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IdeoMania and Gamification add-ons for App Dictionaries

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Abstract

The paper outlines the main features of a lexicographic mobile game developed by a group of students during a coding course. The app is a learning resource for Italian idioms based on pictorial strategies and theoretical assumptions from phraseological research. Special attention is also given to the pedagogical methodology (*Challenge Based Learning* or *CBL*) used during the course and its specific improvements for supporting Humanities students in learning coding topics. Learners actually work in groups to develop an app project on a topic they feel passionate about, so they are urged to acquire coding and specific content knowledge on the subject of their interest.

Challenge Based Learning is intended to be a flexible learning framework which can be used to improve students' knowledge in the electronic lexicography field due to an ongoing process of reflecting, researching and testing innovative solutions before releasing the final prototype. As an example, the type of gamification elements provided by *IdeoMania* can be added to any kind of lexicographic tool.

Keywords: Lexicographic Apps; Lexicography Learning Programs; Lexicography and Language Technologies; Phraseology and Collocation; Reports on Lexicographical and Lexicological Projects

1 Introduction

This paper reports on the main features and functionalities of *IdeoMania*, a mobile application for learning Italian idioms based on pictorial strategies and theoretical assumptions from phraseological research. Another topic of interest lies in the methodological framework used for its development, which can be used more extensively in lexicography since it offers learning strategies for improving lexicographic knowledge and skills among students.

IdeoMania has been developed during the four-weeks of *L'Orientale Apple Foundation* (or *LOR Foundation*¹), a course in programming and app development for Humanities students held at the University of Naples 'L'Orientale' (Monti & Caruso 2019). A special pedagogical method, called *Challenge Based Learning* (or *CBL*, Nichols et al. 2016), supports beginners in coding with learning the necessary IT skills for releasing an app prototype at the end of the course hours. The learning strategy relies on students' involvement in investigating an issue by which they feel challenged and thus willing to offer solutions with an app tool.

2 Gamification and Lexicography

IdeoMania is based on gamification principles with the aim to develop an effective and funny tool to engage people in learning a foreign language, with special reference to its idioms. Gamification is generally understood as the use of game elements in situations which are not considered as a game or don't have game-like features (Deterding et al. 2011: 10). The effect of educational games on language learning, together with their impact on affective learning outcomes and knowledge has been widely analyzed (Hung et al. 2018). Only very recently digital game-based learning has been used in the field of e-lexicography (Mihaljević 2019): an analysis of existing educational games and their gamification elements on lexicographic sites shows that only a small percentage of online dictionaries employs gamification to engage its users. Besides, the use of gamification in dictionary apps as an effective support in vocabulary learning is still an under-researched field, although apps are used by an increasing number of language learners as is demonstrated by the success of Memrise or Duolingo apps. Dehghanzadeh and colleagues (2019) provide a systematic review of 22 contributions dating from 2008 through 2019 where positive effects of gamification were reported on learners' learning experiences and their learning outcomes.

3 *IdeoMania*: a Game for Learning Idioms

IdeoMania is the beta version of a stand-alone application which will also be available as an add-on to a mobile idiom dictionary for foreign speakers (Caruso et al. 2019). The game uses lexicographic descriptions contained in the dictionary entries which, in turn, will provide direct access to the game activities of *IdeoMania*. The software has been localized in English therefore other language versions can be released promptly and make idiom learning more accessible to less proficient speakers of Italian.

¹ For further information on the course and images on the high-tech classroom: <https://lorientalefoundationprogram.wordpress.com>.

3.1 The *Idiomoji* Game Mode

Two different quiz modes are provided by the tool: one for learning new idioms and one for doing exercises by means of a recall activity. The first game is called *Idiomoji* and uses emoji to depict the literal meaning of idioms, the second is *Sfidioms* (from ‘sfida’ the Italian word for ‘challenge’) and is an interactive game to challenge friends on idioms.

The *Idiomoji* home page view is made up of face-down idiom cards. By tapping on one, players discover an idiom (see fig. 1) and try to guess its literal meaning using the emojis better suited to this aim among a selection provided on the screen. For example, fig. 1 shows the translation into emojis of “mettere la mano sul fuoco” (lit. “to put the hand on a fire”, figurative meaning “to be sure about a statement or piece of information because it is definitely true”), consisting in a pictorial representation of the four content words of the idiom, as is also required by the system (“component words to be guessed: 4”).

This game has been inspired by *Pinocchio in emoji* (Chiusaroli et al. 2017), an experiment of translation of the famous Italian novel into emoji carried out on Twitter thanks to the *emojitaliano* bot on Telegram (Monti et al. 2016), which has proved the interest of app users in translation activities based on emojis.

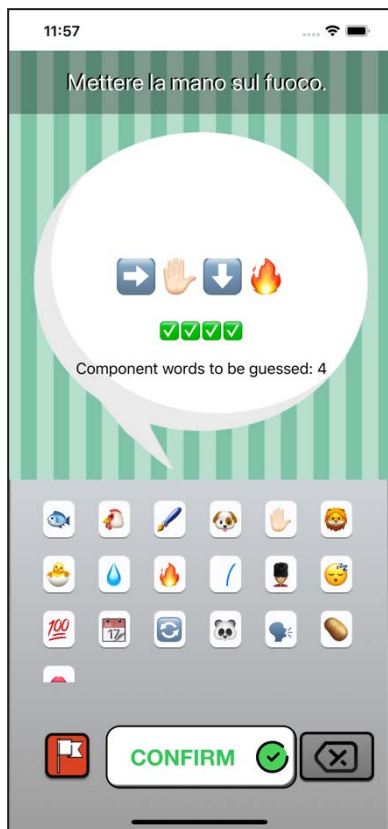


Fig. 1: Translation into emojis of the idiom “mettere la mano sul fuoco”

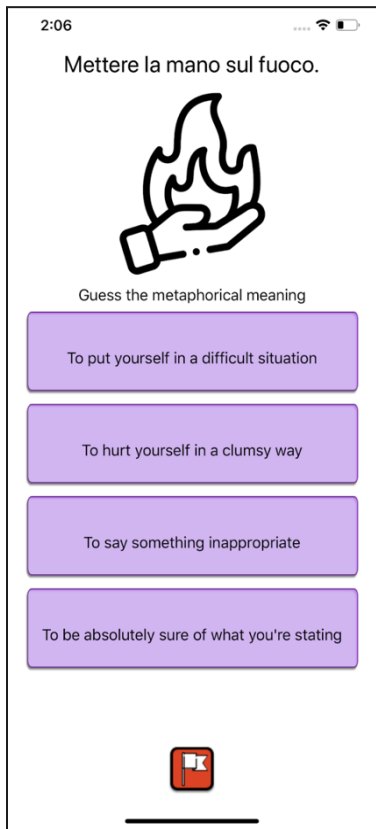


Fig. 2: Guessing the idiom metaphorical meaning



Fig. 3: Idiom card of “mettere la mano sul fuoco”

Once the correct translation is guessed, players get access to a second quiz on the current meaning of the expression, where they are asked to select one metaphorical meaning out of four semantic explanations, as fig. 2 shows. In the end, when the correct answer is given, a lexicographic card is unlocked (fig. 3). This card, stored in a collection accessible anytime by the user, displays the metaphorical meaning of the idiom, its origins and possible equivalents in the player’s native language.

3.2 *Sfidioms*: a Role-play Activity to Make Practice with Idioms

The second game mode of *IdeoMania* is a practice activity to support idiom learning. In *Sfidioms* (fig. 4) players are asked to write down the idioms they come up with by looking at an emoji displayed on the screen. The quiz can be used as a single or multiplayer game to make the learning experience more entertaining.

Although the graphical user interface and the layout design still need to be improved, the app functionalities are fully implemented and the tool is going to be tested to assess both usability and the aforementioned learning function of the emojis to depict the idiom lexical structure.

4 Learning Idioms, Phraseological Theory and Possible Future Developments

The twofold quiz structure of *Idiomoji* is not only aimed at teaching a number of idioms but also at boosting metalinguistic awareness about the key features of their meaning, i.e. the literal and the figurative components, because these expressions “do not point to the target concept directly but via a source concept” (Dobrovolskij & Piirainen 2005:

40) using metaphorical, metonymic or synesthetic strategies. The literal meaning is responsible for different semantic and formal restrictions, as Dobrovol'skij & Piirainen (2005) remark, therefore the two semantic components are both relevant to be proficient with this type of phrasemes. Besides, the guessing activity necessary for matching single words and pictograms not specifically created for this aim, such as emojis, is expected to be engaging but needs specific testes to assess its effectiveness as a learning strategy.

Nonetheless, drawings and illustrations have proved to be beneficial for idiom learning, as reported by Szczepaniak & Lew (2011) who claim that the positive effect can be explained in terms of the dual coding theory (Paivio 1986: 53-83): acquiring visual and verbal information at the same time facilitates comprehension and long-term retention because the depth of processing increases memorization. However, Boers (2009) reports on a distraction effect produced by pictures when learners must cope with unfamiliar and difficult words in the idiom lexical structure. In such instances, it is to be expected that the word-by-word translation methodology used in *Idiomoji* is beneficial to the learners.



Fig. 4: Sfidioms quiz mode of *IdeoMania*

5 The Pedagogical Framework

The study of the existing literature on idiom learning has also been carried out by the *LOR Foundation* students for defining the core concept of *IdeoMania*. Their findings were discussed during review sessions with the course “mentors”, experts who guide the learning process with the three-step phases of the *CBL* framework, called “Engage”, “Investigate”, and “Act” respectively. Each phase provides a set of instructions for transforming broad topics, called “Big Ideas”, into concrete and actionable app challenges. Following the constructivist assumption of learning by doing (Papert & Harel 1997; Sandholtz et al. 1997), the *Challenge Based Learning* urges students to build up autonomously the necessary knowledge on a topic they are passionate about to come up with an app solution for it. Teachers act as “mentors” in the learning process and are responsible for its success.

5.1 From Engagement to Action

The learning process starts with the Engage phase, during which students group together to work on a topic of common interest. Interactive brainstorming activities allow them to explore a closed set of broad ideas addressing humanities issues and turn them into a real-world problem with which students feel connected and, thus, urged to find an informed solution.

As an example, the *IdeoMania* project started from the broad theme of “Set phrases for making communication more effective” which was investigated by the *IdeoMania* team with the following “essential questions” (Nichols et al. 2016): How can idiom learning be improved? Which are the cognitive processes involved in memorizing idioms in other languages? What kind of difficulties have we faced, as learners, in learning idioms? What could be of help for students like us to learn idioms?

The Investigate phase starts from a “Challenge”, or a question which urges participants to study the chosen topic thoroughly. For example, the *IdeoMania* developers started with the following: “Can idiom learning become fun using images?”

Team members set out on a research phase (or “Investigate”) guided by a list of key topics (or “Guiding questions”) for finding valuable solutions to the challenge. They chose resources (questionnaires, web sites, scientific papers, interviews

with experts and so on) and planned the necessary actions to come up with an effective “Solution Concept”, like the following, written for *IdeoMania*:

Our idea is an app in which people can play with idioms using their pictorial representation. Our app will consist of two game modes: a single player mode and a team mode in real life. The team mode will make the game more challenging and fun also for native speakers who might be interested in playing games with their own language.

As soon as the app idea is outlined, teams start developing their tools in the so-called “Act” phase by using the same strategies commonly adopted in the design field.

5.2 Designing, Coding and Prototyping

App development during the Act phase is mostly concerned with UI (User Interface) and graphic design solutions to make for an effective app. Students attend design lessons throughout the course and learn the basic components of the screen layout (alignment, grids, proximity etc.), its textual contents (titles, labels, buttons) and the hierarchy between typographic elements by doing practical activities like dissecting existing apps or drawing sketches of their own projects. The first prototype is released by assembling screens originally drawn on paper and transforming them into an interactive mockup with fast prototyping tools like *Marvel*.

Coding lessons are also focused on implementation of UI components. After the first introductory hours on coding basics (i.e. constants, variables and operators) more complex topics (i.e. delegates or protocols) are explained to add basic UI components to the app, like dynamic cells of table views (see *Human Interface Guidelines*).

Creative design sessions and coding “nano-challenges” alternate with reviews and presentations of mockups. Mentors are generally the first users to test the app prototypes, but students are also encouraged to experiment their results with colleagues, friends, field-experts or whatever type of user outside the classroom. Given the immersive experience of the *LOR* classes, which last seven hours a day for four weeks, students receive daily feedback from mentors on their ideas and design solutions, prototyping is therefore a continuous workflow throughout the course.

As a closing remark, it should be outlined how *IdeoMania* testifies to new possible approaches to disseminating lexicographic knowledge by means of technology learning programs. The adopted framework is a standard methodology which can be adjusted both for teaching special programs in electronic lexicography or even for single lexicographic activities during class hours at any school level.

6 References

- Boers, F., Piquer Píriz, A. M., Stengers, H. & Eyckmans, J. (2009). Does pictorial elucidation foster recollection of idioms? In *Language Teaching Research*, 13(4), pp. 367-382.
- Caruso, V., Balbi, B., Monti, J. & Presta, R. (2019). How Can App Design Improve Lexicographic Outcomes? Examples from an Italian Idiom Dictionary. In I. Kosem, T. Zingano Kuhn, M. Correia, J. P. Ferreria, M. Jansen, I. Pereira, J. Kallas, M. Jakubiček, S. Krek, C. Tiberius (eds.) *Electronic lexicography in the 21st century. Proceedings of the eLex 2019 conference*. Sintra, 1-3 October 2019. Brno: Lexical Computing CZ, pp. 374-396.
- Chiusaroli, F., Monti, J. & Sangati, F. (2017). *Pinocchio in emojiitaliano*. Sesto Fiorentino: Apice libri.
- Deterding, S., Dixon, D., Khaled, R. & Nacke, L. (2011). From game design elements to gamefulness: defining gamification. In A. Lugmayr (ed.) *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments*. New York: ACM, pp. 9-15.
- Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaee, E., & Noroozi, O. (2019). Using gamification to support learning English as a second language: a systematic review. In *Computer Assisted Language Learning*, pp. 1-24.
- Dobrovolskij, D., Piirainen, E. (2005). *Figurative Language: Cross-Cultural and Cross-Linguistic Perspectives*. Oxford: Elsevier.
- Human Interface Guidelines, Accessed at: <https://developer.apple.com/design/human-interface-guidelines/ios/overview/themes/> [30/05/2020].
- Hung, H. T., Yang, J. C., Hwang, G. J., Chu, H. C., & Wang, C. C. (2018). A scoping review of research on digital game-based language learning. *Computers & Education*, 126, pp. 89-104.
- Marvel, Rapid prototyping, testing and handoff for modern design teams, Accessed at: <https://marvelapp.com> [30/05/2020].
- Mihaljević, J. (2019). Gamification in E-Lexicography. In P. Bago, I. Hebrang Grgić, T. Ivanjko, V. Juričić, Ž. Miklošević, H. Stubić (eds.) *INFUTURE 2019: Knowledge in the Digital Age*. Zagreb, Croatia: Department of Information and Communication Sciences, Faculty of Humanities and Social Sciences, pp. 155-164.
- Monti, J., Caruso, V. (2019). L’Orientale Foundation: un programma per l’introduzione delle nuove tecnologie nei curricula umanistici. In S. Allegrezza (a cura di) *Didattica e ricerca al tempo delle Digital Humanities/ Teaching and research in Digital Humanities' era*, 8th Annual Conference, AIUCD 2019, Book of Abstracts, pp. 82-85. Accessed at: <http://aiucd2019.uniud.it/book-of-abstracts/> [30/05/2020].
- Monti, J., Sangati, F., Chiusaroli, F., Benjamin, M. & Mansour, S. (2016). Emojitalianobot and emojiworldbot - new online tools and digital environments for translation into emoji. In *Proceedings of Third Italian Conference on Computational Linguistics (CLiC-it 2016) & Fifth Evaluation Campaign of Natural Language Processing and Speech Tools for Italian*. Final Workshop (EVALITA 2016), volume 1749 of CEUR Workshop Proceedings, Napoli, Italy. CEUR-WS.org, Accessed at: <https://dblp.org/db/conf/clic-it/clic-it2016> [30/05/2020].
- Nichols, M., Cator, K., Torres, M. & Henderson, D. (2016). *Challenge Based Learner User Guide*. Redwood City, CA: Digital Promise.

- Paivio, A. (1986). *Mental Representations*. Oxford University Press.
- Papert, S. Harel, I. (eds) (1991). *Constructionism: research reports and essays 1985-1990 by the Epistemology and Learning Research Group*. The Media Lab, Massachusetts Institute of Technology, Norwood, NJ: Ablex Pub. Corp.
- Sandholtz, J.H., Ringstaff, C. & Dwyer, D.C. (1997). *Teaching with Technology: Creating Student-Centered Classrooms*. New York: Teachers College.
- Szczepaniak, R., Lew, R. (2011). The Role of Imagery in Dictionaries of Idioms. In *Applied Linguistics*, 32(3), pp. 323-347.

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