

# GenAI-Powered Digital Game-Based Learning and GlossapIAI

*Revolutionizing Greek Education and Language Learning*

*Stefanos Alifierakis – Maria Pavlopoulou*

*University of Edinburgh (Scotland) – University of Leeds (UK)*

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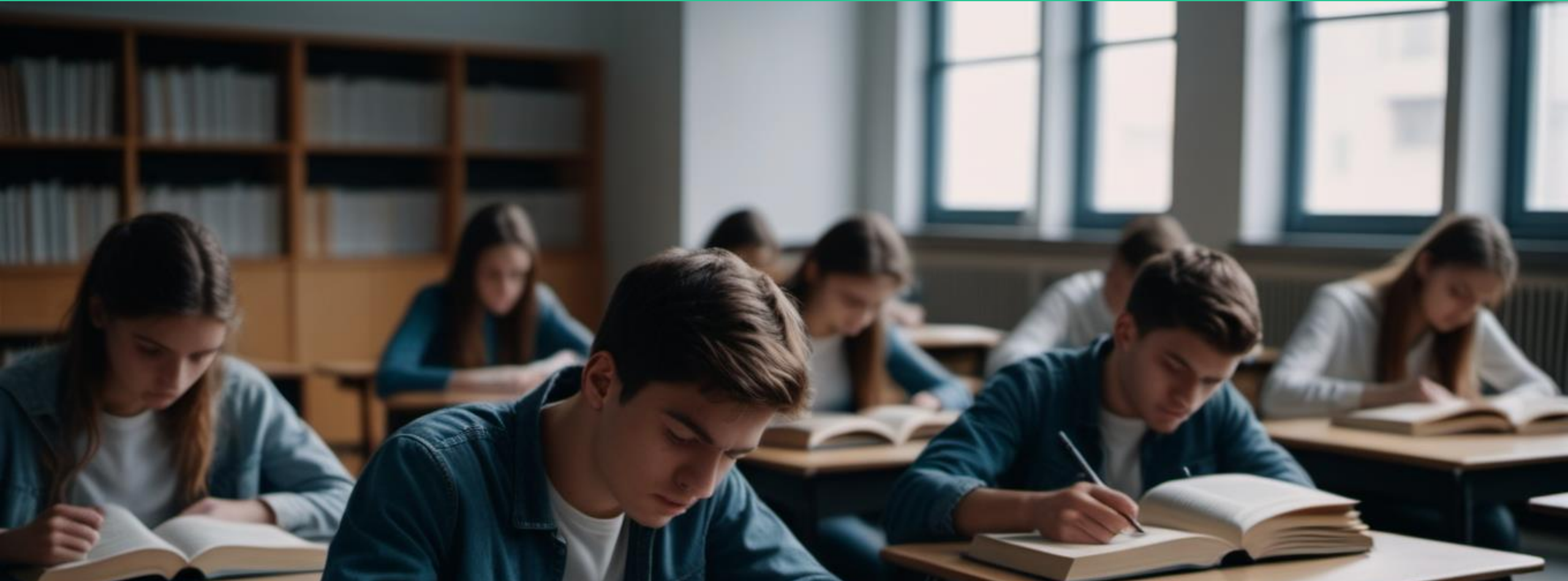


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# Introduction



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## 2024 Classrooms: A familiar picture

*Generated through Mojo AI (2024) with the following prompt: dull classroom with sad and tired students studying books full of text and with no images, some of them are angry and ripping of some pages*



# Introduction





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“Only when we care about experimentation, **play**, and questions more than efficiency, outcomes, and answers do we have a space that is truly open to the imagination. And where imaginations play, **learning** happens.”

*(Thomas & Seely Brown, 2011, p. 118)*

*Generated through Mojo AI (2024) with the following prompt: colourful classroom with happy students playing digital games in front of their computers and big neon letters A, B, C are all over the classroom*



# Terms Definition

## Playful learning



- a philosophy of learning
- play
- safe learning zones
- encouraging curiosity, imagination, innovation and creativity (Whitton 2018; James and Nerantzi 2019).

## Digital Games

- immersive video games
- enhancing the learning experience (Figueroa-Flores, 2016).



## Gamification



- game design elements into non-game contexts (e.g. badges, virtual points)
- students' engagement, motivation and learning outcomes (Vrceljet et al., 2023)

## Digital Game-Based Learning

- use of digital games to promote the acquisition of a variety of knowledge, skills, dispositions, or other educational outcomes



# DGBL on Language Learning Subjects and Greek policies

**Digitally supported immersive learning experiences in Language subjects enable:**

- Vocabulary acquisition
- Spoken fluency (Garrido-Inigo & Rodríguez-Moreno 2015; Guo & Gao 2022).



## However...

The **institutional introduction of DGBL** in Greek nursery, primary and secondary education is still **deficient**.

**WHY?**

- Digital illiteracy
- biases and stereotypes concerning the undermining role of DGBL for the learning procedure (Kokolakis et. al., 2023: 41-42).
- attachment to traditional methods of teaching and assessment.

**Significant need of DGBL initiatives, enhanced and upgraded by GenAI, to be applied to Language Subjects.**





# GenAI's impact on Digital Game-Based Learning

## Benefits

### Benefits for the learning experience

- Motivation and engagement
- Personalization and customization
- Enjoyable
- Immediate feedback
- Sense of control and freedom
- Explainable GenAI features
- From learners to game's co-designers
- Better learning outcomes



### Benefits for the teaching and pedagogical strategies

- Accurate data analysis → Patterns identification in learners' behavior → Evaluation of the effectiveness of teaching methods

### Benefits for game development and design

- Opening the field of digital game creation to non-coders
- Real-time feedback
- Playtesting, mistakes diagnosis and correction, cheat and hacking detection
- Development of NPC characters with diverse realistic personalities and life-like behaviour
- Replayability of the game
- Localisation of foreign games
- Game promotion





# GenAI's impact on Digital Game-Based Learning

## Challenges

### Ethical and Legal challenges

- Undue trust in the accuracy and the efficiency of GenAI
- Data privacy - security
- Cheat or hack
- Spread of biases, stereotypes and misinformation



### Technical and operational challenges

- High costs
- Lack of advanced skillset - No technical expertise and training



### Pedagogical challenges

- Heavy workload
- Deviation from the main instructional goals
- Balance the game's instructional and entertainment value



### Learner Specific Challenges

- Learner's role is undermined, as GenAI solves the problems → overreliance
- Increased possibilities of addiction
- Lack of control over the activity's difficulty level
- Challenge in understanding the adaptive game mechanisms







# GlossapAI

A GenAI-supported DGBL platform for Language Learning



- A shared digital and interactive GenAI-assisted library, an open educational resource (OER) with GenAI-assisted DBGL activities
- Educators, learners and practitioners can contribute to this WordPress platform and share their activity ideas following a precise framework

Scan this QR Code to access the **GlossapAI** platform



# GlossapAI Framework

**G**enAI-assisted

**L**udic

**O**bjective-oriented

**S**calable

**S**tudent-centered

**A**ccessible

**P**ractical

**L**inguistically accurate

**A**daptable

**I**nclusive



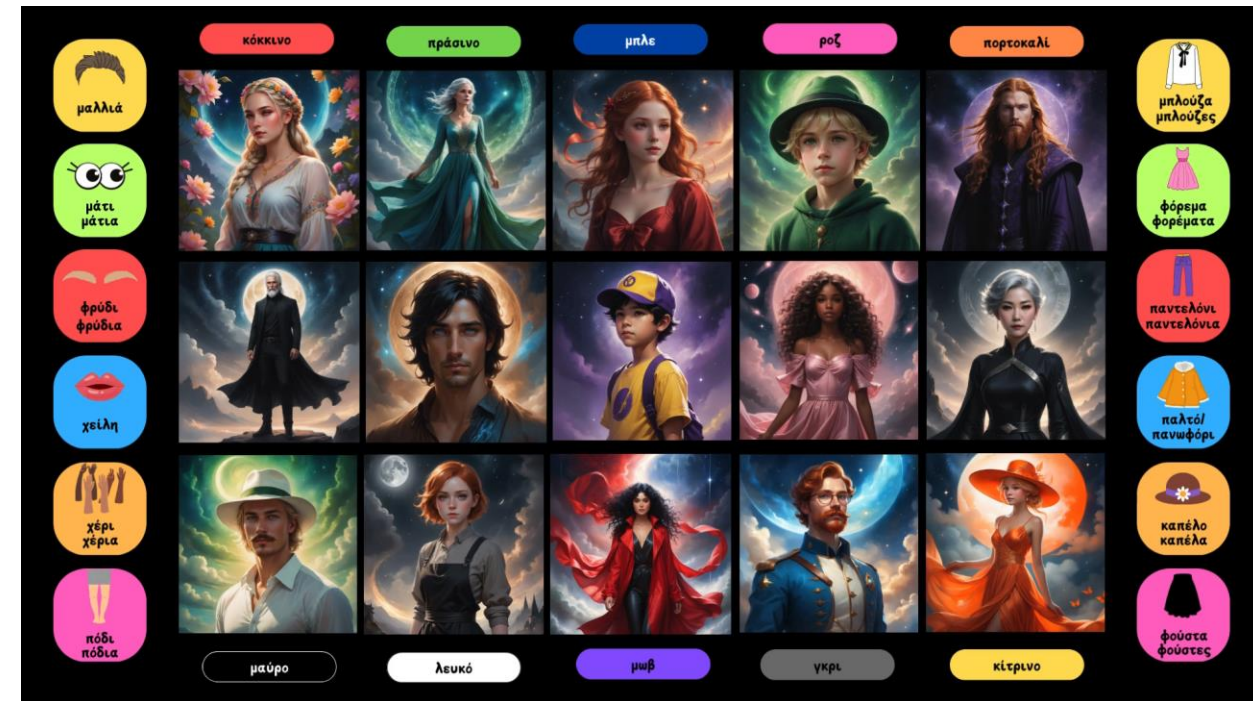
# Model Glossap! AI submissions

## DO WE FIT? Describe, compare, guess! (Greek as a Foreign Language / A2 Level)

- Title of the DGBL activity: **ΤΑΙΡΙΑΖΟΥΜΕ; Περιγράψε, σύγκρινε, μάντεψε! (DO WE FIT? Describe, compare, guess!)**
- Language Subject: Greek as a Foreign Language
- Skills promoted: Vocabulary, Grammar, Syntax, Oral expression
- Designed for: Learning or Assessment
- Target Audience: A2 level (minors or adults), no restriction on the number of students/players
- Two groups of students (with 1 representative for each time at a time)
- **First round:** Two sentences describing one figure (e.g. height, eye colour, hair etc.) and the team can pose 1 YES/NO question and then make 1 guess (1 or 0 points).
- **Second round:** Three sentences describing and comparing two figures (e.g. height, eye colour, hair etc.) and the team can pose 1 YES/NO question and then make 2 guesses (2, 1 or 0 points).
- Winning team: The first one scoring 20 points



*Scan this QR Code to access the activity*



# Model GlossapAI submissions

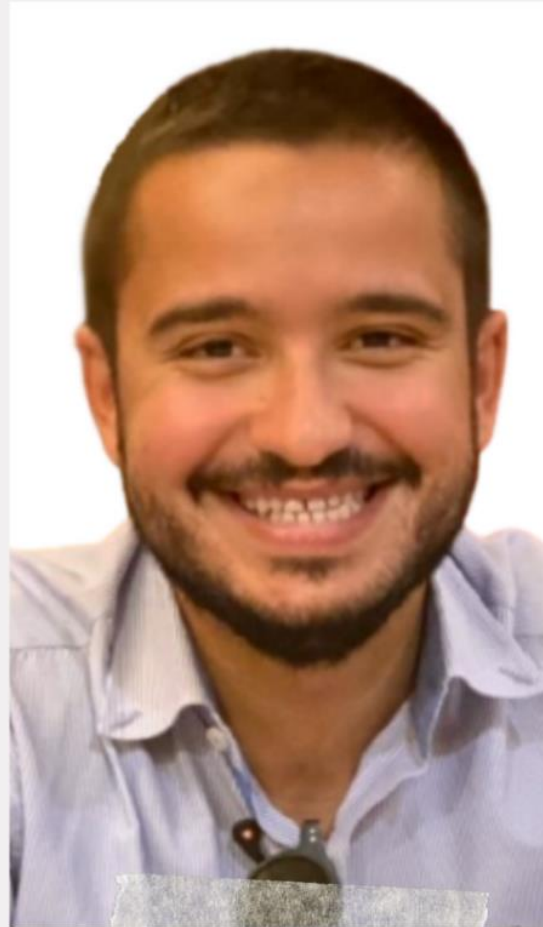
## Mystery Words: Path to Justice (Ancient Greek / 2nd and 3rd-year High School Humanities students)

- Title of the DGBL activity: **Λέξεις Μυστηρίου: Διαδρομή προς τη Δικαιοσύνη (Mystery Words: Path to Justice)**
- Language Subject: Ancient Greek
- Skills promoted: Vocabulary
- Designed for: ~~Learning~~ or Assessment (individual)
- Target Audience: 2nd and 3rd-year High School Humanities students
- **Digital escape room activity** (Nikitas, a young research, has been trapped in an ancient court-maze when investigating a suspicious case.
- Students become Nikitas' assistants
- 3 rounds of vocabulary riddles (unscramble words, fill-in the gaps, multiple choice questions)
- 3 hints from each round helping students find the KEY-WORD to help Nikitas escape.

*Scan this QR Code to access the activity*



# Thank you



We are **Stefanos Alifierakis** and **Maria Pavlopoulou**, the co-founders of ***GlossapAI*** (BA Classics graduates of the National and Kapodistrian University of Athens and current Master students in Digital Education at the University of Edinburgh and Leeds accordingly). Given our professional background as Language educators and the co-founders of an educational social media page (***@heromathesis***), we have always been keen on exploring the leverage of digital – especially GenAI – tools in education. ***GlossapAI*** constitutes our common endeavor to create an online open educational resource (OER) with GenAI-assisted DGBL activities for Language Subjects.



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**Thank you**