

Pre-Service Primary Teachers' Beliefs, Practices, and Needs Regarding the Teaching of a Second Language Through *Book Creator*

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Abstract

Several studies have investigated the use of Digital Storytelling to foster Second Language Acquisition at primary school level from pre-service teachers' perspectives. However, research regarding the employ of *Book Creator*, a digital book-making tool, to enhance students' language, digital, and intercultural competences according to student teachers' perceptions is still lacking. This article presents a case study carried out with 35 student teachers who participated in a workshop on teaching Italian as a Second Language through Digital Storytelling during a single cycle degree programme in Primary Teacher Education, at an Italian university. The study aimed at exploring pre-service teachers' beliefs, practices, and needs regarding the use of *Book Creator* to train pupils' language, digital, and intercultural skills within the multilingual and multicultural Italian primary school. Student teachers were asked to experiment *Book Creator* and to reflect about its didactic potentialities, from both students' and teachers' perspectives. Data were collected through a questionnaire, student teachers' multimodal artifacts and teaching materials. Results show the efficacy of *Book Creator* as a learning tool aimed at enhancing pupils' language competences, digital literacies, and intercultural awareness, as well as pre-service teachers' interest in discovering further digital resources to foster Second Language Acquisition through Digital Storytelling.

Keywords: Pre-service teacher training, Second language acquisition, *Book Creator*, Primary school, Digital storytelling, Digital literacies

1. Introduction

It is well-known that Digital Storytelling (DST) brings several benefits to Second Language Acquisition (SLA), especially in the context of the Covid-19 pandemic. In addition, in recent decades European policies focused on language, digital, and intercultural issues have increasingly supported the use of technology-enhanced language learning, with positive results on teachers' professional development. Nevertheless, research regarding the employ of *Book Creator*, a digital book-making tool, to enhance students' language, digital, and intercultural skills from pre-service teachers' perspectives is still underexplored.

On this basis, this study aims at exploring pre-service teachers' perceptions concerning the use of *Book Creator* to foster the teaching of Italian as a Second Language (L2) within the multilingual and multicultural primary school.

To do so, the article will start by examining the potentialities of *Book Creator* for SLA, with respect to both the European educational policies and the use of DST in pre-service teacher training. Next, it will present the main features of a workshop regarding the teaching of Italian as an L2 through children's literature and *Book Creator*, addressed to a group of pre-service teachers enrolled in a single cycle degree programme in Primary Teacher Education at an Italian university. Finally, it will analyse and discuss the data collected through a questionnaire, student teachers' multimodal artifacts and teaching materials. The study intended exploring the impact of workshop participation on pre-service teachers' beliefs regarding *Book Creator* for SLA, as well as on their intention of using it in their future teaching practices. Moreover, it aimed at understanding student teachers' training needs in Information and Communication Technologies (ICT) according to their own perceived digital literacies. Although results cannot be generalised due to the small sample size and to the single-workshop study, they encourage further research on SLA and *Book Creator*.

2. Theoretical Framework

The conceptual underpinnings of technology-enhanced language learning deal with both international and national educational policies, and the beneficial outcomes of implementing DST projects on pre-service teacher training.

2.1 European Policies on Language, Digital, and Intercultural Issues

According to the Policies of Innovation in Education and Multilingualism, one of the priorities of the European Union (EU) corresponds to students' training in language, digital, and intercultural competences (Note 1). Among the most relevant documents, the *Council Conclusions on Multilingualism and the Development of Language Competences* (Council of Europe, 2014), the *Digital Education Action Plan* (2021-27), and the *2030 Agenda for Sustainable Development Goals* (United Nations, 2015) foster the development of linguistic diversity, digital literacies, and intercultural dialogue within innovative pedagogical practices in the educational setting (Note 2). The *Council Recommendation of 22 May 2018 on Key*

Competences for Lifelong Learning (Council of Europe, 2018a) emphasizes the importance of promoting students' literacy competence (in the mother tongue, the language of schooling and/or the official language in a country or region), multilingual competence, and digital competence from an early age and throughout life. As regards young learners, the *Collated Representative Samples of Descriptors of Language Competences Developed for Young Learners-Volume 1* (Council of Europe, 2018b) collects and collates the new descriptors of the *Common European Framework of Reference for Languages: Learning, Teaching, Assessment. Companion Volume* (Council of Europe, 2018c) for pupils aged 7-10 years, including online interaction, mediation activities, multilingual and multicultural competences (Note 3).

The Italian educational system supports the use of technologies-enhanced language learning from the earliest age. The *National Guidelines for the Curriculum* (MIUR, 2012) highlights the pivotal role of first cycle education in developing pupils' basic literacies, conscious technology use, and intercultural awareness (Note 4). At the primary school, students are empowered to play an active role in their learning process, to develop literacy, digital, multilingual, and multicultural competences, and to experience democratic participation. They are helped to improve their competences in Italian, also by reading children's literature and experiencing creative writing activities during which they use multimodal tools and develop intercultural skills through collaborative activities. The *National Plan for the Digital School* (MIUR, 2015) recommends innovating the Italian educational system by investing in pre- and in-service teacher training to support their role of digital facilitators, and promoting students' confidence with ICT to make them become both conscious digital users and creators of multimodal artifacts (Note 5). Moreover, the increasingly multilingual and multicultural Italian educational system requires the teaching of subjects from an intercultural perspective. According to the latest statistics (MIUR, 2021), the 10.3% of the school population corresponds to non-Italian students, of whom the largest percentage (12%) attends the primary school (Note 6).

Hence, it is essential to integrate SLA, the improvement of digital literacies, and the development of intercultural awareness in teacher training to support student-centred learning, foster social inclusion, and build a stronger sense of community.

2.2 Digital Storytelling for Pre-Service Teachers' Professional Development

DST is a multimodal approach combining digital media (images, audio, video) with narration, that presents high linguistic, technological, and intercultural potential for SLA (Lambert & Hessler, 2018). It contributes to developing the wide set of skills that make up the current multi-faceted notion of 'multiliteracies' (Czarnecki; 2009; Warner & Dupuy, 2018; Chiang, 2020), including the 21st century literacy that is digital literacies (Brown, Bryan, & Brown, 2005). According to the 'literacy turn' in education, being literate today means having acquired communicative, cognitive, and technological competences to understand, create, and share information through ICT (Ferrari, 2012; Warner & Dupuy, 2018). Within the primary school context, DST improves students' organisational skills by managing the overall aspects of the project (aims, time, materials etc.) (Ohler, 2008; Robin, 2016). DST also addresses

pupils' different learning styles, motivates them, and enhances language abilities through their holistic involvement, linguistic and rhetorical achievements in listening, written and oral production, and self- and peer-evaluation (Sadik, 2008; Lotherington & Jenson, 2011; Bertolini & Contini, 2018). Moreover, it improves students' technological and interpersonal skills by training them in multimodal competences to express themselves, use digital tools to digitise content, cooperate with classmates, and construct common narratives (Benick, 2012; Schmoelz, 2018; Trimboli, 2020). In addition, DST adjusts to Task-Based Language Teaching (TBLT), since it presents problem-posing activities requiring students' involvement in cognitive and communicative strategies to express meaning in the L2 through the digital story (Ellis, 2003; Nunan, 2004; Long, 2015; González-Lloret, 2016). When combined with children's literature, DST contributes to renewing the connection between SLA and the traditional narrations of pupils' experiences (Leu, Castek, Henry, Coiro, & McMullan, 2004; Lisenbee & Ford, 2018). After reading a literary text, the DST process facilitates the enhancement of students' writing abilities through both the design of scripts and storyboards, and the creation of the digital story (Shelby-Caffey, Úb éla, & Jenkins, 2014). As a result, primary school students perceive themselves as more skilled writers, feel motivated to produce their stories through multimodal devices, and express their additional creative talents, i.e., by recording narrations, taking photographs, and drawing (Foley, 2013). However, despite the extensive literature developed so far in this context, research regarding the integration of DST and children's literature to foster pupils' creative writing in Italian as a L2 is still underexplored.

As regards teachers' professional development in educational technology, DST is an effective instructional tool for educators. Teachers can successfully reframe literacy instruction in the L2 classroom by incorporating DST, and they can decide whether to create their own digital stories to stimulate students' curiosity when introducing a new topic, or to ask their students to do it to evolve their role from passive observers to active participants and let them personally rework the topics of the lessons (Robin, 2006). Research has revealed that student teachers' training needs connected to DST deal with both the improvement of their technological proficiency in ICT – thereby overcoming their initial reluctance to using it, and with the expansion of knowledge of digital learning resources, especially after the pandemic (Tiba, Condy, Chigona, & Tunjera, 2015; Shelton, Archambault, & Hale, 2017; Campbell & Kapp, 2020; Aiello, 2021). The enforced remote teaching experience led to a significant rethinking of SLA, that can strategically inspire positive long-lasting changes in technology-enhanced language learning, if properly supported (Borro, Conti, & Fiorenza, 2021). Besides, regardless of the increase in the number of studies focused on DST, pre-service teacher training, and student teachers' perceptions across the last decades, the tools used have been either limited to the most widespread digital resources (such as *Windows Movie Maker* and *Microsoft Photo Story 3*) or not generally described in detail (Özüdoğru & Cakir, 2017).

Further studies have reported that engaging pre-service teachers in DST projects has positive effects on their self-confidence towards ICT, perceived learning outcomes, and intention of using DST for SLA and intercultural purposes (Heo, 2009; Sancar-Tokmak & Yanpar-Yelken,

2015; Aşık, 2016; Alcantud-Diaz, 2016; Cuhadar, 2018; Çetin, 2021). Heo (2009) stresses the importance of guiding student teachers to apply the digital competences they have already developed on their own within the educational context, while Alcantud-Diaz (2016) underlines the influence of choosing significant and challenging topics for the digital stories, related to socio-cultural current events or issues, to improve both technological and intercultural skills. Thus, if student teachers are successfully trained in DST, they are more likely to incorporate it into the school curriculum (Teo, 2009; Kobayashi, 2012; Gürer, 2020). Within this context, despite its learning potentialities and suitability for early child education (Tavernier, 2016; Hess, 2019; Ezeh, 2020), research into employing *Book Creator* to foster pre-service teachers' professional development in L2 teaching is still lacking.

Italian research in this field has explored pre-service primary teachers' perceptions concerning their knowledge and training in both DST and digital resources for SLA (Ruggiero, 2017; Polselli, 2021), besides analysing the impact of participating in professional development courses regarding the use of DST for a variety of educational purposes (Banzato, 2014; Ursuleo, 2017). Nevertheless, no inquiry has examined the combination of pre-service primary teacher training, *Book Creator*, and the teaching of Italian as an L2.

In light of all this, this study contributes to expanding this area of research by exploring pre-service teachers' beliefs, practices, and needs regarding the use of *Book Creator* to train pupils' language, digital, and intercultural skills within the multilingual and multicultural Italian primary school.

3. Using *Book Creator* to Foster Second Language Acquisition

Book Creator (Note 7) is a DST tool aimed at creating, reading, and sharing digital books. It was elaborated in 2011 by *Tools for School* and since then more than 30 million e-books have been produced. It is a versatile educational app, since it can be used both by teachers and students for a wide range of subjects (languages, mathematics, art etc.) and school grades (from pre-kindergarten to high school). Its design is simple, intuitive, and accessible to all-age users with elementary computer skills. As for hardware and software, *Book Creator* necessitates just an internet-accessible device (PC, tablet, smartphone), and an internet connection (Google Chrome browser, iOS platform). It offers either free accounts for individual users, or paid ones for individual teachers working with many students, and for school districts, in order to bring *Book Creator* to all teachers and students. With a free plan, an individual teacher or student can store up to 40 books in one virtual library. This option can be chosen by teachers who use *Book Creator* to produce their own digital stories, want to familiarise students with the app by creating individual pages or books, or decide to use the digital tool as a portfolio by asking students to upload the activities they have been producing over a period (a module, a semester, the whole school year). With paid memberships users can save up to 1.000 books in unlimited virtual libraries, and benefit by real-time collaboration and co-teaching. This option can be selected by teachers who consider their students ready to start creating a DST classroom project. *Book Creator* is a teacher-managed tool, since it only allows educators to create virtual libraries in the form of a class set up and to invite students to join them, in order to create, read, and share digital books. Further

instructions and teacher resources on how to use this digital tool for several teaching purposes can be found in the *Book Creator* official website and YouTube account (Note 8).

To create a digital book with *Book Creator* the basic steps to follow are:

- a. Register on the app: users sign in with an e-mail account and access a virtual library to start creating and reading digital books. Students can join teachers' virtual libraries through either a QR code or a password given by the teachers.
- b. Start creating the digital book: users can choose between a blank book or templates. Blank books have different shapes (portrait, square, and landscape), also in the comic version, and are recommended for younger students. The editable templates include both template books (newspaper, magazine, fiction etc.) and theme books (antique, nature, graffiti etc.), and are suggested for older students and when creating as teachers. Users design the digital book's cover and add a table of contents in the following pages, identifying them by background colours, borders, patterns etc.
- c. Annotate and draw: users can add written text either by typing in a textbox or using a pen tool, and choosing different styles, sizes, inks, text alignment etc. They can add stock shapes, and start drawing by using both the mouse cursor (PC) and their fingers (tablet devices), until an artificial intelligence ('AutoDraw') suggests the corresponding professionally drawn form. Users can reinforce semantic and visual content both by including emojis and by employing a fill tool to colour the drawings.
- d. Add images, audio files, video recordings, maps, and hypertexts: users can upload their own files (photos, music, PowerPoints, PDFs etc.) from their PC or Google Drive. Documents can be either visible on the page or appear as icons, to be clicked and downloaded. Users can insert web links (i.e., videos on YouTube) and maps, since *Book Creator*, Google Images, and Google Maps are synchronised. They can also add hypertexts through specific embedded links which, when selected, open new pages.
- e. Collaborate on the same digital book simultaneously: users who have subscribed to paid plans in the *Book Creator* online version can turn on real-time collaboration. Those who have access to the same virtual library can edit a class digital book working synchronously and across multiple devices. This feature can facilitate remote learning. Teachers can start discovering this characteristic with a free 2-week trial.
- f. Read the digital book: thanks to the text-to-speech feature ('Read to Me'), users can listen to the reading aloud of the digital book by the virtual voice assistant in almost 30 languages and can adapt the reading speed. They can also follow the development of the written text because words are highlighted as they are read. This multimodal feature promotes multilingualism, since users of different language proficiencies and ethnic backgrounds have the option of hearing the digital book read in different languages (Ezeh, 2020).
- g. Publish the digital book: upon the completion of the digital book, users can both share it in their own virtual library and join other users' libraries through a private access

code. Only those who receive the password and have a *Book Creator* membership are authorised to read it. Alternatively, the digital book can be either distributed as a private weblink or exported as a PDF, a video, or an EPUB file, to be shared with those who have not already registered on *Book Creator*.

Therefore, using *Book Creator* in DST projects for SLA contributes to enhancing students' multiliteracies (Hess, 2019; Spaliviero, 2021). In fact, "book-making applications (...) do not only afford students options to express meaning in diverse modes, but also engage them in cognitive processes of bridging language skills and digital literacy" (Ezeh, 2020, p. 1). At the multilingual and multicultural primary school, *Book Creator* fosters pupils' training in the following 21st century literacies and skills (Robin, 2006, 2016; Garcia & Rossiter, 2010):

- a. Information literacy: by understanding the content of the digital story, selecting a suitable story topic, collecting and critically assessing information, managing organisational aspects (i.e., the time to create the digital book), elaborating the materials, deciding how to present the digital story, in order to empower students to take responsibility for their own learning process.
- b. Global literacy: by writing the script and the storyboard, reading them aloud to record audio narration, reading and listening to classmates' stories, and speaking individually about the digital book or sharing it as a teamwork product, developing critical thinking and problem-solving skills, including personal elements in the digital book, gaining experience in self- and peer-evaluation through constructive feedbacks, in order to reinforce oral and written language skills thanks to the focus on meaningful language production, to enhance creativity and assessment competences, and to foster pupils' learning by trial and error.
- c. Visual literacy: by understanding and communicating through visual representations (images, videos, maps etc.) which maximise pupils' potential by concentrating on their multiple intelligences, by stimulating kinesthetic experiences, and by supporting inductive discovery.
- d. Technological literacy: by using digital tools to integrate the stories with multimedia (music, recorded audios, videos etc.), digitise content, and create multimodal artifacts in order to stimulate pupils' interest in ICT, facilitate their deeper engagement with the story, and make them produce internet content.
- e. Digital literacy: by interacting with the *Book Creator* digital community in order to discover new resources, get inspired, and compare digital books on different topics.
- f. Interpersonal skills: by improving interaction abilities (i.e., respecting speaking turns, asking questions, listening to each other etc.), discussing story elements, sharing opinions and experiences, working in pairs and groups thanks to the real time collaboration feature in order to reinforce self-understanding, encourage empathy and perspective-taking, and promote community-building.

4. The Research Context: Workshop Design and Implementation

The study was carried out during a workshop of a single cycle degree programme in Primary Teacher Education at the University of Bologna. The workshop dealt with the teaching of Italian as an L2 through children's literature and DST within the multilingual and multicultural Italian primary school, and involved 35 pre-service teachers (undergraduate students). It developed during the 1st semester of the A. Y. 2020-2021, lasted 16 hours, and was implemented throughout 4 lessons of 4 hours each. Its main purpose was training student teachers in both theoretical principles and teaching methods regarding the above-mentioned topics. Thus, each lesson was structured in three different phases:

1. A short theoretical framework, related to a different theme for each lesson but always connected with using children's literature for SLA. The four main topics of the workshop were: the language teaching unit and the appropriate methodologies and techniques for its different phases; the mixed ability classes and some inclusive teaching strategies; social mediation methods (peer education, cooperative learning) to promote intercultural awareness; DST and the use of *Book Creator* to teach Italian as an L2 within the multilingual and multicultural primary school classroom.
2. Either the analysis of existing teaching materials, that I had already created and tested while teaching Italian as an L2 at the primary school, or the first-person experimentation of the theme of the lesson through group works of 3-4 participants. During lessons 1-2-3, student teachers reflected on the different pedagogical theories by observing existing materials based on different types of children's literature: adapted literary classics for children, picture books, and short stories. During lesson 4, instead, pre-service teachers collaboratively produced a digital story on *Book Creator* starting from the reading of a poem as a creative written production activity.
3. The creation of teaching materials by small groups of 3-4 student teachers, based on the same types of children's literature that they have previously encountered, and focused on the different topics of the lessons. The teamwork was followed by the upload of the group activities to the Moodle platform of the course, and a final plenary debate to share ideas, receive feedback, and clear up any possible doubts.

As a result, every lesson aimed at both teaching students and creating teachers (Campbell & Kapp, 2020). The tasks included discovery and inductive learning by trial and error, reflection on pedagogical practices, and planning of new activities. The expected learning outcome was fostering pedagogical content knowledge and competences, critical thinking, time- and group-management skills, and creativity towards professional learning directions.

In particular, lesson 4 intended to guide pre-service teachers in playing the students' role, learning how to use *Book Creator* to produce a digital book starting from a poem, and then to experiment the teachers' perspective, creating L2 activities through *Book Creator* and a fairy tale. According to the linguistic and intercultural potentialities of literary texts (Gonçalves Matos, 2020; Tsang, Paran, & Lau, 2020; Ballester & Spaliviero, 2021), using children's literature to teach Italian as an L2 deals with its pedagogical function of enhancing pupils'

literacy skills, encouraging the development of literary competence, and building bridges between different cultures. When reading activities are combined with creative writing ones, literary texts become a basis for story-making (Reyes-Torres, Villacañas-de-Castro, & Soler-Pardo, 2014; Capetti, 2018). The additional employ of *Book Creator* aimed at combining traditional and digital forms of storytelling to enhance students' learning by re-writing and re-forming the scripts of the digital stories (Hicks, Turner, & Stratton, 2013). Since in early childhood traditional storytelling is an act of telling or writing stories based on pupils' backgrounds or readings, promoting DST projects links children's experiences authentically to school content, and exposes them to various cultural worldviews and communicative styles (Herrera-Ramírez, 2013; Lisenbee & Ford, 2018). As for the selection of children's literature, to engage pupils effectively texts should include entertaining and emotional passages, captivating pictures and illustrations, personal perspectives, repetitive lines, few characters, and appropriate language (Leu, Castek, Henry, Coiro, & McMullan, 2004; Lisenbee & Ford, 2018). The last linguistic aspect involves not only reducing the story length and making its content accessible by scaffolding students' understanding, but also developing relevant topics and adopting a literary language (De Santis, 2022).

The main stages of lesson 4 were:

- a. Preparatory activity: before attending the lesson, student teachers watched a video tutorial on *Book Creator* that I had previously prepared, showing its basic features and functions. They were also asked to explore the *Book Creator* website and YouTube account, and to register on the app as teachers, to familiarise with the digital tool.
- b. Theoretical introduction: at the beginning of the lesson, student teachers focused on the development of the writing ability, examined the benefits of using DST to improve pupils' productive skills, and discovered a set of strategies to foster pupils' creative writing skills (Rodari, 2013; Poletti Ritz, 2017; Guerriero, 2021).
- c. Group work activity from the students' perspective: pre-service teachers divided into groups, read the poem *Saturday Night in the Village* by Giacomo Leopardi (2005), and created a digital book on *Book Creator* by setting it in the present time and in familiar places, and by following the phases of the DST process (Ohler, 2008; Robin & McNeil, 2012). The choice of this Italian poem aimed at engaging student teachers with a challenging 19th century text that is a milestone in the Italian secondary school program. For reasons of time, they focused only on one character (of their choice). After defining the title, they elaborated the narrative script beginning with "It was a late Saturday afternoon...", adding personal connections, and answering a set of guiding questions (Who is the character? Where does he/she come from? What is he/she doing? etc.). To complete the digital book, they collected and organised multimedia materials respecting copyright, and created a storyboard. Finally, they used *Book Creator* to build the digital book, published it in their virtual library, and uploaded the private access code on the Moodle platform of the course. We observed some digital books on a voluntary basis and debated about the DST process.
- d. Group work activity from the teachers' perspective: pre-service teachers continued to

work in groups, read the fairy tale *The Crab Prince* by Italo Calvino (2013), and produced a creative writing activity for the teaching of Italian as an L2 within the multilingual and multicultural primary school classroom through *Book Creator*. The choice of this adapted literary classic dealt mainly with its popular origin and oral tradition, the overturning of gender stereotypes, and captivating illustrations. The creative writing activity must include one or more methodologies studied during the workshop (techniques of the language teaching unit, inclusive teaching strategies, social mediation methods, and creative writing strategies), besides information regarding the teaching context, the target students, and the learning objectives. Once the activity was finished, pre-service teachers uploaded it on the Moodle platform of the course to receive feedback. To conclude the lesson, we discussed the didactic potentialities of using *Book Creator* to promote SLA.

In line with previous studies (Heo, 2009; Sancar-Tokmak & Yanpar-Yelken, 2015; Tiba, Condy, Chigona, & Tunjera, 2015; Cambell & Kapp, 2020; Gürer, 2020; Çetin, 2021), lesson 4 aimed at training pre-service teachers in implementing a TBLT approach through DST in their future classes by first experiencing it themselves. In fact, “connecting theory to practice through dialogue and reflection is central to the process of developing meta-awareness about the role of the digital in facilitating learning” (Cambell & Kapp, 2020, p. 26). Despite the different personal and didactic uses of ICT, “digital storytelling allows personal technologies (...) to transfer to educational venues in easy, fun, and seamless ways”, providing “an opportunity for pre-service to improve their educational technology efficacy”, and thus “to be successful in integrating technology into their classroom” (Heo, 2009, p. 407).

5. The Study

The purpose of the study was to explore student teachers’ perceptions concerning the use of *Book Creator* to support the teaching of Italian as an L2 within the multilingual and multicultural Italian primary school. In particular, the research aimed at understanding the impact of workshop participation on pre-service teachers’ beliefs regarding the use of *Book Creator* to enhance pupils’ multiliteracies within the multilingual and multicultural primary school, as well as on their intentions to employ it in their future teaching practices. Moreover, the study intended examining student teachers’ training needs in ICT according to their own perceived digital proficiency.

5.1 Research Questions

In order to understand whether the workshop had a positive impact on student teachers’ beliefs and future teaching practices, as well as to identify their overall training needs in ICT, the following research questions (RQ) were formulated:

RQ1: What are pre-service teachers’ beliefs regarding DST and *Book Creator*?

RQ2: What will pre-service teachers’ future teaching practices be with DST and *Book Creator*?

RQ3: What are pre-service teachers’ training needs in ICT?

5.2 Participants

The study involved 35 pre-service teachers (91% female, 9% male), aged 20-25 (91%), 26-30 (6%) and more than 31 (3%). They were selected through a convenience sampling strategy, since they were all undergraduate students of the 4th academic year in Primary Teacher Education. Their previous work experiences regarding the teaching of Italian as an L2 were almost completely homogeneous, as only one of them had already taught it at the primary school and had been using ICT quite a lot during that didactic experience.

5.3 Methodology

The research adopted a convergent mixed-methods approach, since both quantitative and qualitative data were concurrently collected in order to gain a complementary understanding of the specific educational context (Dörnyei, 2007; Creswell & Plano Clark, 2018). The study was based on a constructivist paradigm, as it referred to local and specific co-constructed realities, co-created findings, and multiple participant meanings (Denzin & Lincoln, 2005; Creswell, 2014).

A single, common, holistic, and instrumental case study was employed as the research design. It was a single experiment, focused on a typical experience of primary student teachers' training, and involved a single unit of analysis, i.e., student teachers (Yin, 2018). Moreover, it aimed at providing insight into the wider issue of supporting pre-service teacher training on DST to promote SLA within the multilingual and multicultural primary school (Dörnyei, 2007; Creswell, 2014).

5.3.1 Data Collection Procedure

Quantitative and qualitative data were gathered from different sources, i.e., a questionnaire, the evaluation of student teachers' multimodal artifacts, and the analysis of the teaching materials they had produced. Quantitative data came from the closed-ended questionnaire items, pre-service teachers' multimodal artifacts and teaching materials, while qualitative data were collected through the open-ended questionnaire items. Therefore, data collection procedure differed according to the instruments adopted, and developed as follows:

a. Questionnaire

The questionnaire, anonymous and web-based, included 15 items and was divided into four sections. The first one involved items 1-6 and answered to RQ1, as it investigated pre-service teachers' beliefs towards using DST, and in particular *Book Creator*, to enhance pupils' multiliteracies. The second section corresponded to items 7-8 and dealt with RQ2, since it explored student teachers' intentions of employing DST, and in particular *Book Creator*, within their future primary school classes. The third section coincided with items 9-11 and focused on RQ3, because it regarded pre-service teachers' self-assessment concerning their digital literacies and training needs in ICT. The fourth section contained items 12-15 and aimed at collecting student teachers' general information (cf. paragraph 5.2).

Most items were closed-ended and of three types, i.e., Likert scales, yes-no items, and numeric items. The remaining ones were open-ended and of three types as well, i.e., specific

open questions, clarification questions, and short-answers questions (Dörnyei, 2010).

The questionnaire was administered immediately after the end of the workshop through a survey administration software (Google Forms), and it was filled out by all 35 pre-service teachers who had attended the lessons.

b. Multimodal Artifacts

The multimodal artifacts corresponded to the digital books created on *Book Creator* by group works of 3-4 pre-service teachers after reading the poem *Saturday Night in the Village*. A total of 9 multimodal artifacts were produced. This source aimed at answering to RQ3, since it contributed to understanding pre-service teachers' digital literacies and training needs in ICT.

Data were collected according to three criteria (Scancar-Tokmak & Yanpar-Yelken, 2015), focusing on complementary features of student teachers' digital stories:

- a. Message conveyed: whether the scripts were consistent with the reference literary text, while concurrently introducing novelty through the actualisation of time and space and personal connections, and respecting the focus on a single character.
- b. Multimedia selection: whether the multimodal materials integrated in the digital stories were varied (images, audio files, video recordings, maps, hypertext), appropriate to the scripts and *Book Creator*, and well balanced in the storyboard.
- c. Software use: whether student teachers employed *Book Creator* correctly to produce the digital book by registering on the app, annotating and drawing, adding multimedia, publishing the digital books in their own virtual libraries, and sharing them through private access codes.

The multimodal artifacts were gathered throughout lesson 4, during the first group activity from the students' perspective.

c. Teaching Materials

The teaching materials consisted of the creative writing activities in Italian as an L1/L2 produced by group works of 3-4 pre-service teachers, in which the use of *Book Creator* was integrated with the fairy tale *The Crab Prince* assignment. A total of 9 teaching materials were elaborated. They regarded RQ2, as they showed how student teachers would use *Book Creator* with their future pupils.

Data collection was based on three criteria (Scancar-Tokmak & Yanpar-Yelken, 2015), that examined student teachers' materials at a content, methodological, and digital level:

- a. Message selection: whether the activities were appropriate to the teaching context, the target students, and the learning objectives.
- b. Teaching methods: whether the activities included one or more methodologies studied in the workshop, i.e., language teaching unit techniques, inclusive teaching strategies, social mediation methods, and creative writing strategies.

- c. Software instructions: whether the activities presented clear and detailed instructions to guide pupils throughout the DST process and, in particular, to make proper use of *Book Creator* to produce their own digital books.

The teaching materials were gathered throughout lesson 4, during the second group activity from the teachers' perspective.

5.3.2 Data Analysis Procedure

As regards the questionnaire, the responses were downloaded from the survey administration software in an *Excel* spreadsheet. Descriptive statistics were employed to analyse quantitative data of the closed-ended questionnaire items, which were coded and reported in graphs (Dörnyei, 2010). Instead, the content analysis procedure was followed to analyse qualitative data of the open-ended questionnaire items (Denzin & Lincoln, 2005; Dörnyei, 2007; Creswell, 2014). Data were transferred to the *NVivo* software, divided into separate codes (initial coding), clustered together and reduced into wider and more significant categories (second-level coding), and finally presented in graphs. The types of codes were both predetermined, according to already existing literature, and emerging, since they materialised directly from data analysis (Creswell, 2014).

The data analysis procedure of both the multimodal artifacts and the teaching materials was descriptive, and it consisted primarily of relative frequencies (cf. Tables 1, 2). Within every criteria of the two instruments of data collection, the absolute frequencies of each indicator were computed and reported over the total number of digital books (cf. Table 2) and didactic activities (cf. Table 1).

6. Results

Results will be presented according to the research questions, regarding student teachers' beliefs (RQ1), future teaching practices (RQ2), and training needs (RQ3).

6.1 Pre-Service Teachers' Beliefs

To answer RQ1 (*What are pre-service teachers' beliefs regarding DST and Book Creator?*), data from the questionnaire (items 1-6) were considered.

Pre-service teachers' perceptions concerning the use of DST to enhance students' language, digital, and intercultural competences were positive. They judged the employ of DST in teaching Italian to be very useful (63%) and quite useful (37%) (item 1a: *How do you rate the use of DST to teach Italian?*). To justify their answers, they referred to pupils' active participation (43%), multimodal stimulation (29%), innovation approach (23%), enhancement of digital literacies (20%), and inclusion (17%) (item 1b: *Why?*, Figure 1).

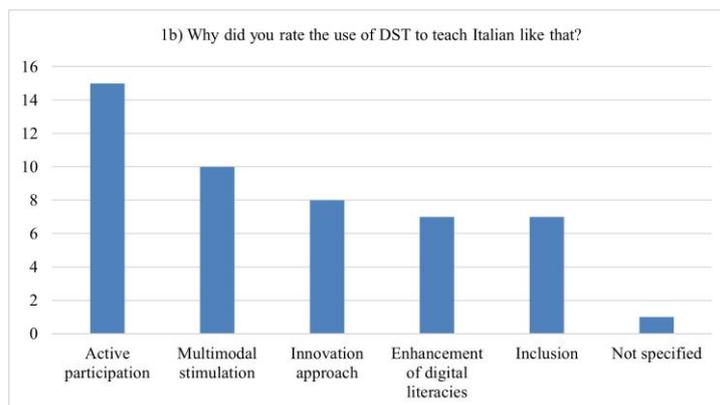


Figure 1. Pre-service teachers' answers to item 1b

Student teachers considered that DST catches students' attention, creates curiosity, and stimulates participation, besides representing a motivating, fun, and playful activity that results in significant acquisition. Moreover, by involving various codes simultaneously DST allows the training of language skills on multiple levels, and thus it represents an original and effective didactic resource if integrated into the 'traditional' frontal teaching approach without replacing it tout court (quote 1). In addition, DST develops pupils' digital literacies in school by promoting a conscious employ of ICT, with which students may already be familiar thanks to daily use (quote 2). Finally, DST represents an inclusive instrument that enhances pupils' individual diversity, including foreign students with different levels of language proficiency in Italian as an L2.

[quote 1] DST is neither positive nor negative per se, instead its effectiveness depends on how it is used, according to the needs of the educational context. It is a useful resource for making activities more exciting, to be combined with paper books and other analogue media.

[quote 2] Today's students are digital natives. Enabling pupils to discover Italian through digital resources is effective and interesting, since it furthers the integration of language, disciplinary, and technological skills through student participation.

Regarding the use of DST to foster the development of pupils' writing skills, pre-service teachers considered it quite useful (54%) and very useful (29%). A small percentage found DST not very useful (17%) (item 2a: *How do you rate the use of DST to develop writing skills?*). To support their ideas, they mentioned creativity and collaboration (49%), the combination of manual and mediated writing (34%), and accessibility (11%) (item 2b: *Why?*, Figure 2).

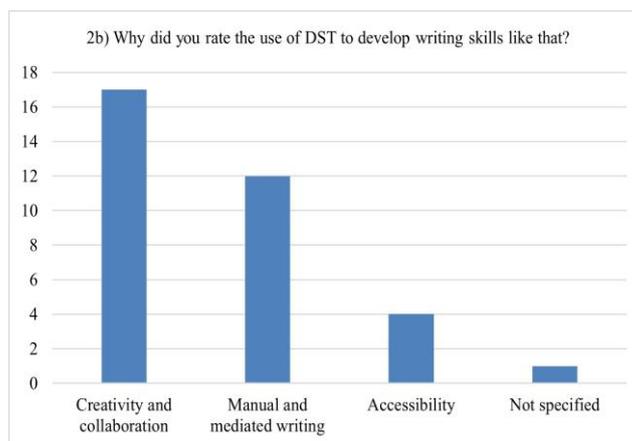


Figure 2. Pre-service teachers' answers to item 2b

On the one hand, DST was perceived as an appealing writing activity, since it permits the pupils to experiment with creative production and feel free to express themselves, provides immediate feedback on errors, and reflects students' digital habits (quote 3). On the other hand, student teachers believed that manual and mediated writing should be integrated according to pupils' ages and learning styles. Manual writing is appropriate for early literacy and pupils who feel disoriented by multiple stimuli, but at a later stage of learning it can be combined with mediated writing to both consolidate SLA and empower students who have an aptitude for ICT (quote 4). However, DST was seen to support the development of writing skills by students of different levels of language proficiency through collaborative activities requiring differentiated contributions to reduce the risk of frustration.

[quote 3] The use of digital resources is an added value in teaching writing skills. DST fosters language experimentation and cooperative activities that increase the spirit of initiative, creativity and, of course, language competence.

[quote 4] Although DST is useful for writing development, digital resources should be used "in small doses", especially during the first years of primary school. It is necessary to strike a balance between offering motivating writing activities and fostering language awareness through a reasoned and conscious use of both analogue and digital resources.

From the intercultural perspective, pre-service teachers found the employ of DST quite useful (83%) and very useful (17%) in promoting pupils' intercultural awareness (item 3a: *How do you rate the use of DST to develop intercultural awareness?*). To explain their opinions, they indicated the wider possibilities for debate (46%), the union of analogue and digital resources (26%), and the production of collective digital stories (23%) (item 3b: *Why?*, Figure 3).

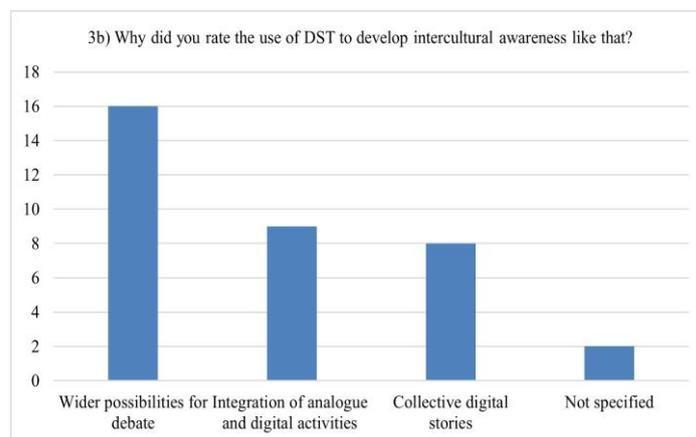


Figure 3. Pre-service teachers' answers to item 3b

DST increases the opportunity for debate, since the use of digital resources widens pupils' sharing of ideas on multiple levels (synchronous and asynchronous, in presence, blended, and online formats). In particular, DST facilitates the intercultural exchange between students of different linguistic and cultural backgrounds by increasing both the comprehensibility and the interaction in the L2 thanks to the multimodal feature (quote 5). Moreover, if combined with social mediation methods, the creation of collective digital stories as pair and group products trains pupils' cooperative skills while promoting their consideration of classmates' points of views and the negotiation of meanings (quote 6). However, consistent with the results presented above, student teachers highlighted the importance of alternating analogue and digital activities as well as direct and indirect discussions to avoid the risks of inhibiting classmates' relationships, creating detachment, and preventing pupils' involvement.

[quote 5] DST offers the opportunity to take advantage of new ways of negotiating meanings. Nowadays teachers can create virtual classes or use message boards (i.e., Padlet), where students can express their own ideas, without exposing themselves directly, and they can reflect on classmates' ones, by listening to and reading their opinions.

[quote 6] As the last lesson of the workshop demonstrated, DST fosters the development of intercultural abilities. We managed to create a collective digital book by working in groups thanks only to the use of relational skills during all the different stages of the DST project.

As regards *Book Creator*, no pre-service teacher knew about it (item 4: *Did you know about Book Creator before attending the workshop?*). In line with the findings on DST, student teachers believed that the strengths of *Book Creator* are the improvement of language (49%), intercultural (31%), and digital skills (26%), multimodality as well as the suitability for pupils (46%), and the didactic potentialities for both teachers and students (17%) (item 5: *In your opinion, which are the strengths of Book Creator?*, Figure 4). On the contrary, its weaknesses are the limits of the free version (46%), the need for both a sporadic use (14%) and electronic devices for pupils (11%), the impossibility of creating a tangible product (6%), and its repetitiveness (3%). A fair percentage (11%) found no weaknesses. Being the first time pre-service teachers tried it, they needed to use it further to discover its critical aspects (item 6: *In your opinion, which are the weaknesses of Book Creator?*, Figure 4).

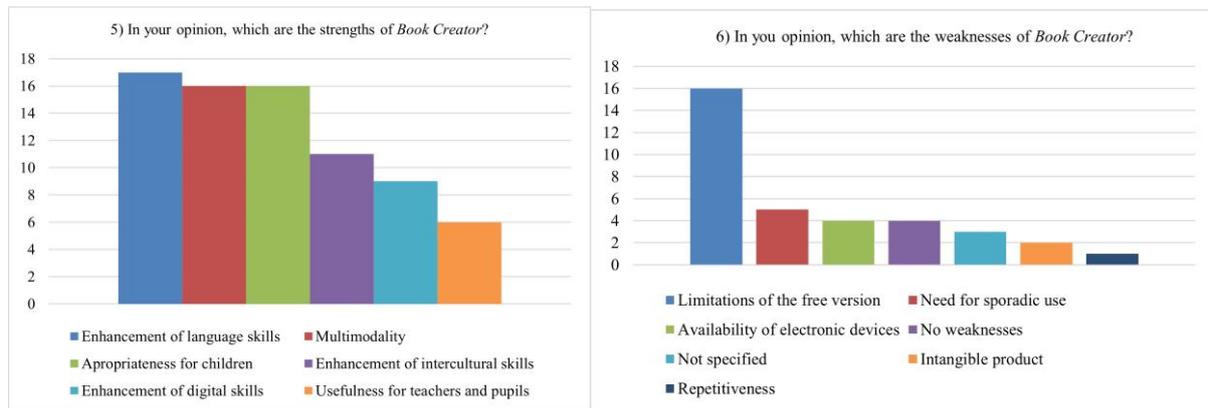


Figure 4. Pre-service teachers' answers to items 5 and 6

According to pre-service teachers, *Book Creator* supports the development of several language abilities (reading, listening, speaking, and writing, as well as interacting and text manipulation) thanks to its innovative approach that stimulates interest in studying Italian, promotes creative expression, and encourages reading for pleasure (quote 7). Moreover, *Book Creator* enhances intercultural awareness through teamwork activities and debates, and reinforces digital literacies thanks to the satisfying features of the free version. In addition, *Book Creator* meets the needs of the multilingual and multicultural primary school context since its multimodal feature involves students holistically, and its intuitive and attractive interface makes it easy to use (quote 8). Finally, *Book Creator* can be useful for teachers too, since it represents an original alternative to content presentation in the Power Point format.

[quote 7] Thanks to *Book Creator* every student can singlehandedly create a product that springs from their personal imagination. This result generates a lot of self-satisfaction, and keeps the motivation high for both learning Italian and playing with literature.

[quote 8] Thanks to *Book Creator* pupils create multimodal artifacts in an interactive and inclusive way, starting from their interests and needs. The simplicity of its use and the multimodal component make it suitable for primary school students, especially for those with different linguistic and cultural backgrounds.

Nevertheless, as pre-service teachers noted, *Book Creator* is not completely free, and the free version presents some limitations, such as a limited number of books to store in the virtual libraries and the impossibility to work simultaneously on the same digital book from different devices. Moreover, *Book Creator* should be employed sporadically to avoid monotony and loss of contact with paper-based tasks (quote 9), and it depends on the availability of electronic devices, especially for the youngest pupils, so that students can learn to use it gradually. Finally, pupils could find *Book Creator* unsatisfactory and repetitive, due to both the impossibility of leafing through digital books and the creation of the same digital product.

[quote 9] The strongest advantage of *Book Creator*, i.e., its being an alternative instrument, could be its main disadvantage too. If it is used too often, pupils may lose their initial interest. In addition, it is important not to replace 'traditional' reading and handwriting completely with digital tools.

6.2 Pre-Service Teachers' Future Teaching Practices

To answer RQ2 (*What will pre-service teachers' future teaching practices be with DST and Book Creator?*), data from the questionnaire (items 7-8) and the teaching materials were used.

Consistent with the results of RQ1, the analysis of the items of the questionnaire confirmed pre-service teachers' intention of using both DST and *Book Creator* to teach Italian in their multilingual and multicultural future classes. Teachers would like to employ DST quite a lot (60%) and a lot (34%), and everybody intends to use *Book Creator* (items 7: *Would you like to use DST to teach Italian?*, and 8a: *Would you like to use Book Creator to teach Italian?*). To support their ideas about *Book Creator*, they mentioned the creative production of stories, the support for teachers' practices, and the planning of teamwork and original language exercises (item 8b: *How would you use Book Creator to teach Italian?*, Figure 5).

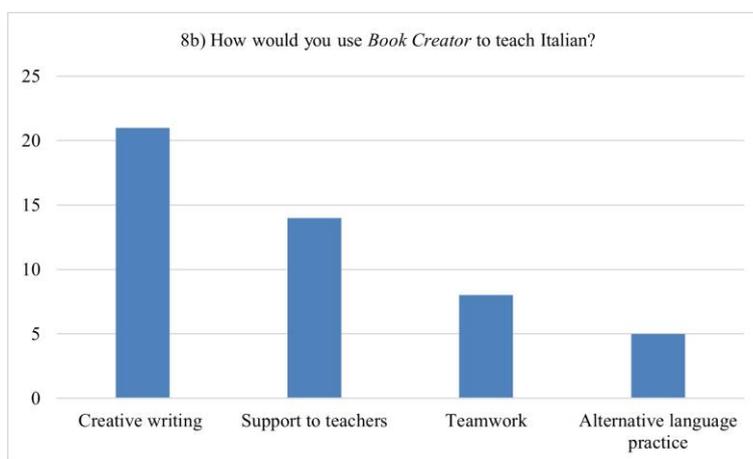


Figure 5. Pre-service teachers' answers to item 8b

Book Creator would be used to stimulate students' imagination by either inventing stories or rewriting literary texts creatively, i.e., in the format of comics or changing characters' roles (quote 10). Teachers would also employ *Book Creator* to explain new content (i.e., vocabulary) or review topics, foster reading comprehension, and promote interdisciplinary links. *Book Creator* would be exploited in both teamwork activities aimed at creating a classroom portfolio (quote 11), and language exercises focused on grammar analysis, text manipulation (i.e., summary), and textual genres (i.e., description of a school trip) (quote 12).

[quote 10] *Book Creator* offers every student the possibility to feel like a writer and the protagonist of their own learning process.

[quote 11] I would ask students to work in small groups and carry out an activity like the one we did in the workshop. I enjoyed it very much and I think that children would have fun too.

[quote 12] After the workshop I have already started to use *Book Creator* in my Italian as an L2 classes connected to history lessons, on Wednesday mornings! Pupils are creating the digital book "The History of Wednesdays", where they summarise the most important elements of the weekly history lessons and add images, Google maps, and timelines.

The teaching materials produced by student teachers and based on *The Crab Prince* presented common features regarding message selection and software instructions. They were all designed for classes with Italian as an L1/L2 to be carried out in the computer lab, and lasted between two (67%) and four hours (33%) excluding the final class presentation, scheduled for the next lesson. Target students attended the fifth (89%) and the fourth year (11%) of primary school. In accordance with the findings explained above, the learning objectives of the activities concerned the development of pupils' language, intercultural, and digital skills. All dealt with the creation of multimodal artifacts with *Book Creator* and classmates' collaboration. Moreover, they included the creative rewriting of the fairy tale (78%), textual manipulation by transforming the literary text into a comic (11%), and the analysis of the stereotypical traits of the female protagonist (11%). All teaching materials established as a prerequisite pupils' participation in one or more previous lessons focused on the essential characteristics and functions of *Book Creator*. However, during the activities students were reminded to indicate the title of the digital books, choose the format, and include multimodal elements. The main differences between the materials regarded the teaching methods. All the techniques followed the phases of the creative writing process (Guerriero, 2021), that pre-service teachers had already experienced during the workshop. The stages were: conceptualisation (pupils' brainstorming about their ideas associated with a topic), organisation (selection of the ideas and outline of the key moments of the script and the storyboard), and completion (creation of the digital book on *Book Creator*). As can be seen in Table 1, the methods were varied but not always evenly distributed.

Table 1. Teaching methods in pre-service teachers' activities

Teaching materials	Inclusive strategies	Social mediation methods	Creative writing strategies
TM1		Cooperative learning	Eccentric words
TM2		Cooperative learning	Mixing stories
TM3		Cooperative learning	Imaginary hypothesis
TM4		Cooperative learning	Imaginary hypothesis
TM5		Cooperative learning	
TM6	Differentiation	Cooperative learning	Imaginary hypothesis
TM7		Cooperative learning	Eccentric words
TM8		Cooperative learning	
TM9		Peer education	Imaginary hypothesis
Relative frequencies	11%	100%	78%

The teaching materials were especially based on social mediation methods (89% cooperative learning, 11% peer education), and thus promoted heterogeneous grouping regarding both language and digital competences, peer interaction, individual accountability, the use of collaborative skills, group autonomy and revision before presenting the digital books, and positive interdependence of aims related to the collective digital book (Johnson, Johnson, & Holubec, 2008). TM4 and TM6 also fostered the positive interdependence of roles by assigning pupils different functions (i.e., the writer, the designer, the supervisors of time and interactions), and TM5 supported the positive interdependence of tasks by dividing the story production into multiple phases (i.e., pupils working on different sections of the comic before uniting them in a single digital book). Moreover, almost all teaching materials included creative writing strategies (Rodari, 2013) such as imaginary hypothesis (44%) by envisioning alternative endings to the story (i.e., the absence of the protagonist at their wedding). The activities also involved eccentric words (22%) by rewriting the fairy tale with some extra words that have nothing in common with it (i.e., electric guitar, cow, and magic powder), and mixing stories (11%) by combining protagonists, events, and settings of various literary texts. Nevertheless, only TM6 inserted the inclusive teaching strategy of differentiation, focusing students' attention either on grammar or on stylistic aspects according to their language proficiency in Italian as an L2.

6.3 Pre-Service Teachers' Training Needs

To answer RQ3 (*What are pre-service teachers' training needs in ICT?*), data from the questionnaire (items 9-11) and the multimodal artifacts were used.

As regards student teachers' responses to the last questionnaire items, they assessed their own digital competence as high (46%) and medium (43%), while only a few of them judged it low (17%) and very high (3%) (item 9: *How do you assess your own digital competence?*). Nevertheless, a very small percentage (6%) were familiar with further digital resources to promote DST, that is *Kahoot* and *Storyjumper* (items 10a: *Besides Book Creator, do you know other digital resources to teach Italian?*, 10b: *If yes, what are they?*). As a result, all were interested in discovering more technological tools and platforms (item 10c: *If no, would you be interested to know them?*). Concerning the final considerations on the teaching of Italian as an L2 through DST, pre-service teachers stressed the importance of both teacher training in these issues (17%), and a conscious educational employ of digital resources such as *Book Creator* (6%) (quotes 13, 14) (item 11: *Is there something that you would you like to add about the teaching of Italian as an L2 through DST?*).

[quote 13] School is becoming an increasingly multilingual and multicultural reality and thus it is extremely important to develop teaching skills in the teaching of Italian as an L2, also through children's literature that plays a fundamental role. Moreover, in my opinion it is essential that teachers are always up to date with new digital resources.

[quote 14] DST can be a teaching resource depending on its mode and frequency of use. Teachers must be fully aware of the potential and limits of digital resources such as *Book Creator* before proposing them in class, in order to fully exploit their didactic advantages.

All digital books were consistent with the message conveyed and the software used. The digital books took inspiration from the poem *Saturday Night in the Village*, were actualised at temporal and spatial levels, being set above all in a university city (Bologna) and in the present time, and focused on a single character. They referred especially to the old woman (*vecchierella*) who crochets, watches afternoon programs on TV, prepares regional dishes for her grandchildren, sits in the park with friends remembering evenings in the dance hall, plays cards, speaks dialect, uses *Facebook*, and goes to water aerobics classes. Several digital books also described the young lady (*donzelletta*) as a student who goes to the university library and the gym, spends a lot of time on social media, eats and drinks biological products, goes shopping, and loves going out and dancing with friends. Moreover, pre-service teachers managed to register on the app of *Book Creator*, produce multimodal artifacts by choosing blank books in the portrait shape (the additional templates were added in 2021), publish the digital books in their own virtual libraries, and share them through private access codes. The main differences between the digital books concerned the multimedia selection. On the one hand, all multimodal materials were appropriate to *Book Creator* and presented well balanced storyboards. The multimedia selection was appropriate both to the literary content and the features of the digital tool, and was used uniformly throughout the characters' descriptions. On the other hand, as can be observed in Table 2, the materials were not so diversified and did not exploit the whole set of multimedia components of *Book Creator*.

Table 2. Multimedia selection in pre-service teachers' digital books

Digital Books	Written texts	Drawings	Images	Audio files	Video recordings	Maps	Hypertexts
DB1	X	X	X	X			
DB2	X		X				
DB3	X		X	X	X		
DB4	X	X	X				X
DB5	X		X				X
DB6	X		X		X		
DB7	X		X				
DB8	X		X		X		X
DB9	X		X		X		X
Relative frequencies	100%	22%	100%	22%	44%	44%	0%

Table 2 shows that all digital books included written texts and images. However, slightly less

than half of them (44%) comprised video recordings (that is, videos of Italian songs on YouTube) and maps (of the university city and immediate surroundings). Only a minority (22%) combined drawings (i.e., a dish, a dancer, a train etc., revised with the ‘AutoDraw’ function) and audio files (i.e., the reproduction of the old woman’s voice registered by student teachers with dialect words and regional accent). No digital book included hypertexts.

7. Discussion

The data collected from the case study permitted analysis of the impact of workshop participation on pre-service teachers’ beliefs and future teaching practices related to DST and *Book Creator*, as well as their overall training needs in ICT. Albeit the small number of participants, the results showed some interesting aspects that are worth discussing further.

As regards the impact of workshop participation on student teachers’ beliefs concerning DST and *Book Creator* (RQ1), both the approach and the digital tool were evaluated positively. Most pre-service teachers appreciated the contribution of DST and *Book Creator* to the development of pupils’ language skills. Their learning potential was associated with students’ cognitive and emotional involvement related to the combination of narration and digital media, which emphasises curiosity, entertainment, and creativity against the awareness of being taught (quotes 3, 7). Several student teachers also stressed the inclusive and accessible components of DST and *Book Creator*, acknowledging that they highlight students’ individual features (learning styles, levels of language competence, attitudes etc.) and do not require a too complicated procedure to create the digital story (quote 8). Their positive influence on the improvement of pupils’ intercultural awareness was recognised too. When combined with social mediation methods, pre-service teachers recognised that DST and *Book Creator* can give a strong impulse to the training of interpersonal abilities (quotes 5, 6). In addition, student teachers favourably assessed the strengthening of pupils’ digital literacies. As they repeatedly mentioned, the fact that pupils are digital natives does not automatically imply that they can master ICT consciously, so they need to be trained in this (quote 2). These findings are consistent with the potentialities of DST and *Book Creator* regarding the enhancement of students’ language, interpersonal, and technological abilities (Ohler, 2008; Robin, 2016; Lambert & Hessler, 2018) and the promotion of students’ multiliteracies (Garcia & Rossiter, 2010; Hess, 2019; Spaliviero, 2021). However, on several occasions pre-service teachers underlined the necessity to balance analogue and digital activities correctly, especially for the development of pupils’ writing skills. On the one hand, DST and *Book Creator* were considered a didactic resource both for the teachers and the students, to present teaching content originally and to inspire pupils’ imagination. On the other, pre-service teachers agreed on only the occasional use of multimodal approach and devices in order to preserve the sense of novelty that generates motivation, to maintain contact with paper books, and to realistically guarantee the availability of the computer lab (quotes 1, 4, 9). These results confirm the relevance of the novelty category in successfully predisposing students’ emotions for SLA (Schumann, 1997), and is consistent with previous research which reported pre-service teachers’ concern about having their students overwhelmed by ICT (Campbell & Kapp, 2020).

Concerning the impact of workshop participation on student teachers' future practices with DST and *Book Creator* (RQ2), the workshop was an overall success since all pre-service teachers expressed their intention to use *Book Creator*, and several of them were willing to develop DST projects too. This result is rather encouraging, considering the current European policies of fostering the use of technologies-enhanced language and intercultural learning (cf. paragraph 2.1). In line with the findings of RQ1, *Book Creator* would be used especially for its language potential, not only in creative writing activities aimed at producing or reproducing simple literary texts, but also in unconventional language exercises focused on training grammar and textual competences (quotes 10, 12). Moreover, the captivating features of *Book Creator* would be exploited in new content presentations or revisions, alternative readings, and interdisciplinary projects. The intercultural strengths of *Book Creator* would emerge in the planning of pair and group works aimed at producing collective digital books and building classroom portfolios (quote 11). These findings, in conjunction with the theoretical framework, confirm the positive outcome of involving student teachers in DST projects with respect to their perceived learning achievements and future didactic employ of digital resources, such as *Book Creator*, to promote SLA and develop intercultural awareness (Sancar-Tokmak & Yanpar-Yelken, 2015; Cuhadar, 2018; Çetin, 2021). Moreover, results reflect the recommendations in the Italian *National Guidelines for the Curriculum* (MIUR, 2012), that not only encourage the production of different textual typologies, including the fictional one, to make pupils both experience the linguistic potential of Italian language and discover children's literature in an engaging way, but also support the combination of handwriting exercises and multimodal materials to strengthen students' written production skills (Note 4). The questionnaire responses were consistent with the teaching materials based on a fairy tale and *Book Creator*, which pre-service teachers produced during the last lesson of the workshop. All activities were planned for multilingual and multicultural primary school classes, and aimed at developing pupils' multiliteracies through peer collaboration, creative writing, textual manipulation, or textual analysis, and collective digital book production. Moreover, student teachers managed to solve the critical aspects of *Book Creator* they had previously detected. They applied the activities to the final school year pupils, who have already completed the early literacy process, and decided to implement them in the computer lab once they had introduced pupils to *Book Creator*, considered a prerequisite. These findings proved pre-service teachers' appreciation of social mediation methods to develop pupils' language, intercultural, and digital skills, awareness of the additional time and devices of DST projects, and intention to solve possible complexities (Tiba, Condy, Chigona, & Tunjera, 2015). However, the limited use of inclusive strategies indicates the need to be trained further in the didactic application of theories that will increase accessibility to lesson content in order to improve all levels of language proficiency (cf. Table 1). In any case, results confirm the positive effects of developing projects that integrate children's literature and DST to foster the mutual implication between SLA and the expression of pupils' imagination (Foley, 2013; Shelby-Caffey, Úbáda, & Jenkins, 2014; Lisenbee & Ford, 2018). In line with the reference literature, the findings also show the efficacy of both transferring pre-service teachers' personal digital literacies into an educational context, and selecting relevant themes for the digital books (Heo, 2009; Alcantud-Diaz, 2016).

With respect to the impact of workshop participation on pre-service teachers' training needs in ICT (RQ3), student teachers rated their own digital literacies overall as good, but reported being almost completely unaware of additional didactic tools except for *Book Creator*, and thus were motivated to learn more. This discrepancy confirms the fact that a distinction should be made between pre-service teachers' personal and educational technology knowledge (Heo, 2009). However, all being digital natives for age reasons (cf. 5.2), student teachers' training needs in DST consist especially in increasing their didactic skills in learning tools and platforms rather than in their own digital literacies, developed in informal contexts (Campbell & Kapp, 2020). Another relevant aspect concerns the perceived centrality of teacher training in using ICT for SLA within the multilingual and multicultural primary school. According to their responses, teachers should be both updated on innovative approaches and made fully aware of how to make the most of learning gains with ICT (quotes 13, 14). In line with the questionnaire findings, the digital books complied with content indications and the correct use of *Book Creator*, since pre-service teachers managed to create and share their digital stories regarding the actualisation of the characters of the poem. Nevertheless, their digital books only partially included the multimedia components of *Book Creator* (cf. Table 2). This result reinforces student teachers' need to expand their technology skills regarding the features and functions of *Book Creator* at both theoretical and practical levels. Although the multimodal artifacts were rather encouraging thanks to their previous digital competence, the preparatory activity (cf. 4), and the group work, an additional focus on the development of technological literacies could have better diversified the teaching materials (Garcia & Rossiter, 2010; Robin, 2016). The success of pre-service teachers' training in DST is measured not only by its incorporation into the programme (Teo, 2009; Kobayashi, 2012; Güreş, 2020) but also by analysing their digital stories, since it is probable that, with the necessary adaptations, they will request similar performances from their pupils.

Apart from the promising results, a rather important limit in data analysis and discussion dealt with the time factor. Due to time constraints, little space was devoted to pre-service teachers' technology training in *Book Creator*, as well as to the production of the digital books and teaching materials. In this respect, some student teachers justified the lack of weaknesses of *Book Creator* with the need to have extra time in which to examine its critical aspects (cf. Figure 4). Consistent with this, as mentioned above, in the teaching activities they indicated pupils' extensive training in *Book Creator* as a prerequisite to digital book creation.

Therefore, if a similar workshop were to be repeated, the timetable should be differently distributed to address pre-service teachers' technology training more appropriately both from student and teachers' perspectives. As a result, student teachers could increase the variety of the multimedia components of the digital books as well as distribute the teaching methods more uniformly in the activities. Actually, in a subsequent workshop that I taught, with similar participants and content but different time distribution, three lessons were respectively dedicated to digital book creation, teaching material production, and class presentation. Although on that occasion I did not carry out a formal data collection, I noted that pre-service teachers' comments, multimodal artifacts, and teaching materials showed a greater internalisation of the theories and more balanced didactic applications.

8. Conclusion

Against the backdrop of the effectiveness of DST for SLA and of European policies supporting teachers' professional development in technology-enhanced language learning, this study demonstrates that *Book Creator* seems a valuable resource for enhancing students' language, digital, and intercultural skills within the increasingly multilingual and multicultural educational system.

A case study dealing with pre-service teachers' perceptions regarding the use of *Book Creator* to foster the teaching of Italian as an L2 within the multilingual and multicultural primary school was designed and piloted with a group of undergraduate students. Even though results cannot be generalised due to participants' reduced sample size and the single-workshop study, they showed the positive impact of workshop participation on pre-service teachers' beliefs, future teaching practices, and training needs related to DST, *Book Creator*, and ICT for SLA.

Despite the above-mentioned limitations of the research, results regarding the impact of workshop participation proved that one of the biggest challenges of technology-enhanced language learning is to integrate DST and, in this case, *Book Creator* to paper-based teaching practices, as the workshop did by using TBLT in paper and digital activities. Consequently, pre-service teachers would benefit from multiple pedagogical approaches, follow national and international guidelines, and nurture pupils' differences without creating imbalances in their competences. Especially after the remote teaching experience during the pandemic, sharing experimentations and investigations like this focused on pedagogical approaches that combine SLA and DST through a little-investigated tool can contribute to inspiring new uses of ICT for language, digital, and intercultural purposes. It would be interesting to investigate further replicable activities based on *Book Creator* for the teaching of both Italian as an L2 and other languages.

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Notes

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