Digital Storytelling with ThingLink VR 360° Interactive Posters in Language and Culture Studies Virtual Classroom

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ABSTRACT

The paper describes the first stage of the research aimed at applying digital storytelling in remote teaching of Language and Culture Studies as a part of Applied Linguistics curriculum. ThingLink VR 360° interactive posters (IPs) are proposed to be the key instrument of adopting digital storytelling in Language and Culture Studies virtual classroom. At the first stage of the research six VR 360° IPs about Great Britain, its language, history, geography and culture were created by the teachers and used as a background for students’ virtual tours around the country. It was done with a view to motivate students to develop their own IPs for further presenting their individual and group projects in a digital form. The purpose of the study is to prove that digital storytelling can be an effective tool boosting students’ motivation to gain an insight into the culture of another country and developing their narrative skills. The participants of the research were the second-year students of Bauman Moscow State Technical University (BMSTU) (N=42) majoring in Applied Linguistics. The analysis of the participants’ self-assessment checklists showed general improvement of students’ narration and increase in motivation to study the subject. The above interim results gave the authors the impetus to proceed to the next stage of the research involving students’ creation of their own digital stories.

Keywords: Digital storytelling, Language and Culture Studies, ThingLink VR 360° interactive posters (IPs), virtual tours, students’ motivation, students’ narrative skills.

1. Introduction

In 2020 a global pandemic has caused significant changes in educational practices around the world. Due to forced isolation and transfer to remote learning there has been an overall shift towards using online technologies in the classrooms on all educational levels. After eight months of online teaching educators no more feel unduly concerned for the problems of online communication with their students. Modern platforms (Zoom, MS Team, BigBlueButton and others) offer a combination of fantastic features, from audio and video conferencing at the click of a button, to webinars. With their help teachers can connect with countless number of students, without having to download any software, take advantage of virtual video backgrounds, screen-sharing, co-annotation, instant messaging and emoji reaction as a feedback to students’ actions.

However, getting access to synchronous communication in a virtual classroom is not an end in itself. Technological advancement cannot get the teacher’s job done. Working from home or other remote locations requires extra effort in sharing thoughts and progress with learners. University lecturers are asked to set up digital learning environments, transfer their lessons to the cloud and run their courses online (Nurieva, 2019, Kirsanova et al., 2018).
Although many of them have some previous experience of applying blended learning strategies and the flipped classroom model, this transition goes beyond anything that most of them have done before, as today the whole educational system is flipped (Koivula, 2020).

In case of Language and Culture Studies, the discipline providing an insight into a language and culture of another country, transferring traditional classroom practices online is insufficient. Modern students, ‘digital natives’ are known to be well prepared for multisensory information processing. They are unlikely to be interested in acquiring cultural, historical or geographical facts about another country by reading and discussing texts online. If teachers want to increase students’ awareness about the subject and boost their motivation to study online, multimodal information input (visual, aural and verbal) is necessary.

Using interactive visual media in online teaching can provide a good alternative to text-based communication. Narrative, sound, and visual stimulation can help students to get a deep insight into development of another country with its distinctive customs, achievements, values and outlook. In this paper we present an overview of pedagogic experience of digital storytelling with ThingLink VR 360° interactive posters and provide a detailed description of underlying concepts and teaching techniques.

2. Literature Review

2.1 Language and Culture Studies

Language is closely entwined with culture. It is known to be ‘much more than the external expression and communication of internal thoughts formulated independently of their verbalization’ (Encyclopedia Britannica, 2020 ‘a’). The meaning is always bound in cultural context. This is why it is so important not only to explain the meaning of the language used, but to understand the cultural context, in which it is placed.

Linguists have always drawn attention to the ways, in which one’s native language is related to one’s life in a community. In Russia since 1960s Language and Culture Studies have been considered a section of linguoculturology, a branch of linguistics combining ethnolinguistics, linguistic anthropology, sociology, history and cultural studies. It was based on the concept of sociocultural determinism of human language phenomena originated from research papers of European and Russian scholars (Bakhtin, Bvebistse, Budagov, Humboldt, Losev, Lotman, Meillet, Likhachev, Potebnia), who studied the relationship between languages and cultures. In 1973 Russian scholars Vereschagin and Kostomarov introduced the new term ‘linguostrovanovedenie’ (language and culture studies) (Vereschagin & Kostomarov, 2009). This term denoted the area of linguoculturology that was focused on the analysis of language units in order to identify their national and cultural meaning. It included non-equivalent vocabulary, non-verbal means of communication, native speakers’ background knowledge, aphoristics, phraseological units as a reflection of culture and psychological characteristics of a nation.

The emergence of a new concept couldn’t help but affect foreign language teaching methodology. It became obvious that teaching/learning one’s language with a view to develop learners’ intercultural communicative skills requires appropriation of one’s culture. Some scholars believe that learning a new language involves the learning of a new culture (Allwright & Bailey, 1991). Educationalists assume that language teachers must ‘explore culturally based linguistic differences to promote understanding instead of misconceptions or prejudices’ (Leveredge, 2008). According to Byram, some teachers of a language are also teachers of culture (Byram, 1989). The studies of Russian scholars focused on development of students’ intercultural and sociocultural competence (Ter-Minasova, 2000) and ‘multiculturally oriented language pedagogy in the context of the sociocultural approach to development of language learners’ communicative, cognitive, and multicultural abilities’ (Safoanova, 2014).

In BMSTU the course of Language and Culture Studies is integrated in English as a Second Language curriculum and explores intercultural communication by understanding the relationship between English language and British cultural identity. The students majoring in Applied Linguistics get to know the historical milestones, customs, beliefs and practices governing the life of the British society, for which English language is the vehicle of expression. The course is supposed to facilitate students’ understanding of the British culture, enhance knowledge of English and change students’ outlook on intercultural communication.

2.2 Interactive Visual Media in Remote Learning

Remote learning has come into our lives and required development of technology-enhanced teaching strategies and expansion of teachers’ digital toolsets for effective work in a virtual classroom. With digital uptake gathering pace around the world, some teachers are still biased against using technologies in their work and have difficulties adapting to remote format (Inozemtseva et al., 2018). With this in mind, it is reasonable to propose user-friendly digital solutions that can enhance remote learning, stimulate students’ independent work and classroom interaction, inspire creativity and easily integrate in daily pedagogical practice.

It is not surprising that interactive visual media, also called interactive multimedia, is at the forefront of modern educational trends. Interactive visual media is defined as ‘any computer-delivered electronic system that
allows the user to control, combine, and manipulate different types of media, such as text, sound, video, computer graphics, and animation’ (Encyclopedia Britannica, 2020 ‘b’). The most common interactive visual media applications include electronic encyclopaedias, online dictionaries and thesauri, training programs, video games, electronic tests, travel guides, etc. New interactive visual media tools (interactive posters and videos, classroom response systems, interactive test constructors) leveraging the power of artificial intelligence and machine learning algorithms have emerged recently and rushed in virtual classrooms.

Interactive posters (IPs) have become impressive instruments of foreign language teachers trying to carry the linguistic meaning to learners. From new topic presentation to group projects and visual brainstorming, IPs are a great way to consolidate students and promote their comprehension. Among applications being used for creating interactive posters (Glogster, Canva, Pictochart, Crello, Desygner, Pixello), many teachers give preference to ThingLink, a media platform launched in 2010 in Finland. This is a cloud-based service that recognizes objects and link them to any information on the Internet by means of hyperlinks.

A user can upload or import via URL or Flickr a static or VR 360° focus image and create interactive learning modules (ILMs), which can be navigated by the audience via Rich Media Tags (RTM). RTM are special points added to an image linking it to other images (Flickr, Instagram), audio (SoundCloud, Spotify, Rdio), texts, videos (YouTube, Vimeo, TED, Bambuser), social media (Google Maps, Facebook, LinkedIn, Twitter and others), documents (Slideshare, Scribd, Wikipedia), photos, drawings, infographics, etc. The platform identifies the type of media contained within the tag and creates the necessary functions to display it. ThingLink IPs are stored on the platform. They are shareable and embeddable, with a click to Facebook, Twitter and email. ThingLink IPs can be used inside and outside of the classroom on desktops, smartphones and tablets. The platform has the app equipped with a unique function of direct voice recording to camera photos. Taking into account all these characteristics, ThingLink IPs are becoming one of the most promising educational tools.

It is customary to think that using technology a priori enhances learning. Some scholars call it into question, as there is not so much evidence of such enhancement based on valid empirical data (Kirkwood et al., 2014). Despite the lack of quantitative research validating the hypothesis on the impact of a particular interactive visual media tool on learner’s outcomes, there is a broad base of theoretical studies highlighting the role of multisensory experience in education.

Paivio’s dual-coding theory hypothesized that the formation of mental images assists learning (Paivio, 1969). According to Paivio, a person could learn material by means of verbal association or visual imagery. Human mind processes visual and verbal information differently, creating separate representations for the data processed in distinctive channels. Both visual and verbal codes are used for recalling information. The ‘dual coding’ helps a learner to make a connection and memorize new words and facts.

Nelson’s sensory semantic theory focuses on the idea of picture superiority effect (Nelsons et al., 1976). Pictures are believed to assess meaning more directly than words. They are encoded easier, which facilitate better recollection for pictures. This explains why, according to Nelson’s theory, people remember images better than words.

It is quite understandable that the above theories influenced foreign language teaching methodology. The concept of instructional scaffolding originated from Vygotsky’s ‘zone of proximal development’ and first introduced by Jerome Bruner in the 1970s, referred to the difference between what a learner can do independently and what he or she can achieve with guidance and encouragement from a mentor/skilled partner. Having its roots in psychology, the concept expanded into educational contexts and referred to verbal, visual and procedural teacher’s assistance that could help students to develop new skills. According to the concept proponents, visual and verbal scaffolds set by a foreign language teacher generate associations and help learners to comprehend and memorize new words and facts (Echevarria et al., 2017).

ThingLink interactive posters provide multimodal input of lesson content (visual, aural, verbal). Visualization starts with uploading/importing a background metaphoric image that configure students’ perception of a topic. A combination of panoramic pictures, videos, sound and infographics allows to create multisensory learning materials and triggers learners’ associations. With a VR 360° panoramic image used as an IP background and links to subject related texts, online dictionaries, sounds, records and images, students get visual, verbal and auditory stimulus, dive into the right atmosphere and expand their understanding of the topic. Presumably, using ThingLink interactive posters in remote teaching can facilitate students’ topic acquisition and help teachers to manage classroom activities. With IPs, a teacher can scale a lesson content to an unlimited number of screens to reach students’ audience simultaneously in multiple locations. ThingLink IPs are easily integrated in Zoom videoconference and can be used both for classroom activities and for students’ independent work.
2.3. Digital Storytelling in FL teaching

Interactive image creation is an effective way to practice digital storytelling in the traditional and virtual classroom. Digital storytelling is used in academic and non-academic contexts. It emerged at the Center for Digital Storytelling in California in the late 1980s. It was initially employed by community theatre workers as a method to enable the recording, production, and dissemination of stories (Lambert, 2002). Benmayor defines it as ‘a short multimedia story that combines voice, image and music’ (Benmayor, 2008). Digital stories are told by the storytellers in their own voices that give them a personal touch. According to most definitions, digital stories are 2-3 minutes personalized narratives based on a combination of images and soundtracks and presented by their creators as short movies or cartoons (Smeda et al., 2014). They can be linked to any listener in a number of ways by means of online technologies.

Implementation of digital storytelling in all educational settings is associated with constructivism, a theory that recognizes learners as constructors of their own knowledge and allows them to build their knowledge on their own interpretation of the world. Constructivism overlaps cognitive learning school, as its origin is linked to Piaget’s theory of cognitive development (Piaget, 1983). Constructivist approach to learning encourages learners’ working together and using variety of tools and information sources (Nurieva & Inozemtseva, 2019, Troufanova & Razheva, 2019). Smeda, Dakich and Sharda believe that combining digital media with student-centered teaching practices, digital storytelling enhances a constructivists approach for teaching and learning and can help teachers to build constructivist e-learning environment (Smeda et al., 2014).

Titova distinguishes the following invariant components of digital storytelling: 1) topic, 2) opinion, 3) emotional content, 4) expressiveness of the voice-over, 5) background music, 6) amount of information, 7) speed of information delivery. These components reflect semantic and representational elements of the above technology. Considerable attention is paid to the presentation design, the more so that modern visual media tools open up great opportunities for creativity. Application of digital storytelling in a foreign language classroom requires to set eligibility criteria in order to strike a balance between the content of the story and its representation. The goal of the task comes to the fore, whereas creative element of the story is limited to the task requirements and the proposed material. Emotional coloring gives way to the logic of the presentation. A special place is given to the author’s speech, which is the primary assessment criterion including stylistically and grammatically correct usage of language constructs, a wide range of vocabulary and grammatical structures (Titova, 2019).

Visuals, background music and subtitles make up the basic content of digital storytelling. These components are naturally integrated into online foreign language teaching format. Visuals help to promote the development of students’ sociocultural competence. Soundtrack aids to enhance listening skills. Subtitles facilitate students’ comprehension of the content and can be used for translation exercises. The synergy of all digital storytelling components leads to developing a range of learners’ skills (cognitive, narrative, presentation), as well as contributes to learners’ topic acquisition.

In the context of using digital storytelling in Language and Culture Studies virtual classroom ThingLink mobile application seems to be the easiest way to save and share notes and observation about geographical locations, historical facts, customs and language characteristics of one’s country. The teachers creating ThingLink interactive posters can maximize students’ engagement by sharing IPS on desktop, mobile, big screen TV, or mobile VR headset. Creating interactive virtual tours around the country being studied requires creativity and allows students to become storytellers.

3. Research Question

The purpose of the research is to prove that digital storytelling can be an effective tool of boosting students’ motivation to study Language and Culture of other countries and developing their narrative skills in a virtual classroom.

4. Methodology

4.1. Virtual Tours around Great Britain with ThingLink VR 360° Interactive Posters

The first part of the research was focused on teachers’ creating interactive visual media tools in order to motivate students to study British language and culture in a remote format and boost their engagement and narrative skills. Despite modern students’ continuous existence in a digital environment, some of them are known to be reluctant to fulfill technology-enhanced academic tasks as they find them too complicated. This reluctance may prevent students from getting involved in digital storytelling in its usual sense, with their recording their own stories and presenting them to the public. The students expect to be shown a model, which could be used as a sample and which could stimulate their own creativity. With this in mind, the authors decided to develop six ThingLink VR 360° interactive posters supporting virtual tours around Great Britain and evaluate their suitability for digital storytelling in a Language and Culture Studies virtual classroom.
A virtual tour is a simulation of an existing location, usually composed of sequential videos or static images. Virtual tours are widely used in advertising, indicating an unbroken view of an object of interest (a museum, an architectural design, a piece of nature, etc.). Using a video camera, an observed location can be filmed at a walking pace while moving continuously from one point to another. VR 360° interactive posters are mostly based on ready-made panoramic photos, which can be imported from the internet public domain. Presumably, virtual tours can become a good support for foreign language teachers and digital storytellers.

The authors of this research paper chose six British geographical units (England, Wales, Scotland, Northern Ireland, Snowdonia and London) with the highest concentration of country-specific cultural content, the study of which is important for increasing linguistics students’ cultural awareness. In order to create ThingLink IPs, the metaphoric VR 360° background images (nature and city landscapes) of the above places were imported from the internet.

With VR 360° mode, the users can rotate the IPs in all directions and participate in the virtual tours around the particular areas. The soundtracks of British national music (e.g., bagpipes in Scotland or hymn of Wales) and environmental sounds (e.g., noise of wind in Snowdonia or people murmuring in the London streets) added to the IP background image helped to create an effect of immersion into the atmosphere of these places. The hyperlinks to carefully selected thematic videos, photos and images of geographic maps, national symbols, portraits of historical personalities, photos of tourists’ attractions were added to the images visualizing IP content and providing the basis for multisensory learners’ experience. Web links to the variety of subject-specific texts introduced students to British history, language, cuisine, national legends, music, holidays, customs, superstitions and provide a wide choice of material for classroom discussions and students’ self-study. The links to podcasts, audio guides, visual online dictionaries and thesauri extend students awareness about British culture and languages (English, Cymraeg or Gaelic), as well as develop listening and pronunciation skills, taking into account the regional dialects.

All IPs were equipped with assessment tools created on Quizlet.com, a website enabling teachers and students to develop digital flash cards, generate interactive games and tests. Quizlet allows to create automatically-assessed activities, which can be easily integrated in Thinglink IPs. Within the framework of this study, the authors developed the tests based on factual and interpretive questions on Quizlet.com. The factual questions in the tests assessed students’ knowledge of cultural facts, as well as their acquisition of new words and constructs. Interpretive questions checked students’ topic comprehension and data analysis.

The links to six interactive posters about Great Britain are presented below:
1. England
   https://www.thinglink.com/video/1321345562129203201
2. Wales
   https://www.thinglink.com/video/132599461238196483
3. Scotland
   https://www.thinglink.com/video/1319329762551791619
4. Northern Ireland
   https://www.thinglink.com/video/1321239489829404675
5. Snowdonia
   https://www.thinglink.com/video/1326526338701459459
6. London
   https://www.thinglink.com/video/1326670575556362243

The above IPs are stored in the internet public domain and accessible for all teachers and learners from their desktop, smartphones, tablets and mobile VR headsets such as Google Cardboard. With these digital tools applied in Language and Culture virtual classroom, students turn into travelers and immerse into unique atmosphere of Great Britain with its beautiful nature and cultural heritage.

4.2. Digital Storytelling with the Use of ThingLink Virtual Tours

It has already been mentioned that Language and Culture Studies is integrated in English as a Second Language course studied by the second-year BMSTU students majoring in Applied Linguistics. Within the framework of this research, the entire course module consisting of five sequential lessons was allotted for digital storytelling. The stories to be told by students were supported by six ready-made VR 360° ThingLink IPs with a view to increase students’ engagement and develop their narrative and explanation skills.

The first stage of the research was carried out with the participation of 42 BMSTU linguistics student. At the beginning, the teachers told the participants about digital storytelling, ThingLink platform, their experiences with digital sound and video and provided the links to the IPs. Then they instructed the students to explore the IP content and be prepared to present their stories in the Language and Culture Studies virtual classroom. By this means, the flipped classroom approach was used.
The stories were to be:
1) conducting a guided virtual tour of a museum or another place of interest,
2) reasoned opinion on a country-specific issue related to geography, transport, travelling, nature, ecology, sustainable development, architecture, music, literature, folklore, etc.) supported by virtual tours,
3) description of historical and cultural events with the use of virtual tours,
4) lexicographical analysis of Cymraeg or Gaelic language units.

The teacher also introduced the students to the assessment criteria proposed by Titova (Titova, 2019). Given that the students were working with the ready-made IPs, some criteria were excluded from the list (preparing and verifying the script, using the suggested resources and language material on the topic, quality of multimedia). As a result, the presented stories were assessed according to the following criteria:
1) story presentation,
2) content of the story,
3) structure of the story,
4) the language of the narrative,
5) participation in the discussion and commenting on the peers’ stories.

The implementation of digital storytelling supported by six IPs created by the teachers proved to be a positive experience for all stakeholders. VR 360° format made the participants feel like guides taking tours of London streets and museums, across endless Scotland fields, quiet countryside and exuberant cities of Ireland or breathtaking Snowdonia mountains. ThingLink VR 360° IPs supported students’ reports on country-specific issues and stories about historical and cultural events and customs (e.g., national symbols and music festivals in Wales). Students quoted illustrated excerpts from literary works by British writers, retold some of them, sang songs or made comments on pieces of national music. Some stories told with the support of visual online dictionaries and thesauri included in the IPs, presented the pieces of linguistic research studying specific English language units (e.g., non-equivalent vocabulary) originated from Cymraeg or Gaelic languages. Some students presented the digital stories about British non-verbal means of communication and native speakers’ background knowledge.

All storytellers were encouraged to edit the IPs and extend the range of topic-specific visual, aural and text materials. It suggested a problem-based approach to solving the proposed academic task and turned students into co-authors of their educational content. The listeners of digital stories immersed in a unique VR 360° e-learning environment that encouraged them to make comments of the presented stories and participate in the discussion.

5. Results

The data for this study was collected through virtual classroom practice observation, teachers’ evaluation and students’ self-assessment checklists. In this way, the authors of the study obtained and analyzed qualitative data that helped them to answer the research question, reflect on possible improvements and go to the next stage of the research.

The observation has shown that digital storytelling can help students fulfil the tasks that they previously found complicated. The necessity to narrate a story in the background of visual material display, stick to the script, use correct speech patterns, navigate the IP without hitches and pauses, as well as engage the audience in a discussion of what they have seen and heard proved to be an exciting learning experience triggering students’ interest in technology-enhanced projects. The idea of the study was not comparative, due to the fact that the intent of this preliminary stage was to identify the benefits of using this technology in the virtual classroom and explore students’ self-evaluation of their narrative skills and influence of digital storytelling on their development.

The teachers’ assessment of presented digital stories was carried out in accordance with the abovementioned criteria and confirmed the authors’ expectations. Along with impressive achievements of students’ creativity, findings extending the topic content available on the IPs and efforts to engage their peers in discussions, there was obvious imperfection of task completion. On the one hand, the weak points of most stories were the inaccuracy of language patterns used for narration (words pronunciation, sentence formation, forming the body of the text). Besides, the content structure often lacked such essential parts as introduction to the topic or conclusion. Semantic links between digital story parts were also not always relevant. On the other hand, it became evident that when telling their stories, all students strove to improve their narrative skills. It was noticeable during the commenting stage, where all missing items returned to the place and most mistakes were corrected. The overall impression was positive, with most students’ completing the task in accordance with the proposed criteria. When asked, if they would like to record their own stories about British culture or languages, all students answered positively and demonstrated the readiness to solve a new task.

The participants filled the following self-assessment checklists:
Table 1. Self-assessment checklist

<table>
<thead>
<tr>
<th>How effective was your digital storytelling experience?</th>
<th>Self-Assessment Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate the extent to which each statement is true for you on a 1 to 5 scale</td>
<td>1=Not at all</td>
</tr>
<tr>
<td>1. Digital storytelling has added to my knowledge of British culture and English language</td>
<td>1</td>
</tr>
<tr>
<td>2. Digital storytelling has increased my interest in Language and Culture Studies</td>
<td>1</td>
</tr>
<tr>
<td>3. Digital storytelling has developed my English narrative skills</td>
<td>1</td>
</tr>
<tr>
<td>4. Digital storytelling has helped me to overcome the language barrier</td>
<td>1</td>
</tr>
<tr>
<td>5. Digital storytelling should be used for studying all other disciplines</td>
<td>1</td>
</tr>
<tr>
<td>6. ThingLink VR 360° interactive posters have improved my perception of remote learning</td>
<td>1</td>
</tr>
<tr>
<td>7. With visual, verbal and aural support provided by ThingLink VR 360° interactive posters I can better memorize new words and facts</td>
<td>1</td>
</tr>
<tr>
<td>8. I would like to create my own digital stories with ThingLink VR 360° interactive posters</td>
<td>1</td>
</tr>
</tbody>
</table>

The analysis of the completed checklists has shown that thirty-nine of forty-two students set the maximum rating for questions 1-3 and 6-8. Twenty-eight participants confessed that digital storytelling helped them to overcome the language barrier. Twenty-two students answered ‘not sure’ or set the low rating, when asked about the expediency of using digital storytelling for studying all other disciplines. It is worth noting that all forty-two students answered positively, when they were asked about influence of multimodal information input on data memorization (question 7). In this way, they confirmed again the assumption about significance of multimodal information input and multisensory learning experience.

The obtained results have shown that technology-enhanced learning has a positive effect on modern students. Most of them felt excited about using VR 360° interactive posters in their education and telling digital stories in their Language and Culture Studies virtual classrooms. Having experienced digital storytelling with the use of IPs, students overcame their psychological and language barriers and no longer showed unwillingness to fulfil cross-disciplinary tasks requiring a combination of subject knowledge and digital skills. The interpretation of the above qualitative results proved the general increase in students’ motivation to study Language and Culture Studies and demonstrated positive changes in the development of their narrative skills. The students also proved to be prepared for creating their own digital stories, which confirmed initial assumptions and served the impetus for the authors to move on to the next research stage.

6. Discussion

Digital education has been slowly increasing for decades, but in 2020 the pandemic jumpstarted the world of education technology. The shift from innovation to necessity has driven the development and adoption of impressive technological tools. Educationalists should reflect on the impact of these technologies on education going forward and take a look at what is working and what trends will last when we return to the new ‘normal’.

In this paper we tried to analyze the future of digital storytelling in Language and Culture Studies virtual classroom. Having experienced using this technology, the authors came to the conclusion that the conditions of successful integration of digital storytelling into remote teaching practice are as follows:

1) the availability of necessary technical devices (tablets and smartphones when working with ready-made IPs and the camera or access to visual media application in case of students’ recording their own digital stories),

2) students’ digital competence and design thinking (IPs editing skills at the preliminary stage and skills of working with software for recording and online stories distribution; an ability to find or create metaphoric digital imagery),

3) the presence of a clear methodological algorithm of task preparation, completion and assessment (task objective statement, determining a place of the task in a lesson or a sequence of lessons on the topic. At the stage of students’ independent work, it is important to choose the subject of the story, use digital story creation algorithm, select materials, set assessment criteria).

Another important factor of digital storytelling success was to introduce students to English language patterns used in narration. In rhetoric, *narration* is the part of an argument, in which a speaker provides a narrative account of what has happened and explains the nature of the case. For this purpose, the storyteller should know the necessary language patterns and constructs that introduce the story, highlight the key points, demonstrate your
attitude to the problem, go the next issue, etc. Students should use relevant semantic links between the story parts and make a conclusion. It is also important to remember that 'brevity is the soul of wit' and not to exceed the time limit.

The authors of this paper assumed that having experienced storytelling with ThingLink IPs, students would be motivated to record their own digital stories. For this purpose, the following programs were previously used: Windows Movie Maker, Microsoft Photo Story 3 and Adobe Photo Shop for creating stories with the help of any computer and iMovie, Sonic Pics, Story Kit, Storyrobe, Strip Designer, Idea Sketch, myMemoir for creating stories with Apple computers. According to Titova, Windows Movie Maker and iMovie stand out as basic programs for digital storytelling (Titova, 2019). However, providing an opportunity to use graphic images and video clips in a sound slideshow, the above programs are not equipped with virtual reality mode that make them less attractive for students and teachers.

In this context, ThingLink has advantages over the above programs with its VR format, direct voice recording to camera photos, variety of tag icons (100+), advanced analytics, team work, project privacy and interactive video tagging. The storytellers can share their stories with all viewers through ThingLink application. The access to ThingLink app is free that makes it easy to get immediate viewers’ feedback. ThingLink offers unique opportunities to create interactive educational content, serving as a basis for immersive e-learning environment, empowering students to create virtual tours of their favorite places and constructing their own knowledge. The platform has also enriched the teachers with a tool that extends ‘teacher-students’ communication channels and significantly improves topic presentation format in the traditional and virtual classroom.

7. Conclusions

The findings of this research show that digital storytelling can cater for greater diversity by personalizing students’ multisensory learning experience. It can help them to enhance their narrative, social and psychological skills. Both the storytellers and the teachers have appreciated digital storytelling as a way to present the results of their work. What is more, for many of the teachers and students involved in this study, traditional presentation format has been replaced by digital stories.

It is worth noting that ThingLink IPs didactic potential is very high. Except for digital storytelling and visualized teachers’ topic presentation, ThingLink IPs can become an indispensable tool for students’ individual and group projects. IPs can display the results of students’ research to a classroom audience and can be submitted to scientific contests. All stakeholders proved to be happy about rich visual media support provided by interactive posters. It means that Language and Culture Studies virtual classroom has gained a new powerful digital tool, the role of which will not be downplayed when returning to ‘normal’ pedagogic practice.

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