Comic-based Digital Storytelling for Content and Language Integrated Learning

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ABSTRACT

This work explores how comic-based digital storytelling can support children and teachers in combining foreign language and content teaching in the Content and Language Integrated Learning (CLIL) framework. In particular, we focus on investigat- ing three specific aspects: (1) the use of digital storytelling in terms of collaboration, engagement and ease of use, (2) the adoption of comic-based digital storytelling in the CLIL frame- work, and (3) the benefits and limitations in using digital story- telling in comparison to a paper-based version. In order to investigate these aspects, we develop a case study in a primary school in Italy. A class of 18 children and 2 teachers used a digital tool, named ComicsCLIL, with the aim of creating digital narratives in the CLIL framework. The results provide some evidences that comicbased digital storytelling can be a beneficial educational tool for approaching CLIL lessons. It emerged, in fact, that digital storytelling, as supported by ComicsCLIL, can facilitate this practice by being engaging, easy to use, fully educational while considering the collabora- tive aspect.

1. Introduction

CLIL (Content and Language Integrated Learning) is an educational framework that combines foreign language and content learning objectives by teaching content (e.g., science, history, or geography) in a second language (usually English) (Mehisto et al., 2008). CLIL emerged in the 1990s and has become a priority concern in European education in the last 10 years, being adopted in a number of countries as a model for delivering language education (Hanesov ´a, 2015). Although much progress in terms of teaching and learning methodol- ogies has been made over the last 15 years, there is still the need of researching new approaches on teacher training (Coonan, 2017) and, in particular, on how to build educational tasks and structured teaching activities supported by technology (Coonan, 2009; Serragiotto, 2017). Regarding the latter, teachers tend to use textbook exercises that focus on content while being poorer in terms of amount and variety of tasks related to language learning (Coonan, 2009; Salvadori, 2017). In this context, it is necessary to provide educational tools for children to make use of concepts delivered during CLIL lessons and, at the same time, to exercise language use (Coonan, 2009; Salvadori, 2017). In this paper, we investigate the use of digital storytelling,

supported by a tool named ComicsCLIL, as didactic resource for CLIL teaching. A case study, therefore, has been conducted with the aim of understanding the value of digital storytelling in the form of comics in teaching CLIL.

2. Related work

In this section, we present a concise overview of the scholarly works in which the study is located. In particular, we report works that address the use of (1) digital storytelling in an educational context and (2) comics for teaching English as a foreign language and CLIL.

2.1 Digital storytelling at school

Digital storytelling consists in combining the art of telling stories with digital tools, such as graphics, audio and video (Robin, 2008). Digital storytelling within the educational context has being increasingly employed in the last years in different contexts (Choi, 2018; Faruk Islim et al., 2018; Rubegni & Landoni, 2014) Faruk and colleagues (Faruk Islim et al., 2018) investigate the use of digital storytelling in mathematics to create digital stories. The study has shown that digital storytelling can effectively capture the attention of the students, sup- porting the teacher in presenting the subject in an interesting way. Other authors (Rubegni & Landoni, 2014) evaluate the

impact of a mobile storytelling application, named Fiabot, on educational activities in two primary schools. The study underlines the positive effects of digital storytelling on creativity, digital literacy and narrative ability for in-class activities. Choi (Choi, 2018) explores how students are engaged in online educational materials that are presented via digital storytelling. The results show that children have a positive attitude towards continuing online course, and personalized elements help to positively affect students' academic performance. As shown in these works, digital storytelling can be considered as a successful medium to be employed in an educational context, being personalized, rich in terms of amount of variety and tasks, and fully instructive.

2.2 *Comics for teaching English as a foreign language and CLIL*

The use of comics in education is a very ancient debate (Sones, 1944) but, mostly, it refers to the use of comics as complementary to the textbook (Farinella, 2018) and even when it is interactive (Rizvic et al., 2019) often the focus is on the use of comics not on the production. In this sense, many works (Liu, 2004; Llull, 2014; Ravelo, 2013) focus on the benefits of comics' use in an educational environment for teaching English as a foreign language. Liu (Liu, 2004), for example, investigates the effect of using comics as visual support in language learning texts to increase reading comprehension. Considering CLIL approach, Ravelo (Ravelo, 2013) shows that the use of comics can represent a valid resource for CLIL lessons, allowing students to infer meanings not only through words but also through images. In a similar way, Llull (Llull, 2014) discusses the potential of comics as genre to motivate and facilitate the learning process but also to generate new educational proposals combining both gra- phical and textual elements. In these works, the beneficial use of comics is been highlighted; in our work we consider both the production and the use of comic- based digital storytelling in the CLIL framework.

3. ComicsCLIL overview

ComicsCLIL 1 CITATIONS BLIND FOR REVIEW is a computer-based application for storytelling, designed to support and facilitate narrative production in the form of comics (Figure 1). The tool allows teachers to create a library of background images, characters and objects chosen for a specific educational objective. Furthermore, in the library, teachers can include pre-defined textual material that children can access as well as free text.

4. Research question

The study concerns the investigation on how comic-based digital storytelling, supported by a specific tool named ComicsCLIL, can facilitate children and teachers in approaching CLIL lessons. Specifically, we focus on three research questions.

(1) How do children interact with comic-based digital storytelling, supported by ComicsCLIL, in terms of engagement, collaboration and ease of use for approach- ing CLIL lessons?

We believe that, based on the past studies on comics (Liu, 2004; Llull, 2014; Ravelo, 2013) and digital storytelling (Choi, 2018; Faruk Islim et al., 2018;

Rubegni & Landoni, 2014), comic-based digital storytelling, supported by ComicsCLIL, can facilitate children in approaching CLIL lessons in terms of

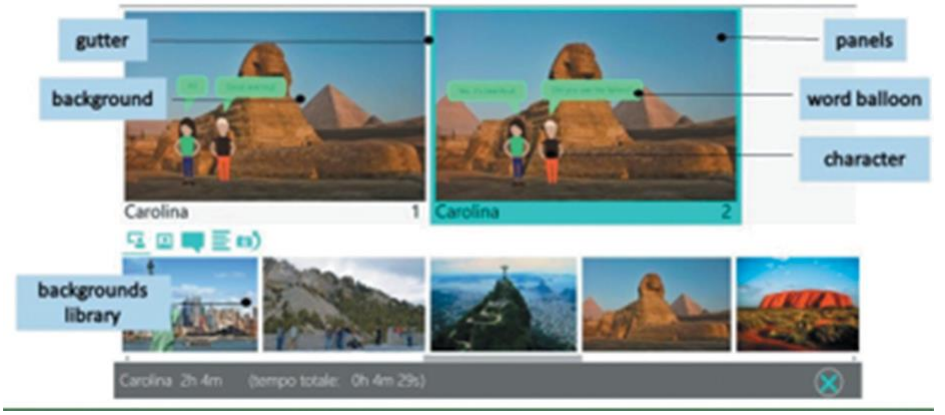

Figure 1. Communics' Interface

engagement, collaboration and ease to use. Investigating these aspects is essential within the community of children. In fact, according to Piaget's theory (Piaget, 2002) children at this age (7–11 years old) are in the concrete operational stage and they are more likely to appreciate someone else's perspective, which enables them to better work

in teams. In this sense, children might appreciate the benefits of using comics, which facilitate the possibility to take different perspectives, while creating collaboratively narratives, and being engaged by technology for approaching CLIL lessons.

(2) How comic-based digital storytelling, facilitated by ComicsCLIL, can support the CLIL lessons while addressing the issues related to the application of the CLIL framework?

As the integration of the teaching content and the English material for the CLIL lessons is a problematic aspect (Furstenberg & Kletzenbauer, 2015), and the lack of CLIL teaching proper support, in terms of variability of elements and tasks, complicates the situation (Coonan, 2009; Di Martino & Di Sabato, 2012; Mehisto et al., 2008), teachers are not well equipped for teaching in a CLIL situation. We aim to investigate whether comic-based digital story- telling, and specifically ComicsCLIL, can represent a narrative-based language tool to be considered as a successful support for the CLIL lessons. Teachers have the possibility to create the educational material to be included in ComicsCLIL easily, quickly and smoothly while making it fully educational. On the one hand,

in fact, teachers can use predefined textual elements that constitute a way to support the children in the language task, representing a scaffolding tool for language learning (Sharma & Hannafin, 2007) while overcoming the *'blank page syndrome'* (Joyce, 2009). On the other hand, teachers can, as well, add graphical elements that can facilitate children in being focused also on the content, essential for teaching CLIL, for creating their narratives.

(3) What are the limitations and benefits when using digital-based storytelling in comparison to paper-based storytelling in form of comics?

Considering literature (Di Blas & Boretti, 2009; Rubegni & Landoni, 2014), there is still a gap in understanding benefits and limitations of comic-based digital storytelling compared to the more traditional paper-based approach as didactic resource for CLIL. Many works highlight the benefits from the use of digital storytelling in the classroom, although, to the best of our knowledge, there is no work that comperes digital and non-digital storytelling in the form of comics in the context of CLIL lessons. Therefore, in our work, we focus on investigating comic-based digital storytelling compared to a paper-based approach.

5. Case study

5.1 Methods

We explore these research questions by investigating a case study. In this context, we use a mixed research approach in which qualitative and quantitative research methods are employed together (Creswell, 1999). We collect qualitative data through ethnographic observations, written interviews to children, narratives composition produced by the children, and teachers' interviews, while we collect quantitative data through children' pre- and post-questionnaires. Ethnographic observations during classes are used to identify behavioural patterns. Children' written interviews consist in four questions that prompt qualitative data about (1) the children's own experience when using ComicsCLIL, (2) both graphical and textual element evaluation, (3) digital comics' use for CLIL lessons and (4) benefits and limitations in using paper and digital-based storytelling in the form of comics. Pre- and post- questionnaires are used to

measure the experience. The questionnaire consisted of five items that measured (i) Ease of use, (ii) Engagement, (iii) Collaboration, (iv) Use of predefined textual elements, and

(v)Willingness to use ComicsCLIL in future. Each item was presented as a 5-point Likert scale (from strongly disagree to strongly agree). Narratives are

analyzed to evaluate and compare the stories. Finally, teachers' interviews are conducted in order to elicit educational benefits in using comic-based digital storytelling. The questions regard (1) their experience in embedding comic-based digital storytelling in the CLIL framework, (2) the differences in using traditional paper-based CLIL approach and comic-based digital storytelling, and (3) the use of ComicsCLIL, focusing on the use of graphical and textual elements.

5.2 Participant and procedure

The study took place in a primary school, named BLIND FOR REVIEW in a small town in Europe. The selected class was a fifth grade with 18 children aged 10–11 years (M = 10, F = 8). All of the children have a basic knowledge of English. We involved a teacher of Geography, and a teacher specialized in CLIL. The study lasted 2 months in the school year 2018–2019. The overall intervention in the school was articulated in three phases.

Phase 1: intervention design. In order to plan the study we organised two meetings with the teachers. In the first one, ComicsCLIL was presented to the teachers and they could give it a try collaboratively on a single PC and individually. While in the second, we explored the potential options and scenarios of using the tool in the classroom. Considering the tool as an engaging and highly motivating way to involve children in the context of CLIL lessons, they agreed to include it in their teaching plans in a module of 5 sessions over a period of 2 months. Teachers decided to use the tool in teaching

geography in English to introduce the topic of *'Cultural and Environmental Diversity in the World'*, in the CLIL framework. Finally, they decided to introduce ComicsCLIL to children to produce comics in pairs while using a single PC. In addition, a single session in which children would use traditional paper-based comics was planned too.

Phase 2: Content creation process. The preparation of the ComicsCLIL library (i.e. graphical and textual elements) is a crucial part because, on the one hand, participants have to be able to find material 4 to elaborate narratives on the selected topic; on the other, it has to be avoided an excessive amount of visual material difficult for children to be navigated and understood. The content creation process was finalized in two meetings with the teachers. In these meetings, the teachers, with the support of the researchers, selected visual and textual elements – considering backgrounds, objects, characters and pre-defined textual elements – to be included in ComicsCLIL's library.

Phase 3: study in class. The intervention included six sessions. In the first session, children were introduced to the project and received a training on ComicsCLIL. Moreover, a questionnaire was administrated. From the second session, they were instructed to produce a comic in English, representing a real or imaginary adventure. Still, students were divided in couples that remain the

same for the entire project. In the second session, they were asked to use paper and pens to draw a comic-based narration. In the other four sessions, they were asked to compose a narrative through ComicsCLIL on a single PC (see Table 1).

Table 1. Conditions, number of children and number of stories divided per sessions

Session	Condition	# Children	# Stories
1st session	(Digital training)	18	-
2nd session	Paper-based	18	9
3rd session	Digital-based	18	9
4th session	Digital-based	18	9
5th session	Digital-based	14	7
6th session	Digital-based	16	8

Then, a questionnaire and to answer a written interview was admini- strated to children. Finally, the teachers were interviewed for almost 30 minutes.

6. Data analysis

The analysis from the data collected in this case study is divided into three subsections:

(1)*Children's experience*, (2) *Teachers' experience* and (3) *Narratives' analysis.*

6.1 Children' experience

The data collected consists of analysing 18 questionnaires, written interviews and ethnographic observation. The data analysis of the open-questions includes the coding, using the thematic analysis with a deductive approach (Braun & Clarke, 2006), among three researchers. At the end of the coding, the three researchers met up to revise the results collected, and disagreement were revised till researchers came to an agreement.

Fun activity. In general, children enjoy working with ComicsCLIL as it is perceived as a fun tool. They strongly agree that digital storytelling makes them engaged in the content of the story by gaining motivation and interest. The results from the close-questions show that children remain engaged during the entire activity, in the pre- (M = 4.9, SD = 0.3), and in post- (M = 4.8, SD = 0.4) (no statistically significant difference was observed between the two conditions) (see Table 2).

Education. Children also recognize an educational value in using the tool; they are engaged in this activity, while being supported in the learning process. A child reports: *'From this activity, I learned a little more about English, I wrote in a grammatically correct English, and I also discovered many new countries. (C8)*'

Tool for Narrations. Most children (12) report that they feel not too skilled in drawing and, therefore, these children appreciate to have a predefined set of backgrounds, objects and characters to choose from library. A child writes: *'Creating the comics through ComicsCLIL is easier as I am not good at drawing. (C5)'* On 5 the contrary, others (4) prefer to draw their own comics as they feel the need to personalize their graphical content as a child reports: *'I prefer to create the comic strip not in a digital way because I can draw the characters as I want. (C8)'*

Comics genre. Although children seem not to be used to create comics, they enjoy combining graphical and textual elements for creating their narration. In particular, they like adding as many panels as they want in a story. A child writes: *'I like inserting in the panel the backgrounds, the characters and the dialogue! (C2)'* Moreover, they enjoy creating playful stories. Another child writes: *'I really like using comics because I can create easily a playful story! (C6)'*

Library. In general, children enjoy having an entire library of graphical and textual elements; backgrounds recall to the mind familiar places, while they are able to represent themselves through the characters. On the other hand, some children are unsatisfied with the number of elements provided: some children would have liked to have changed the content for each session, others to improve the variety of the backgrounds. A child reports: *'I liked using ComicsCLIL, but I cannot add to the comics certain elements as for example, a bicycle or a car or other scenario as, for example, the sea side, or a swimming pool. (C7)'*. Pre-defined textual elements gradually become less useful; in the pre- questionnaire, the predefined text is generally appreciated (M = 3.6, SD = 1.1), while in the post-questionnaire the feature receive lower scores (M = 2.3, SD = 1.3, see Table 2).

Ease of use. Regarding ComicsCLIL, in general, the tool is perceived as easy to use both in the first and in the second questionnaire (M = 4.4, SD = 0.8 and M = 4.2, SD = 0.8, see Table 2). During the activities, children do not face any problems in using ComicsCLIL, and consequently they have never asked for any help. A child writes: *'It's really easy to use for learning language and geography: it should be used in other schools! (C17)'*

Collaboration. Children seem to appreciate to create the comics in pairs, especially after some time of use (scores for the post-questionnaire (M = 4.6, S = 0.5) are higher with respect to the pre-questionnaire (M = 4.1, S = 1.0), see Table 2). In the written interview, they report that they like collaborating with a peers as they can discuss about the story plot and the narrative structures

while reelaborate their point of view and compromise. A child writes: *' writing with a friend. It's more fun, and I can give or receive good suggestions for the story structure! (C15)'.*

Table 2. Means (SDs) and t-tests from the pre- and post- questionnaires.

Dimensions	Pre-questionnaire	Post-questionnaire	Paired t-test
Usability	4.4 (0.8)	4.2 (0.8)	n.s.
Engagement	4.9 (0.3)	4.8 (0.4)	n.s.
Collaboration	4.1 (1.0)	4.6 (0.5)	t(20)=2.2, p <.05
Pre-defined text	3.6 (1.1)	2.3 (1.1)	t(20)=4.1, p <.01
Future use	4.9 (0.4)	4.9 (0.2)	n.s.

6.2 *Teacher's experience*

As a first step, the interviews were transcribed. Then, researchers individually examined the interviews through thematic analysis with a deductive approach (Braun & Clarke, 2006). Finally, researchers met up, reviewed the analysis, and came to an agreement while disagreement emerged. T1 and T2 are used as ID for the teachers. T1 represents the Geography teacher and, T2 represents the teacher specialized in CLIL.

Children Engagement. The teachers report that one of the main issues, during the 6 CLIL lessons, is to find activities that can be attractive for the children combining Geography content and English language. Thanks to the technology, and in particular,

ComicsCLIL, children were fully engaged in the activity. A teacher, for example, says: *'Children have concentration difficulties during CLIL. Every 5/10 minutes they loose concentration because it's difficult for us to find material that could be interesting. (. . .) ComicsCLIL represent a significant tool to overcome this problem, as children are really concentrated in the activity! (T1)'.*

Children Technology Awareness. Teachers report that even if children are used to computers, tablet and phones, they are not really aware of the dangers represented by the Internet. A teacher says: *'Sometimes, we use computers at school (. . .) then children need to browse on the Web looking for images and images are not always appropriate for them (T1).'* In this sense, ComicsCLIL can represent a safe space for children to practice while teachers do not need to worry. A teacher says: *'With ComicsCLIL, we are sure that nothing can happened. (T1)'*

Children CLIL ability. Teachers are suprised by the children capacity to elaborate narratives in English about Geography. The children ability of combining digitally CLIL content and language is very appreciated. A teacher says: *'They show competences that I thought they did not have in terms of Geography and English. (T1)'* Before adopting ComicsCLIL, teachers report that, when asked, children create narratives but, most of the time, they use Italian sentences instead of practicing with English. In this activity, children are driven in using and experiment with English. A teacher said: *'One of the CLIL goal is to experiment in English, even if the sentences are not grammatically correct. They have to become friends with English. (T2)'*

Children Constrained sensation. Teachers outline that children seem not to use pre-defined textual elements as they expected to express themselves without being constrained. Teachers are surprised by children experimenting in English instead of using pre-defined text. A teacher says: *'Surprisingly, they do not use pre-defined textual elements as they prefer to express themselves freely. I thought*

that they would have used pre-defiend text rather that free text because it is already written and easy to use. (T2)'

Digital comics support. The digital support utilization is appreciated by teachers as it seems to foster the learning process. A teacher says: *'So in my opinion, the activities done with this tool, differently from the traditional one, remain more vivid in their minds. This is due to the fact that they combine graphical and textual elements, they used technology and they have fun! (T2)'* They appreciate the digital combination of textual and graphical elements in the genre of comics. In particular, digital comics are identified as a stimulus to narrate a story in English on Geography.

Technology Ease of use. The easiness in using ComicsCLIL is appreciated by teachers. Teachers value positively the fact that children do not need a long training to understand how to use it. After the first brief training, in the first session, children do not need any further guidance. A teacher says:

> *Children asked for our help when they didn't know some words in English, but it never happened for not being able of using the tool. (T1)*

Collaboration. During the sessions, children elaborate their ideas, then share them and decide with the peers the narratives plot and graphical structure. Sometimes seven children argue in deciding which elements (characters, objects, or backgrounds) they could have inserted in the story; then they try to find compromises with the peers. A teacher says:

> *Often, in the narratives production, children do not collaborate as they prefer to work individually; they have to work as a team to decide the plot of the story considering a beginning, middle and end. (T1)*

The collaboration aspect emerges also in the children–teacher relation. A teacher says:

> *Children were able to collaborate also with us; for example, it happened that when they weren't able to compromise they asked for our help. (T1)*

6.3 Narrative analysis

The narrative analysis is performed on both 33 digital and 9 non-digital comics, using the thematic analysis (Braun & Clarke, 2006) approach. Three researchers, independently, revise and, then, identify different patterns in the narrative production. Three different dimensions of the narratives composed are explored. The first one is the *Structure of the narration*. We consider the presence of a beginning (1) including an opening scenario a middle (2) including

the development of the story and an end (3) including a conclusion of the story. Secondly, we explore: *Coherence*, including the coherence with the task, and *Meaningfulness of the story*, considering whether the story makes sense for the reader. Thirdly, *Narrative elements* such as the number of words balloons, comics' strips, objects, and characters are taken into consideration too. Moreover, in the digital comics we consider also the use of the pre-defined text. *Structure of the narrations*. For what concerns the digital narratives, 30 stories had a beginning, 25 a middle, 15 an end. Regarding the non-digital stories, 5 out of 9 stories presented a beginning, 2 a middle, and 2 an end. From this analysis, it emerged that children who create the story in a digital way composed stories
that presented, often, a complete structure.

Meaningfulness. For meaningfulness, we intend whether the story created makes sense and has a clear meaning for the researchers. In particular, we indicate meaningful a story that incorporates the appropriate amount of images, objects, text, and characters. Digitally, children compose stories that were mainly meaningful (17), while only 15 story was meaningless. Non-digitally, children propose 8 stories without sense, and 1 with sense. It emerged that while digitally children presented stories that for the readers were meaningful, individually they were not totally understood from the readers point of view.

Coherence. The coherence narrative revolves around a clear topic that is introduced, elaborated upon, and eventually concluded in which an episodes of adventure around the world is presented. Digitally, children represent 24 stories that were coherent with the task, namely representing an adventure in English, while non-digitally children propose 2 stories that were coherent with the task proposed.

Comic strips analysis. In order to evaluate formal structure of the comics produced, we consider the number of panels (i.e. the individual frame that composed a comic strip), the number of word balloons (i.e. the occurrences of speech or thoughts by a given character in the story), the number of characters (i.e. total characters in a comic 8 strip), and the number of objects (i.e. total objects in a comic strip). Moreover, in the digital narratives, we examine also the use of pre-defined text. The results are reported in the following table (see Table 3). To sum up, the analyses show that digitally stories are composed, on average, by more panels, words balloons, characters and objects than non-digital ones.

Table 3. Means (SDs) of different elements from the Comic strip analysis

Elements	Digital	Pen-and-paper
Panel	7 (3)	4 (0)
Word Balloon	21 (10)	6 (2)
Character	20 (11)	7 (2)
Animal	5 (6)	7 (2)
Pre-defined text	2 (4)	/

7. Discussion

Our research regards the investigation of how comic-based digital storytelling, supported by ComicsCLIL, can facilitate children and teachers in approaching CLIL lessons. In this section, we discuss the findings according to each research question.

7.1 RQ1: Comic-based digital storytelling in terms of collaboration, engagement, and ease of use

Collaboration was already investigated in the context of digital storytelling for collaboratively share online story (Bonsignore et al., 2013) or for enriching creativity, and digital literacy (Rubegni & Landoni, 2014). In our study, it emerges that pupils fully practice with the capacity to mediate with a peer for composing comics-based narratives in the CLIL framework. Teachers report that children are able to decide and mediate together the story plot, and the structure of the narrative; when a discussion rise, they are able to compromise. Specially from children's perspective, collaboration give them the possibility to structure the story plot while compromising. Regarding the engagement, it was already noticed that digital storytelling could support it (Choi, 2018; Faruk Islim et al., 2018; Rubegni & Landoni, 2014). Even in the CLIL framework, and usinig comics, children are totally engaged in the digital narratives creation. It emerges that children do not loose concentration, as it often happens during traditional CLIL lessons, because they work with a peers using a digital tool. Finally, both teachers and children do not encounter any difficulties in experimenting with ComicsCLIL. After the first meeting in which teachers and children use the tool, together with a researcher, they do not need any further guidance.

7.2 *RQ2: Comic-based digital storytelling in the CLIL framework*

Digital storytelling and, ComicsCLIL, seems to be an effective tool for the preparation of instructional material for CLIL lessons, as expressed by the teachers. Usually, the

preparation of the material is a long process and it takes much effort, and sometimes the result is not satisfactory for the children (Coonan, 2017; Mehisto et al., 2008; Salvadori, 2017). The creation of both graphical and textual ele- ments for ComicsCLIL take a meeting with the teacher and it is used for 5 sessions (5 weeks), without any further elaboration of the material. Children enjoy using ComicsCLIL, and it is perceived as interesting for exercising the vocabulary in the foreign language. This tool offers specific support for the teachers to focus the narrations toward specific topics and related vocabulary. The possibility of using pre-defined textual expression allow children to effec- tively use it for on-topic, and meaningful story, although the use of this features to support vocabulary training is not used as much as expected. In order to start the activity, pre-defined text seems to be useful while gradually it nine stops to be used. Children are enthusiastic to combine both graphical and textual elements to create a narratives as already noticed in (Choi, 2018; Llull, 2014), even if they are less proficient than expected with comics composition. However, they report that they might have liked to upload different graphical material, in particular new backgrounds and characters.

7.3 *RQ3: comic-based digital storytelling in comparison to paper-based version*

Teachers appreciated including technology, and in particular ComicsCLIL, for approaching CLIL lessons for different reasons. First, they appreciated the possibility to select and filter the content as a scaffolding practice that it would be more difficult to have in the paper-based version. Second, they reported that, as children tend to lose concentration easily, the use of compu- ters is very motivating and engaging for them comparing to the paper-based version. Finally, it was noted that technology helped teachers in involving children in the learning process as noticed in (Llull, 2014). Most

children (12) preferred using the digital-based version compared to a paper- and

-pen version. In particular, they liked having a predefined set of backgrounds, objects and characters to choose from the library. They realized that changing their minds on stories and correcting mistakes was much easier in the digital tool. On the contrary, fewer preferred (4) drawing their own comics as they felt the need to personalize their graphical content. Still, they mentioned that

visual elements could facilitate the narratives structure as 'blank page syndrome' (Joyce, 2009) could be avoided. Regarding the comics' production, it emerged that stories composed digitally were more structured, meaningful and coherent that the non-digital one. Still, children composed stories that for the majority present a complete plot of the narratives (beginning, middle, end). Once again (Rubegni & Landoni, 2014,?), it might be that technology introduction in the school curricula is essential to get children motivated, engaged and focused during class activities.

8. Conclusion

This paper presents an empirical study investigating how comic-based story-telling, supported by ComicsTool, can facilitate primary school children and teachers in approaching CLIL lessons. It emerges that comic-based digital story-telling seems a promising way for supporting CLIL lesson. In this sense, a digital tool, such as ComicsTool, can help to support this practice, being engaging, easy to use, fully educational while considering the collaboration aspect. Our find- ings, in fact, support the use of comic-based digital storytelling, and ComicsCLIL, for engaging and motivating children in approaching CLIL. Moreover, the collaborative creation of stories had many benefits including the mediation between peers. In our work, this finding pointed out the added values that confrontation and mediation, through digital narratives composition between children, can bring in the class activity. Many insights emerged in comparing the use of digital and traditional paper-based narrative in form of comics for supporting CLIL framework. The functionalities offered by the tool (the use of a library for images and predefined textual elements) were useful for structuring and supporting the narrative task although, in some cases, it might have slightly limited 10 the creativity (or at least the willingness to express) of the children. On the one hand, pre-defined textual elements might help in overcoming the initial difficulty of starting a story from scratch and structuring the story plot, although it was not used as much as expected. On the other hand, graphical and textual elements were widely used in the comics strip, and they facilitate CLIL approach on Geography in English topic. In conclusion, this case study provides initial evidence for the potential benefits of using digital storytelling in the form
of comics as a didactic approach in CLIL.

8.1 Limitation and future work

We focused on a relatively small group of participants since it was addressed to analyse deeply certain mechanisms of the intervention. Extending the study and engaging a wider sample would improve and reinforce our understanding

of the topic and strengthen our ability to answer the RQs. Therefore, we plan in further studies to include other primary schools and teachers. Second, future investigations should consider also the novelty effect since it was the first time teachers and students were engaged in comic-based storytelling to reflect on situations involving conflicts Finally, it would be interesting to investigate the use of comic-based digital storytelling for teaching other subjects in English in the CLIL framework

Disclosure statement

No potential conflict of interest was reported by the authors.

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