THE LEARNING DIALOGUE OF UNIVERSITY LANGUAGE STUDENTS IN A DIGITAL ENVIRONMENT FOR ONLINE TEXT ANNOTATIONS[*]

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Abstract – The article discusses how an open access tool for collaborative online interaction (Hypothes.is) can be used to enhance collaborative and individual actions of language awareness and critical multimodal awareness for groups of undergraduate and postgraduate university students of English as a foreign language. The research questions focus on how student online collaboration can contribute to (or hinder) the process of critical analysis of multimodal texts, and to what extent collaboration through a digital environment can promote learner autonomy and peer learning through shared discourse and online/offline actions. The digital environment which is the main digital context of interaction for the study is LearnWeb/CELL: CELL (Communicating in English for Language Learning) is a community hosted within the LearnWeb digital environment developed by the L3S Research Center at Leibniz University (Hanover, Germany) (Marenzi 2014) and it is customized as a collaborative environment for undergraduate and postgraduate language courses at the University of Udine (Italy). The LearnWeb developers have embedded an open access application for website annotation (Hypothes.is) in the LearnWeb/CELL digital environment, so that it can be accessed and used by students and teachers. In the study we focus on the reflective learning dialogue that takes place between students when they analyze texts collaboratively. In general terms, this learning dialogue is usually rather elusive and difficult to capture because it happens informally outside the classroom. Our starting hypothesis was that the digital functionalities and affordances of Hypothes.is in CELL would capture at least a part of that learning dialogue and, more specifically, they would record what the students decide to disclose and reveal through their online annotations. Within the limitations of a small-scale study, the paper discusses the students' individual and collective process of reflection on multimodal text analysis. This use of the digital environment allows teachers, researchers and the whole class to 'see' the powerful effect of learning with peers and from peers while developing learning autonomy and exploring learning strategies.

Keywords: language awareness; multimodal analysis; text annotations; learning dialogue; English FL.

1. Introduction

This paper presents a small-scale study carried out in Autumn 2018 to assess the innovative use of an open access digital tool for collaborative annotation (Hypothes.is) embedded in the digital learning environment (LearnWeb/CELL) used for English as a foreign language in university courses (undergraduate and postgraduate degrees in Foreign Languages and Literatures). A variety of studies show that digital environments for learning can help students become active agents of their language learning processes through online interaction and collaboration (see, among many others: Jones, Hafner 2012; Dudeney, Hockly, Pegrum 2013; Motteram 2013; Chapelle, Sauro 2017; Chanier, Lamy 2017). Learner agency is seen as a crucial variable in language-learning processes; van Lier (2008) recognizes language agency as the learner's ability to self-regulate, the socially mediated nature of sociocultural contexts, and the awareness of learners' responsibility for their own learning actions. This paper will address learner agency with the focus on collaborative learning (Miyake, Kirschner 2014).

In this paper we aim to investigate ways in which an open access tool for collaborative online interaction (Hypothes.is) can be used to enhance collaborative and individual actions of language awareness and critical multimodal awareness, namely the collective and individual ability to approach a complex multimodal text and interpret it taking into consideration the context, the complex interaction between addressers and addressees, and the interrelation between the verbal and visual aspects in contributing to meaning making and interpretation (see, among many studies: Baldry 2005; Kress 2003, 2010; O'Halloran, Tan, Marissa 2017) .

More specifically, the research questions of the present case-study focus on how student online collaboration can contribute to (or hinder) the process of critical analysis of multimodal texts, and to what extent collaboration through a digital environment can promote learner autonomy and peer learning through shared discourse and online/offline actions.

The study is at the cross-roads of different and complementary research fields: critical discourse studies (Fairclough 2003, 2006; Blommaert 2005; Mooney, Evans 2015; Goatly, Hiradhar 2016), multimodal studies for pedagogical purposes (Baldry 2005, 2011; Kress 2003, 2010; Bezemer, Kress 2016; O'Halloran, Tan, Marissa 2017), multiliteracies studies (New London Group 1996, 2000; Cope, Kalantzis 2009a, 2009b, 2015), language learning and technology (Dudeney, Hockly, Pegrum 2013; Motteram 2013; Farr, Murray 2016; Cappellini, Lewis, Rivens Mompean 2017; Chapelle, Sauro 2017).

2. Context of study and theoretical framework

The learning contexts of this research study were two English Language courses of Languages and Literatures degrees at the University of Udine (Italy) in the Autumn term (2018-2019): the 3rd year undergraduate course and the 2nd year post-graduate course.[1] The students' competences in English range from B2 to C1(Common European Framework of Reference, 2001, 2018) for the undergraduate course, and the postgraduate students have competences beyond C1. The main educational objective of the two courses is to enhance and promote reflective critical awareness in text analysis. The 3rd year undergraduate course deals with media discourse (Mooney, Evans 2015, 4th ed); while the 2nd year post-graduate course deals with ecolinguistics (Stibbe 2015).

In this research study we investigate the ways in which students use an open access application for online annotation of websites and documents to carry out collective reflections in small groups on multimodal text analyses.

2.1. The digital environment

The digital environment we decided to use as main digital context of interaction for the study is LearnWeb/CELL (Communicating in English for Language Learning). CELL is a community hosted within the LearnWeb digital environment developed by the L3S Research Center of the Leibniz University of Hannover (Germany) (Marenzi 2014).

CELL is customized as a collaborative environment for undergraduate and postgraduate language courses at the University of Udine (Italy). The LearnWeb developers have embedded an open access application used for website annotation (Hypothes.is) into the LearnWeb/CELL digital environment so that it can be accessed and used by students and teachers.

This means that students' annotations (see below Section 3.1.) are only accessible to the participants who sign up for a special interest group of the CELL community. The multimodal text analysis of the students can be seen only by the two class groups (undergraduate and postgraduate) and the teachers. We did not have any specific study to rely on about the use of the application Hypothes.is for critical multimodal analysis because this open access tool, embedded into the LearnWeb/CELL digital environment, to our best knowledge, had never been used before for this purpose and in this way.

There are several authoritative studies on teaching and learning multimodal analysis (among a vast literature, see Kress 2003, 2010; O'Halloran, Tam, Marissa 2017). In our case, however, more than on the

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[1] Undergraduate degree course: Foreign Languages and Literatures; postgraduate degree course: European and Extra-European Languages and Literatures (the University of Udine, Italy).

actual use of multimodal analysis, we wanted to focus on the reflective learning dialogue that takes place between students when they analyze texts collaboratively. This learning dialogue is rather elusive and difficult to capture because it usually happens informally outside the classroom. Our starting hypothesis was that the digital functionalities and affordances of Hypothes.is in CELL would capture at least a part of that learning dialogue and, more specifically, they would record what the students decide to disclose and reveal through their online annotations. The study focuses on how the students use the digital tools for text analysis, the reflection that goes on between them while carrying out collaborative text analysis, and what of this reflection they choose to record online. As Chanier and Lamy remark:

> In computer-mediated interactive language learning (henceforth CMILL), learning is affected by the resources that are available to learners and their use. Therefore, the design of learning activities and research on their use needs to take into account of the materiality of the modes available to learners and how they are used to create meaning multimodally. (Chanier, Lamy 2017, pp. 429)

Due to the specific pedagogical focus of this study, we have adopted their working definition of multimodality: 'Multimodality is the complex relationship that develops between multiple tools and modes when they are co-deployed in different combinations, in learning situations to work toward particular objectives.' (Chanier, Lamy 2017, pp. 430).

2.2. The theoretical framework

As outlined in the introductory section, the research questions focus on how student online collaboration can contribute to (or hinder) the process of critical comprehension and analysis of multimodal texts, and to what extent it can promote autonomous and peer learning. As Chanier and Lamy (2017) state, the potentialities and affordances of the tools and environment need to be carefully considered. This research study tries to assess how a specific collaborative annotation tool can support students' analytical and critical skills through peer learning and autonomous learning processes. We investigate in what way self-reflection, organization of the analysis, knowledge sharing, peer feedback and discussion were instantiated in the specific online environment as related to its offline context of learning.

As O'Halloran, Tan and Marissa write:

> The ability to critically analyze and interpret multimodal texts (e.g., online news, social media postings, websites and videos) has become an important, if not indispensable, skill in the twenty-first century, where sites of information, knowledge construction and social interaction are increasingly governed by interactive digital media technology. (O'Halloran, Tan, Marissa 2017, pp. 147)

Our paper focuses on how a digital appliance not specifically created for multimodal analysis can contribute to what O'Halloran, Tan and Marissa (2017) call MACT: Multimodal Analysis for Critical Thinking. In the research study of O'Halloran, Tan and Marissa the software has purpose-built applications for multimodal analysis and critical thinking, whereas in the present study, the applications are open access and were developed for the general annotation of websites and documents and not according to multimodal theories and practices. This choice allowed the tool Hypothes.is to be embedded into the LearnWeb/CELL environment and used as a set of functionalities in which the students have to adopt their own specific labels and modalities for analysis through online exchange.

We situate our work in the area of multiliteracies for promoting critical thinking through autonomous and collaborative learning. A vast body of research has been carried out in the past decades on the relevance of critical (multi)literacy skills and, more specifically, media literacy skills for students in our 21st century society (among many others: the New London Group 1996, 2000; Unsworth 2001; Kress 2003, 2010; Ala Mutka 2011; Jones, Hafner 2012; Rheingold 2012). As early as 2000, Cope and Kalantzis (members of the New London Group) wrote about the need for change from literacy to multiliteracies: '[…] *literacy* education is about students in our classrooms becoming a part of the global world through mass media, the internet and the multiplicity of communication channels and through interaction with others' (Cope, Kalantzis 2000, pp. 6). Unsworth (2001, pp. 14) identifies three dimensions in literacy practice: 'recognition literacy', 'reproduction literacy' and 'reflection literacy'. The last step, where the student has the role of text analyst, is also referred to as critical literacy.

Greenhow, Robelia and Hughes (2009, pp. 249), following Scardamalia and Bereiter (2006), define as 'knowledge building' those 'environments whose affordances are interconnections, creative capabilities, and interactivity'. This ties in with Dooly and O'Dowd's (2012) view of learning in online networking: '[L]earning is understood as an organic process, fostered through cognitively challenging, meaningful use of language. Inevitably, engaging learners in online networking and publishing implies greater opportunities for communicatively-based language learning, thus facilitating learner-mediated dialogical use of the target language' (Dooly, O'Dowd 2012, pp. 14-15).

Collaborative learning (CL) is 'a fundamentally social process of knowledge building' (Miyake, Kirschner 2014, p. 420), during which 'learners work together to complete a task or solve a problem, and communicate with one another in this process.' (Kukulska-Hulme, Viberg 2018, p. 207). Networking and collaboration in language learning involve two main areas of learning: autonomous learning and peer learning. The

literature on both these areas is vast. Here we just outline some of the aspects which are relevant for the present study.

Holec defines autonomy as the ability of the learner to take charge of his/her own learning (Holec 1981, p. 3). Little (1991) outlines the complexities of autonomy in learning. He writes that "autonomy is a capacity – for detachment, critical reflection, decision-making, and independent action. It presupposes, but also entails, that the learner will develop a particular kind of psychological relation to the process and content of his learning" (Little 1991, p. 4). Benson identifies 'control' as a key aspect at different levels: learning management, cognitive processes and learning content (Benson 2001). The autonomous learner becomes creator of learning content, and takes control over his/her learning process. Whereas the first studies on autonomy (1970s and 1980s) focused on individual learning, later on collaboration and the social dimensions have come to be considered crucial factors in developing autonomous language learning (Benson 2006, 2011, 2013). Today ICT technologies offer collaborative and interactive environments where the user/learner can create and re-contextualise learning content, and explore innovative modalities of learning processes (Cappellini, Lewis, Rivens Mompean 2017). Autonomy in language learning is now seen as a 'social construct' as well as a cognitive one (Murray 2014).

Autonomy, therefore, is a necessary basis for the practices of peer learning. Research has shown that learning processes among peers are conducive to enhancing meaning making and knowledge building, especially among people who share age, learning experiences, educational levels and common difficulties (Falchikov 2001, p. 1). As Williams and Burden write, 'working together with another person, either an adult or a more competent peer at a level that is just above a learner's present capabilities is the best way for the learner to move into the next layer' (Williams, Burden 1997, p. 40). Boud *et al*. (2014) clearly show how learning from and with each other should be mutually beneficial for the sharing of knowledge, ideas and experience between the participants. Thus 'peer learning' suggests a two-way, reciprocal learning activity in a formal context (the class) through formal and informal dialogue (online and offline).

Students engage in peer learning to find emotional and motivational support from each other or from a tutor and they collaborate in an open atmosphere of free communication or cooperation in the target language (Boud *et al*. 2014). Through peer learning practices, students can become more aware of their learning process and develop autonomy in language learning, through interaction, reflection, self-evaluation and critical awareness.

In the following section, we describe and analyze our case study.

3. Participants, tasks and tools

The two language courses of our case study are designed to provide the students with basic competences in discourse and multimodal analysis: reading and interpreting texts in context, identifying main viewpoints from verbal and visual cues, discussing identity construction of represented and interacting participants, including the implied or ideal reader of the text, etc.

The courses mainly address what Unsworth (2001) defines as 'recognition literacy' and 'reflection literacy' (see Section 2.2.).

Our study focuses on how the students recognize textual aspects (verbal and non-verbal), and reflect critically on them in collaboration and as autonomous learners through the interaction which we call 'learning dialogue'. As mentioned in Section 2.1., the digital environment we adopt allows freedom in organizing the collaborative dialogue among the groups, and, as explained below, the tasks enable the students to choose how to carry out the learning dialogue when analyzing texts. Here we analyze and discuss how the students decide to use the digital tools to carry out collectively a critical multimodal analysis task. We are interested in the solutions they adopt to show their 'learning presence and dialogue' online (and offline).

As a starting point, we explained to the students that they would be using an innovative tool for collaborative annotation and through their work we would assess and validate its use in context. We set the tasks as part of student coursework assessment, but only volunteer students would carry them out using the online environment. All the other students would do the tasks during the traditional exam session (written and oral).

Out of 50 third year undergraduate students, 13 volunteers were divided into 6 groups; each group selected one online text (media or social media news): 6 online texts in total, 1 per group. We decided to divide the students into small groups (two or three members in each) to encourage them to take direct responsibility for their own collective work. The groups, however, were formed by the students themselves. Out of 30 second year post-graduate students, 17 students volunteered and were divided into 7 groups. They were also free to select the online texts to analyze according to the guidelines given during the course. Postgraduate students had one text per student (17 texts) and therefore each group had to annotate two or three texts (according to the number of students per group).

All the members of each class (even those who did not directly participate in the study) could see the analysis carried out online by accessing the special interest group on the CELL community. This means that not only could the whole classes access the text analysis and interaction carried out by their classmates, but the work done online can also be accessed as a resource by students of the future courses. This was explained to the students: they

knew their work would be seen by other students and become an online resource.

As part of their tasks, the students had to use the online tools to annotate texts and identify crucial aspects related to representation of identities and fact-checking (participants, social groups, events, point of view, etc.). O'Halloran, Tan, and Marissa summarize their Multimodal Analysis for Critical Thinking (MACT) as follows:

> [T]he MACT approach encourages guided as well as self-directed group and individual learning, with the aim to
> - develop an understanding of the different text types/genres that students may encounter in everyday contexts;
> - systematically identify the main features, structures and ideas in functional texts from print and non-print sources;
> - plan, organize, summarize and synthesize pertinent information;
> - develop a critical understanding and appreciation of how visual, verbal and aural elements work together to create an impact and achieve their respective communicative purposes. (O'Halloran, Tan, Marissa 2017, p. 155)

Our students had to decide what to give priority to in their text analysis, and discuss within their group the relevance to give to the various aspects they noticed. Student discussions lead to prioritization of specific elements in their text analysis with reference to the relevance of particular features such as text type, layout and visual aspects, lexical choices, agentivity, verbal and visual metaphors, salience, erasure, etc. The students had no fixed template to follow, but during the courses we had provided them with tools and methodology for carrying out such analysis. They could also share questions with their colleagues and ask for feedback on their own reflections, establishing a peer dialogue and using both technical and informal language.

The digital tool is flexible: categories are not pre-determined and, when carrying out the tasks, users are free to adopt both technical/specific language learnt during the courses and their own wording. The LearnWeb/CELL environment allows the students to save, revise and share annotations of their analysis. They can also decide whether they wanted to work online in group analyzing the text together, or work individually on the same text at different times.

The expected and hypothesized final outcomes are that students would see and acknowledge the other participants' points of view and express their own. They discuss perspectives, increase knowledge through social interaction, develop autonomy in language learning, develop critical thinking and problem-solving skills (see Benson 2013; Murray 2014). Additionally, they can use and improve their own digital skills for specific learning purposes.

The two classes of students (all of them, not only the volunteer participants) were given a 2-hour workshop by Boato and Salvador about how to use Hypothes.is and the *LearnWeb* digital environment. They were also given the Guidelines written by Boato and Salvador to help them access the application and use its functionalities for text analysis. As far as the text analysis is concerned, the two courses (40 hours for the undergraduates and 20 for the postgraduates) were devoted to critically analyze multimodal texts.

The task given to the student specified that they could choose the text they wanted to analyze, and they should do so collaboratively (in pairs or groups of three) using the tool Hypothes.is. No minimum or maximum number of interactions or text annotation was required; this choice was done to enhance pair/group and individual autonomy and collaboration. Each pair or group would have to give an oral presentation of the salient findings of their collaborative text-analysis. For their presentation they had to use as visual support their text analyzed with Hypothes.is and uploaded onto the *LearnWeb* digital environment used for the class group (CELL). The classmates could access the work of each group online and could see it projected on screen during the presentations. A class discussion about the text and its analysis followed each group presentation and the class was supposed to ask questions or suggest further possible interpretations.

Both collaboration and student autonomy (in the sense of pair and group autonomy as well as individual autonomy) was expected at different times during the process: the formation of pairs/groups, the choice of the text to analyze, the way in which the group/pair decided to focus on some aspects of the text analysis, on the way they used Hypothes.is for their analysis and presentation, and their participation in class as active audience for their classmates' work.

3.1. Working with Hypothes.is

As a convention, we capitalize Annotation, Reply, Tags, Highlighting, Page Notes when we refer to the specific category listed below; we do not capitalize when writing generally about different types of annotation. Fig. 1 shows how Hypothes.is appears to users when annotating. The advantage of using this tool is the possibility for the students to annotate the multimodal text as it appears online with its co-text, images, graphic layout, etc.; annotations appear on the side or superimposed without changing the layout of the original text. This allows students to comment both on verbal and visual aspects of the text capturing the multimodal complexity of meaning in context.
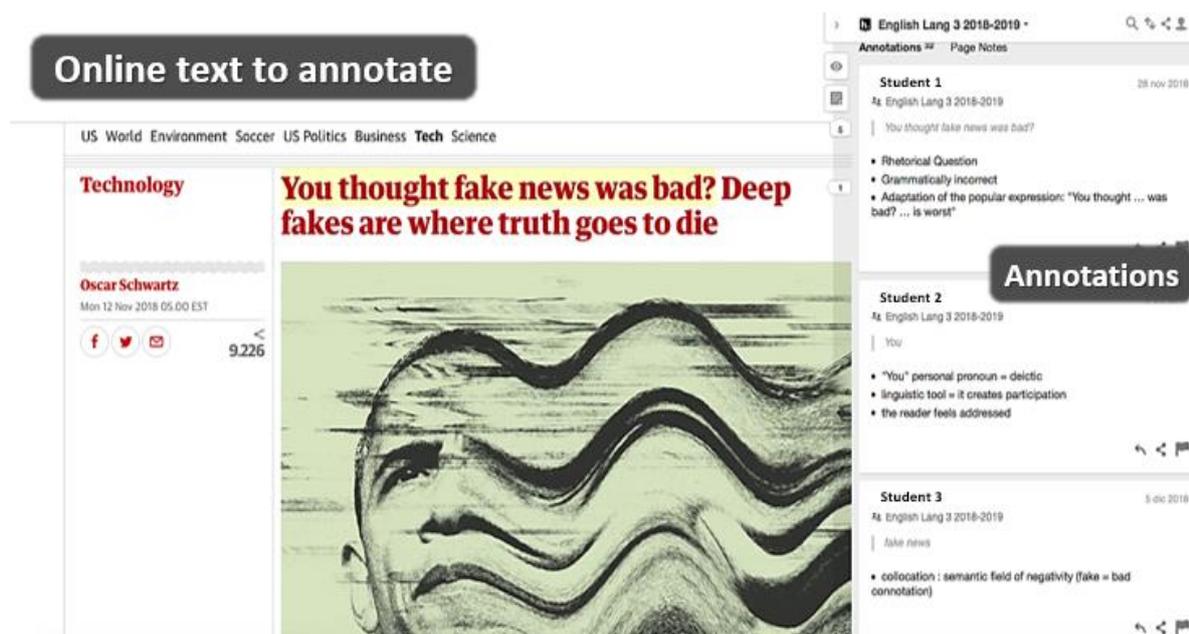
Figure 1
Annotation.

The following are the functions used by the students when annotating the texts:

- **Annotation**: comments appear on the side of the text. Only written text can be annotated (including headlines). It is also possible to embed different media within the Annotation function, as shown in Fig. 2 below. In this specific example, students embedded the link to the video mentioned in the article. In other instances, students added the link to an online dictionary entry or to a website related to the topic.

- **Reply**: it can be used to answer other annotations, thus offering the opportunity for a written collaborative dialogue online.

- **Highlighting**: it can be used to identify stretches of texts or multimodal aspects that the user annotates. Highlighting is only in yellow.

- **Tag**: it is used to identify key aspects students want to share and easily retrieve using 'search'.

- **Page Note**: it allows students to comment on wider sections of texts such as layout, images, whole pages, etc. Hypothes.is does not have a specific function to annotate images and macro-structures, and Page Note can be used for this purpose.
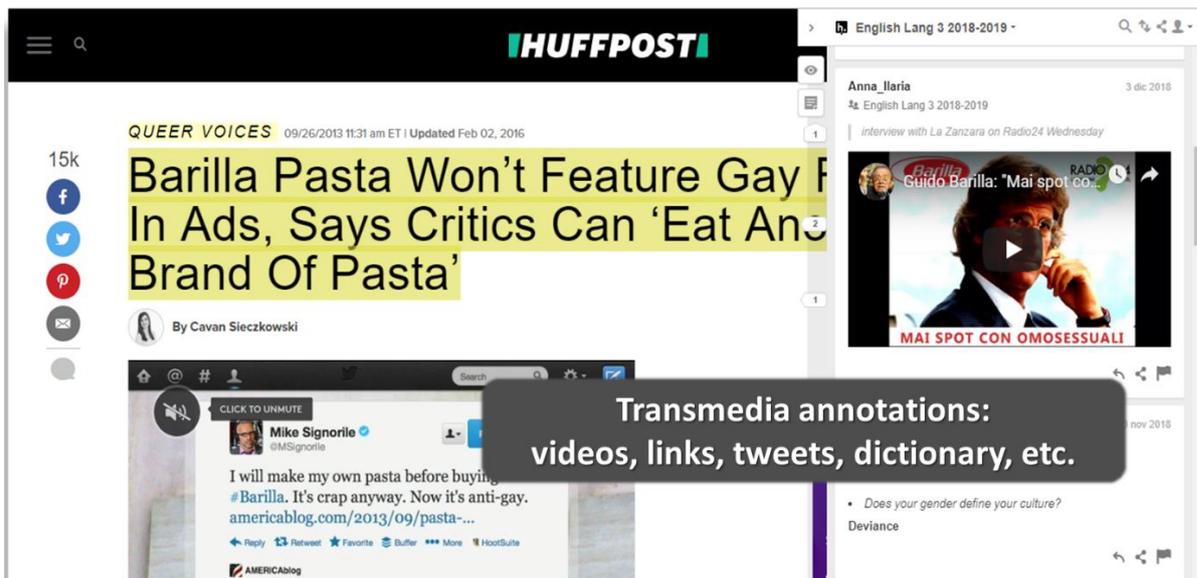
Figure 2
Transmedia annotations.

In the following section, we present the methodology adopted by students when constructing the online learning dialogue.

4. Online and offline discussion for critical reflection on text analysis

Critical reflection on texts and text analysis are among the most complex aspects of learning, especially when they are carried out in a foreign language (English in this case). Generally, what tends to be seen is the end result of a text analysis which is in fact a complex process of close reading, reflection, text and multimodal analysis (Goatly, Hiradhar 2016; Bezemer, Kress 2016; O'Halloran, Tan, Marissa 2017). As O'Halloran, Tan and Marissa (2017) demonstrate, a specific software for multimodal analysis can help students in their individual and collaborative multimodal analysis for critical thinking. The present study focuses on the different ways in which students use the affordances and tools of a software such as Hypothes.is in CELL, which, since it was not developed specifically for multimodal text analysis, requires students to choose the language of interaction for annotating in groups. This flexibility (its drawbacks and limitations in Section 5.1.) has the undeniable advantage of allowing students to report an online learning dialogue based on autonomous learning and peer interaction: a dialogue that is rarely captured, and usually remains covert and neglected. What follows is a summary of the qualitative analysis on the student multimodal and critical reflection.

4.1. Collaborative construction of text and multimodal analysis and interpretation: the task

All groups annotated collaboratively in a collective construction of text analysis using different functionalities. As mentioned, the groups autonomously decided how to use the tools to carry out their task. This allowed the students of the group, other students who accessed their work, and the teachers to see an online collective analysis in which each student had the responsibility for and the autonomy of participating in the discussion. The task explicitly required collaboration, however, each group interacted in different ways and with different results.

Some groups had a dominant tagger/annotator. This is more evident in some postgraduate groups in which some individual students tended to annotate more and feel more responsible for the text they would present orally to the class. Some groups tended to be more balanced than others in terms of contributions from the partners. The task was also based on respecting autonomy in group dynamics; therefore, we did not specify a precise number of obligatory interactions or annotations that had to be carried out; the task did not have any word limit in annotations and online contributions. The result is a great variety in annotation length, highlighting and interaction. This freedom can better capture individual and group differences and it also allows more proficient students (either in written English or in text analysis) or more confident individuals to contribute more while helping less confident or less proficient students. This led to major variations in the number of annotations: from a minimum of 6 to a maximum of 64 for each of the 17 postgraduate students, and from a minimum of 7 to a maximum of 19 for the 13 undergraduate students.

4.2. The learning dialogue in annotations

We call 'learning dialogue in annotations' the final result of annotated texts in which all the students of each group contributed to the analysis and interpretation of the multimodal text by collectively annotating the text, using the tools and negotiating the results. Therefore the 'learning dialogue' is student discourse and action carried out online and offline and reported through the annotations. In this paper the unit for the learning dialogue is the original text with all its annotations. We identified three main typologies of 'learning dialogue in annotations'. Number 1, below, is an expected outcome, whereas number 2 and 3 are interesting variations adopted by the students.

Here typologies are presented separately; in fact, not only are they not mutually exclusive, but also they overlap and blend.

- *Online block-annotation learning dialogue.* It is a use of annotations that most groups adopted in a variety of ways: they shared ideas and comments annotating the text individually in turns. In some instances, students did not interfere with what the others posted, they only added annotations without overtly responding to their partners' annotations. In this case, the learning dialogue is less explicit, but it is still clearly presented and probably negotiated offline as can be seen by the general coherence of the result, since in block-annotation there are no contradictory claims within the text analysis of each group. The data also show that if one student overlooked one aspect considered relevant by a partner, Replies or Annotations as comments were added in an ongoing dialogue exchange (see Example 1).

  Example 1. Group AT-RS[2]

  Text *The hidden climate change impacts of the tourism industry*
  AT: (dominant student) 15 Annotations and Tags; RS: 3 Replies used to add only very briefly some linguistic devices.

  Text *Stop biodiversity loss or we could face our own extinction, warns UN*
  RS: (dominant student) 29 Annotations and Tags; AT: 5 Replies to add linguistic devices or brief comments.

- *Online reported learning dialogue.* Some groups reproduced an online dialogue with turn-taking and online discussion (often using Reply). In some instances, the use of metadiscoursal features that confirm, acknowledge and add to what others wrote transforms the activity into an explicitly reported interaction and an 'academic dialogue': *I do agree with you, definitely, moreover,* etc. In these instances, the students captured and reproduced their learning dialogues by means of the virtual exchange collectively discussed and recorded online (Example 2).

  Example 2. Referring to comments made by one participant in the group, Group CA-IR-LP write in their annotations: 'I loved the comments ;) This really feels like a dialogue between friends.'

- *Face-to-face online learning dialogue.* We use this label for an unexpected find which is a blended offline-online mode of interaction. Some students met face-to-face and worked online on the learning dialogue. Therefore, the learning dialogue took place both offline and online in real time: they would discuss features face-to-face and report the

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[2] Examples are reported using the initials of the students' names. In italics the text title or headline. Examples are reported verbatim.

results of this dialogue in the online annotations through their personal account. In this typology, the students used the offline dialogue seamlessly to plan, revise and enrich the online learning dialogue; the latter is on-record and more permanent because it is written online and 'more public' (shared with the class and the teachers). The students who adopted this modality wove their dialogue across digital and in-person learning contexts. For instance, Group AZ-FC-MB met after classes and each student used their individual laptop. They worked simultaneously on the common account and discussed face-to-face what each noticed in the multimodal text and wanted to annotate online. The final result is that annotations are evenly distributed throughout the text and, even though there is a difference in quantity of annotations (AZ 12, FC 19, MB 20), the quality of the analysis is similarly insightful for the three components of the group. Through their concerted effort, the three students managed to comment on rather complex text phenomenon; Examples 3-5 give three instances of their annotations (one for each group component).

Example 3. Group AZ-FC-MB AZ:'pragmatic presupposition: violence against women'

Example 4. Group AZ-FC-MB MB:'The journalist does not limitate (sic) the construction of his identity only to his gender, but through the reference to his family dimension he shows his vulnerable side too.'

Example 5: Group AZ-FC-MB FC: 'hard and fast news > it reports a crime'

In general terms, typologies 2 and 3 show a more complex level of collaboration and also a higher level of autonomy for both the individual learner and the group because each learner clearly demonstrates competences in negotiating the learning dialogue and making his/her voice heard/read in relation with the other voices in the group/pair. The evidence of this is on the greater coherence of annotation between the learners of a pair or group using typologies 2 and 3 more than typology 1. Typology 1 shows the autonomy of the learners and their ability to notice text features and interpret them; in some cases, however, this typology reveals limited collaboration. In a few instances, one partner in the learning dialogue tends to efface him/herself and only contributes by annotating the text or part of text s/he will have to present in class. The 'dominant annotator' usually prevails and takes over. Even in this case, however, there is an educational advantage in using the tool because shy, less confident or less autonomous students are supported by their group and helped in the task, as can be seen from the results. On the other hand, confident, autonomous students appear rather collaborative and active online and on-record.

In summary, to be able to see the 'learning dialogue' reported online (in its various instantiations) has allowed the teachers to see the potential of a flexible tool that can be used autonomously and collaboratively by the students in accordance with their learning preferences and online and offline interaction preferences.

4.3. Blending learning opportunities online and offline

Affordances are defined as 'the potential and constraints for making meaning' (Bezemer, Kress 2016, p. 23). In this section we summarize some of the main tools used by the students as affordances to demonstrate their individual and collective competence in text analysis and interpretation.

We also describe the use students made of potentialities and constraints of digital tools for multimodal text analysis.

Transmedia. This has been defined as 'the increasingly interconnected and open-ended circulation of media content between various platforms, where the subjects previously known as "the audience" are increasingly involved in the production of flows' (Jansson 2013, p. 287).

Some groups made the most of the tools offered by the digital environment to reach out to other media and modes: students embedded links to external references, pages, videos, dictionary entries, social posts, etc. which were relevant for their discussion, such as links to online dictionaries when they needed to discuss a term or a collocation, links to other texts, images, videos or even social media posts related to the issue (see Fig. 2).

The communicative impact of transmedia was also used for the oral presentations in class to give a wider scope to the discussion, show a relevant aspect which was not present in the text (an image or a short video clip), give a definition for a key term (dictionary entry), give authority to their presentation quoting from other texts related to the issues, etc. Transmedia affordances allowed students to explore the wider context of their text, understand it better (linking it to past events and present or future results), and give depth and validity to their analysis. Additionally, transmedia also have the aim of attracting the attention of the audience during the oral presentation.

Tagging. Tags in themselves are a digital tool that can be used for different affordances and give scope to a variety of meaning making: identifying a keyword or key concept, offering a key term for retrieving similar topics or language devices, underlying a concept. The 50 Tags used by the postgraduate students are selected key terms for text analysis. The students' complete freedom in using Tags (rather than selecting from a pre-established

set) has the disadvantage that the system counts as different Tags a capitalized 'Salience' (2 occurrences), and 'salience' (8), which means 10 Tags in total. Other examples in which the label identifies similar items are the use of Evaluative Term and Evaluation (which are used similarly, but counted separately), Facticity/FacticityPatterns, Appraisal and its variations, etc. (as can be seen in Table 1). However, flexibility gives the students a wider scope for autonomy and exploration of their competences as language analysts. All postgraduate students used Tags for identifying linguistic devices and major patterns of analysis such as layout or visual features (see twelve top Tags in Table 1 reported with raw number of occurrences):

28	23	20	16	15	14
Epistemic modality	Appraisal pattern	Metaphor	Identity	Facticity pattern	Evaluative term
13	11	9	9	8	7
Appraising item (sic)	Evaluation	Appraisal item	Facticity	Salience	Nominali-zation

Table 1
Top tags and raw number of occurrences.

It is remarkable how the postgraduate students used Tags for linguistic and visual phenomena as the task required, rather than just content or topic. Thus, the functionality 'Tag' identifies self-selected key issues in technical terms in text analysis.

Often these Tags are also accompanied by an Annotation or a Page Note that elaborates on the relevance of the tag, as in the example below (reported verbatim):

> Example 6 Group EC: *might point out*
> Tag: epistemic modality
> Annotation: This expression is the first one of a long series of epistemic expressions indicating a low degree of commitment, related to a low level of facticity of truth in the text. As a matter of fact the majority of the expressions either indicates a probability or present some hedges.
>
> Example 7 Group FC-RC
> Tag: imagevisual features
> Annotations for each image: The illustration is really eye-catching as well as the contrast between colours. Worth mentioning is also the representation of the earth as transfigured because of human actions.
> The ground and the sky (natural elements) are drawn with warm colours (yellow and orange) while the human figure and the other objects (a plastic bottle, a barrel and a car wheel) which are waste, are represented by using cold colour (blue, grey and purple).

Using annotation for self-study. Some groups and individual students used the functionalities as explicit strategies for self-study and self-reflection.

One of many instances can be found in the text analysis of the group CT-CDL where linguistic devices and patterns are highlighted in bold in their annotations; annotations are also partly written schematically to support the easy retrieval of information and as textual landmarks for the oral presentation (see excerpt in Example 8):

Example 8: Group CT-CDL
Annotations: CONCLUSION
Need to promote and spread more visual metaphors
Why
- Images are cognitively *less demanding*
- Visual metaphors are *easier* to remember, imagine, see
- They give *concreteness*: abstract concepts often hide the reality of things
- Tag: #visualmetaphor

Using annotation for the oral presentation. A positive outcome was the use of the annotated text for the oral presentation of students' work in class.

The student speakers were able to show their analysis in context, focus on their priorities and choices and use the annotated text as an outline that could guide their oral performance. The student audience could choose how to access the article, co-text and wider context: either looking at the classroom screen displayed by the presenters, or by accessing the analysis online on their own laptop screen. This latter solution allowed the audience to scroll up and down the texts to follow the presentation better, read on, read the co-text, access the hyperlinks, see the images and layout better than on a distant screen, and also prepare questions for the presenters during the follow up class discussion. Thus, the audience can be more involved, more attentive, ask relevant questions and make more cogent remarks related to specific features they notice. Autonomous learning and peer learning, in this way, are enhanced by blending offline-and-online meaning-making affordances and opportunities for critical reflection.

Using annotated texts for study and revision. One of the major advantages of the annotated text is the opportunity it provides of accessing the learning dialogue, the annotations and reflections on the multimodal text for all students who sign up for the digital environment. Since the choices of texts annotations were the students' own, the variety of annotated texts and the variety of the learning dialogues offer interesting resources for revision and study to students who have similar tasks to carry out. Additionally, students who cannot attend lessons can access materials which are insights into the process of preparing for the written and oral tasks required for the exam. This solution gives students who did not participate in the research study the

opportunity to see the level of critical language awareness required for this exam, and offers them resources for peer-revision and peer-study (annotated texts will remain accessible for future groups of students) contributing to increasing their study autonomy.

5. Discussion

This section summarizes some of the findings of the data analysis and the main educational assets and drawbacks of using this digital environment (Hypothes.is in *LearnWeb*/CELL) for enhancing autonomous and peer learning to promote critical multiliteracy.

The digital environment as used in this study contributed to making the individual and collective learning dialogue partly visible and accessible for further reflection and considerations to teachers and classmates. The learning dialogue is based on the autonomous organization by individuals and groups and is characterized by different collaborative actions for peer-learning. First the group had to choose the multimodal text to analyze collectively, then organize their own individual and collective way of analyzing it identifying the most salient aspects in relation to the multimodal analyses carried out during the course. Then the group had to negotiate the way they wanted to discuss their choices for the multimodal analysis: offline in presence, online via annotations, online via another medium, deciding timing (discussing before the text analysis or while they were writing the text analysis using Hypothes.is). They had to decide on revisions and what needs to be left on record for the whole class and the teachers to see online as far as the different annotations were concerned and the way in which they wanted to report their discussion.

They had to decide and organize their oral collective presentation of their work to the class using their text analysis on Hypothes.is to display the multimodal text; and they had to answer the questions of their classmates or discuss their comments.

More specifically, the learning dialogue was elicited by the need for annotating collectively the texts in context and interpreting the devices the students noticed and commented on. The original text was also given depth of context by relating it to other texts (through intertextuality and transmedia).

As discussed in Sections 4.2. and 4.3., in the data we can identify three main ways of representing the learning dialogue: 1. *Online block-annotation*, 2. *Online reported learning dialogue*, 3. *Face-to-face online learning dialogue*. Typology 1 is based on separate autonomous decisions accepted by the group (and sometimes supported or commented by other students in the group); Typology 2 and 3 are more focused on peer-learning and a more

overt relational autonomy of individuals in the group. In Typology 2, the groups reported online and in dialogic form their negotiations (carried out online or offline and explicitly recorded through online annotations).

Typology 3 can be identified only through the observation of the teachers and demonstrates the relevance of face-to-face learning dialogue for the students while working directly online. The relational aspect of peer-learning is overtly on record in Typology 2, and observed 'in action' by the teachers in Typology 3. In Typology 3 in particular, the quality of interaction is enhanced by group autonomy through peer-learning actions which happen in a 'third space' by blending online and offline actions and discourse (Dooly 2011, p. 334).

To summarize, the learning dialogue through annotations showed (and required) the autonomy of the learners in their choices of text to analyze, strategies to carry out the task and final results to share online and 'on record' with the class and the teacher. This dialogue and multimodal annotation process became blended in place and time. Students reported in a variety of online ways their offline dialogue, and their online annotated text became an effective support for their offline oral presentation in class. The audience (classmates and teachers) could follow the class presentation through the online environment as well as the projection on screen of text and annotations; this enabled them to follow better, read co-text and context, possibly accessing links provided to facilitate comprehension and exploring the wider context of production and interpretation of the text.

The analyses and reflections presented by the students as well as their choice of text are resources for study and revision for other students (also students belonging to different academic years). The annotated texts become exemplifications of the variety of how critical multimodal analysis can be carried out and developed, what aspects can/might be selected and what multimodal features noticed and commented on. This is a resource for exam preparation and revision, especially for the students who cannot attend courses.

One of the most complex aspects of the teachers' job is tapping into the learning process and finding ways to render it less elusive in order to value it and reflect on it with the students. In our case study, individual and collective learning dialogues are not only visible (at least partly), but also on record and shared collectively. Peers can learn from the learning process of others, as well as from the competences (and limitations) of other students.

In terms of both autonomous and peer learning, this series of learning actions and learning discourse can promote communication in the target language at different levels of competence, different registers (technical written annotations, informal oral dialogue, formal oral class presentation). The exchange of points of view and procedures in multimodal analysis

contributes to enhancing autonomous and peer learning. The transmedia embedding of external resources such as dictionaries, links, video can help students in the analysis, autonomous study and peer-exchange.

5.1. Limitations of the study

The study is small scale and its results can be useful as a pilot analysis for follow-up research studies. This section summarizes some of the problematic aspects detected during planning and data gathering. First of all, we soon noticed that the two-hour workshop devoted to teaching the students how to use the tools of the digital environment and give them controlled hands-on practice was far too limited. A longer practical workshop would be needed both to present the functionalities and their potentialities, and to exemplify how and what can be annotated. Boato and Salvador wrote Guidelines for using the platform; however, guidelines for how to annotate and how to use the potential affordances of annotations are needed. A video could be prepared to help students navigate and use the environment for critical multimodal analysis.

As evidence for the need of better training, we can mention the fact that undergraduate students did not use Tags at all, whereas postgraduate students did in a very interesting way (see Section 4.3.). This is due to the fact that the postgraduate group had an additional, informal short training session (1 hour) when they were explicitly told how to use Tags. The same applies to the limited use of Page Note, which potentially can be used to annotate layout, images and macro-structures. Also, some groups never used Reply, but replied using Annotation; this choice creates the impression of switching to a different topic, rather than a continuity in the student dialogue. Another relevant aspect is that the students would have certainly profited from the use of a specific checklist for multimodal analysis.

A series of technical issues should be also solved if the environment is to be used for a wider project. More specifically, there is the need for a more user-friendly interface between the *LearnWeb*/CELL environment and Hypothes.is. Sometimes annotations disappear or become 'orphan' showing that the system is not yet stable. Archiving online texts with annotations for research purpose and for retrieving them later is still problematic at the time of writing.

Methodological limitations are also to be addressed as far as task setting is concerned: to obtain comparable data, more stringent requirements would be needed for the task (length of annotation, number of annotation, balance between verbal and non-verbal aspects, etc.). Additionally, the relevance of face-to-face interaction (for the purpose of analyzing and annotating the text collectively) shows that it would be necessary to voice-

record the offline dialogues; these dialogues greatly contributed to the 'learning dialogue in annotations' and are only partly captured or inferable through observation and annotation analysis.

5.2. Concluding remarks

This small-scale qualitative study has investigated how students' online collaboration can contribute to the process of raising critical awareness when analyzing multimodal texts, and to what extent it can promote autonomous and peer learning. As summarized in Sections 4 and 5, using a digital environment such as Hypothes.is in *LearnWeb*/CELL has the advantage of making visible part of that otherwise elusive but crucial process which is the individual and collective learning dialogue. The students use a variety of solutions that show the richness and originality of the individual and collective process of reflection on multimodal text analysis. The digital environment also allows the teacher, researchers and the class to 'see' the powerful effect of learning with peers and from peers while developing learning autonomy and exploring learning strategies.

Using a digital environment, the students create their own 'third space', namely a co-created space at the intersection of online and offline worlds. The concept of the 'third space', derived from Bhabha (1994) and Kramsch (1993), is re-contextualized by Dooly (2011) as a learning opportunity. She writes:

> Seeing the 'third space' as an opportunity for users to co-create a 'third' culture, through the combination of multiple cultures (including e-cultures), implies that the virtual communities can be where members build a sense of joint enterprise and identity around a specific area of knowledge and activity and share a repertoire of ideas, commitments, memories and ways of doing and approaching things. (Dooly 2011, p. 334)

The present study shows that this 'sense of joint enterprise' can be elicited and explored through specific tasks and can contribute to critical meta-reflection in the blended space of the offline and online learning dialogue. In this joint enterprise students use a variety of discoursal and digital features that signal reflection, interaction and negotiation in autonomous and peer learning.

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