creating animated videos; to do so, the website connects users to external websites, some of which are expensive to use. Moreover, students cannot work on a shared project or video collaboratively or benefit from immediate, in-the-process feedback. In the second step, students are required to record their narration. In this step, they are recommended to leave most of the information to be conveyed through narration and not the written words on the slides, which can help students develop speaking skills. For narrating their research, the website recommends students to be simple, energetic, inviting and unhurried. They are advised to hold the microphone correctly for better voice quality. Then students will use the recorder to narrate over their slides (Figure 2). Finally, they will send their final videos to Vimeo or YouTube and pin them to the *We Share Science* website. These functions require students to create accounts in the website.

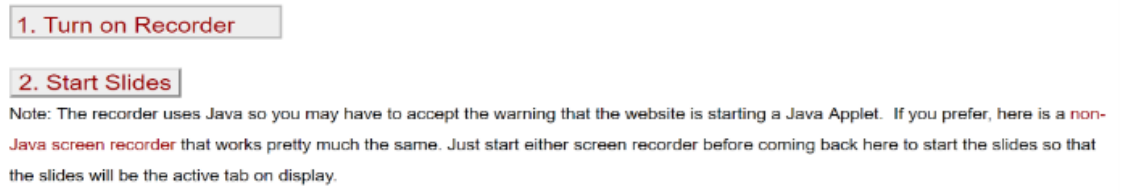


Figure 2. The Recorder and Slide Playing buttons.

The benefits of using video abstracts in a second language research course can be justified through Second Language Acquisition (SLA) approaches to linguistic development specifically the sociocultural and systemic functional perspectives. From the sociocultural perspective, humans make use of the many physical and non-physical tools to achieve command over their social and mental performances. The adaptation of this theory to second language acquisition encouraged scholars in this field to look at language as a medium to interact with self and with the environment or social context. The progression of research in this area led researchers to believe that the development of a second language is a by-product of a complex relationship between individuals and their internal factors and other human or non-human sources that are within a specific context in which language is used (Ganem-Gutiérrez, 2013). The advent of computer-based media and different technologies, as well as the accessibility of web-based data and information, have provided users with new mediums for communicating their research interests (Spicer, 2014). This is happening in online spaces such as *We Share Science* where researchers, using different mediums and modes of communication (i.e. spoken, written, audio and visual), communicate their desired meanings (i.e. research). Many of the users of this website are from non-English speaking countries and to access a wide audience they will need to explain their research in English. Knowing how to describe a research process can be a challenging task but this is compensated by the incorporation of other visual and written modes that accompany researchers' narrations. These are the options that technology provides for language users, and language in its written or spoken forms is not considered the only medium of communication. In fact, this technology makes it possible for users to produce multimodal texts and genres and these are the insights put forward by the systemic functional theory (O'Halloren, 2008).

One more benefit of creating video abstracts from specifically sociocultural perspectives would be for researchers to receive feedback as a form of assistance in doing their research hence the assisted learning, a concept embedded in the Zone of Proximal Development of Vygotsky. According to this theory, the development of individuals as language users (in this discussion) happens in three main stages; object-regulation, other-regulation, and self-regulation. An individual relies on instructions and follows them too closely in order to perform an activity. Next, they can perform the activity with the help of experts in the field and finally, they can become experts and independent learners in performing the intended activity (Lantolf & Thorne, 2007). Though there is a room for

learners to move from assisted to independent learning, the website falls short in providing true opportunities for receiving feedback. In fact, the transition from other regulated and scaffolded learning to self-regulation or autonomy (i.e. the zone of proximal development) is feasible if learners continue sharing and communicating through this website while in the process of creating and not after they have created their product. This does not happen in the website, though students can still benefit from sharing their finished videos.

Despite providing visibility for researchers and their research, the website does not truly challenge students' competencies. To develop linguistic competence, one needs to develop technological competence (Chapelle, 2009). As video abstract is a new genre for student-researchers (Spicer, 2014), they will need to get familiar with this genre before producing their own. Partly because it was intended for a different use, the website does not provide teachers and students with opportunities for learning about the video abstract genre prior to producing their own abstracts. It is upon teachers to design genre analysis lessons using the corpus of video abstracts on the website. Teachers can design activities in order to help students develop critical thinking skills by asking them to analyze the existing video abstracts using different criteria. This is in line with the assisted learning to an independent learning model that is introduced in sociocultural theory. Moreover, it is in line with the teaching and learning cycle in systemic functional theories of language learning, in which a genre is first modeled and analyzed, then, it is co-constructed by instructors and students so that, ultimately, students can produce the genre independently (Hyon, 1996).

3. Conclusion

The website offers a very nice environment for novice researchers and graduate students from different countries and different disciplinary backgrounds who produce video abstracts in English to access a wide ranging audience. The creation of videos for describing one's finished or in-progress research ideas requires students to have analytical, summarizing and explaining skills as well as the knowledge to work with the technology. Furthermore, the website sparks communication and provides a nice space for having conversations on researchers' desired topics or for receiving feedback from others on different aspects of their research. However, it could have been more interactive if students had the opportunity for co-construction of the videos in the same environment and for communication while in the process of creation. Furthermore, in a video abstract written words, images and audio are accompanied, which demands students to not only know how to write or talk in a second language but also know how to use the technology to combine these together. However, this needs training and a bit of effort on the part of the teachers to design tasks that can develop this competency, as the website does not provide such tasks for students. In addition, one major concern for using the website would be the fact that the internet, computers, and technology might not be accessible for people in every country in the world and this brings up social justice issues which need to be resolved in higher-level educational systems in those countries. It is rather apparent that our lives have become tied to technology and to develop various abilities such as the ability to produce an academic text, in most occasions, we need to be able to use certain technologies. Technology has appeal for today's world and the key is to make use of what is appealing as a learning opportunity. Furthermore, the creation of digital media such as *We Shares Science* has provided multiple, new opportunities for people to communicate in the world. In conclusion, this website is potentially highly beneficial to use in a second language research writing course with the required adaptations.

References

Chappelle, C. A. (2009). The relationship between second language acquisition theory and computer-assisted language learning. *The Modern Language Journal, 93*(focus issue), 741-753.

Ganem-Gutiérrez, G. A. (2013). Sociocultural theory and second language development: Theoretical foundations and insights from research. In. R. Manchon (ed.), *Contemporary approaches to second language acquisition*, (pp. 129-152).

Hyon, S. (1996). Genre in Three Traditions: Implications for ESL. *TESOL Quarterly, 30*(4), 693-722.

Lantolf, J. & Thorne, S. L. (2007). Sociocultural theory and second language learning. In. B. Van Patten & J. Williams (eds.), *Theories in second language acquisition*, (pp. 201-224).

O'Halloran, K. L. (2008). Systemic functional-multimodal discourse analysis (SF-MDA): Constructing ideational meaning using language and visual imagery. *Visual communication, 7*(4), 443-475.

Spicer, S. (2014). Exploring video abstracts in science journals: An overview and case study. *Journal of Librarianship and Scholarly Communication 2*(2), 1-13.

Reflective practice

Learning autonomy, digital learners and Google Education: a rhizomatic English syllabus framework

Samia Kara
German University in Cairo, Egypt

samia.kara@guc.edu.eg

Abstract

Exploiting the free technology empowering services with which Google supplies the educational field, the present paper contributes a Google Education mediated syllabus framework to the field of teaching English as a second/ foreign language. Through a systems approach methodology, the framework addressed the concepts of 'learner autonomy' and 'digital learners' within the scope of its consecutive blocks: conceptualisation, planning and development. The relevance of this effort is to be seen in terms of bridging the ever-growing gap between the classroom and the digital world of web 2.0 learners; as well as enabling the teachers to contextualise the proposed tool with regard to their syllabi development, renewal and adaptation.

Keywords: English as second/foreign language, learner autonomy, digital learners, syllabus framework, Google Education.

1. Introduction

Analysing data in relation to learning reported by the Programme for International Student Assessment in 2012, the OECD (2016) explained that the introduction of digital technology did not lead to the expected efficiency as the emphasis was mainly on technology and connectivity. Indeed, what needed to be explored, according to this source, are gaps in teachers/learners' digital skills, shortage in clarity in relation to learning goals, resource and software selection, as well as unsatisfactory readiness for blended learning-based lessons and syllabi.

Within the scope of English as a second/ foreign language (ESL/ EFL) teaching, the above-mentioned challenges do apply as well; especially with the advent of web-driven learners for whom digital devices and internet have become a must. Although many teachers have already succeeded in turning their classrooms into web-based environments, a deep understanding of the nature of these learners' needs as to autonomy and digital learning is always a gain. To benefit from opportunities presented by the internet without getting lost in the midst of this information ocean, this understanding is supposed to respond to the aforementioned challenges.

The aim of the present paper is to suggest a framework that is based on 'learner autonomy' and 'digital learning' to be followed for the sake of turning classrooms into Google Education mediated environments through syllabus design, renewal and adaptation.

The methodology that was adopted is founded upon the systems approach which 'denotes a collection of procedures directed toward the engineering of specific "real world" effects' (Stowe, 1973, p. 166). More precisely, the synthesis dimension of these procedures was adopted in order to meet the problem-solving nature of the systems approach. Thus, the learning situation is not regarded as a sole outcome in terms of individuals, activities and goals, but that of the synergy of the parts of a whole. In other words, the teacher goes

beyond content delivery, aiming to recognise learners as important constituents of the classroom system.

Subsequently, the following questions guided this endeavour:

- What do teachers need to know in relation to learner autonomy and digital learners?
- What do teachers need to focus on at the planning stage of the syllabus in relation to needs, stakeholders and teaching methodology?
- What type of learning outcomes, contents and tasks, aids (Google Education platforms) and assessment do teachers need to select to develop the syllabus?

2. Learner autonomy

The European efforts that were made to meet the late 1960s social and political changes, culminated in the creation of bodies like the Council of Europe Modern Languages Project, whose main goal was to provide a lifelong learning based on the interwoven elements: education, individual liberty and social obligation (Gremmo & Riley, 1995). For its part, the University of Nancy 'Centre de Recherches et d'Applications Pédagogiques en Langues: CRAPEL' (Centre for Research and Applications in Language Teaching) facilitated the admission of the concept of autonomy to the arena of language learning in the early 1970s (Benson, 2013). This effort was thanks to its founding father Yves Châlon, who died just afterwards and was replaced by Henri Holec (Benson, 2013).

Holec, in a co-authored article that appeared in 1973, associated the concept of autonomy in learning to adults' specificities who relate their ambitions to their learning possibilities (Cembalo & Holec, 1973). Thus and at that time, the pivot around which autonomous education was revolving was the adult who, by virtue of his/her new role as a learner-teacher was supposed to fulfil a set of tasks Holec (1981, p. 3) stated in his bedrock definition of learner autonomy (LA):

> *ability to take charge of one's learning... to have, and to hold, the responsibility for all the decisions concerning all aspects of this learning, i.e.:*
>
> - *determining the objectives,*
> - *defining the contents and progressions;*
> - *selecting methods and techniques to be used,*
> - *monitoring the procedure of acquisition properly speaking (rhythm, time, place, etc…),*
> - *evaluating what has been acquired.*

LA is sometimes associated with independent learning although the latter has mainly to do with behaviour and active obligation (Morrison, 2011). Another association is that of self-determination, whereby LA is perceived as an authentic engagement on the part of the learners to proceed with learning and in agreement with peripheral potencies of learning contexts (Willems & Lewalter, 2012). Thus, LA is a capacity to be revealed in both learning and learning transfer (Little, 1991).

Accordingly and as a construct, LA depends heavily on the spatial/cultural/temporal contexts where it is practiced (Lamb, 2017). All in all, it emphasises external factors, which help learners endorse responsibility for the various learning process facets, and internal ones, which prepare learners to accept responsibility (Jiménez Raya and Lamb, 2008, p. 64; cited in Lamb, 2017, p.187).

In fact, while the first trend depicts a system wherein LA is enacted while learning a language takes place following CRAPEL's self-access learning perspective; the second one emphasises components of cognition and psychology (Lamb, 2017). Thus, LA is redefined according to these individual components as a capacity to detach oneself, to reflect critically, make decisions, and act independently (Little, 1991).

For Candy (1991), LA is a manifestation of self-management (mastery of the learning process) and self-determination (an individual's readiness to accomplish learning). If both perspectives of LA are met, then, self-directed learning takes place. Self-directed learning is based on the notion of personal learning projects being fuelled by the learners' determination and ability (Bouchard, 2012). Bouchard (2012) further used another nomenclature to speak of the same dichotomy in terms of dimensions. He used

'algorithmic/procedural dimension' for self-management and 'conative/psychological dimension' for self-determination. He also proposed to add two other dimensions: the 'semiotic dimension', whereby specificities of modern communication such as social networking and learners' preferences are to be taken into account, and the 'economic dimension', whereby the learner is compelled to choices as to the actual value granted by online programmes (Bouchard, 2012).

Owing to the principle of 'taking one's learning in charge', LA is very much associated with learning strategies (LSs). According to Oxford (2008, p.52), L2 LSs can be metacognitive for the sake of directing learning like planning and evaluating, affective such as motivating oneself and dealing with negative emotions, cognitive like analysing and synthesising for the sake of L2 mental handling and cognitive schemata creation, and social-interactive such as collaborating and detecting sociocultural aspects.

LA is seen in terms of seven levels in Nunan's (1997) proposed framework. The first of these levels is awareness whereby learners are made conscious of the aims and are required to match strategies with tasks and come up with their own. Then, there is involvement whereby learners choose goals and tasks from provided lists. Thirdly, there comes the intervention level whereby learners actively adapt the goals and content as well as tasks. Fourthly, there is the creation level whereby learners formulate their own goals and tasks. The last level is the one of transcendence whereby learners play the role of teachers and researchers and go outside the classroom to relate what they have learnt with the outside world. Whereas cognitive LSs should be made co-existing with the awareness, involvement, intervention and creation levels, the social-interactive LSs are to be targeted at the transcendence level. For their part, both metacognitive and affective LSs target all the levels.

3. Digital learners

Generational dissimilarities go back to studies highlighting differences among generations which are sealed in shared experience, life experiences and common standards (Torocsik et al., 2014). Consequently, the categorisation of individuals into cohorts had to be age based and linked to three criteria: individual social and economic features, an authority/stimulus/vision-based environmental impact and a cohort expertise (Torocsik et al., 2014). In addition, generational segmentation could also have been subject to more precise factors than age but which are still related to it like awareness of membership, shared beliefs and conduct, and shared coordinates in history as to meaningful tendencies and happenings (Howe and Strauss, 2000; cited in (Torocsik et al., 2014).

Figure 1 shows different generations. The first of these is the generation of the Silent/ Traditionalists/ Matures/ Veterans, whose members do not exceed the year 1946 in terms of birth. It is followed by the Boom/ Baby Boomers/ Baby Boom Generation (1943-1960). Then, there comes the third generation, namely, the 13th Generation/ Generation X/ Gen-Xers (1961-1981). The fourth generation is labelled Millennial Generation/ Echo Generation/ Baby Buster/ Gen-Y/ Digital Generation and NeXters (1981-2000).

Source	Labels				
Howe and Strauss (2000)	Silent Generation (1925–1943)	Boom Generation (1943–1960)	13th Generation (1961–1981)	Millennial Generation (1982–2000)	–
Lancaster and Stillman (2002)	Traditionalists (1900–1945)	Baby Boomers (1946–1964)	Generation Xers (1965–1980)	Millennial Generation; Echo Boomer; Generation Y; Baby Busters; Generation Next (1981–1999)	–
Martin and Tulgan (2002)	Silent Generation (1925–1942)	Baby Boomers (1946–1960)	Generation X (1965–1977)	Millennials (1978–2000)	–
Oblinger and Oblinger (2005)	Matures (<1946)	Baby Boomers (1947–1964)	Gen-Xers (1965–1980)	Gen-Y; NetGen; Millennials (1981–1995)	Post-Millennials (1995–present)
Tapscott (1998)	–	Baby Boom Generation (1946–1964)	Generation X (1965–1975)	Digital Generation (1976–2000)	–
Zemke et al. (2000)	Veterans (1922–1943)	Baby Boomers (1943–1960)	Gen-Xers (1960–1980)	Nexters (1980–1999)	–

Figure 1. Generations (Reeves & Oh, 2008, p. 296).

The post 1995-2000 natives and who are of interest to this paper came after the Gen-Yers. According to Marshall (2018), they are called Net Generation (Tapscott, 2009), Digital Natives (Prensky, 2001), Smart Mob (Rheingold, 2002), Screen Agers (Rushkoff, 2006) and Google Generation by Rowland et al. (2008). At the personal level, the members of this generation are characterised by being freedom, customisation and personalisation lovers; scrutiny, integrity and openness impregnated minds; amusement and speed seekers; collaboration and relationship representatives, and innovators (Tapscott, 2009). As such, they are more or less active participators in decision-making processes related to their lives. At the level of information treatment, they rely on interaction and creativity in the way they collect, take and remember information (Daley, 2001). In addition, and as maintained by Bennett et al. (2007) –relying on research by Frand (2000), Oblinger & Oblinger (2005), Prensky (2001) and Tapscott (2009)–, these learners are portrayed as multitasking, active experiential and reliant on technology for information use and communication.

Although the above descriptions tried to depict the digital natives as accurately as possible, they have been criticised by several scholars. In fact, the disapproval was mainly due to the extremist nature of the differentiation made between young and old learners regarding learning online, the heterogeneity of the present generation, the prior existence of multitasking, the existence of accurate differences as to technology usage in each generation and the fact that older generations are discarded from technology (Crook and Harrison, 2008; Vaidhyanathan, 2008; Kennedy, Judd, Dalgarnot & Waycott, 2010; cited in Wheeler & Gerver, 2015).

In an attempt to bridge the gap, White and Le Cornu (2011) proposed a continuum 'Digital Residents-Digital Visitors' whereby both young and old learners can find a suitable situation. According to these authors, a digital resident is the one who perceives the web as mainly a network of people or groups of people who produce information; whereas, a digital visitor is the one who realises that the web is a set of devices that help in delivering or manipulating content.

Because of the previous debate, Gallardo-Echenique et al. (2015) proposed to shift the denomination to 'Digital Learners' (DLs) to target a group of individuals as technology conscious learners (not persons) who are not subject to any generational limits. These individuals live in a world immersed in technology and use the latter both formally and informally to attain knowledge. To understand these learners, Siemens (2004) proposed connectivism, which is: 'the integration of principles explored by chaos, network, and complexity and self-organisation theories' (Siemens, 2004, Para. 21).

Cormier (2008) talked of a different model in reference to the concept of rhizome, which is a plant whose roots grow in an independent manner. Metaphorically, the rhizome is the present knowledge network which is available online and to which individuals in varying communities add their nodes (Cormier, 2008). Thus, the syllabus is built cooperatively by communities of learners who are implicated in the learning mechanism (Cormier, 2008). This opens the door to two other notions that are in very close association with digital learning and rhizomatic education, namely, 'Heutagogy' and 'Paragogy'. According to Wheeler and Gerver (2015), Heutagogy was introduced by Hase and Kenyon (2007) to refer to a form of learning that is (in)formal and self-determined and which targets meta-learning. Paragogy, for its part, is related to DLs as co-builders of their educational content (Cornelli & Danoff, 2011; cited in Wheeler & Gerver, 2015).

Another concept that is very important to DLs is 'Digital Skills' (DSs). DSs exceed attaining, creating and sharing information as they target the latter in terms of processing and critical evaluation for the sake of problem solving (Fau & Moreau, 2018). They must be understood within the frame of constant change and evolution that go hand in hand with technology advancement (Fau & Moreau, 2018). DSs are various and are classified by Steayaert and De Haan (2001, cited in Fau & Moreau, 2018) into instrumental –using technology tools, structural/informational– targeting online information in terms of comprehension, interpretation and evaluation, and strategic – practical transfer of knowledge for the sake of influencing personal as well as professional spheres. Another classification is that of Eshet-Alkalai (2004, cited in Fau & Moreau, 2018) who gathered DSs in the form of literacies under the umbrella of 'digital literacy' including photo-visual

(comprehending visuals), reproduction (reusing data creatively), information (evaluating data), branching (comprehending media), and socio-emotional (online behaviour).

4. LA, DLs and learning English as a second/foreign language

Because DLs have, in one way or another, an already existing familiarity with the internet and technology, they show a readiness for LA. Thus, and as stated by Boulton et al. (2008), they ought to be capable of taking responsibility for their learning regarding goals and objectives, contents and resources, methods and techniques, learning organisation as well as evolution assessment.

4.1. Bloom's digital taxonomy

Originally, Bloom (1956) with his group of educationists- and in an effort to develop a basis for educational goals designed for curriculum/course development, presented a hierarchical taxonomy of categories targeting simple to complex and concrete to abstract learning outcomes: knowledge, comprehension, application, analysis, synthesis and evaluation. A revised version was made by Anderson et al. (2001) and included the categories in the verb form: remember, understand, apply, analyse, evaluate and create which were arranged into a continuum: lower order thinking skills (LOTS) - higher order thinking skills (HOTS):

The advent of technology was behind new attempts to update the taxonomy again. One of the most notable ones was Churches' (2008) concept of digital taxonomy that builds upon Anderson et al.'s (2001) revised form of Bloom's taxonomy and takes it steps ahead by including digital objectives. For example, and as displayed in Figure 2, the category of creating, which included sub-skills such as planning and producing, includes now sub-skills like programming, filming, and blogging. The new taxonomy also includes collaboration elements such as commenting, emailing and instant messaging. An updated form of this taxonomy is available in the form of a poster on [wabisabizen.com].

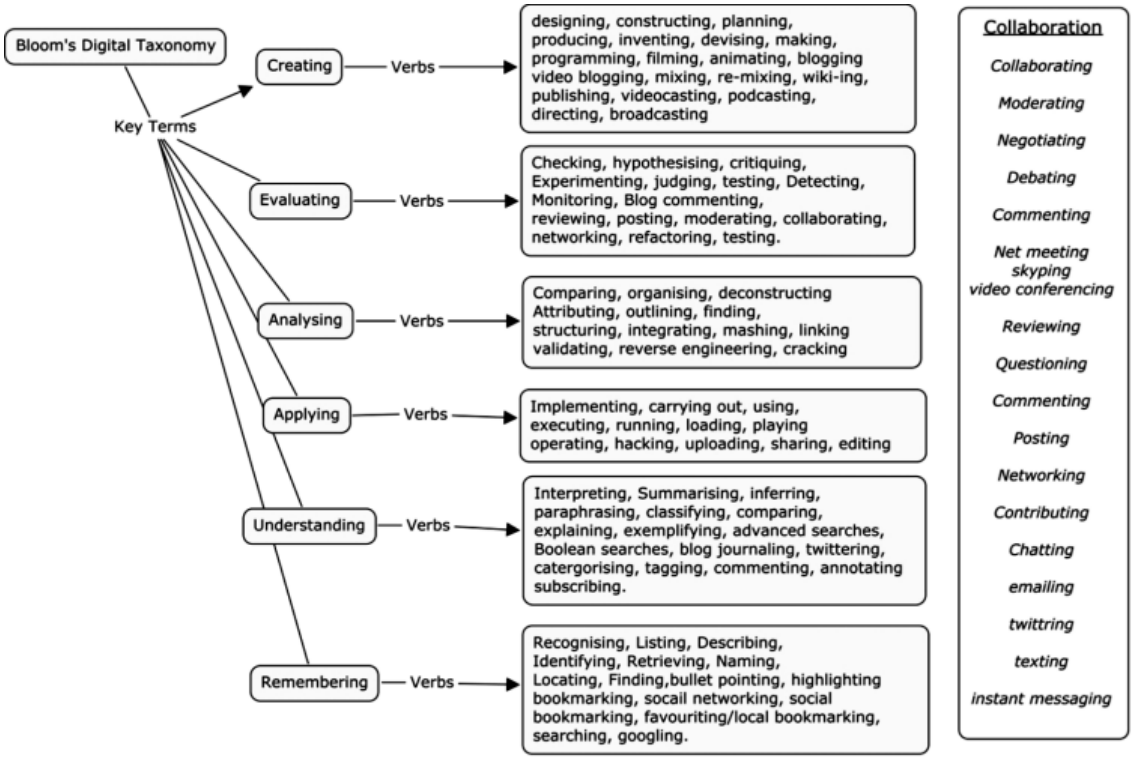


Figure 2. Bloom's digital taxonomy (Churches, 2008).

4.2. Transactional/ interactional English

To start with, language is said to have a transactional function when used to deliver information and an interactional one when used to maintain social relationships (Brown & Yule, 1983). Consequently, a learner does not only learn a language as a set of systems and skills or a content, but also as a means for creating, maintaining and advancing social links with its native speakers, teachers or co-learners.

The transactional function of language when accessed online may make for the impoverishment that happens in some traditional environments featured by the absence of study abroad (Blake, 2008). Thus, not only does technology help in sustaining learning that takes place inside the classroom, but it also encourages the learner to be more self-reliant in coming in contact with native language materials on his own without the direct intervention of the teacher.

Within the interactional dimension of language functions, the breach existing between the classroom and the digital world never ceases to grow. Indeed, the more advanced technology tools are, the more the language used for interaction will differ from the one encountered in the classroom in terms of nonstandard features (Veszelski, 2017). Called in the 1990s a 'written interactive register' (Ferrara et al., 1991; cited in Veszelski, 2017), it shifted to a status of a variety with Crystal (2001, 2008; cited in Veszelski, 2017) who called it 'netspeak', 'textese', 'slanguage', 'new high-tech lingo', and 'hybrid shorthand'. For his part, Veszelski (2017) coined the term 'digilect' to refer to a variety of language that is used in groups (sociolect) and mediated by technology tools (mediolect). Always according to this author, this appellation responds favourably to the rapid changes witnessed in technology and which moved people from simple mobile sms users to Facebook consumers. These same changes moved learners from static web 1.0 users who download and upload materials to highly interactive web 2.0 manipulators (Underwood, & Farrington-Flint, 2015).

As to the text types of this digilect, they include (but are not limited to) 'e-mails, posts and comments on internet forums, blog and vlog posts, tweets, online chat texts, posts and related comments on the message wall of social networking websites' (Veszelski, 2017, p.29). They are delimited by a number of dichotomous characteristics, namely, synchronous/ asynchronous, planned/ spontaneous, unrestricted / restricted length, private/ public and non-anonymous/ anonymous (Veszelski, 2017, pp. 28-29).

4.3. Google Education

Google for Education is a service Google provides almost for free and for the benefit of students, teachers and education, the final aim being to bring the power of technology to classrooms thanks to an array of devices, applications and resources (Google, 2018). For example, a teacher can create starting from his/her email a digital classroom with a code to be delivered as a password to his/her learners and wherein announcements and posts are allowed and classwork in the form of topics, questions and assignments is arranged (Figures 3 & 4).

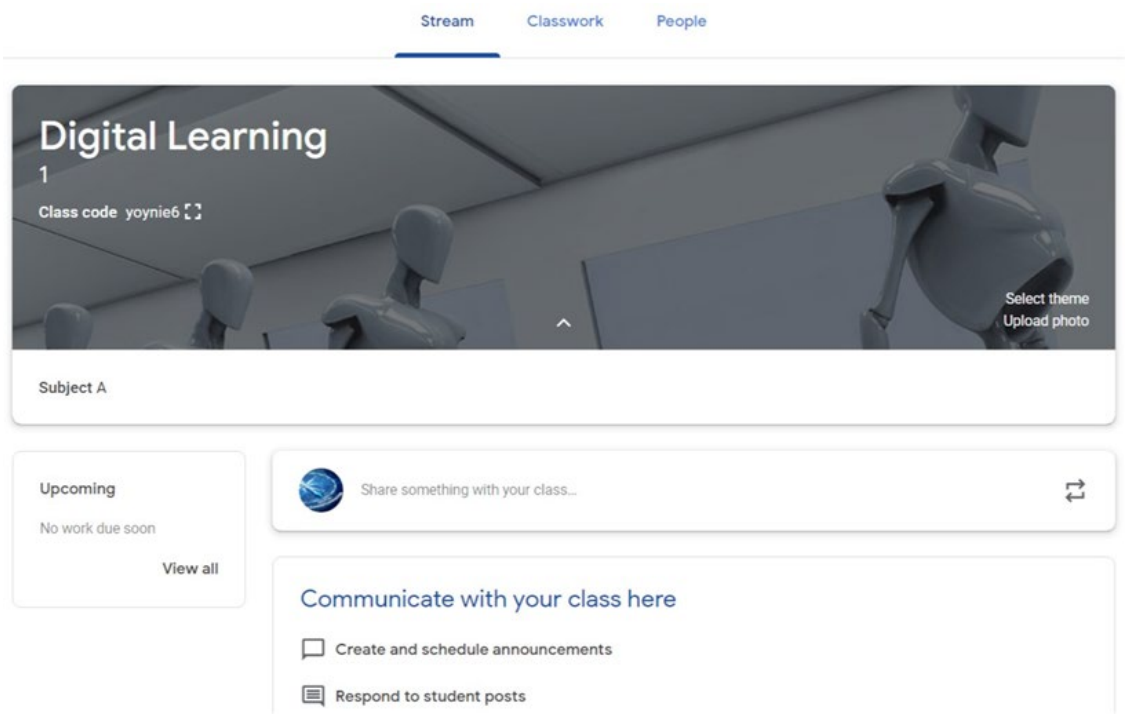


Figure 3. Google classroom.

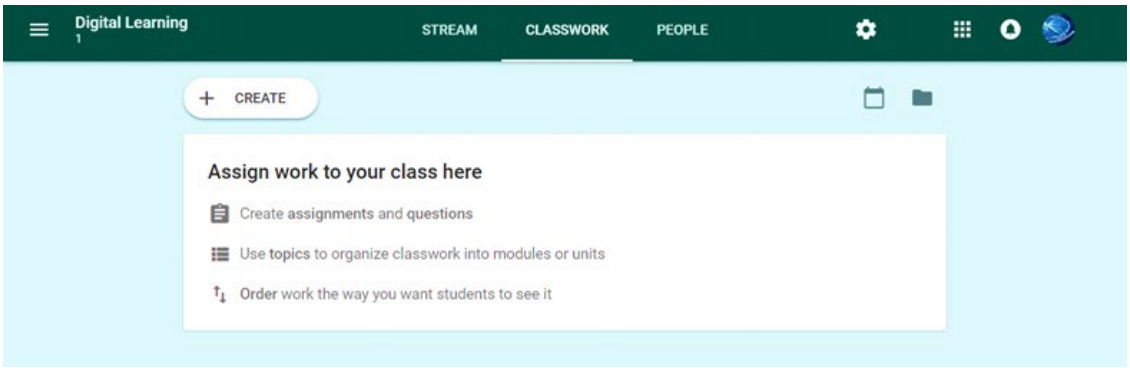


Figure 4. Google classwork.

For its part, Google + allows for the creation of communities wherein learners and teachers can post, share and discuss ideas and pieces of writing (Figures 5, 6 & 7).

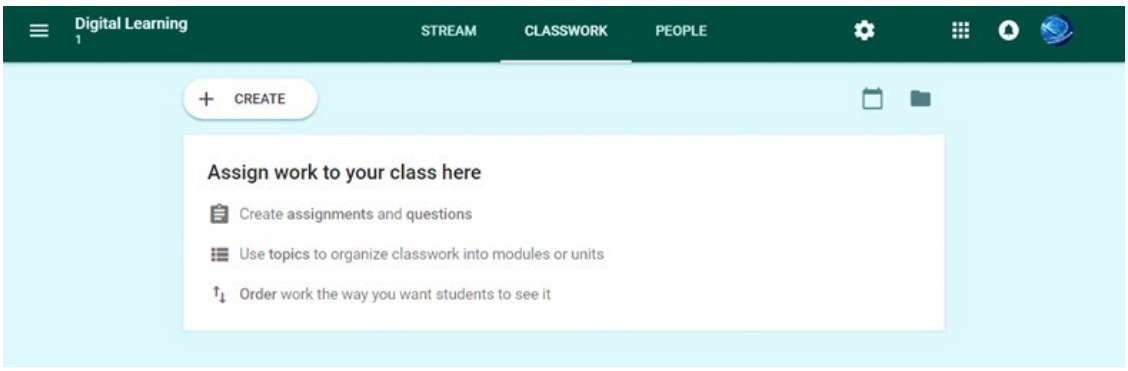


Figure 5. Google+ communities.

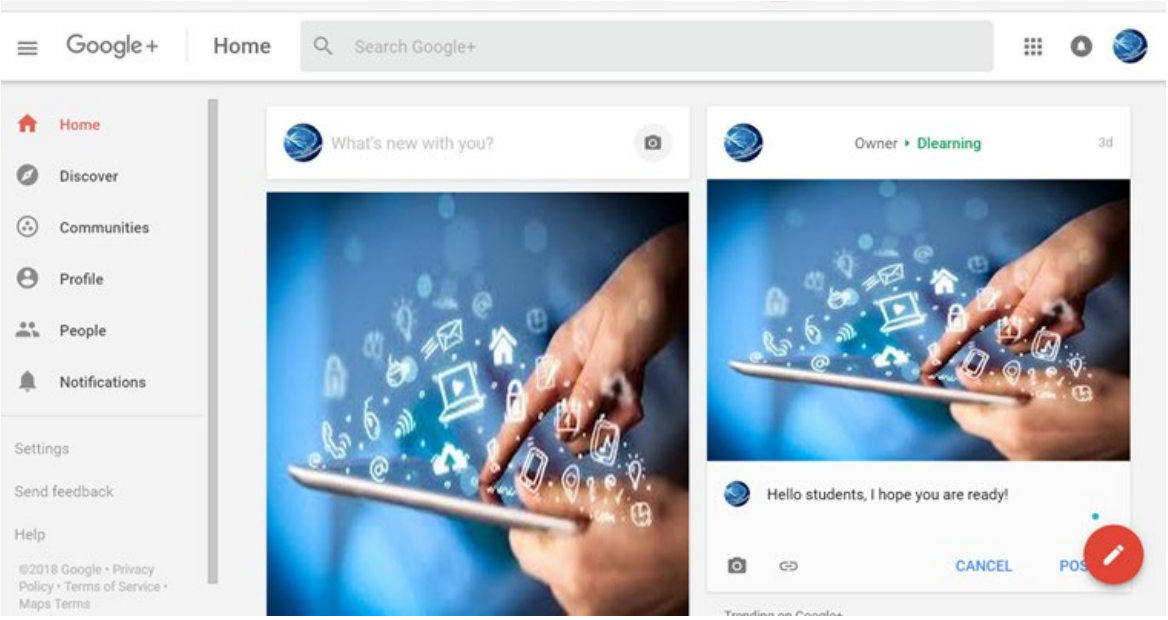


Figure 6. Google+ chat.

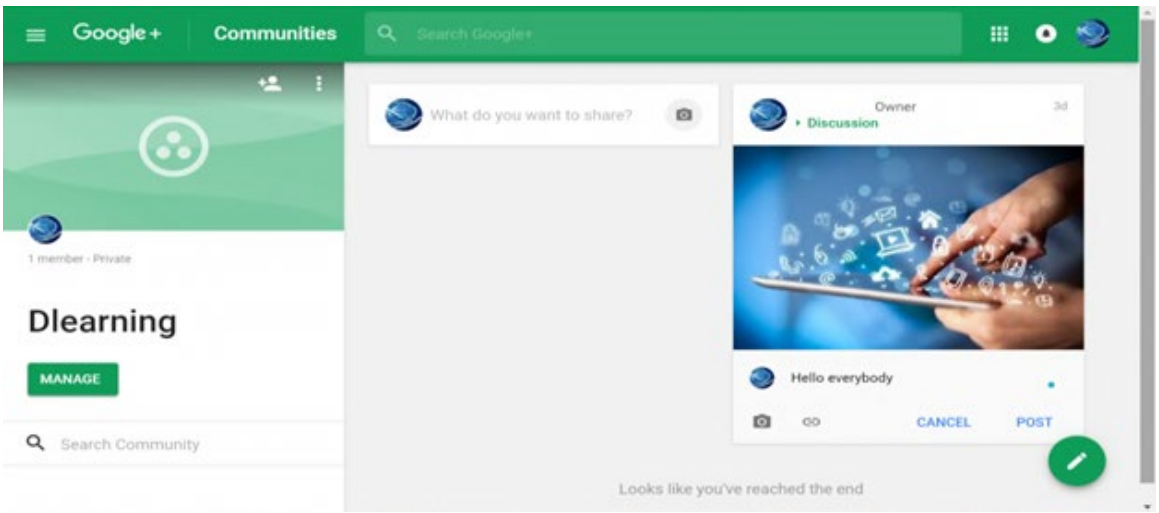


Figure 7. Google+ post sharing.

Additionally, learners can use applications such as Ginger, Define and Cite for editing any text (Figures 8 & 9).

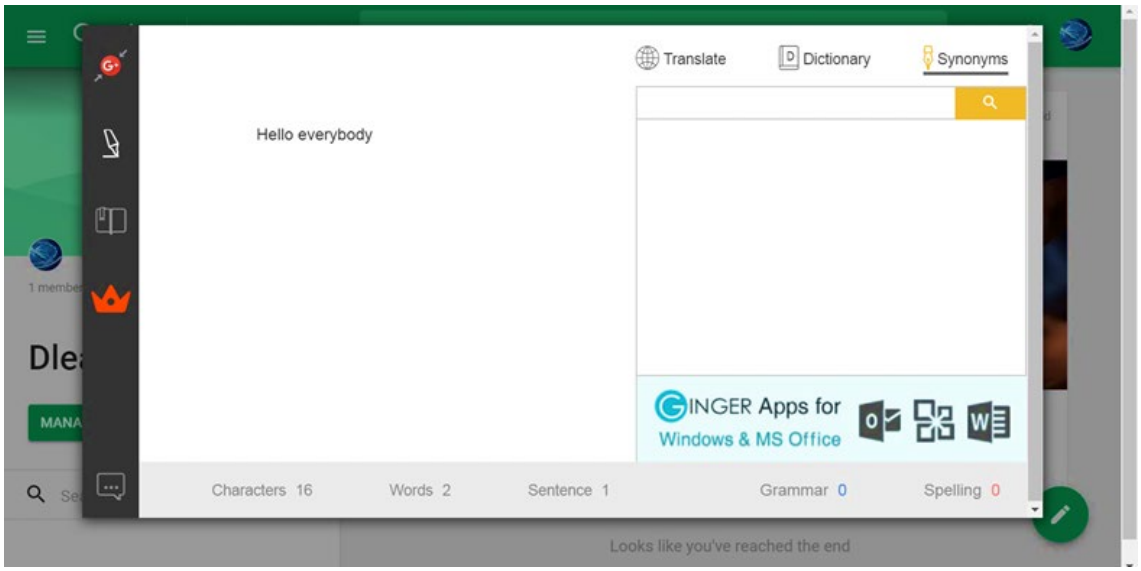


Figure 8. Google Ginger application.

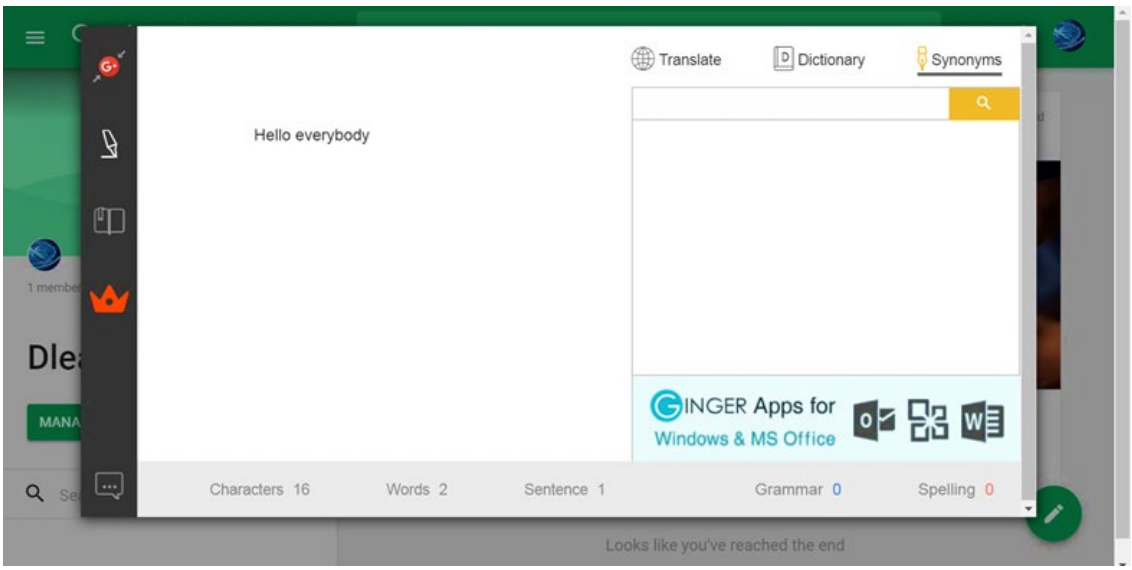


Figure 9. Google Define and Cite applications.

Another interesting application is the Read & Write one, which allows the learners, for instance, to practice shadow reading and record their voices for the sake of listening to themselves or sharing their recordings with their teachers and peers (Figure 10).

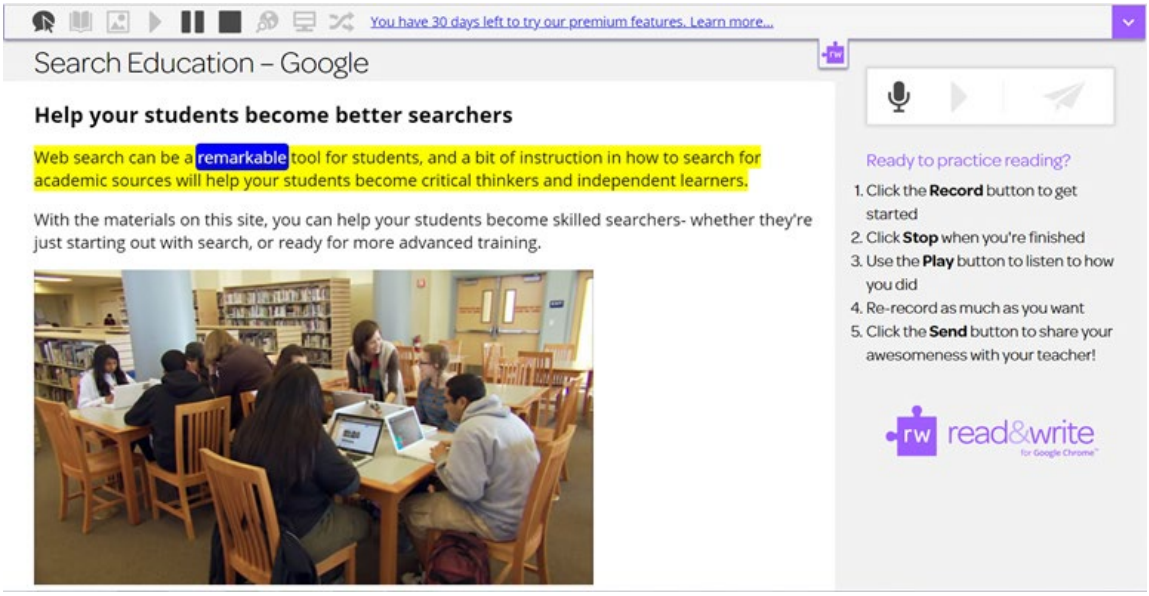


Figure 10. Google Read & Write application.

Google+ also allows for the creation of blogs and sites (Figures 11 & 12) wherein both teachers and learners can take part.

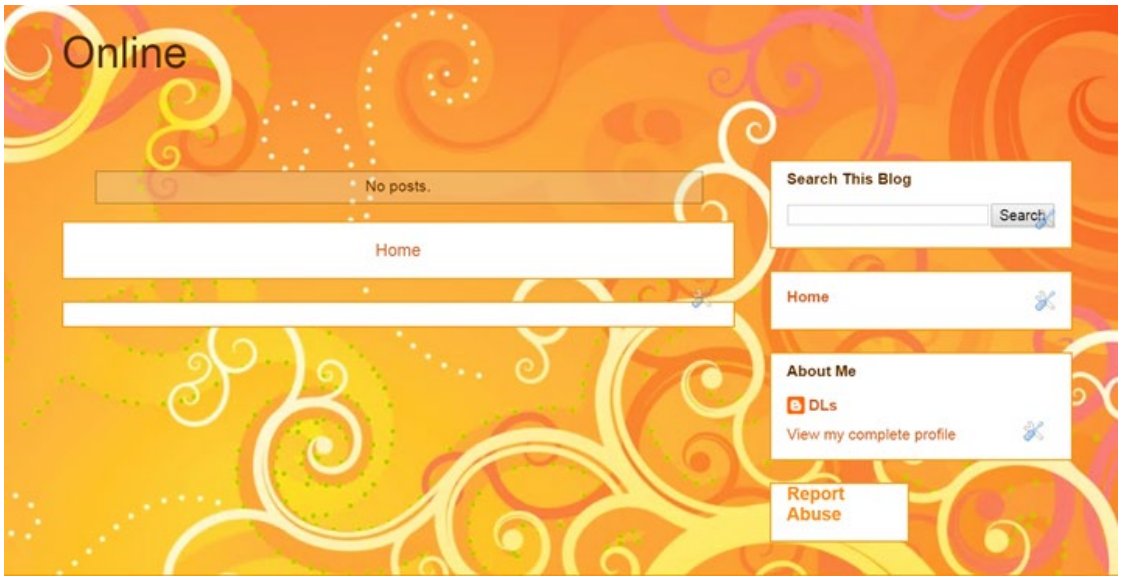


Figure 11. Google Blog.

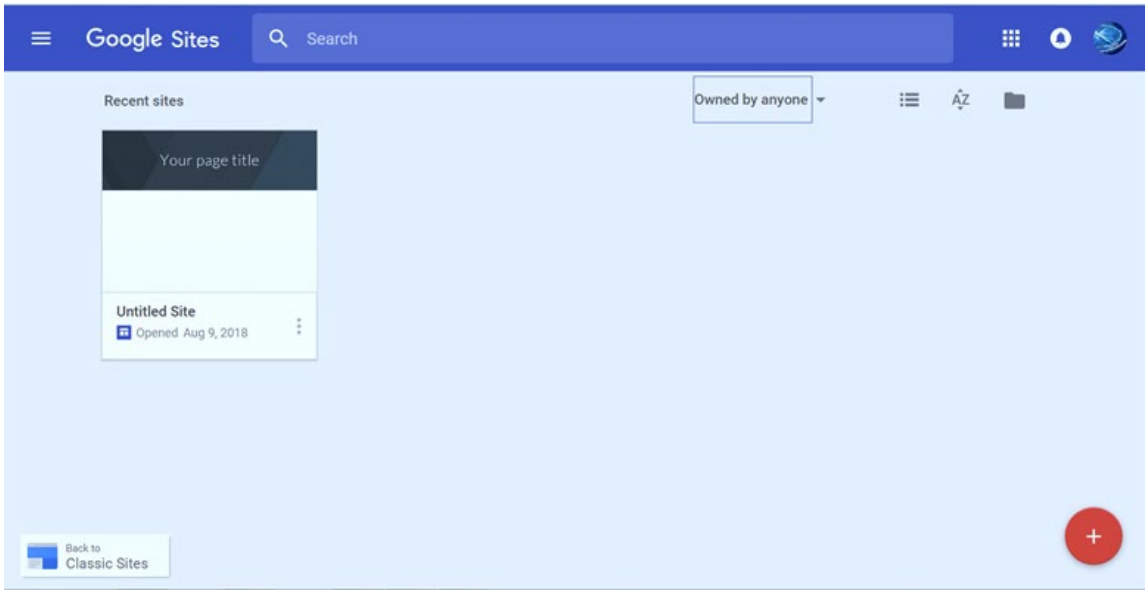


Figure 12. Google Sites.

As to Google drive, it allows for the creation of documents representing different types of writing (Figure 13) and where learners can be invited to take part via editing, commenting and sharing (Figure 14). It has also the option of allowing the creation of slides, forms and sheets (Figures 15, 16 & 17).

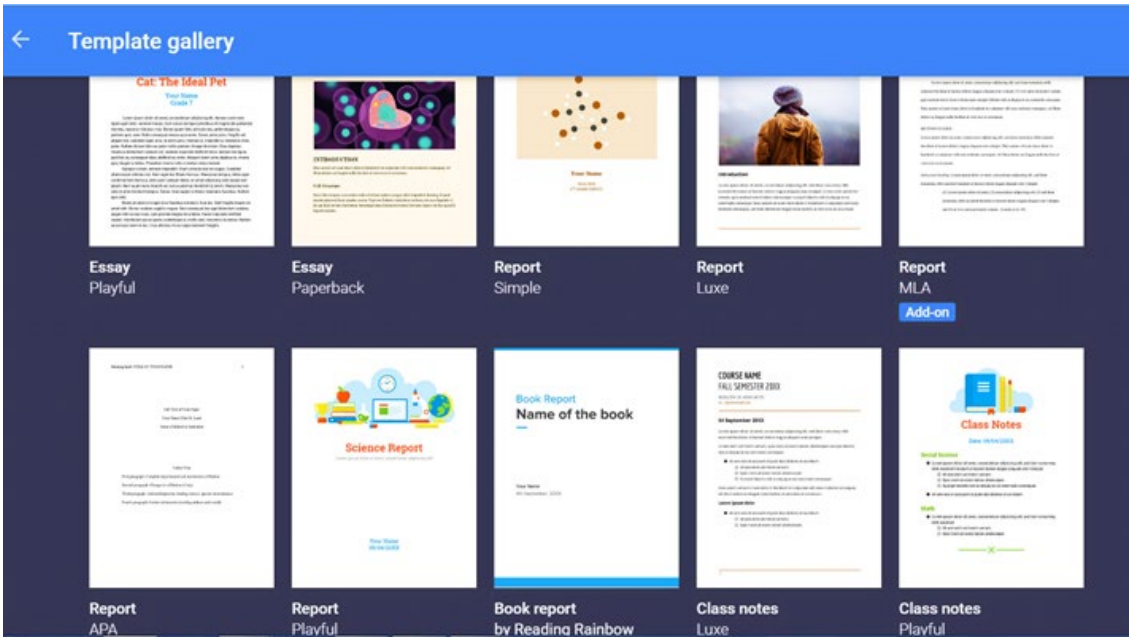


Figure 13. Google Drive documents.

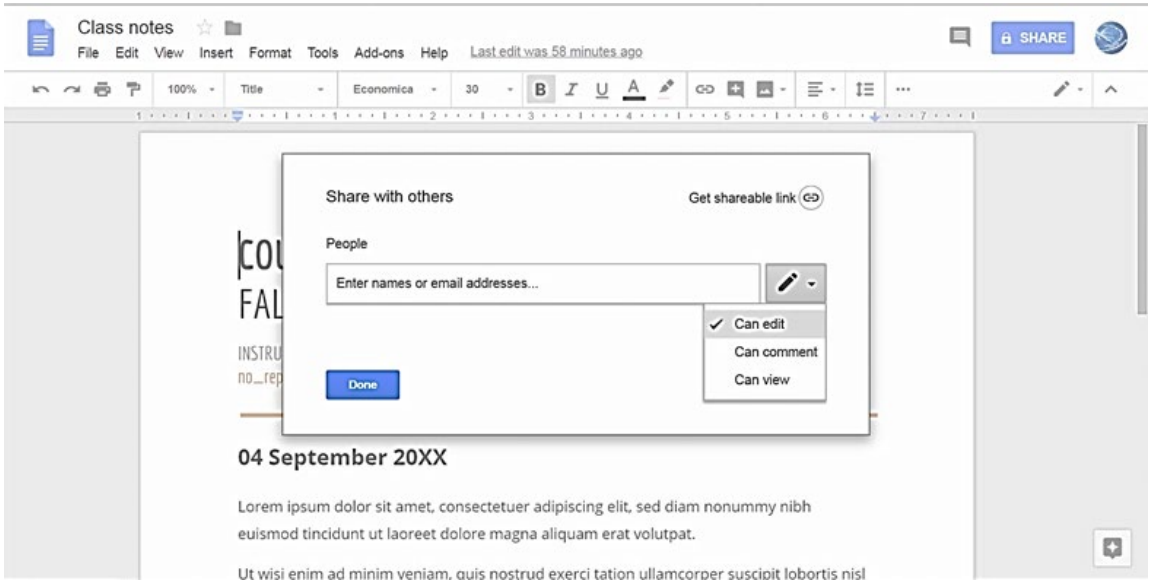


Figure 14. Google Drive document sharing.

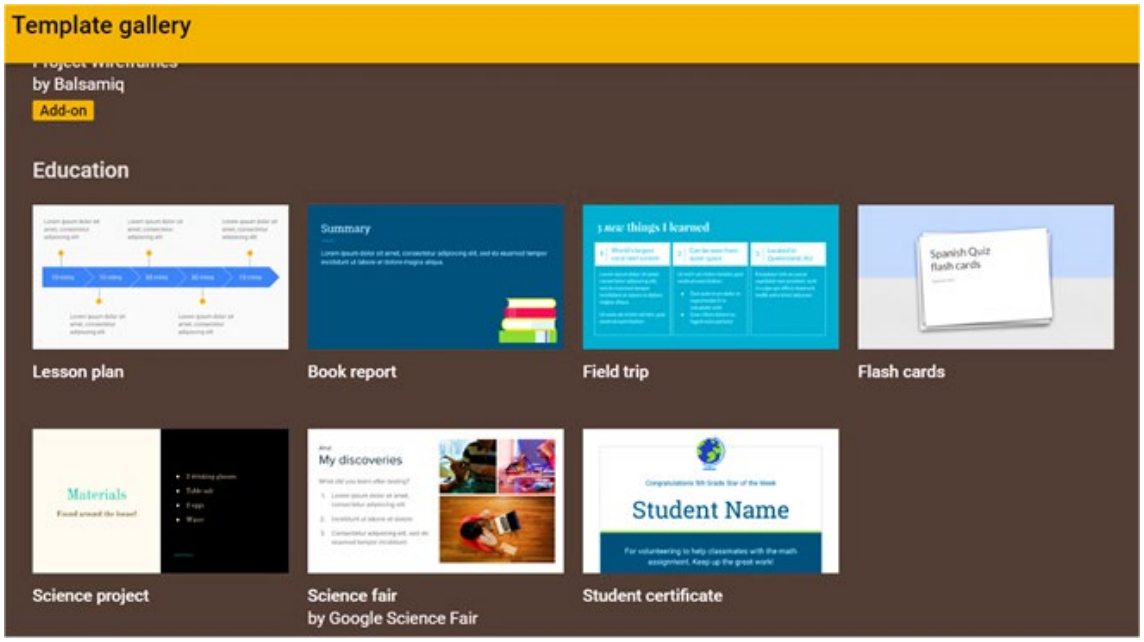


Figure 15. Google slides.

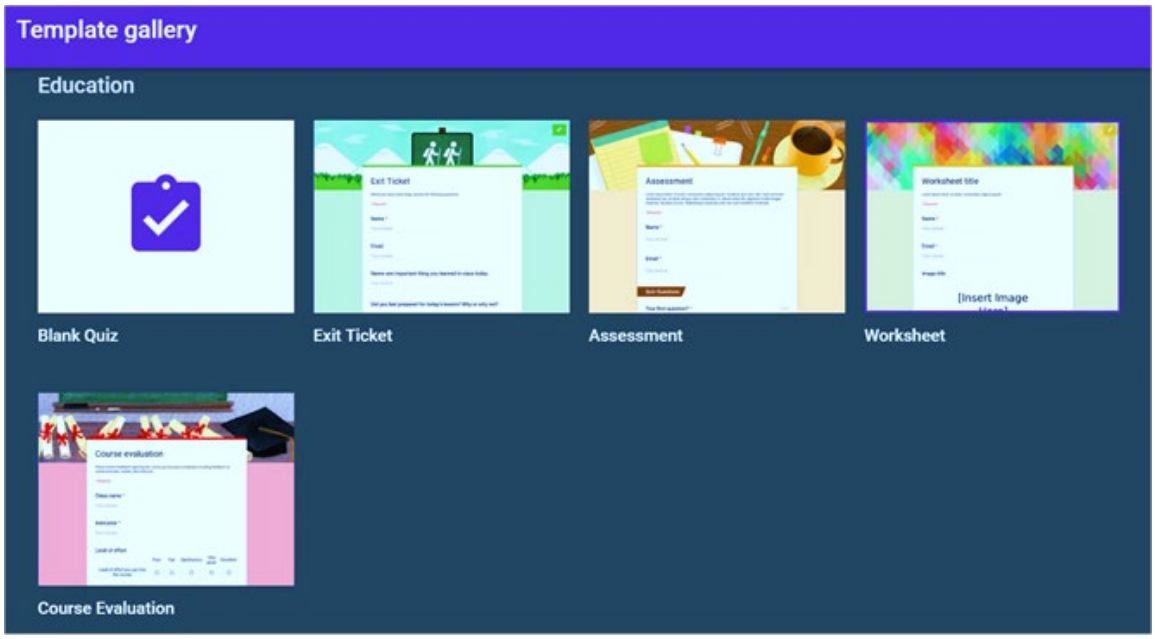


Figure 16. Google Forms.

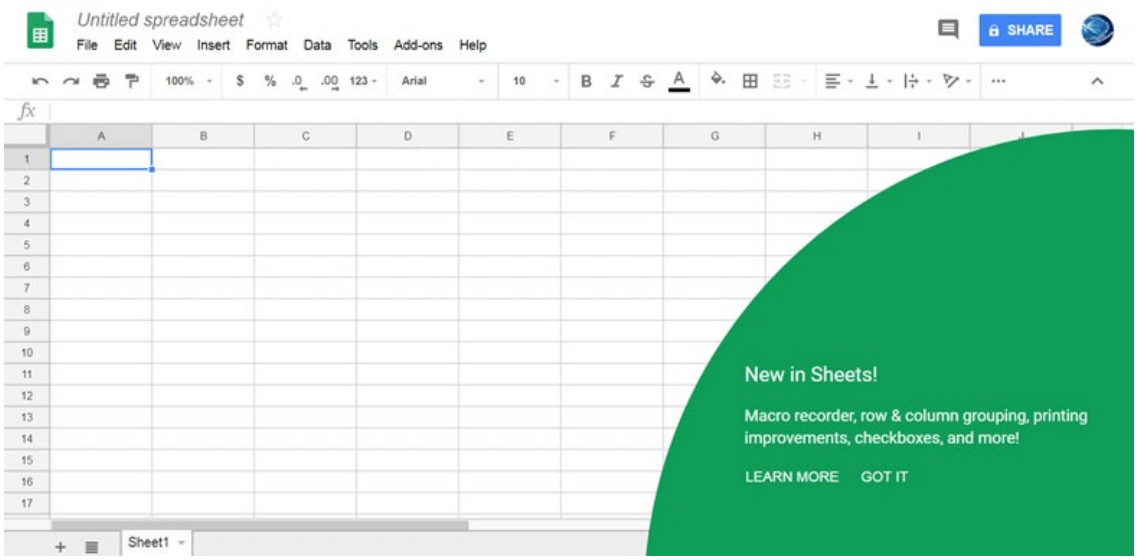


Figure 17. Google Sheets.

5. A Google Education mediated rhizomatic English syllabus framework

5.1. Background

A framework is by definition a form of roadmap that sets 'parameters, directions, standards for curriculum policy and practice' (International Bureau of Education, 2017, p. 6). The present framework is developed for the benefit of ESL/EFL teachers, and in the interest of turning their classes into digital and autonomous environments. It, in particular, targets features of LA and DLs in terms of intertwining in order to ensure a rhizomatic pathway that uses Google Education services.

Relying on the systems approach, the framework addresses the following research questions:

- What do teachers need to know in relation to learner autonomy and digital learners?

- What do teachers need to focus on at the planning stage of the syllabus in relation to needs, stakeholders and teaching methodology?
- What type of learning outcomes, contents and tasks, aids (Google Education platforms) and assessment do teachers need to select to develop the syllabus?

5.2. Structure

As shown in Figure 18, the framework is structured around three consecutive blocks, namely, conceptualisation, planning and processing. Of course, these stages should be preceded by data gathering and followed by evaluation.

5.2.1. Conceptualisation

In the conceptualisation phase, the teachers are, on one hand, directed towards understanding the nature of the present generation of learners in relation to LA as a concept in terms of dimensions, stages and LSs. On the other hand, they are as well familiarised with the notion of DLs in terms of learning features, DSs and language functions. In fact, what is needed at this stage is that teachers get aware that their students need to be/become autonomous; and that the virtual world they know must serve both their autonomy and learning.

As far as LA is concerned, the teacher must approach his/her learners in terms of four dimensions: Their capacity to manage their own learning (algorithmic/ procedural/ self-management dimension), their readiness to accomplish their learning tasks (conative/psychological/ self-determination dimension), their preferences in relation to modern communication and networking (semiotic dimension), and their perception of the economic value of the course or syllabus (economic dimension). In addition, teachers are made acquainted with the stages of LA they will encounter in their learners. In fact, they may need to start from scratch and instil cognizance in their learners and/or encourage involvement. With those who have a more developed LA, teachers may need to build on these already existing stages and move their learners towards intervention, creation and transcendence. For their part, LSs constitute a third pathway for teachers as they are to be taught if necessary for the sake of metacognitive, affective, cognitive and social-interactive enhancement purposes.

As to DLs, teachers must approach them bearing in mind the fact that their learning is mainly heutagogical (in the sense that it is a meta-learning which is self-determined and taking place in formal and informal contexts), paragogical (that is to say, it is co-constructed by learners) and connectivist (i.e., technology related). They must also take note that they have their DSs specific to them and that they make use of language in both transactional and interactional contextual situations online.

5.2.2. Planning

At the planning level, an analysis of individual and group needs is performed and negotiated by teachers and learners as stakeholders (making use of the aforementioned information explained in the previous conceptualisation stage). For example, they construct their knowledge digitally and in collaboration with their peers, the methodology to be used by teachers is mainly rhizomatic (that is peer driven and community based), facilitative and task/ strategy based.

5.2.3. Development

In this phase, learning outcomes are defined in relation to Bloom's digital taxonomy (Churches, 2008), which allows learners to choose from digital skills. The teacher's role should be essentially within the mentoring scope. Contents and tasks are also chosen on a negotiated basis and integrated in the whole scheme of Google Education in an effort to use its platforms be they synchronous or asynchronous (explained and exemplified in the literature review). As to assessment and because of the rhizomatic nature of digital learning, it has to be formative and mainly online. Of course, this does not really exclude summative and offline evaluation. Blending both modes might be needed at certain phases; however, the lion's share should go to the first option to suit DLs more.

5.3. Usability

The framework is at the teacher's service and is meant to be highly flexible. In other words, it should be viewed as a roadmap that guides the steps for the design/ renewal

and adaptation of the syllabus following the context of situation a particular course would take place in. Teachers are advised to make the utmost use of it to develop new courses, update traditional courses, or evaluate already existing courses. Although the framework encourages the use of Google Education platforms and tools, it might use other tools.

Prior to the framework implementation, it is preferable that teachers attend workshops in relation to autonomy as a practice for LA works better with autonomous teachers or teachers who are ready for autonomy. The same principle applies to knowledge about DLs. Besides, it is highly advisable that teachers work in teams (may be under the direction of experts) as this will enhance a good brainstorming of ideas through knowledge and experience sharing. This teamwork enterprise might be embodied in the form of 'communities of practice', that is to say, groups of persons gathered around shared interests and competencies (Wenger, et al., 2002). The teachers would benefit a lot if they belong to one of these communities of practice. Indeed and at the very least, their sense of belonging would fuel the longevity and meaningfulness of the experience.

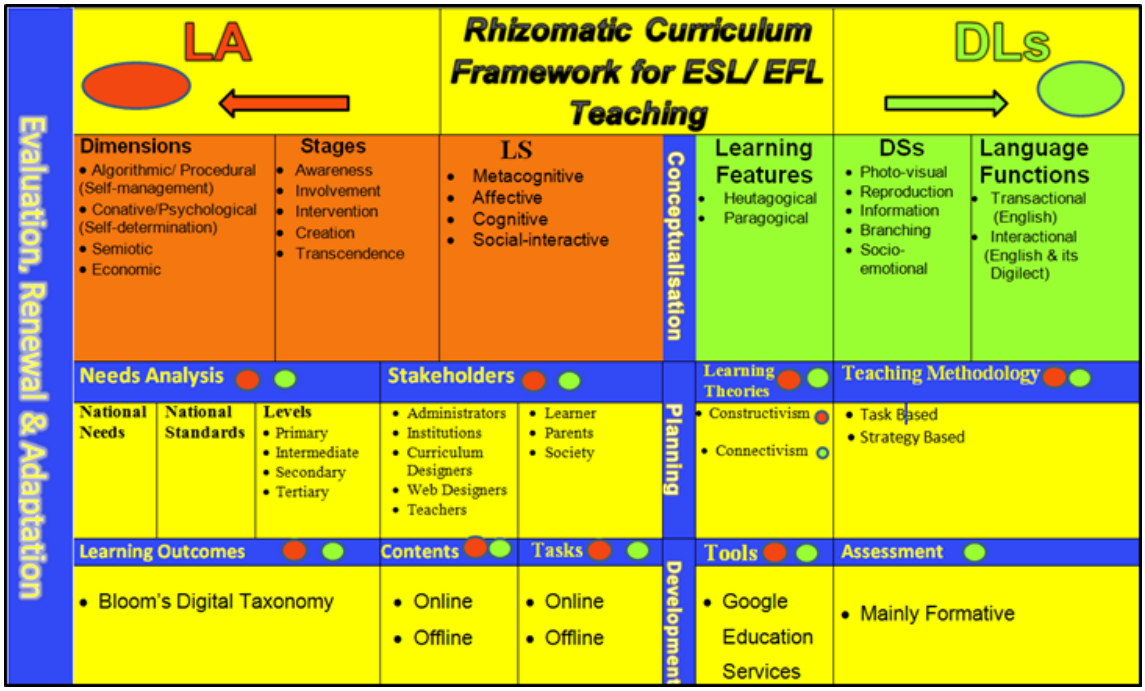


Figure 18**.** A Google Education mediated rhizomatic English syllabus framework.

6. Conclusion

At the heart of this paper, there lies a concern about the challenges met by teachers (ESL/EFL teachers, in particular) as to the nature and needs of their present learners. Two concepts, LA and DLs, were theoretically explored and practically exploited – within the scope of the systems approach- in view of designing a rhizomatic framework for the benefit of a Google Mediated English syllabus.

Consequently, three questions guided this attempt. They came in connection with what is needed to be known by teachers at the theorisation stage, what is to be planned, and what is to be selected? The answers involved suggestions in relation to:

- Dimensions, stages and LS (LA), as well as learning features, DSs and language functions (DLs) at the conceptualisation stage;
- Needs, analysis and stakeholders(LA), as well as learning theories and teaching methodologies(DLs) at the planning stage; and
- Learning outcomes, content and task (LA), as well as tools –basically Google Education– and assessment (DLs) at the development stage.

Of course, all these stages are backed by evaluation, renewal and adaptation.

Two major limitations of this framework are: firstly, it has not been implemented yet in reality; and secondly, it lacks some features in relation to logistics such as costs. The second limitation becomes of great significance if the framework is to be used in some poor countries where access to internet is a luxury.

Thus and in terms of future research, it is recommended that the feasibility of the framework is experimented and evaluated via cross-sectional and longitudinal studies. In addition, it is also recommended that solutions for poor countries be investigated. For instance, building communities of practice for both teachers and students might reduce the costs.

Despite its limitations, the framework might be used with other languages, and perhaps, other subjects. In fact, its flexibility allows enough room for its applications. In addition, Google Education was suggested as an online stand for the realisation of this web-based classroom; however, it is by no means an exclusive choice. Indeed, other applications are available and many of them are free platforms. Furthermore, the participation of learners in the selection of learning outcomes, contents and tasks is highly valued; and targets the wholeness of the framework as per the systems approach.

References

Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.

Benson, P. (2013). *Teaching and Researching Autonomy in Language Learning*. London: Routledge.

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. doi: 10.1111/j.1467-8535.2007.00793.x.

Blake, R. J. (2008). *Brave New Digital Classroom: Technology and Foreign Language Learning*. Georgetown University Press.

Bloom, B.S. (Ed.), Engelhart, M.D., Furst, E.J., Hill, W.H., & Krathwohl, D.R. (1956). *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 1: Cognitive Domain*. New York: David McKay.

Bouchard, P. (2012). Self-directed learning and learner autonomy. Seel, N. M. (Ed.). *Encyclopedia of Sciences of Learning*. Springer, 2997-3000.

Boulton, A. Chateau, A. Pereiro, M. & Azzam-Hannachi, R. (2008). Learning to learn languages with ICT - but how? *CALL-EJ Online, 9*(2). Retrieved 19 June 2018 from http://callej.org/journal/9-2/boulton.html.

Brown, G. and Yule, G. (1983). *Teaching the Spoken Language*. Cambridge: Cambridge University Press.

Candy, P. (1991). *Self-Direction in Learning: A Comprehensive Guide to Theory and Practice.* San Francisco: Jossey Bass.

Cembalo, M. & Holec, H. (1973). Les langues aux adultes: Pour une pedagogie de l'autonomie. *Melanges Pedagogiques. CRAPEL*. Retrieved 19 June 2018 from http://www.atilf.fr/IMG/pdf/5cembalo-holec.pdf.

Churches, A. (2008). *Bloom's Digital Taxonomy.* Retrieved 13 August 2018 from http://burtonslifelearning.pbworks.com/f/BloomDigitalTaxonomy2001.pdf.

Cormier, D. (2008). Rhizomatic education: Community as curriculum. *Innovate 4*(5). Retrieved 10 July 2018 from http://davecormier.com/edblog/2008/06/03/rhizomatic-education-community-as-curriculum/.

Corneli, J. & Danoff, C. J. (2011). Paragogy. In *Proceedings of the 6th Open Knowledge Conference,* OKCon 2011, Berlin, Germany. Retrieved August 20 2018 from http://ceur-ws.org/Vol-739/paper_5.pdf.

Crook, C. & Harrison, C. (2008). *Web 2.0 Technologies for Learning at Key Stages 3 and 4.* Coventry: Becta Publications.

Crystal, D. (2001). *Language and the Internet.* Cambridge: Cambridge University Press.

Crystal, D. (2008). *Txtng: The GR8 DB8.* Oxford: Oxford University Press.

Daley, J. P. (2011). Deconstructing formal and informal learning spaces with social networking sites. Thomas, M. (Ed.). *Digital Education.* London: Palgrave.

Eshet-Alkalai, Y. (2004). Digital literacy: a conceptual framework for survival skills in the digital era. *Journal of Educational Multimedia and Hypermedia, 13*(1), 93-106.

Fau, S. & Moreau, Y. (2018). *Managing Tomorrow's Digital Skills - What Conclusions can we Draw from International Comparative Indicators?* Paris: UNESCO.

Ferrara, K. Brunner, H. & Whittemore, G. (1991). Interactive written discourse as an emergent register. *Written Communication*, *8*(1), 8-34. Sage Publications.

Gallardo-Echnique, E. E., Marques-Molias, L., Bullen, M., & Strijbos, J. W. (2015). Let's Talk about Digital Learners in the Digital Era. *International Review of Research in Open and Distance Learning, 16*(3). Retrieved 6 May 2014 from http://www.irrodl.org/index.php/irrodl/issue/view/69.

Google (2018). Solutions built for teachers and students. *Google for Education*. Retrieved 14 August 2018 from https://edu.google.com/?modal_active=none.

Google drive https://drive.google.com.

Gremmo, M.-J., & Riley, P. (1995). Autonomy, self-direction and self-access in language teaching and learning: The history of an idea. *System, 23*(2), 151-164.

Hase, S. and Kenyon, C. (2007). Heutagogy: A child of complexity theory. *Complicity: An International Journal of Complexity and Education, 4*(1), 111-118.

Holec, H. (1981). *Autonomy and Foreign Language Learning*. Oxford/New York: Pergamon Press.

Howe, N. Strauss, W. (2000). *Millennials Rising: The Next Great Generation*. New York: Vintage Books.

International Bureau of Education. (2017). *Training Tools for Curriculum Development: Developing and Implementing Curriculum Frameworks*. Paris: UNESCO.

Jiménez Raya, M. & Lamb, T.E. (2008). Manifestations of Autonomy in the School Curriculum. In M. Jiménez Raya & T.E. Lamb (Eds.), *Pedagogy for Autonomy in Modern Languages Education: Theory, Practice, and Teacher Education* (pp. 58-76). Dublin: Authentik.

Kennedy, G., Judd, T., Dalgarnot, B. and Waycott, J. (2010). Beyond digital natives and immigrants: Exploring types of net generation students, *Journal of Computer Assisted Learning, 26*(5), 332-343.

Lamb, T.E. (2017). 'Knowledge about language and learner autonomy', in Cenoz, J. & Gorter, D. (Eds.) *Language Awareness and Multilingualism.* In: *Encyclopedia of Language and Education.* Cham, Switzerland: Springer International Publishing Switzerland: 173-186. Retrieved 8 July 2018 from http://westminsterresearch.wmin.ac.uk/20414/1/Lamb%20KALLA%20complete%20final%20rev.pdf.

Little, D. (1991). *Learner Autonomy 1: Definitions, Issues and Problems.* Dublin: Authentik.

Morrison, B. (2011). Building on experience, seeking new perspectives. In Morrison, B. (Ed.), *Independent Language Learning: Building on Experience, Seeking New Perspectives.* Hong Kong University Press, pp. 3-10.

OECD (2016). *Innovating Education and Educating for Innovation: The Power of Digital Technologies and Skills,* OECD Publishing, Paris. doi: 10.1787/9789264265097-en. Retrieved 10 July 2018 from http://www.oecd.org/education/ceri/GEIS2016-Background-document.pdf.

Oxford, R. L. (2008). Chapter 3: Hero with a Thousand Faces: Learner Autonomy, Learning Strategies and Learning Tactics in Independent Language Learning. In Stella Hurd & Tim Lewis (Eds.), *Language Learning Strategies in Independent Settings* (pp. 41–64). Bristol, Blue Ridge Summit: Multilingual Matters. doi: 10.21832/9781847690999-005.

Nunan, D. (1997). Designing and adapting materials to encourage learner autonomy. In Benson, P. & Voller, P. (Eds.), *Autonomy and Independence in Language Learning* (pp. 192-203). London: Longman.

Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon, 9*(5), 1-6. MCB University Press. Retrieved 10 July 2018 from https://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf.

Reeves, T. C. & Oh, E. (2008). Generational Differences. Spector, J.M. Merrill, M.D. Merrienboer, J. V. & Driscoll, M. P. (Eds.). *Handbook of Research on Educational Communications and Technology* (pp. 295-303). Springer.

Siemens, G. (2004). Connectivism: A Learning Theory for the Digital Age. Retrieved 10 July 2018 from https://www.learningnetwork.ac.nz/shared/professionalReading/TRCONN2011.pdf.

Rheingold, H. (2002). *Smart Mobs: The Next Social Revolution.* Cambridge, Mass.: Perseus.

Rushkoff, D. (2006). *Screenagers: Lessons in Chaos from Digital Kids.* New York: Hampton Press.

Rowlands, I. Nicholas, D. Williams, P. Huntington, P. Fieldhouse, M. Gunter, B. Withey, R. Jamali, H. R. T. Dobrowolski, T. & Tenopir, C. (2008). The Google Generation: the Information Behaviour of the Researcher of the Future, *Aslib Proceedings, 60*(4), 290-310. Retrieved 10 July 2018 from https://doi.org/10.1108/00012530810887953.

Steyaert, J. and J. de Haan (2001). *Geleidelijk Digitaal: Een Nuchtere Kijk op de Gevolgen van ICT* [Gradually Digital: A Sober Look at the Consequences of ICT]. The Hague: Social and Cultural Planning Office of the Netherlands.

Stowe, R. A. (1973). Research and systems approach as methodologies for education. *AV Communication Review, 21*(2), 165-175. Springer. Retrieved 13 September 2016 from https://jstor.org/stable/30218523.

Tapscott, D. (2009). *Grown Up Digital: How the Net Generation is Changing your World*. New York: McGraw-Hill.

Torocsik, M. Szucs, K. & Kehl, D. (2014). How Generations Think: Research on Generation Z. *Acta Universitatis Sapientiae, Communicatio*, 1, 13-45.

Underwood, J. D. & Farrington-Flint, L. (2015). *Learning and the E-Generation*. Oxford: John Wiley & Sons, Ltd.

Vaidhyanathan, S. (2008). Generational myth: Not all young people are tech-savvy, *The Chronicle of Higher Education, 55*(4). Retrieved 10 July 2018 from https://www.chronicle.com/article/Generational-Myth/32491.

Veszelszki, Á. (2017). *Digilect: the Impact of Infocommunication Technology on Language.* Berlin: De Gruyter Mouton.

Wenger, E. McDermott, R. & Snyder, W. (2002). *Cultivating Communities of Practice.* Harvard Business Review Press.

Wheeler, S. & Gerver, R. (2015). *Learning with 'e's: Educational Theory and Practice in the Digital Age.* Carmarthen: Crown House Publishing.

Willems, A. S. & Lewalter, D. (2012). Self-determination and learning. In Seel, N. M. (Ed.). *Encyclopedia of Sciences of Learning*. Springer, 2993-2997.

Project

ReDesign: Redesigning learning through a new Learning Management System

Maria Iosifina Avgousti* and Stella K. Hadjistassou**
The University of Cyprus, Cyprus

*avgousti.maria-iosifina@ucy.ac.cy | **hadjistassou.stella@ucy.ac.cy

Abstract

In a world which abounds with digitally-driven changes, an orthodoxy of technology adoption and utilisation in higher education is emerging, and it is deemed critical for steering the discussions of experts for planning and implementing a digitally-enabled ecology where students and faculty members alike will benefit. Although several types of software that host educational or training content for students have been used in previous studies, the aim of this EU-funded project was to design a digitally-enabled platform that would afford culturally-driven exchanges between university students and collaboration among faculty members of the same disciplines across Europe. The platform is based on, but extends beyond, principles of standard Learning Management Systems (LMSs) and Facebook, by affording Web 2.0 tools, Augmented Reality (AR) applications, and QR codes. Further, the platform has been designed based on multiple pilot testing phases, students' individual needs, instructors' constructive feedback, and the tailored needs of each academic discipline. This EU-funded project is a joint effort to guide instructors and students in experiencing the curricula in different academic institutions, to guide instructors and students in understanding the affordances and contradictions of intercultural telecollaboration, and to guide students in developing a conceptual understanding of complex constructs in their discipline.

Keywords: *ReDesign,* Learning Management System

1. Introduction

The European Report "The Digital World in 2025" makes it abundantly clear that there is an imperative need to develop current and future generations that are computer- and Internet-literate, in a world where the Internet has become the main economic and social platform, and which, in the foreseeable future, will "be able to connect everything and anything, including inanimate objects, sensors, and actuators" (p.13). The European Report "The Digital World in 2030. What place for Europe?" accentuates its 'digitally-enabled education for all' position to identify the emergence of adaptive and personalised learning as imperative in an e-skilled society. Today's generation will be succeeded by even more tech-savvy emerging societies that will be competent in developing and using more powerful, high-tech tools. However, there seems to be an almost infinite deviation in the context of education as "teachers with self-taught e-skills, often also ill-equipped, will not prove adequate to prepare youngsters for the digital economy in 2025" (p.21). To set targets in line with the relentlessly accelerating development of digitalisation, the realm of education has to act in seemingly coordinated fashion by redesigning "education itself around participative, digitally-enabled collaboration within and beyond the individual educational institution" (p. 21). Teachers need to harness the power of technology in order *to promote inclusivity, learning at an individual's own pace, and collaboration on a global scale*, and "ensure that these learnings are fully embedded in the business end of education" (Abhi, 2017, Independent Education Today).

Despite the proliferation and developments in educational technology, many scholars (see Arnold & Ducate, 2011; Gee, 2007; Shaffer, Squire, Halverson, & Gee, 2005) have pointed to the gap between theory and practice as a lot of universities have not integrated technology in courses and a lot of courses are not designed to promote digital skill development, collaboration, knowledge construction, and transnational exchanges among students in different academic institutions, disciplines and countries. According to the "Horizon Report 2018", however, Higher Education Institutions have been lately adopting virtual and augmented reality technologies to support individual and team learning (see Horizon Report 2018, p. 21). The transition from the traditional lecture-based lesson toward a student-centred, hands-on approach marks the beginning of the transformation of classrooms to "real-world work and social environments that foster organic interactions and cross-disciplinary problem solving" (Horizon Report, 2018, p. 9).

Although technology has increasingly become ubiquitous, caution needs to be taken in its adoption as if it is not integrated in meaningful ways into the curriculum, it can be "ineffective and distracting" (p. 7). de Wit and Hunter (2015) called for a comprehensive and strategic approach of the internationalisation of higher education that calls for a focus on the curriculum and the learning outcomes using various "forms", such as technology, for forming future global citizens that not only compete against each other but also collaborate. The instructors and researchers of the European-funded ReDesign project have taken a bold step and heralded the launch of redesigned curricula that aim to promote digital collaboration, digital skills development, immersive and personalised learning that expands beyond institutional boundaries. Although the project entailed multiple technological tools, such as Augmented Reality applications, the focus of this paper is set on the theoretical underpinnings of the design of the mediating platform, the students' reactions to the use of the platform as a mediating tool that enacts affordances for intercultural collaborations with distant partners, and possible uses of the platform for future collaboration.

2. Telecollaborative practices in Higher Education contexts

Intercultural telecollaboration or virtual exchange is emerging as a polysemous term (Belz 2003; Bickley & Carleton, 2009; O' Dowd, 2018; Sadler & Dooly, 2016). Robert O'Dowd (2018) notes that telecollaboration, or 'virtual exchange,' are terms used to refer to the engagement of groups of learners in online intercultural interactions and collaboration projects with partners from other cultural contexts or geographical locations as an integrated part of their educational programmes (p. 1).

Virtual exchanges have been launched in diverse contexts, academic disciplines and areas often embedded in instructors' epistemologies of practice. O'Dowd (2018) thoroughly describes the several terms allocated to telecollaboration and the gradual transition to the current term 'virtual exchange', the preferred term of several governmental bodies, organisations, and the European Commission. Dooly and O'Dowd (2018) attempt to fit telecollaboration under the umbrella of 'approach' and argue that it should be recognised as a 'growing institutional practice' but it is definitely not a method or a methodology, as multiple activities can fit into an 'approach', and telecollaboration indeed entails multifaceted and multi-natured tasks and activities.

The growing interest in telecollaboration based on sociocultural perspectives is not only due to the availability of technology but also to three other important factors: (i) the inherent connection of language learning with intercultural communication; (ii) the need for an interactive language learning approach beyond the educational institution, and (iii) the need to acquire communication skills in several languages and through several modalities (Dooly & O'Dowd, 2018).

Intercultural telecollaborative projects are not new to the field; in the field of education, the practice of telecollaboration has been around for at least a century with such practices as pen pal exchanges (O'Dowd & Dooly, 2018). Tella (1991) and Cummins and Sayer (1995) are only some of the scholars who have explored intercultural telecollaboration. Additionally, Warschauer (1995) provided a constellation of projects on 'cross-cultural communication' where students devised personal profiles, conducted surveys and looked into cultural stereotypes. Over the past fifteen years, the study of intercultural competence in online environments has also been a major focus of attention (Belz, 2003;

Belz & Thorne, 2006; Liaw, 2006; Müller-Hartmann, 2000; O'Dowd, 2003, 2006, 2007; Ware & Kramsch, 2005). However, what is rather concerning is how long policy makers and educational stakeholders have taken to acknowledge its value and potential (Thorne, 2018). Within the framework of the three-year European-funded project, ReDesign, this study will: i) delve into the integration of the ReDesign platform as the mediating tool for intercultural collaborations between distant academic institutions and its resemblance to the social platform, Facebook; ii) tap into students' perspectives on the telecollaborative exchange mediated by the platform, and iii) explore its potential for future uses in further collaborations.

3. Facebook in intercultural communication as a model for the design of the ReDesign platform

Learning Management Systems (LMSs), such as Moodle, have long served as supplementary learning platforms for language learning courses. According to Arcos, Ortega and Amilburu (2009), the rise of LMSs has brought about interoperability, according to which courseware designers can integrate rich learning applications, and different information technology systems and software applications can communicate and exchange data. According to Wang (2012), there is a lack of empirical studies examining Facebook for educational purposes even though it has been identified as an important tool for informal and cultural learning. Facebook extends beyond the frame of a social networking tool for maintaining friendship, as, according to Wang (2011, p. 64) it is "a platform ready for instructors to use for facilitating mentorship and affiliating teaching". Despite the increasing abandonment of the platform in favour of other platforms, especially as an aftermath of the Cambridge Analytics scandal, Facebook still "remains the world's largest social platform" (The Guardian, 2018).

According to Avgousti's (2018) systematic review findings in online intercultural communication studies that were conducted between 2004 and 2015, the most commonly investigated *Web 2.0 technologies in intercultural exchanges* were e-mails, Skype, blogs, and wikis. Social networking tools, such as Facebook and Twitter, were investigated in only 6 out of 54 studies, whereas the Virtual World of Second Life is the only 3D Virtual World studied in such exchanges. However, social networking sites, such as Facebook and Twitter, have been reported to appeal to students as they feel that they belong to a *community* (Lee & Markey, 2014), they are *familiar* with the Facebook platform, and they are outwardly *motivated* to use such social media tools. In addition, familiarity with the tools, such as Facebook (Lee & Markey, 2014), plays a significant role in students' attitude towards the technology and the project, and eliminates their reluctance to communicate with their partners (Dooly, 2011).

Mabuan and Ebron (2016) touch on the ubiquitous presence of technology in our lives and the unprecedented effect of innovative, state-of-the-art educational tools in current educational landscapes. According to Mabuan and Ebron (2016), several studies (Hew, 2011; Pempek, 2009; Selwyn, 2007; Thompson, 2007) have indicated the omnipresence of *Facebook* in students' everyday lives and the adoption of Facebook by university students and teachers alike for the practice of more modern pedagogies. Mabuan and Ebron (2016) explored how undergraduate *students* who take compulsory English courses used Facebook to perform classroom tasks, their attitudes towards the usage of social networking sites in English language learning, and the challenges that the students encountered. The authors reported that there is great pedagogical potential in using Facebook for educational purposes, mostly because users are already *familiar* with the tool and Facebook can act as a point of convergence between students and teachers.

Likewise, Espinosa (2015) explored the use of *Facebook in EFL classrooms* as a tool that holds the potential to *motivate students* and suggested ways that teachers can adopt to integrate this social networking site in their classrooms. Espinosa (2015) listed the potential educational benefits of using Facebook in education, the challenges that might emerge, and practical suggestions to overcome these pitfalls. For example, Facebook allows users to create a private or public profile, post statements, start discussions, post photos and videos, livestream, create private or public groups, send online messages, share information, and other multimodal activities.

According to Espinosa (2015), by embracing Facebook, *teachers* can also greatly benefit. For instance, they can collaborate with other teachers, gather information from powerful educational resources and notifications from journal publications, and many more. Facebook is aligned with 21st century skills that involve *collaboration* and *communication*. Additionally, students can enhance their *communicative competence* through interaction and exchange, as well as their *linguistic skills*. Therefore, language learning becomes "more practical, interactive, and holistic" (p. 2208).

Facebook has recently emerged as an effective social media tool in *language education* (Kabilan, Ahmad & Abidin, 2010; Sykes, Oskoz & Thorne, 2008). However, many studies have also delved into the effect of Web 2.0 tools and applications on students' *intercultural competence* (Furstenberg, Level, English & Maillet, 2001; Kramsch & Thorne, 2002; Lee, 2009; Özdemir, 2017; Perren, 2018; Vuksanovic, 218; Ware & Kramsch, 2003). Facebook is an example of a promising social media and social networking platform for promoting intercultural interaction. However, few studies have investigated the potential pedagogical benefits of Facebook for intercultural communication. According to Özdemir (2017), among others, Facebook promotes intercultural interaction with target language speakers, participants are provided with authentic, real-life knowledge through exchanges, their motivation is enhanced, and they develop advanced communication skills.

Özdemir (2017) employed a mixed-method approach to examine the *intercultural effectiveness* of forty freshmen ELT students using administration of intercultural effectiveness scale, semi-structured interviews, and students' essays. After students' immersion in intercultural instruction and collaboration, it was reported that their intercultural effectiveness scale had improved, and that the Facebook-users group were immersed in more effective intercultural exchanges than the in-class discussion group.

Wang (2011) attempted to investigate how online collaboration groups could be formed and how assignments could be designed in cross-cultural exchanges for better learning satisfaction. The students in this study posted greetings and feedback on a specific group on Facebook. Wang (2011) chose Facebook mainly for three reasons: (i) it is free; (ii) it does not require technology staff to maintain the platform, and (iii) it would be easier for students to maintain their connection and interaction even after the exchange would end. Further, it provides authentic means of communicating with native speakers, it has rich features and it keeps evolving. In addition, several media formats can be integrated into messages. At the end of the project students indicated that their *worldview had expanded* and that the international partners bear *cultural similarities* in many ways. Regarding cultural differences, the Taiwanese students were excited to find out new traditions and view things from a *different perspective*. Generally, the experience made the students willing to improve their English to better communicate their thoughts. Although lack of common interests and different cultural backgrounds posed challenges during the exchange, cultural conflicts occurring during the process were considered rich intercultural experiences. Wang (2011) concludes that *familiarity* seems to play a key role for a successful cross-cultural exchange. Most of the population agreed that Facebook is suitable for cross-cultural communication as they are familiar with it and there is outward motivation to participate in a Facebook exchange and check for new messages and notifications.

In Ertmer et al.'s study (2011), where interlocutors from several countries used English as a lingua franca, participants had to communicate with their partners at least once synchronously using any of the available tools —Skype, Facebook Chat, Adobe Connect— and as many other times asynchronously through the use of wikis, to complete the project. What was interesting in Ertmer et al.'s (2011) study is the development of students' *cultural competencies*, especially the behavioural and affective ones, in the rather short amount of time of only five weeks. In addition, the participation had a significant positive impact on students' perceived comfort for using Web 2.0 tools to collaborate with other people having different cultures. Their perceived knowledge for using such tools was enhanced, since they might have been able to use such tools in their everyday life but not necessarily in an educational setting to support teaching and

learning. The results of the study suggest that *as students became more comfortable with technology*, they could engage in other types of cross-cultural activities.

3.1. Challenges posed by Facebook in telecollaborative exchanges

The use of computer-mediated communication emerged in the early 1990s when more advanced tools for mediated communication became available. However, according to Wang and Chen (2009) CMC tools alone cannot provide learners with a *comprehensive platform that combines synchronous and asynchronous modes of communication*. At the other end of the spectrum, the rise of LMSs has brought about online platforms where a course can be planned, supported and managed by both the teacher, and the learner. Whereas asynchronous LMSs mainly provide functionalities to support asynchronous learning activities, a synchronous LMS "facilitates synchronous real-time interaction and collaboration via a combination of PC-based conferencing tools such as synchronous document sharing, collaborative whiteboard, text chat and audio and/or video communication" (p.2).

Willems and Bateman (2011) explored the potentials and pitfalls of social networking sites, such as Facebook, in higher formal education contexts. Although Facebook constitutes an alternative LMS for use in formal education that allows users to share resources in cases that institutional LMSs block certain media, for collaboration between geographically distant members of a cohort, and for peer teaching, it does not come without its pitfalls. These include *privacy issues* and *electronic identity*, *public domain challenges, information sharing, cyberbullying* and more.

In their exploratory paper, Yu, Sun, and Chang (2010) delved into higher education students' and teachers' experiences and attitudes towards the use of CMSs (Computer Management Systems) in college language courses. In fact, Yu, Sun, and Chang (2010) explored college students' and teachers' use of the different functions of the CMS, the language students' and teachers' motivation to use CMSs in English courses, and students' and teachers' perceived limitations and degree of technical support needed for using such CMSs in language courses. The authors used questionnaires and face-to-face interviews to record the experiences of both students and teachers. An interesting finding that emerges from this mixed-methods study is that despite the participants' positive attitudes towards LMSs incorporated into the curriculum, they concluded that such systems are *not specifically designed for language learning and teaching*, thereby highlighting that it is the instructor's careful incorporation and usage which is critical for the efficient functioning of the CMS as a *learning and pedagogical platform*.

Another interesting and relevant finding of this study is the urgent need to adopt a *needs analysis approach* before the implementation of each course, testing and comparison of the functionalities of various CMCs, and a *continuous updating of the system* for students in order to leverage the pedagogical benefits of the system and avoid technical difficulties that can act as a major deterrent in the participants' educational experience. The findings of the study pertain to the development of strategies for maximising the functionality of learning platforms and the critical need for "training users to selectively adopt CMSs to suit their language teaching objectives rather than accommodating course content to the existing CMS functions" (p.345). There is, thus, a critical need to *construct learning platforms tailored for the needs of specific disciplines* and *comprehensive functionalities aimed towards enhancing language skills.* To our knowledge, no platform has been designed up to now, which has been devised for the specific needs of intercultural communication in the field of language learning.

4. The ReDesign project

ReDesign is a three-year, EU-funded, research project which brings together a pool of experienced educators, educational technologists, IT professionals, and researchers to collaborate and design an interactive digital platform based on each faculty's *teaching needs* and students' *learning needs*. The ReDesign platform that mediated students' exchanges bears several features that are similar to the features of the social platform, Facebook. The philosophy of ReDesign is based on recent endeavours among educators to promote multimodal learning experiences to improve student engagement using multiple modes of context representation (i.e., interactive e-contexts) and accommodate the learning styles and needs of a diverse student population across Europe (Sankey,

Birch, & Gardiner, 2010). Calls for Higher Education internationalisation (de Wit & Hunter, 2015) by means of curriculum and learning aims focus upon social inclusion through technological mediums in order to foster global citizens.

The aim of the study is to address the following research questions:

1. *How does the ReDesign platform enact affordances for collaboration, interaction and content-based learning among students and educators?*
2. *What are some of the students' perceptions regarding the design and use of the ReDesign platform as part of their involvement in the telecollaborative exchanges?*
3. *How can faculty members utilise the newly designed platform to enact affordances for collaboration, learning, and knowledge development among students in different academic institutions and geographic locations?*

4.1. Multimodality as an underpinning construct of the ReDesign platform

The increasing trend of combination of texts and images in reading texts marked concerns about a drastic change in the way readers process such multimodal texts. As early as 1998, Kress shifted attention to the emergence of new processes and conceptualisations of reading since graphics rely on images and the reading of such visual information is different from the reading of words. In other words, Kress postulated that multimedia products require high levels of *multimodal competence*. More than a decade later, Dooly and Hauck (2012) argued that multimodality has always been part of meaning making since human beings have always used more than one mode to communicate. This interest has been vividly revived with the adoption of technological mediums that have begun to outweigh the dominance of writing within education. Multimodality refers to "a field of work, a domain for enquiry, a description of the space and the resources which enter into meaning, in some way or another. There is a potent point to multimodality as such, namely the assertion that 'language' is just one among the resources for making meaning: and that all such resources available in one social group and its culture at a particular moment ought to be considered as constituting one coherent domain, an integral field of nevertheless distinct resources for making meaning; all equal, potentially, in their capacity to contribute meaning to a complex semiotic entity, a text or text-like entity." (Kress, 2011, p. 242; see also Bezemer & Jewitt, 2009; Kress & van Leeuwen, 2001).

The epistemology of multimodality casts a critical glance at *meaning*, the construction of meaning (meaning-making) and the level of agency of meaning-makers and the (re)construction of identity (see Gilakjani, Ismail & Ahmadi, 2011; Morrison, Sweeney & Heffernan, 2003; Kress, 2011). Meaning making dimensions have to be integrated into a semiotic model of language learning. Hauck (2010), drawing on *meaning making*, concludes that multimodal communicative competence, the 'cultures of use' of the tools used (Thorne, 2003), and gains in intercultural competence (Byram, 1997) are the least interrelated, if not interdependent. Furthermore, the learners who benefit the most out of online intercultural exchanges are the ones who are *aware of the affordances of different modes* rather than the learners who are fully competent within one mode (Kress, 2003). Reportedly, these learners will be more aware of the cultural determination of the learning context and the way their participation in online communities shapes their perception.

Farías, Obilinovic and Orrego (2007) argued that multimodality extends beyond the psycholinguistic and sociocultural interpretations of language learning to consider multiple media (i.e., body, sound etc.) and modes (i.e., visual, gestural etc.). They further argued that multimodality can play an important role in *L2 or FL learning* as the design of multimodal environments resembles contexts of interaction between a mother and her baby and negotiation of meaning with the child's mind. This is very similar to van Lier's *Firstness* (2004) which points towards natural language learning acquisition and development in ways that it resembles first language development. Notwithstanding that, the objective of classroom is not to replicate what is happening in the natural world, Farías, Obilinovic and Orrego (2007) argue that multimedia can *bring some outside world into the classroom*. As they put it, through perceiving images, gestures, and sounds, "multimedia messages can become the means through which meanings can be grasped in the totality of complex, 'almost' real scenarios" (2007, p. 193). On a similar line,

Wigham and Chanier (2013) argue that as *non-verbal acts* have been shown to possess a significant role in face-to-face communications, so they have in CMC settings.

Within these theoretical trajectories, multimodal theory is guided by the following overarching questions:

1. How is meaning constructed?
2. What is the level of agency of meaning-makers?
3. What are some of the constraints and contradictions encountered in constructing meaning?
4. How is identity (re)constructed in meaning-making?
5. How is knowledge developed and transformed through different modes?
6. Who develops and transforms this knowledge? (see Zhang, 2015; Kress, 2011; Kress & Van Leeuwen, 2001; Gilakjani, et al., 2011; Farias, 2007)

As Gilakjiani et al. (2011, p. 1325) postulate, "viewing multiple ways of presenting concepts stresses the importance of vision in understanding, ignoring the effects of other senses in learning activity. Learning is not only a visual-cognitive activity but also a physical one particularly as it requires the interplay among multiple sensory modalities and representations". Multimodal learning invites us to examine the construction of meaning through different modes, as well as the interaction and interplay of these modes, such as gestures, artefacts, and speech (see Mayer & Sims, 1994; Kress & Van Leeuwen, 2001). *Digital technologies* have galvanised this construction and interpretation of multiple modes, while users are invited to explore, interpret and use these multiple modes of analysis (see Kress & Van Leeuwen, 2001).

In SLA and CALL, multimodality has received considerable attention expanding the trajectories through which we can reconceptualise the construction of socially-embedded knowledge, meaning, interactivity, identity while we engage, explore and transform all these modes of communication and interaction. Active, critical learning may take place in multimodal contexts whether involving game-based learning, augmented reality or virtual worlds (see Gee, 2003).

5. Research questions

5.1. Research Question 1: How does the ReDesign platform enact affordances for collaboration, interaction and content-based learning among students and educators?

This three-year EU-funded study entailed a multidisciplinary pool of researchers, instructors and educators in Applied Linguistics and CALL, Educational Technology, ICT and Engineering. Students in Electrical Engineering and future ESL teachers in Romania, the UK and Cyprus were set to engage in multimodal learning experiences through the use of the newly designed ReDesign platform.

During the first stage, an attempt was made to harness the affordances of social networking sites and overcome some of the challenges encountered with LMSs. The aim of the project was to develop a platform that afforded integration of some tools that are used in LMSs and have been proved efficient, such as recorded lectures. To further enhance the functionality of the platform, it was decided that additional tools should be added that are not currently available in LMSs, such as *Augmented Reality* (AR) and *QR codes*.

The platform affords a multitude of features that are similar to the ones found in several social networking sites, such as the *Facebook* platform, both in terms of appearance and functionality. The designers reckoned that this similarity would promote *familiarity* and users would feel more comfortable and confident to use it for intercultural purposes. The instructors and the system administrators may add content, assignments, groups, and deliver lectures, and instructional material on the platform. Further, the ReDesign platform affords external applications, tools and other content that aims to enhance students' learning experiences and intercultural collaboration. The ReDesign platform allows three different roles; the role of the Administrator, the Professor, and the Student. Each role has different capabilities, but only Administrators have the ability to change other roles. Further, all Administrators are editors by default.

Preparation and acquiring familiarity with the content of the platform are key to successful learning and interaction as online platforms may offer additional challenges than those met in traditional teaching accompanied with a standardised array of pedagogical materials, such as textbooks. However, students need to familiarise themselves with the technical, spatial, and communicative possibilities of the online environment and become fully aware of the affordances of the ReDesign platform. Students are provided with login credentials by their instructor and upon logging in, the following features are on display: *Menu, Profile, User Profile, Events, Groups, Filters, Context, Terms of Use, Student Menu, Chat, and Video*. Students may add their profile picture along with some information about themselves and may report a bug directly to the IT specialist. Users are assigned into Groups by their instructors and they are notified about any upcoming events through the Events feature. The Filters icon enables students enrolled in a course to view which lectures have been uploaded and can be accessed. The students can also select the Context icon in order to filter or Sort by Ascending or Sort by Descending in alphabetic order the indicated content, such as lectures and assignments.

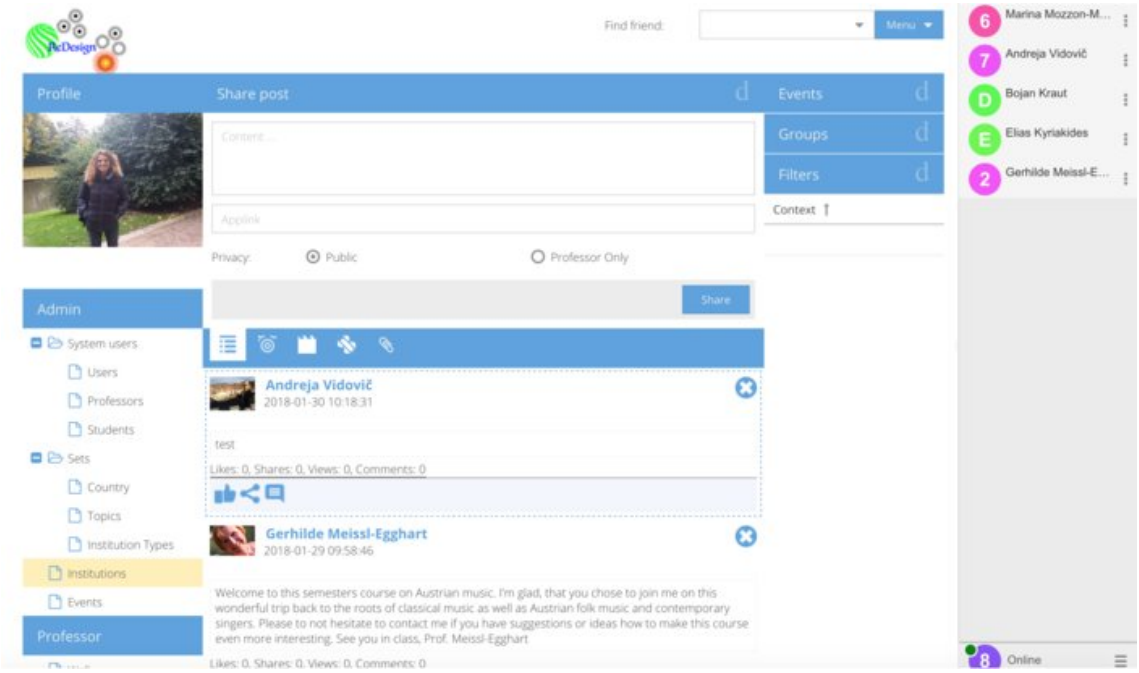


Figure 1. The ReDesign platform.

The ReDesign platform features the *Student Menu* which includes multiple components that allow students to share posts either publicly or with their professors only, make friends, reply to their friends' posts, observe lectures, participate in courses, groups, and events (*Wall, Friends, Professors, Groups, Events, Courses*).

The student Wall has been designed to promote collaboration, participation, interaction, sharing of knowledge, views and ideas, content, and images among students and the establishment and enhancement of interrelations. An instructor can utilise the Wall feature to expand the collaboration and learning trajectories among students. Students can add content, share an idea, or their views on their wall by sharing a post. They can also select an image, a movie, or a file and upload it either publicly by selecting the Public or the Professor Only icon to share their views and ideas only with their professor. Upon uploading images, movies, posts, or QR codes, the student's name, day and time will be displayed under each post. In line with the Facebook platform design, all these four features (like, share, view and comments), appear right below each post, along with the number of times that a post was liked, shared, or commented upon by their peers. Students may use their smartphones to scan the QR code which will display the link or text to them. It is imperative, however, to install the required software on their smartphone in order for the QR code to be read by their smartphone.

The Friends menu has been designed to promote interrelation building and collaboration among students. Students have a network of friends and they are assigned to groups. By

selecting Events, students can view a list of the events and they can select an event based on Interest that will be saved successfully. The event date, time, and location are displayed under the calendar and new events can also be added and/or deleted. Students can view the title of the course in which they are enrolled, the number of hours of the course, the professor's name, the academic institution, and study program.

Users of the ReDesign platform may use the Chat feature that indicates the students' online status and the number of friends that are online at that particular moment. By selecting the drop-down menu, students can view the following features: Settings, Mute, Hide Offline Contacts, Add Contact, Join Chat, About. Students can also customise the different features of their chat, such as Priority, Chat State Notifications, On login, Message History, and Carbon Copy. Students are also provided with the option to Bookmark or Auto-join the chat session. Finally, the About feature displays information on the real-time chat application.

After opening the Chat feature, the Video Call feature also appears. By clicking on the Video Call button, a new message appears requesting from students to verify if they will "allow beta.redesign-project.eu to use their camera and microphone". The platform allows students to use a camera and a microphone to start a video call.

The ReDesign platform is a collaborative attempt that aims to cater to the infinite possibilities of learning and teaching afforded by the emerging practices of state-of-the-art educational technology. The affordances of the platform for intercultural communication point towards the reconceptualised, multifaceted experience of culture and language learning/teaching through digital technologies. Adhering to pedagogical and research trends in CALL and Intercultural Communication in Language Learning/Teaching, the design of the platform seeks to adopt pedagogical goals that expand the monolingual, monocultural, micro-linguistic elements that promote cultural stereotypes, to promote "ethnographical techniques and perspectives and the ability to engage in culturally appropriate conversations in real time" (Train, p. 248 as cited in Belz & Thorne, 2005). Transnational class-to-class collaboration within academic settings, points us towards enlarging our views of teaching and learning as dynamic processes in ways that "explore the emergent semiotic possibilities of multimedia, synchronous, and asynchronous modalities of communication" (pp. 248-249).

5.2. Research question 2: What are some of the students' perceptions regarding the design and use of the ReDesign platform as part of their involvement in the telecollaborative exchanges?

The questionnaires that were devised by the instructors of the course were administered as hard copies to all undergraduate students of ENG101 at a large public academic institution located in the Mediterranean region after specific instructions and guidelines were provided to participants. A consent form was previously administered to all students for ethical reasons. The questionnaire seeks to elicit comments about the ReDesign platform and the ways it was perceived and used by students who were involved in collaboration with students from a large, distant European university.

To tap into students' perspectives about the platform, a six-part questionnaire with 42 closed-ended questions and 10 open-ended questions was devised based on Dörnyei's (2007) guidelines on a five-point Likert scale. The questionnaire involved factual questions (age range, course, etc.), behavioural questions (what the respondents did in the past), and attitudinal questions (their attitudes, opinions, beliefs, etc.). The questionnaires composed mostly of closed-ended questions and a small part of open-ended items. Following Dörnyei (2007), questionnaire items were short, simple language was used, and ambiguous words or sentences were avoided.

The questionnaire was divided into six parts. The first part, 'Academic Institution' was related to information about personal information and their experiences with LMSs in the past. The second part, 'The LMS (Platform)', asked about the design and functionality of the ReDesign platform. The third part, 'The Instructional Material/lectures/tasks', required information about the instructional material, such as recorded sessions, lectures, collaborative activities and other resources. The fourth part, 'The Methods of Communication', required information about the several available communication means, such as text and voice chat, whereas the fifth part, 'Collaboration/Intercultural

Understanding' elicited information on the contribution of the activities and collaborative tasks on students' intercultural understanding. The final part, 'Open-ended questions', asked students about the overall impression of the platform and the learning experience.

Fifteen out of 19 students returned the questionnaires to the instructor. The students of this cohort were all between the ages of 18-24, students at the Department of Education, registered in ENG101 which was compulsory. All the participants answered positively on being asked whether they had used a Learning Management System, such as Moodle, Canvas, or the Blackboard System in other courses in the past. Therefore, all students were familiar with the design and functionality of LMSs. Four students indicated that they had been using the indicated Learning Management System(s) for two years; the rest of the students indicated that they had been using it for one year. The most popular LMS used by these students was Blackboard (12 students), whereas 5 students indicated that they had also used other kinds of LMSs. Interestingly, Moodle and Canvas were never used by any of the students. Only three students indicated that they had previously participated in intercultural collaboration or multimodal learning experiences in the past which were mediated via a virtual environment and collaborated with students from other countries. Regarding the description and gains reported by the three students that were previously involved in these exchanges, one of the students indicated that they learned a lot of things from other cultures, another indicated that the outcomes were very positive as they learned about other cultures and the third student did not make any further comments.

The majority of students answered positively (Agree) on the way the different instructions and guidelines were helpful in understanding the tools and features, agreed that the platform contributed to enhancing and facilitating the delivery of the course objectives, and generally enjoyed using the platform. Although not completely disagreeing, questions about the platform being self-explanatory or whether the guidelines on the platform were helpful in troubleshooting technical challenges, had an equal number of Agree (7) and Neutral (7) responses. This refers to the functionality of the platform, which although providing students with an intercultural experience, faced some structural and technical issues.

It is important, at this point, to note that from part 3 onwards, one of the students did not provide any answers to the questions. Regarding 'The Instructional Material/lectures/tasks' part, the majority of students 'agreed' that the different features and tools on the ReDesign platform were used effectively to expand opportunities for collaboration between students and instructors in different academic institutions, to immerse students into a collaborative community and multimodal environments, and to boost their motivation to learn and develop a better understanding of the subject. Finally, students reported that the several supplementary platforms, such as Moodle, Blogs, the Blackboard System, complemented the delivery of instructional materials.

In part four, 'The Methods of Communication', almost all participants (11/14) agreed that the communication means, such as text chat and voice chat, facilitated interaction with their peers at distant academic institutions, as well as interaction with their instructors. Additionally, such methods of communication facilitated the exchange of information, collaborative tasks and activity completion and students maintained their focus on the activities.

Finally, the last closed-ended part, 'Collaboration/Intercultural Understanding' was composed of questions that elicited answers on students' development of intercultural collaboration and awareness. Three students 'strongly agreed' and ten students 'agreed' that the instructional materials and activities promoted intercultural collaboration. A high of eight students strongly agreed that the collaborative activities promoted intercultural understanding. Additionally, the majority of students felt part of an extended community of learners by being involved in this telecollaborative practice. A surprising number of 12 students strongly agreed that the feedback and designed assessment activities clearly reflected the learning objectives, which points to the clearly defined and specified objectives relating to activity design. Finally, 11 students agreed that these interculturally-laden activities positively contributed to their learning of the subject.

Various linguistic and intercultural gains were also noted in the open-ended questions of the ReDesign questionnaire. For example, when asked in what ways these multimodal learning experiences contributed to expanding their knowledge, students answered that there was exchange of information about their own and the others' cultures, they could process information more easily, they managed to advance their knowledge in the subject, and they became exposed to other students' opinions and way of thinking. Linguistic gains reported from the students included enrichment of vocabulary and grammar skills, and a considerable amount of students also reported that their critical thinking skills had improved. Finally, one student reported that she particularly liked the multiplicity of teaching methods used in contrast with the traditional single delivery method. One student reflected that this course, which was completely different in methodology from the rest of the courses being taught at the university, allowed her to express her ideas about different topics and develop her critical thinking skills. Moreover, it was reported that apart from academic gains, students had had the opportunity to bond with other students through this kind of activity. Some students were encouraged to adopt their peers' writing style or ideas on what to post after reading the other students' posts. Furthermore, students realised that they even shared some cultural artefacts. Particularly challenging in these exchanges was the making of the videos as part of their activities, the AR activities they had to carry out, and the students' impression that they had to be fluent in English as they were interacting with students studying in the UK. Nine out of 14 students reported that the interaction with other students from other countries and cultures was what they enjoyed the most from this experience. Students suggested that the design of activities that would involve students' collaboration towards reaching a goal would enhance the telecollaborative exchange. Additionally, as a suggestion for improvement, most of students reported that the platform should be accessible on mobile devices. The tools and features of the platform that were deemed more enjoyable were its interactivity and simplicity. Students also recommended the use of additional videos as a way to enhance the intercultural collaboration between the students of the two academic institutions.

5.3. Research question 3: How can faculty members utilise the newly designed platform to enact affordances for collaboration, learning, and knowledge development among students in different academic institutions and geographic locations?

The relentlessly accelerating diffusion of digital technologies and the ubiquitous availability and use of such communication systems have rendered the need for integration of such systems into higher education institutions imperative. Practitioners and students are provided with the possibility to create eco-systems of collaboration, and learning opportunities and intercultural collaboration can be tremendously expanded. To remain relevant and updated, the online curriculum content needs to be subject to *continuous revision and improvement*. New, emerging curricula and evolving technologies can greatly enhance the content of the online platform for digitally-afforded, intercultural collaboration.

The newly designed platform brings added depth to second/foreign language teaching and extends beyond these trajectories to fit in a diverse array of teaching contexts. The ReDesign platform has already been integrated in multiple teaching contexts, but there are concrete plans on using it further. As a platform that is built on reframed notions of communication that need to be firmly anchored in higher education priorities, it may be utilised by several researchers/practitioners that wish to undertake intercultural communication projects among students of the same disciplines across different academic institutions and geographic locations.

University professors may engage in finding *common grounds* in the curricula and enact collaborations that would otherwise be deemed impractical. The platform offers students and faculty an opportunity to share their curricula and identify common grounds in their disciplines. In doing so, each faculty would need to determine specific areas of interest for joint activities, the type of technology that would be used during the course, the students' learning needs, the official start and end dates, and other project-related constructs.

The selection of common curricula grounds from the instructors of each discipline will lead to the design, preparation, and delivery of collaborative, content-based material that will be uploaded to the ReDesign platform. In this case, a team of highly experienced researchers exchanged their expertise for the redesign of lectures and activities in ways that would immerse students in constructive, digitally-afforded learning experiences. A meticulous examination of the *syllabi* of each Applied Linguistics course, *students' individuals and collective needs*, and *common areas of expertise and interest* was conducted during the identification of common grounds. Specifically, it was decided that the common areas in the curricula need to promote: joint lectures (mediated by the platform and other Web 2.0 technologies), joint reading materials, joint assignments, collaborative activities designed to promote intercultural collaboration, joint tasks, joint use of the platform and other Web 2.0 technologies and augmented reality (AR), deep learning, multimodal learning experiences, and improved academic performance. These activities were meant to be integrated among students in different academic institutions and geographic locations within the same area of expertise. Further, it was deemed critical that the *digital platform be assessed by the consortium partners* in order to determine whether additional tools and features needed to be added to enhance its interface and user-friendly content, and to promote further collaboration among students and faculty members that participate in the consortium.

The platform can be utilised to enact joint projects among future ESL teachers. To be more precise, instructors can become engaged in designing lesson plans where different technologies, such as AR, form an integral part of the lesson. Teachers will, thus, acquire expertise in devising *online lesson plans* and the platform will serve as a venue for promoting *students' competency in educational technology and teaching/learning skills development*.

By utilising the platform, practitioners can promote intercultural collaboration between students that would not have taken place without the advent of technological online platforms that afford communication and exchange. In other words, the platform expanded the trajectories for collaboration among faculty and students in transnational collaborative endeavours. The ReDesign platform engages students in *active learning* with instructional materials and access to a wealth of resources that can facilitate the adoption of research-based principles and best practices from the learning sciences, an application that might improve student outcomes without substantially increasing costs. The platform can engage students in *critical learning* through *hands-on experiments, collaborative discussions and joint tasks*. The platform offers a system where joint lectures can be viewed, but at the same time the features of social networking sites are integrated for learning purposes. Additionally, the ReDesign platform may provide a venue to observe lab experiments in different countries. Although this is more relevant to STEM disciplines, future ESL teachers can practice such endeavours through CLIL (Content and Language Integrated Learning), content-based or task-based learning and other related methodologies.

Practitioners may promote *multimodal learning experiences* through the use of multiple modalities, such as audio, video, and gestures. The new ReDesign platform expands the modes of presenting and discussing complex concepts in ESL. The ReDesign platform involves markers, images that are hard-coded into the system and trigger some kind of action, such as displaying text, illustrating an image, playing a video or sound clip. These black and white square, printed objects, the so-called Quick Response (QR) codes, are easily recognised by an application. Such *QR codes* can also be printed in textbooks to enrich and supplement the learning activities by adding a multimodal perspective to communication or knowledge acquisition. Students can view posted lectures simply through the use of the QR code, thus promoting active learning outside the four walls of a classroom or the locational constraints of a desktop computer. Additionally, the platform offers a new path for using technology to explore and experience complex concepts, i.e., through AR applications that have been developed by researchers-educators and IT professionals. For example, difficult to grasp concepts in each discipline are presented to students via AR (Vuforia AR software) in a more enjoyable, comprehensive and holistic manner for the needs of today's tech-savvy generation.

6. Conclusions and future steps

The ReDesign project was undertaken with the aim of designing a platform that accommodates today's societal and workforce needs for intercultural communication and digital skill development among ESL student teachers. Further, the project aimed to bring together a team of experienced researchers to enact opportunities for collaboration among instructors in order to foster knowledge development among students in different academic institutions. The tasks that needed to be delivered during the ReDesign exchange included the design of digitally-afforded collaborative activities, joint lectures, content-based material, intercultural exchanges, and other learning activities in multimodal learning environments.

This study set out to examine the design of the platform, featuring several Facebook tools and features, the students' impressions from the use of the platform as a mediating tool for intercultural collaboration with distant partners, and the potential of the platform to be further used for future collaborative projects. Although not all data have yet been collected and analysed, the analysis of the students' questionnaires points towards students' satisfaction with the learning platform and their improvement in intercultural and linguistic gains as noted in several other studies that used Facebook or other platforms for intercultural collaboration. The interactivity and simplicity of the platform appealed to the students, probably because of its striking resemblance to the social platform Facebook, with which students were already familiar. The most frequently reported caveat of the platform was the inability to be accessed from a mobile device. It should be noted, however, that all pitfalls and challenges are being discussed and tackled by the consortium expert partners and concrete steps for improvement of the platform for a more productive intercultural learning experience are currently being carried out.

The ReDesign platform expands learning beyond the traditional LMSs in ways that enable practitioners to enact new opportunities for learning in online contexts that students have not experienced before. Further plans and future steps of the project entail a follow-up of the feedback received from participating students this semester to add additional features to the ReDesign platform and enhance its pedagogical potential. Additionally, evaluation and modification of the platform tools based on feedback and suggestions, and evaluation and modification of educational materials to meet students' needs will take place. Future plans of the ReDesign platform include extensive use of AR applications, such as the use of AR-afforded scenarios to illustrate important concepts in Applied Linguistics. Further, additional joint tasks will be enacted for several courses the upcoming academic year. New online lectures and interactive learning materials will be planned and designed for the purposes of the project in order to launch transnational intercultural telecollaborations among students in the discipline of ESL teacher education.

References

Avgousti. M. I. (2018). Intercultural communicative competence and online exchanges: A systematic review. *Computer Assisted Language Learning, 31*(8), 819-853.

Abhi, A. (2017). The role of technology in collaborative learning. *Independent Education Today*. https://ie-today.co.uk/Article/the-role-of-technology-in-collaborative-learning

Basharina, O. (2007). An activity theory perspective on student-reported contradictions in international telecollaboration. *Language, Learning and Technology*, *11*(2), 82–103.

Belz, J. A. (2003) Linguistic perspectives on the development of intercultural competence in telecollaboration. *Language, Learning and Technology,* 7(2), 68–117.

Belz, J. A., & Thorne, S. L. (Eds.). (2006). *Internet-mediated intercultural foreign language education*. Boston, MA: Heinle & Heinle.

Bezemer, J., & Jewitt, C. (2009) Social Semiotics. In Östman, J. O., Verschueren, J & Versluys, E. (eds.), *Handbook of Pragmatics: 2009 Installment*. Amsterdam: John Benjamins.

Bickley, M., & Carleton, J. (2009). Students without borders. *Learning & Leading with Technology, 37*(3), 20–23.

Byram, M. (1997). *Teaching and assessing intercultural communicative competence.* Clevedon: Multilingual Matters Ltd.

Collins, A., & Halverson, R. (2009). Rethinking education in the age of technology: The digital revolution and schooling in America. Teachers College Press: New York.

Cummins, J., & Sayers, D. (1995). *Brave new schools: Challenging cultural literacy through global learning networks.* St Martin's Press.

De Wit. H., & Hunter, F. (2015). The future of internationalization of higher education in Europe [Special Issue]. *International Higher Education, 83.*

Dooly, M. (2011). Divergent perceptions of telecollaborative language learning tasks: Tasks-as-workplan vs. task-as-process. *Language Learning & Technology, 15*(2), 69–91.

Dooly, M. & Hauck, M. (2012). Researching multimodal communicative competence in video and audio telecollaborative encounters. In M. Dooly and R. O'Dowd (Eds.), *Researching online interaction and exchange in foreign language education. Telecollaboration in education (3)*. Bern: Peter Lang Publishing Group, 135–162.

Dooly, M., & O'Dowd, R. (2018). Telecollaboration in the foreign language classroom: A review of its origins and its application to language teaching practice. In M. Dooly and R. O'Dowd (Eds.), (pp.11–34). Bern: Peter Lang Publishing Group.

Ducate, L., & Arnold, N. (eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching.* San Marcos, TX: CALICO.

Ertmer, P. A., Newby, T. J., Yu, J. H., Liu, W., Tomory, A., Lee, Y. M., Sendurur, E. & Sendurur, P. (2011) Facilitating students' global perspectives: Collaborating with international partners using Web 2.0 technologies. *Internet and Higher Education*, *14*(4), 251–261.

European Internet Foundation: Political Leadership for Network Society. (2009). *The digital world in 2025.* European Internet Foundation: Political Leadership for Network Society.https://www.eifonline.org/the-digital-world-in-2025.html.

European Internet Foundation: Political Leadership for Network Society. (2014). "The digital world in 2030: What place for Europe?" European Internet Foundation: Political Leadership for Network Society. https://www.eifonline.org/the-digital-world-in-2030.html.

EDUCAUSE (2018). NMC Horizon Report. https://library.educause.edu/resources/2018/8/2018-nmc-horizon-report.

Espinosa, L. (2015). The use of Facebook for educational purposes in EFL classrooms. *Theory and Practice in Language Studies, 5*(11): 2206–2211.

Farias, M. (2007). Reading with eyes wide open: Reflections on the impact of multimodal texts on second language reading. *Ikala, 22*(1): 57-70

Farías, M. Obilinovic, K & Orrego, R. (2007). Implications of multimodal learning model for foreign language teaching and learning. *Colombian Applied Linguistics Journal, 9*, 174–199.

Gee, J. P. (2007). *What video games have to teach us about learning and literacy*. Palgrave Macmillan: New York.

Gilakjani, A. P. (2011). Visual, auditory, kinaesthetic learning styles and their impacts on English language teaching. *Journal of Studies in Education,2*(1), 104–113.

Gilakjani, A. P., Ismail, H. N., & Ahmadi, S. M. (2011). The effect of multimodal learning models on language teaching and learning. *Theory & Practice in Language Studies*, *1*(10), 1321–1327.

Hamper, R., & Hauck, M. (2006). Computer-mediated language learning: Making meaning in multimodal virtual learning spaces. *The JALT CALL Journal*, *2*(2), 3–18.

Hauck, M. (2007). Critical success factors in a TRIDEM exchange. *ReCALL, 19*(2), 202–223.

Hauck, M. (2010). At the interface between multimodal and intercultural communicative competence. In S. Guth & F. Helm (Eds.), *Telecollaboration 2.0: Language and intercultural learning in the 21 st century* (pp. 219–248). Bern: Peter Lang.

Kabilan, M. K., Ahmad, N., & Abidin, M. J. Z. (2010). Facebook: An online environment for learning of English in institutions of higher education? *Internet and Higher Education*, *13*, 179-187.

Kress, G. R. (2003). *Literacy in the new media age*. London: Routledge.

Kress, G. R. (2011). 'Partnerships in research': Multimodality and ethnography. *Qualitative Research, 11* (3), 239–260.

Kress, G. R., & van Leeuwen, T. (2001). *Multimodal discourse: The modes and media of contemporary communication.* Oxford UK: Oxford University.

Lee, L., & Markey, A. (2014). A study of learners' perceptions on online intercultural exchanges through Web 2.0 technologies. *ReCALL, 26*(3), 281–297.

Liaw, M. (2006). E-learning and the development of intercultural competence. *Language Learning & Technology, 10*(3), 49–64.

Mabuan, R., & Ebron, G. P. (2016). Engaging ESL/EFL learners with Facebook groups. *24th Annual Korea TESOL International Conference*. Sookmyung Women's University, Seoul, South Korea.

Mayer, R. E., & Sims, V. K. (1994). For whom is a picture worth a thousand words? Extensions of a dual-coding theory of multimedia learning. *Journal of Educational Psychology*, *86*(3), 389–401.

Morrison, M., Sweeney, A., & Heffernan, T. (2003). Learning styles of on-campus and off-campus marketing students: The challenge for marketing educators. *Journal of Marketing Education, 25*(3), 208–17.

Müller-Hartmann, A. (2000). Learning how to teach intercultural communicative competence via telecollaboration: A model for language teacher education. In J., A. Belz & S. L. Thorne (Eds.), Internet-mediated intercultural foreign language education, (pp. 63–84). Heinle & Heinle.

O'Dowd, R. (2018). From telecollaboration to virtual exchange: State-of-the-art and the role of UNICollaboration in moving forward. *Journal of Virtual Exchange, 1,* 1–23.

O'Dowd, R. (Ed.). (2007). *Online intercultural exchange: An introduction for foreign language teachers.* Clevedon: Multilingual Matters Ltd.

O'Dowd, R. (2006). *Telecollaboration and the development of intercultural communicative competence.* Langenscheidt.

O'Dowd, R. (2003). Understanding the" other side": Intercultural learning in a Spanish-English e-mail exchange. *Language Learning & Technology, 7*(2), 118–144.

Özdemir, E. (2017). Promoting EFL learners' intercultural communication effectiveness: a focus on Facebook. *CALL, 30*(6), 510–528.

Sadler, R., & Dooly, M. (2016). Twelve years of telecollaboration: what we have learnt. *ELT Journal, 70*(4), 401-413.

Sankey, M., Birch, D. & Gardiner, M. (2010). Engaging students through multimodal learning environments: The journey continues. In C.H. Steel, M.J. Keppell, P. Gerbic & S. Housego (Eds.), Curriculum, technology & transformation for an unknown future. *Proceedings ascilite Sydney 2010*, 852-863. http://ascilite.org.au/conferences/sydney10/procs/Sankey-full.pdf

Schreiber, B. R. (2015). "I am what I am": Multilingual identity and digital translanguaging. *Language Learning and Technology, 19*(3), 69–87.

Shaffer, D. W., Squire, K. R., Halverson, R., & Gee, J. P. (2005). Video games and the future of learning. *Phi Delta Kappa*, *87*(2) 104–111.

Solon, O. (2018, June 1). Teens are abandoning Facebook in dramatic numbers, study finds. *The Guardian*. https://www.theguardian.com/technology/2018/jun/01/facebook-teens-leaving-instagram-snapchat-study-user-numbers

Sykes, J., Oskoz, A. & Thorne, S. L. (2008). Web 2.0, synthetic immersive environments, and mobile resources for language education. *CALICO Journal, 25*(3): 528-546.

Tella, S. (1991). *Introducing international communications networks and electronic mail into foreign language classrooms: A case study in Finnish senior secondary schools*. Yliopistopaino.

Thorne, S. L. (2003). Artifacts and cultures-of-use in intercultural communication. *Language Learning and Technology, 7*(2), 38–67.

van Lier, L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Dordrecht: Kluwer.

Wang, C. M. (2011). Instructional design for cross-cultural online collaboration: Grouping strategies and assignment design. *Australasian Journal of Educational Technology*, *27*(2), 243–258.

Wang, C. M. (2012). Using Facebook for cross-cultural collaboration: The experience of students from Taiwan. *Educational Media International*, *49*(1), 63–76.

Wang, Y., & Chen, N. S. (2009). Criteria for evaluating synchronous learning management systems: Arguments from the distance language classroom. *CALL, 22*(1), 1–18.

Ware, P. D., & Kramsch, C. (2005). Toward an intercultural stance: Teaching German and English through telecollaboration. *Modern Language Journal*, *89*(2), 190–205.

Wigham, C. R., & Chanier, T. (2013). A study of verbal and nonverbal communication in Second Life: The ARCHI21 experience. *ReCALL*, *25*(1): 63–84.

Willems, J., & Bateman, D. (2011). The potentials and pitfalls of social networking sites such as Facebook in higher education contexts. In Williams, G, Statham, P., Brown N. & Cleland B. (Eds.), *Changing Demands, Changing Directions*. *Proceedings ascilite Hobart 2011*. 1329-1331.

Yu, W. K., Sun, Y. C., & Chang, Y. J. (2010). When technology speaks language: an evaluation of course management systems used in a language learning context. *ReCALL, 22*(3), 332–355.

Zhang, M. (2015). Teaching translation with a model of multimodality. *Asia Pacific Translation and Intercultural Studies, 22*(1), 30–45.

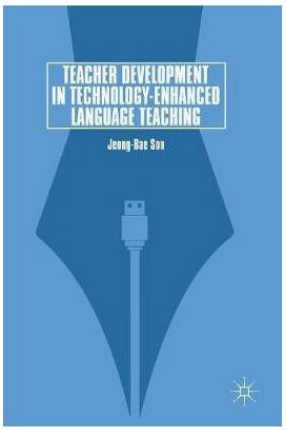
Zheng, D. (2012). Caring in the dynamics of design and languaging: Exploring second language learning in 3D virtual spaces. *Language Sciences, 34*(5), 543–558.

Book review

Teacher Development in Technology-Enhanced Language Teaching

Reviewed by İsmail Yaman
Ondokuz Mayıs University, Turkey

ismail.yaman@omu.edu.tr



Teacher Development in Technology-Enhanced Language Teaching

Jeong-Bae Son

Palgrave Macmillan

2018

ISBN 978-3-319-75710-0

ISBN 978-3-319-75711-7 (eBook)

https://doi.org/10.1007/978-3-319-75711-7

233 pages

This book explores language teacher development in Computer-Assisted Language Learning (CALL) environments and discusses approaches, tasks and resources that can guide language teachers to develop their skills and strategies for Technology-Enhanced Language Teaching (TELT). It looks at key aspects of CALL in terms of pedagogy and technology and proposes a model of CALL teacher development which incorporates essential elements of teacher learning in CALL. Further, the author presents practical tasks and tips on how to develop knowledge and skills for the use of digital technologies in language teaching and suggests ideas to improve language teacher training and development.

The book consists of three main parts and five appendices. Part 1 focuses on issues concerning language teachers in CALL environments and covers four main chapters concerning TELT. Chapter 1 discusses the historical development of CALL and presents a review of the relevant literature in view of aspects like content, process, effectiveness of teacher training, transfer of coursework to classroom practice, factors affecting technology integration, continuous professional development, and future directions. Chapter 2 concentrates on the six roles teachers are expected to undertake in the CALL classroom: teacher as CALL observer, CALL designer, CALL implementer, CALL evaluator, CALL manager, and CALL researcher. Chapter 3 discusses the features of CALL-competent language teachers with reference to detailed data from the relevant literature. Chapter 4 focuses on CALL teacher development and introduces a four-phase ECCR (Exploration, Communication, Collaboration, Reflection) framework for teachers.

Part 2 consists of four chapters each of which is devoted to a specific approach to CALL teacher learning: role-based approach, language skill-based approach, tool-based approach, and activity-based approach. Chapter 5 covers details on the role-based approach which is based on the roles discussed in Chapter 2. Each role is explained through a specific task; for instance, the implementer role is elaborated through a task

asking teachers to make a CALL lesson plan. Chapter 6 is devoted to the language skill-based approach that covers reading, writing, listening, and speaking as main skills; and pronunciation, vocabulary, grammar, and culture as further areas. The implementation of the approach is clarified through tasks including teaching reading with a word cloud, teaching writing with a wiki, and teaching culture with authentic videos. Chapter 7 is on the tool-based approach and introduces specific tasks concerning the application of learning/content management systems, communication tools, live and virtual worlds, social networking and bookmarking tools, blogs and wikis, presentation tools, resource sharing tools, website creation tools, web exercise creation tools, web search engines, dictionaries and concordancers, and utilities. Chapter 8 is about the activity-based approach and covers to-the-point tasks that ask language teachers to practice collaboration, communication, concordancing, creation, exploration, games, mapping, presentation, reflection, simulation, storytelling, surveys, tests, and tutorials.

Part 3 consists of three chapters that provide context-specific ideas and selected CALL-related resources for language teachers. Chapter 9 advances the idea that real situations involve diverse variables and an eclectic approach (based on the approaches discussed in Part 2) should be taken in accordance with the specific context at hand. Four different scenarios and the possibly ideal blend of approaches to be adopted by language teachers are discussed in detail. Scenario 4, for instance, is as follows: "You are an experienced teacher. You use digital tools in your classroom when possible. You want to improve your CALL knowledge and skills and learn more about online language learning activities and tools so that you can enhance your teaching methods. How can you do it?" (p. 165). Chapter 10 presents a vast bibliography of outstanding CALL-related books, chapters, and journal articles with a special focus on the involvement of teachers in CALL practices. Lastly, Chapter 11 provides important CALL-related teacher development resources including professional organisations, academic journals, websites, mobile apps, online tools, and online activities (all with direct links to the relevant websites).

The book possesses a notable value considering its to-the-point contribution to the teacher-related dimension of the integration of technology into language learning and teaching. It covers a practice-oriented content that is based on a huge body of up-to-date research. Accordingly, both ELT researchers and practitioners can benefit greatly from this work. Part 2 especially is based mainly on specific guiding tasks that aim to help language teachers develop practical awareness concerning the ways to implement TELT effectively. In addition, Part 3, with the useful scenarios and valuable resources covered, constitutes a real body of reference information on TELT. One possible drawback about the book is its omission of the rising MALL trend. MALL tools are mentioned just a few times under the CALL framework. Nevertheless, the use of portable devices in ELT is evolving to become an indispensable way for language learners. Therefore, language teachers who constitute the major target readership of the book should also be equipped with knowledge and skills to make use of MALL tools effectively. At least, the inclusion of some MALL-oriented tasks in Part 2 would render the work stronger. Overall, with its reader-friendly organization and rich content, the book can be added to the list of must-have resources in ELT.

Editorial Board

The EUROCALL Review is an open access journal published online biannually by the European Association for Computer-Assisted Language Learning (EUROCALL) and is hosted on the Online Journal System at http://polipapers.upv.es/index.php/eurocall by Universitat Politècnica de València (Spain). Regular sections include:

- *Reports on EUROCALL Special Interest Groups: up-to-date information on SIG activities*
- *Projects: reports on on-going CALL or CALL-related R&D projects*
- *Recommended websites: reports and reviews of examples of good practice in language learning website development*
- *Research papers on CALL related topics*
- *Research and Development papers on CALL related topics*
- *Reflective Practice papers on CALL related topics*

The EUROCALL Review is indexed in

- ERIC (Education Resources Information Center - an internet-based digital library of education research and information sponsored by the Institute of Education Sciences of the U.S. Department of Education.)
- DOAJ (Directory of Open Access Journals) - an online directory that indexes and provides access to quality open access, peer-reviewed journals.
- MLA Modern Language Association International Bibliography.

- The European Reference Index for the Humanities and the Social Sciences (ERIH PLUS). This database contains data on scientifically approved European journals within the disciplines of humanities and social sciences.
- Dialnet plus
- REDIB Red Iberoamericana de Innovación y Conocimiento Científico

The EUROCALL Review is also listed in the DULCINEA database, providing bibliographic data, access policies and self-archiving-policies, and in Wiley's Linguistics Abstracts Online database - a continually updated database with abstracts appearing within 6-12 months of publication.

Articles submitted to *The EUROCALL Review* are peer-reviewed by members of the Editorial Board.