Διεθνές Συνέδριο για την Ανοικτή & εξ Αποστάσεως Εκπαίδευση

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Thematic teaching of English as a foreign language combining cross-cultural knowledge and digital media tools through digital storytelling and serious games

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Θεματική διδασκαλία της Αγγλικής ως ξένης γλώσσας με συνδυασμό διαπολιτισμικών γνώσεων και ψηφιακών εργαλείων μέσω ψηφιακής αφήγησης και παιχνιδιών σοβαρού σκοπού

Thematic teaching of English as a foreign language combining cross-cultural knowledge and digital media tools through digital storytelling and serious games

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Abstract
The aim of this paper is to present a thematic English lesson to be delivered on a weekly basis to 12–13-year-old students learning English as a foreign language. Each week a different culture will be selected and presented to the students with the help of some digital tools. The tools used are digital storytelling, animation, serious games - created on the TinyTap online platform - and gamification achieved through the kahoot platform. The aforementioned tools are combined with historical and cultural elements from all over the world in order to simultaneously achieve the learning of English vocabulary but also the learning of English as a foreign language. This lesson plan will be implemented once a week to make the distance learning process more enjoyable and efficient. Once the course has been completed, students will be asked to evaluate this course through questionnaires distributed to them via Google forms to provide feedback regarding the improvement of the teaching procedure.

Keywords: *e-learning, cross-cultural knowledge, digital storytelling, serious games, TinyTap, kahoot, evaluation*

Περίληψη
Ο στόχος της παρούσας εργασίας είναι να παρουσιάσει ένα θεματικό μάθημα Αγγλικών που θα πραγματοποιείται σε εβδομαδιαία βάση σε μαθητές 12-13 ετών που μαθαίνουν Αγγλικά ως ξένη γλώσσα. Κάθε εβδομάδα επιλέγεται ένας διαφορετικός πολιτισμός, ο οποίος θα μελετάται και θα παρουσιάζεται στους μαθητές με τη βοήθεια ορισμένων ψηφιακών εργαλείων. Τα εργαλεία που χρησιμοποιούνται είναι η ψηφιακή αφήγηση, η κινούμενη εικόνα, τα παιχνίδια σοβαρού σκοπού - τα οποία δημιουργήθηκαν στην ηλεκτρονική πλατφόρμα TinyTap - και η παιχνιδοποίηση που επιτυγχάνεται μέσω της πλατφόρμας kahoot. Τα προαναφερθέντα εργαλεία συνδυάζονται με ιστορικά και πολιτιστικά στοιχεία από όλο τον κόσμο προκειμένου να επιτευχθεί ταυτόχρονα η εκμάθηση του αγγλικού λεξιλογίου αλλά και η ιστορική και πολυπολιτισμική γνώση εκ μέρους των μαθητών. Το συγκεκριμένο σχέδιο μαθήματος θα εφαρμόζεται μία φορά την εβδομάδα προκειμένου να γίνεται πιο ευχάριστη και αποδοτική η διαδικασία της εξ αποστάσεως

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εκπαίδευσης. Εφόσον έχει ολοκληρωθεί το μάθημα, οι μαθητές καλούνται να αξιολογήσουν το μάθημα και τα μαθησιακά αποτελέσματα με χρήση ερωτηματολογίων που τους διανέμονται μέσω φορμών της Google με σκοπό την ανατροφοδότηση της πληροφορίας σχετικά με την βελτίωση της εκπαιδευτικής διαδικασίας.

Λέξεις-κλειδιά: *ηλεκτρονική μάθηση, διαπολιτισμική γνώση, ψηφιακή αφήγηση, παιχνίδια σοβαρού σκοπού, TinyTap, kahoot, αξιολόγηση.*

Introduction

The technology advances, the accessibility to the internet and the wide use of computers and mobile devices (smartphones and tablets) by all ages has contributed to the use of E-learning. Furthermore, distance learning has been obligatory in all levels of education due to the global health crisis, which was caused by the pandemic of COVID-19. At this point, we should distinguish the difference between distance learning and E-learning, which are two terms which have similar meanings but are not identical. Distance learning takes place when a teacher and a student are in distance and according to Harting & Erthal (2005) has been dated since the 1700s. During those years, education was achieved through correspondence. On the other hand, e-learning is *learning supported by digital electronic tools and media* while m-learning is *e-learning using mobile devices and wireless transmission*. (Hoppe, Joiner, Milrad & Sharples, 2003). Nowadays, both E-learning and Distance learning tend to have identical meanings since both are obtained using digital media and the use of the internet.

Distance learning is achieved with the use of teaching platforms such as Zoom, Webex, Skype for business which enable teaching through video calling, sharing files, and the use of a whiteboard to assimilate distance learning to conventional classroom teaching. Besides the online platforms used, teachers must develop their technological skills using a wide collection of tools such as digital storytelling, serious games, and gamification in order to achieve linguistic and educational goals and overcome the challenges and difficulties that occur during distance learning. Online learning must be entertaining, interactive and keep the students interested in the lesson. Our goal is double; to achieve the best results in learning English as a foreign language and gain global knowledge while having fun.

Therefore, a combination of digital learning tools and cultural facts based on a thematic lesson will be used once a week, to improve the students' language skills while they gain knowledge about cultures throughout the world. To date, there are various technologies available in educational environments to support teaching exhibitions directly or indirectly (augmented reality, digital storytelling, serious games, linked open data, user profiling), and every technology used makes an impact on the exhibition or the visitors. It is important for educational spaces to explore whether technological enhancements can help them attract more students and provide different ways of learning or interaction between students and exhibits or among them (Konstantakis, 2017).

Literature review

During the 21st century, technology has evolved in various sections. Among them, significant would be the section of distance education. However, distance education is not something new for the educational society. It has a history of almost 200 years

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(Spector, Merrill, Merrienboer, & Driscoll, 2008). Firstly, it started through postal service and throughout the years it has greatly evolved with the help of the potential offered by the Internet. Consequently, distance education has resulted in various types of learning, as d-learning (digital learning) and its subsets e-learning (electronic learning), m-learning (mobile learning) (Kumar Basak, Wotto & Bélanger, 2018). They can be used either to introduce an alternative type of learning or as a complementary method. The above types of learning are assisted by various tools which make teaching and learning more interesting and motivating to students of all ages, especially juveniles.

Digital storytelling enables students – technology users to create their own script and develop a story, using all kinds of digital media Robin (2008). Digital Storytelling is widely recognized as a powerful means for augmenting the engagement of people and achieving the goal of communicating knowledge. Nowadays, educational spaces find themselves competing with the large offer coming from the entertainment industry. They therefore need to make their "product" more appealing and attractive to a variety of audiences, while attaching additional attributes to it that combine educational and entertainment aspects. Digital storytelling is one of the "vehicles" they have on hand for enriching their offer (Konstantakis, 2020).

Another interesting and useful mechanism is gamification. Even though the term gamification is quite recent, the concept of rewarding is not new, since it is used in many fields, some of these being marketing, corporate management, and ecology initiatives (Dicheva, Dichev, Agre & Angelova, 2015). The idea in education is that the student gets rewarded when giving the correct answer, so that means that they gain knowledge, and they earn badges at the same time. However, the concept of gamification is different from that of the serious game.

A serious game (SG) is a game that its primary purpose is non entertainment. It is a computer application, for which the original intention is to combine both serious aspects for instance, teaching, learning, communication, or information, with playful springs from the video game (Alvarez & Djaouti, 2011). Over the last few years, SGs have been widely adopted as a new and promising tool to promote cultural education in an engaging way. The fact that SGs combine aspects of learning with the playfulness of video games and maximize user's motivation, increase their popularity, even in public that may not be familiar with the arts and culture. One of the main advantages of SGs is that it motivates the user to activate and extend his/her knowledge, by transforming him/her from a passive data receiver to an actor who plays, explores, makes mistakes and, also, his/her own choices (Konstantakis, 2019).

All the above consist of tools that make learning more interesting and motivate children to study and learn in an innovative way. Therefore, the concept of the activities which are presented, integrate culture with vocabulary acquisition (Bush, 2007), assisted by technological tools.

Methodology
Introduction of the new vocabulary
To increase engagement and knowledge acquisition, and improve the learning process, we have developed a set of components for creating and presenting educational mini-games. The first step was to introduce the new vocabulary to the students. Since the thematic lesson is devoted to Egyptian civilization, we created an interactive interface on the TinyTap platform as shown in the figure below.

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Fig.1 Egyptian civilization TinyTap screenshot

This interface appears on the teacher's screen which he/she shares with the students that are connected online attending the lesson through a teaching platform (zoom, webex, skype). The interface consists of the new vocabulary which appears on the screen. In front of each word appears a symbol of a speaker. When this symbol is pressed, the students can hear the pronunciation of the relative words which have been recorded by the teachers. Above each of these words, we also see a photo of them. Through visualization and audio, we aim to get students to learn the new vocabulary and pronounce it properly in a fun way and in a very short period of time.

Animated video
The next step was to create a video to visualize a text related to the Egyptian civilization. Once again, another potential of the TinyTap platform is used to create the animated video. Through the method of digital storytelling, the students will be able to watch and hear the animated story we created that has to do with the Egyptian civilization. The particular video is about mummification. The students learn what mummification is, the process of mummification and the reason why the ancient Egyptians did it. By watching this video, the students acquire general knowledge on this culture while they enrich their vocabulary in this field. Comprehension questions are addressed to the students to promote dialogue and the speaking skills of the students, followed by a serious game described below which will help to further master the new vocabulary which was previously presented.

Serious game-drag and place
A serious game puzzle was created with the vocabulary which was taught and mentioned in the animated video. The students are asked to drag and place the correct word to the matching photo. They take turns in order to match the correct word to the photo.
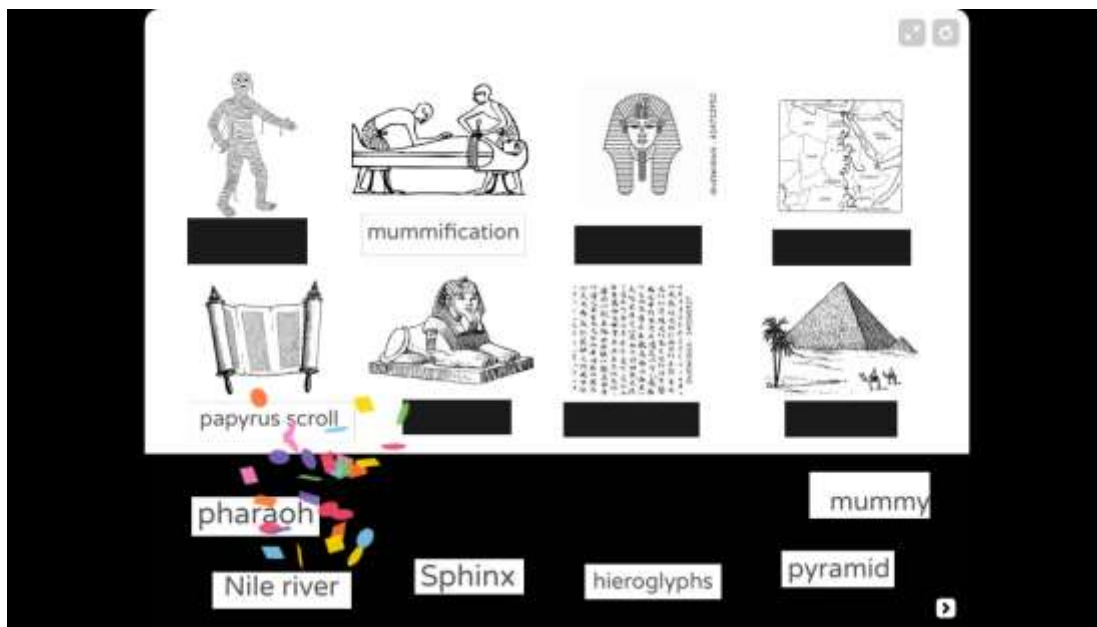
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Fig.2 Serious game puzzle

When the correct word is matched to the corresponding image, confetti appear on the screen. If the answer is not correct, an error sound is produced, and the answer block goes back to its initial place. Then, another student is asked to place the matching word to the corresponding image. The game is completed when all the words-labels are placed in the correct spot.

Serious game- interactive poster

Following that, another serious game was created on the TinyTap platform, but this time the children are given 3 minutes to read the information on an interactive poster which appears on the screen. The poster contains different facts about the pyramid of Giza, as shown below.
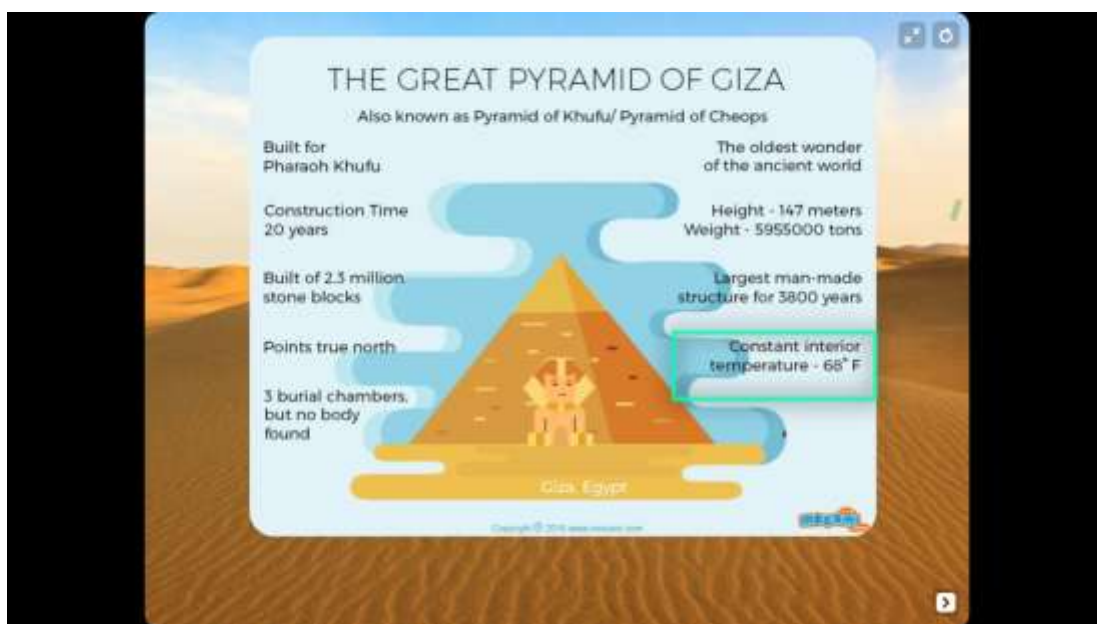

Fig.3 Pyramid of Giza puzzle

After that, the students hear a question related to the Pyramid of Giza. Then, they take turns to answer the questions they hear by pressing on the correct spot of the poster

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where the answer is located. If the answer is correct, confetti is thrown. Otherwise, the error sound is heard, and another student is asked to answer the question. Once all questions are answered, we move onto the next game to master the gained knowledge through entertainment and gamification.

Gamification-Kahoot

A Kahoot game on Egyptian civilization was designed, containing the vocabulary taught during the lesson. The game was created in the Kahoot.it platform and aims to educate the students while it entertains them. This is the case of *m-learning,* since all students are connected to the game through their mobile phones in order to participate. Students are asked to enter the kahoot.it website. In continuance, they are asked to type the PIN number of the game that appears on their screen and their nickname. Once this is done, their nickname appears on the screen, and they are ready to play. The Kahoot game we created consists of 14 multiple choice questions, which the students must answer by tapping on the corresponding answer that appears on their mobile phone. The game's countdown timer makes it more fun and promotes goodwill between students. At the end of the game, the nicknames of the winner, the second and third runner-up appear on a podium on the screen accompanied by the points obtained.

Fig. 4 Kahoot game wizard

Evaluation

In this section, we present the results based on the answers to our questionnaire and evaluate the feedback from the usability testing of our mini-games. Generally, the methods of evaluating the UX are distinguished:
- In terms of their emphasis: on usability assessment methods and design methods.
- In terms of data they collect, analyze and present: qualitative and quantitative.
- As far as the place is concerned: in the lab, in the field and online.
- In terms of UI time, in evaluations: expected use, appreciation, experience in interaction, and time-based experience (Konstantakis, 2018).
20 students were recruited, with no previous experience in serious games and digital storytelling mini-games, but all of them were familiar with touch screen devices. Participants were invited to complete a series of tasks. After their experience, the participants discussed with our experts, who concluded the following:

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- Most of the participants agreed that it was a pleasant educational experience and that they learned new things about the Egyptian cultural heritage.
- In a scale of 1 to 5, the students granted the game with 4 on how it attracts them to continue playing it after 2 minutes.
- Most of the participants would appreciate the mini-games as a massive multiplayer online experience through social data login.
- Some players found the tasks very easy and suggested having a longer version, adding tasks not strictly related to educational content and including rewards.

Conclusion

The current paper presents interactive mini-games that use modern technologies (Digital Storytelling, Serious Games) to enrich the user's experience by combining aspects of learning and fun in an immersive environment. This playful approach not only increases motivation to learn, but also raises interest in art history and cultural heritage in general. Based on the answers of the participants, we will implement and design the serious game including design improvements, the implementation of further mini-games and a large-scale evaluation of the game with the participation of more users.

Digital storytelling enables people to tell stories and others to listen to them as well. Consequently, both groups when it comes to language learning gain vocabulary knowledge. In addition, with the combination of visual images, the message-vocabulary is captured more easily.

Serious games have a twofold purpose. The first is to entertain, and the second and most important is to educate. Apparently, when there is a combination of these two purposes, the result will be effective.

Both digital storytelling and serious games are tools that offer great potentiality to language learning and to culture as well. It is essential that more digital tools are evaluated, to ascertain their practicality.

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