

Enhancing Morphophonological Awareness in Higher Education: The role of ChatGPT in phonology and morphology courses*

Mary Soukalopoulou, Vassiliki Apostolouda, Anthi Revithiadou

Aristotle University of Thessaloniki

msoukalo@lit.auth.gr, vapostolo@lit.auth.gr, revith@lit.auth.gr

Περίληψη

Η παρούσα μελέτη παρουσιάζει μια καινοτόμα προσέγγιση για την ενίσχυση της μορφοφωνολογικής ενημερότητας των φοιτητών/τριών γλωσσολογίας στην Τριτοβάθμια Εκπαίδευση, αξιοποιώντας τις δυνατότητες του ChatGPT 3.5. Στο προτεινόμενο σενάριο διδασκαλίας, το ChatGPT λειτουργεί ως εικονικός καθηγητής παρέχοντας απαντήσεις σε γλωσσολογικές δραστηριότητες, τις οποίες στη συνέχεια καλούνται οι φοιτητές/τριες να συζητήσουν και να αξιολογήσουν ως προς την ορθότητά τους. Το σενάριο επικεντρώνεται σε τρεις προσεκτικά σχεδιασμένες δραστηριότητες που στοχεύουν στη βελτίωση της κατανόησης βασικών φωνολογικών εννοιών, όπως η συλλαβή και ο τονισμός, αλλά και της μορφολογικής δομής κλιτών και παράγωγων λέξεων. Το υλικό περιλαμβάνει υπαρκτές λέξεις, αλλά και ψευδολέξεις που κατασκευάστηκαν στο πλαίσιο του ερευνητικού έργου GRADIENCE, σύμφωνα με τις φωνοτακτικές και μορφολογικές αρχές της Ελληνικής (Apostolouda, 2018; Apostolouda et al., 2023). Αρχικά οι φοιτητές/τριες εισάγονται σε θεμελιώδεις έννοιες που σχετίζονται με τη συλλαβοποίηση και τον τονισμό την Ελληνική, και εξοικειώνονται με τις βασικές αρχές μορφολογικής κατάτμησης. Στη συνέχεια, χρησιμοποιούν το ChatGPT στις κινητές τους συσκευές για περαιτέρω διερεύνηση και πρακτική εφαρμογή των εννοιών που διδάχθηκαν. Δουλεύοντας σε ομάδες, αξιολογούν κριτικά τις απαντήσεις που παρέχονται από το ChatGPT. Για παράδειγμα, καλούνται να εξηγήσουν γιατί κάποιοι οι συλλαβισμοί είναι αμφιλεγόμενοι (π.χ. εκ-νι-μη), να αναλύσουν γιατί συγκεκριμένα τονικά σχήματα μπορεί να εκλαμβάνονται διαισθητικά ως ασυνήθιστα (π.χ. βουτραλί), και να εντοπίσουν λανθασμένες μορφολογικές κατατμήσεις (π.χ. καλο-καιρινός). Επίσης, καλούνται να εξετάσουν άλλες πρακτικές εφαρμογές και να εμπλακούν σε παρόμοιες δραστηριότητες με τη βοήθεια του ChatGPT, ενισχύοντας μ' αυτόν τον τρόπο την επίγνωσή τους στη φωνολογική και μορφολογική δομή της Ελληνικής. Το σενάριο διδασκαλίας ολοκληρώνεται με μια συζήτηση αναστοχασμού για την αξιοποίηση του ChatGPT στα μαθήματα θεωρητικής γλωσσολογίας και, ειδικότερα, σε δραστηριότητες για την ενίσχυση της μορφοφωνολογικής ενημερότητας των φοιτητών/-τριών. Μετά την παρουσίαση του διδακτικού σεναρίου, το άρθρο ολοκληρώνεται με μια ανασκόπηση των βασικών πλεονεκτημάτων της εφαρμογής του ChatGPT σε πανεπιστημιακά μαθήματα

* This article is part of ongoing research within the project *GRADIENCE: Modeling the limits of grammar: Integrating lexical frequency in a Gradient Harmonic model of lexical stress; Evidence from young and adult Greek speakers' grammars*. The project is carried out within the framework of the National Recovery and Resilience Plan Greece 2.0, funded by the European Union – NextGenerationEU (Implementation body: H.F.R.I., Project ID: 15053).

γλωσσολογίας, καθώς και με κάποιες σκέψεις για τον μελλοντικό ρόλο των εργαλείων τεχνητής νοημοσύνης στις διδακτικές μεθόδους.

Λέξεις-κλειδιά: Συλλαβή, τονισμός, μορφολογική κατάτμηση, μορφοφωνολογική ενημερότητα

Abstract

This article examines a new approach to enhancing morphophonological awareness among higher education linguistics students by using ChatGPT. In the teaching scenario presented here, ChatGPT serves as a virtual professor, providing responses to morphophonological activities students are asked to debate and assess for correctness. The teaching scenario includes three activities, all designed with the aim to assist students in learning some central phonological concepts related to syllables and stress and to improve their understanding of the morphological structure of inflected and derived word. The materials used in the activities include actual words as well as pseudowords constructed within the project GRADIENCE according to Greek phonotactic and morphological rules (Apostolouda, 2018; Apostolouda et al., 2023). Initially, students are introduced to basic concepts such as syllable structure, stress assignment and morphological segmentation. Following the theoretical component, they are invited to use ChatGPT on their devices to further investigate and apply these concepts. Working in groups, they critically assess ChatGPT's responses, examining debatable syllabifications (e.g., *εκ-νι-μη*), counter-intuitive stress patterns (e.g., *βουτραλι*), and incorrect morphological segmentations (e.g., *καλο-καιρινός*). This critical evaluation allows them to deepen their understanding of complex linguistic notions and advance their critical thinking skills. Students are, also, encouraged to think about practical ways to improve their understanding of phonological and morphological structures in Greek. The article concludes with a review of the main benefits of implementing ChatGPT in university courses, in particular activities designed to raise students' morphophonological awareness, and provides insights into the future role of AI tools in teaching methodologies.

Keywords: syllable, word stress, morphological segmentation, morphophonological awareness

Introduction

This article explores how ChatGPT, version 3.5., enhances the understanding of morphophonological concepts among university students of linguistics. It proposes that ChatGPT 3.5 can serve as a valuable tool for both instructors and students in understanding complex linguistic concepts and applying this knowledge to actual language data analysis. ChatGPT 3.5 was used as a “teaching assistant” to the linguistics courses “LING348: Introduction to Morphology” and “LING396: Introduction to Phonology” at the Department of Linguistics, School of Philology at the Aristotle University of Thessaloniki. Specifically, it was employed to assist students in segmenting inflected and derived Greek words morphologically and to help them explore syllable patterns and the specifics of stress assignment.

By undertaking the role of “a teaching assistant”, ChatGPT 3.5 invited students to participate in interactive learning and acquire a deeper understanding of complex linguistic notions through focused exercises and critical thinking assignments. These interactive exercises are essential components of the teaching methodology because they allow students to apply intricate theoretical concepts to linguistic analyses. Essentially, in the current work we attempt to establish an enriched learning environment for students with the implementation of ChatGPT 3.5 within university-level linguistics courses. We believe that this approach will benefit students in the long run by improving their understanding of morphophonological concepts and further developing their skills in comprehending and analyzing linguistic data examples.

The remainder of the article is structured as follows: Section 1 discusses the literature review on ChatGPT 3.5 within higher education language and linguistics courses. Section 2 describes the structure of the teaching scenario designed for two university-level linguistic courses using ChatGPT 3.5. Section 3 presents the linguistic activities and the generated feedback. Section 4 offers a discussion on the outcomes of using ChatGPT 3.5 in these linguistics courses, and Section 5 concludes with some remarks on the benefits of using ChatGPT as a complementary learning tool in higher education.

1. ChatGPT and linguistics courses

Introduced in November of 2022, OpenAI’s ChatGPT, changed profoundly how we view and use educational technology in language teaching and learning, bringing along numerous benefits for both students and educators (see, e.g., Hong, 2023; Huang & Li, 2023; Kartal, 2023; Kohnke et al., 2023; Kostka & Toncelli, 2023; Lo, 2023; Song & Song, 2023; Han, 2024; and Gavriilidou, 2024 for Greek). For instance, it has revolutionized education by enabling personalized learning for students, especially tailored to their needs and interests. Teachers benefit from ChatGPT by creating custom activities, adapting teaching methods to diverse student needs, designing assessments, and offering detailed feedback on their work (Kim et al., 2023; Gavriilidou, 2024). Furthermore, ChatGPT has been shown to provide direct access to authentic language materials and offer immediate feedback, thereby promoting independent learning and enhancing motivation across speaking, writing, and academic skills (Amin, 2023; Yan, 2023). Of course, it is important to emphasize that ChatGPT should be used with caution because its responses and feedback are not always accurate – an issue that we will revisit later in this article.

In academic contexts, ChatGPT has been employed in Applied Linguistics courses to generate texts, such as emails, for discourse analysis in English, yielding positive results in terms of accuracy and relevance (Onal & Kolavuz-Onal, 2023). Furthermore, Loock & Holt (2024) investigated the capabilities of Online Translators (OT) and generative AI tools, such as ChatGPT, in aiding students in undergraduate applied foreign languages programs and professional training master’s programs to analyze complex Noun Phrases (NP) in English-to-French translation exercises. Their findings reveal that, in general, OTs assisted students in identifying the head of complex NPs. However, a closer examination of the results revealed significant variation, with OT outputs improving the analysis of some examples, while worsening it for others, contrary to researchers’ initial expectations. The researchers also examined two versions of ChatGPT: ChatGPT 3.5 and ChatGPT 4.0; and two types of prompts: one concise and the other more elaborate. The results were that, using ChatGPT

compared to OTs, students performed more accurately in identifying heads in complex NPs; however, their performance was dependent on the prompt and version used. Specifically, version 4 of ChatGPT produced accurate judgments with simple prompts, while model version 3.5 required much more complex ones to achieve similar results.

The role of ChatGPT as an assistant for answering questions typically posed in the final exam of an introductory linguistics course at a German university is examined in Ronan and Schneider's (2023) study. The researchers provided ChatGPT4 with questions on phonetics/phonology, morphology and syntax. The results were quite successful in phonetics/phonology questions, especially those pertaining to IPA transcriptions, but somewhat variable for the other linguistic components. For example, in the morphological component of the exam ChatGPT effectively identified parts of speech but was less successful in performing more demanding morphological analyses beyond identifying inflections and frequent derivational patterns.

In the part of the exam related to syntax, ChatGPT performed poorly in the analysis of more complex phrases. It underperformed in tasks that require visualizations, for instance, such as drawing or interpreting syntax trees. On the basis of the results, the researchers concluded that ChatGPT low-performed in tasks involving highly specialized terminology and relatively rare phenomena, likely due to the scarcity of data. They suggested that enriching ChatGPT with more specific knowledge might make it better in performing syntactic and morphological analysis.

Despite being limited in number, studies that incorporate ChatGPT into linguistics courses generally agree that this method enhances interactivity and engagement in learning experiences, motivates student participation, and enriches teaching methodologies in linguistics and related disciplines.

2. The teaching scenario

The teaching scenario presented in this article was designed for two linguistics courses: namely "LING348: Introduction to Morphology" and "LING396: Introduction to Phonology". Both courses are offered to Linguistics majors during the fifth semester of their studies at the School of Philology, Aristotle University of Thessaloniki. By this point, the students have completed two introductory linguistics courses. The phonological and morphological activities, however, were presented to students enrolled in LING348 during the Spring semester of 2024 as part of the course's introduction to the basic linguistics concepts.

The teaching scenario had the following key objectives: first, to enhance students' understanding of some of the central morphophonological concepts, including stress assignment and syllabification patterns, and the morphological segmentation of inflected and derived Greek words; and second, to involve students in an interactive learning process that would offer them the opportunity to identify linguistic principles, test their knowledge, and receive immediate feedback. Additionally, the use of ChatGPT aimed to boost critical thinking, not only in respect to linguistic structures but also in terms of the efficacy of ChatGPT as an educational tool.

Notions such as syllable and stress are fundamental in understanding the morphological structure of Greek. Firstly, stress assignment in Greek is morphology-oriented (Revithiadou, 1999, 2007; Revithiadou & Spyropoulos, 2016) since it depends on the inherent metrical

information that morphological constituents, such as roots, theme elements and suffixes, may be lexically endowed with. Secondly, it is important for students to learn how to accurately identify syllables, more so those crossing morphological boundaries (e.g., *ράφτης* 'tailor', syllabification: .ra.σftis.σ, morphological segmentation: /raf-t-is/), and thus distinguish between the phonological level of organization (i.e. the syllables) and the morphological structure, that is, the morphological elements combined to form words.

The 4 hour-long teaching scenario was evenly divided between theoretical teaching and practical application and was carried out in two academic sessions. In terms of technological requirements, students were notified a week in advance to bring their mobile devices to class to ensure full participation in all activities. The scenario is based on materials that include a mix of existing Greek words and pseudowords. The pseudowords used in these linguistic activities were developed as part of the GRADIENCE research project (H.F.R.I. ID 15053, RC ID: 76809). More precisely, they were constructed based on Greek phonotactic and morphological principles (Apostolouda, 2018; Apostolouda et al., 2023) and were controlled for the effects of lexicostatistical frequency (Coleman & Pierrehumbert, 1997) and lexical analogy (Protopapas, et al., 2006) using tools like the *Clean Corpus* and the online *NumTool* (Protopapas et al., 2012).

The teaching scenario begins with the “Introduction Phase”, during which students are introduced to basic phonological and morphological concepts. They review core notions, such as syllable structure and stress assignment rules, and are familiarized with morphological segmentation through detailed examples that help them better understand the relevant information. This phase is designed to help students refresh and further develop their theoretical background before applying these basic concepts to actual language data.

During the “Exploration Phase” that follows, students are introduced to a series of activities that invite them to engage with ChatGPT 3.5 as a tool for deeper investigation and practical application of concepts discussed during the previous phase. For instance, they are invited to ask ChatGPT about the morphological segmentation of both existing derived nouns such as *χαρτάκι* 'small paper' as well as pseudo-nouns, such as *φραμότητα*, which are constructed from an existing derivational suffix combined with a pseudo-root. This interactive approach aims to improve their comprehension of complicated theoretical notions in the subject and make the whole process of learning easier. By using ChatGPT, students are better placed to observe, test linguistic structures, apply knowledge in real-time contexts, and receive immediate feedback that they can evaluate. Additionally, this approach helps them develop analytical skills essential for their linguistic studies and future professional careers.

In the final “Reflection Phase” of the teaching scenario, students are prompted to engage in lively discussions about their experience with ChatGPT 3.5 and complete an online questionnaire to assess it (see also Kohnke, 2023; Xiao & Zhi, 2023). Having used ChatGPT 3.5 for the morphological analysis of real language data, students now turn to evaluating the accuracy of the results. They are also invited to discuss the instructor’s view on integrating ChatGPT 3.5, spot potential errors in the AI-generated responses and weigh the advantages and disadvantages of using it in their linguistics studies. More specifically, this phase is crucial as it provides students with the opportunity to make critical judgments about the role that ChatGPT 3.5 can play as a learning tool. Open-ended questions allow students to express their views, deepening their understanding regarding the impact of AI

on teaching methodologies, in general, and its implications for linguistic analyses, in particular. Ultimately, it is this reflective process that encourages students to look further out at the broader effects of technology in shaping their learning experience.

In the next section, we present a sample of the phonological and morphological activities along with the responses generated by ChatGPT 3.5 during two separate periods: March and April 2024. Responses provided during the later period are noticeably better compared to those from the initial period. However, this does not mean that responses were always accurate or error-free and devoid of misunderstandings.

3. Application of the teaching scenario

3.1. The exploration phase: Samples of activities and ChatGPT 3.5 answers

The phonology component of the activities consisted of tasks where ChatGPT 3.5 was required to provide feedback on syllabification and stress assignment in both existing words and constructed pseudowords. The inclusion of pseudowords, especially pseudo-nouns, intended to test whether ChatGPT 3.5 had mastered the relevant rules and could accurately apply them to both familiar and unfamiliar words. As mentioned above, stress assignment in Greek is not predictable (see, e.g., Revithiadou, 1999), in the sense that stress placement depends largely on lexical properties word constituents (e.g., roots, suffixes, etc.) may have, rather than on the phonological properties of syllables, such as whether they are closed or open or their position relative to the edges of the word.

Activity 1. Syllabification and Stress (with pseudo-words):

a. Syllabify the following pseudo-nouns: ναβη, εκνιψη, δουγρι, φραμο, δαμα, εμουχι, καβιπα, δουφαμα, γουκραπος, πραγουμο, σκομουδης, ουκαπης.

⌚ *Answer in March 2024:* να-βη, δου-γρι, φρα-μο, δα-μα, ε-μου-χι, κα-βι-πα, δου-φα-μα, γου-κρα-πος, πρα-γου-μο, σκο-μου-δης, ου-κα-πης

b. Stress the aforementioned pseudo-nouns.

⌚ *Answer in March 2024:* νά-βη, δού-γρι, φρά-μο, δά-μα, ε-μού-χι, κα-βί-πα, δού-φα-μα, γού-κρα-πος, πρα-γού-μο, σκο-μού-δης, ου-κα-πής

c. Assign stress to the word *βουτραλι*.

⌚ *Answer in March 2024:* βουτραλι

⌚ *Answer in April 2024:* I cannot stress a word that does not exist in the Greek language or that is unfamiliar. Do you mean some other word or concept?

d. Explain why you stressed the word *ναβή* (*δουγρι*, *φραμο*, etc.) in this particular way.

⌚ *Answer in March 2024:* The stressed syllable in the word “ναβή” is the penultimate one, following the pentonic rule (“πεντατονικός κανόνας”), according to which the stressed syllable usually falls on the penultimate one if the word ends in a vowel, as is the case with the word “ναβή”.

⌚ *Answer in April 2024:* I stressed the word “ναβή” as “νά-βη” because that is its natural stressed pattern in Greek, even though the word is not well-known.

As for the other words: *δού-γρι*, *φρά-μο*, *δά-μα*, *ε-μού-χι*, *κα-βί-πα*, *δού-φα-μα*
γού-κρα-πος, *πρα-γού-μο*, *σκο-μού-δης*.

I stress each word based on the natural accentuation pattern in Greek. If you have any other questions or need further explanations, I'm here to help!

The morphology activities primarily involve the segmentation of inflected and derived words, along with an exercise where ChatGPT 3.5 is prompted to provide judgments on marginal grammatical forms, such as diminutive nouns in the genitive plural, both in existing (familiar) and constructed (unfamiliar) words. The aim of the latter exercise is to evaluate whether ChatGPT can make judgments that somehow reflect the intuitive decisions native speakers make when encountering less frequent grammatical forms.

Activity 2. Morphological segmentation and matching morph (form) and morpheme (meaning):

a. Segment the following words into their constituent parts and give the meaning of each component: *χαρτάκι* 'small paper', *ποδάρα* 'big foot', *κουτάλα* 'ladle', *ορθότητα* 'correctness', *καλοκαιρινός* 'summery, summer-like', *γουκραπινός*, *πραγουμάλα*, *εμουχένιος*, *φραμότητα*.

Sample answers:

⌚ *Answer in March 2024:*

καλοκαιρινός: καλο-καιρινός

- καλο-: usually refers to something good or pleasant.
- καιρινός: relates to summer, the season of the year.

γουκραπινός: γου-κραπινός

- γου-: It is a prefix that refers to something related to water or liquid.
- κραπινός: it refers to the type or nature of a person's face that resembles the word “κράπος”

⌚ *Answer in April 2024:*

καλοκαιρινός: καλοκαιρι-νός

- καλοκαιρι-: it refers to the season of summer.
- -νός: a suffix indicating a quality or relationship with something.

γουκραπινός: γουκραπ-ινός

- γουκρατ-: possibly from conquests or tribes.
- -ινός: a suffix indicating a quality or relationship with something.

◎ *Answer in March 2024:*

κουτάλα: κουτ-άλα

- κουτ-: Refers to the utensil “spoon”.
- -άλα: Indicates an object that has the shape or function of the specific utensil.

πραγουμάλα: πραγ-ου-μάλα

- πραγ-: Likely refers to something related to a greenish hue.
- ου-: Possibly a prefix that connects the components of the word.
- μάλα: Refers to something soft or comfortable.

◎ *Answer in April 2024:*

κουτάλα: κουτ-άλα

- κουτ-: From the word “κούταλο” (spoon), refers to the utensil used for eating.
- -άλα: A suffix that indicates a large size or refers to something large.

πραγουμάλα: πραγου-μάλα

- πραγου-: From the word “πράγμα” (thing), which refers to anything that exists or happens.
- -μάλα: Possibly derived from conquests or tribes.

Note: Interpretations may vary depending on usage or the complex nature of the language.

b. Segment the words into their constituent parts and provide the meaning of each component: θαλασσών 'sea-PL.GEN', καλοσυνών 'goodness-PL.GEN, ζαχαρών 'sugar-PL.GEN, φορμών 'form-PL.GEN', προσώπων 'face-PL.GEN, σίδερων 'iron-PL.GEN, προβάτων 'sheep-PL.GEN', προβατακιών 'sheep-DIM.PL.GEN'.

Sample answers:

◎ *Answer in March 2024:*

καλοσυνών: καλο-συν-ών

- καλο-: typically refers to something good or desirable.
- συν-: relates to combination or unity.
- -ών: plural ending, indicates the plural number.

προβατακιών: προβατ-ακι-ών

- προβατ-: refers to sheep.
- ακι-: indicates a small version or gentle characterization.
- -ών: plural suffix, denotes the plural form.

◎ *Answer in April 2024:* There were no observed differences in the responses.

Activity 3. Judging the existence of familiar and unfamiliar words:

Does the word “προβατακιών” exist in Greek?, Does the word “φραμοτήτων” exist in Greek?, Does the word “εμουχιών” exist in Greek?, Does the word “γουκραπών” exist in Greek?

Sample answers:

⌚ Answer in March 2024:

προβατακιών

The word “προβατακιών” is not commonly used in the Greek language. The correct form would be “προβατιών”, derived from the plural of “πρόβατο”. The term “προβατάκια” would be used to refer to small sheep or lambs.

φραμοτήτων

The word “φραμοτήτων” is not known in the Greek language. It is likely a mistaken compound word. The correct form would probably be “φραγμοτήτων”, referring to something related to barriers or obstacles. However, without further context, it is difficult to confirm its existence or provide a complete interpretation.

εμουχιών

The word "εμουχιών" does not appear to be a standard term in the Greek language. It may be an unknown or extremely rare term, but without more context, it is not possible to provide an accurate interpretation or confirm its existence. If there is any additional context, I can assist further.

⌚ Answer in April 2024: There were no observed differences in the responses.

3.2. The reflection phase

In the discussion, students are asked to explain why certain syllabification outputs may be erroneous or controversial (e.g., *εκ-νι-μη*), clarify why specific stress patterns may appear unusual (e.g., *θουτραλί*) and identify cases where morphological segmentation is incorrect (e.g., *καλο-καιρινος*). This process enhances their morphophonological awareness and cultivates their linguistic aptitude, as they are encouraged to provide linguistically valid explanations on ChatGPT's answers based on the theoretical concepts they have learned.

The students' responses in the questionnaire (see Appendix) reveal that they welcome the instructor's positive attitude towards the use of ChatGPT for educational purposes. Additionally, they acknowledge that while ChatGPT is highly interactive, it can make mistakes and therefore emphasize the need to use it with caution and critical thinking.

“A disadvantage is that it does not always provide correct answers and does not understand the questions in Greek well. An advantage is that it makes exercises more engaging due to its interactivity.”

“In general, chat gpt can be useful for acquiring basic knowledge and even supporting our studies, but it should definitely be used in tandem with critical thinking and, of course, with other sources of information.”

4. Evaluating the use of ChatGPT 3.5 in linguistics courses and conclusions

In this study, we explored how ChatGPT-assisted learning impacts the development of undergraduate students' morphophonological awareness and critical thinking in conducting linguistic analyses in morphology and phonology courses. To investigate this thoroughly, we implemented a teaching scenario that involved using both phonological and morphological analytical tools to evaluate ChatGPT's responses to specific morphophonological questions. Additionally, we gathered students' perspectives on the use of ChatGPT in their linguistics course through an online questionnaire.

Regarding ChatGPT's performance as a "teaching assistant" on phonology and morphology courses, we observed differences in its effectiveness between these two levels of linguistic analysis. In phonology, ChatGPT showed strong performance in syllabifying familiar and unfamiliar words accurately. However, it demonstrated significant inconsistencies in placing stress within pseudowords and even proposed non-existent stress rules, such as the "pentatonic rule".

Moving to morphology, ChatGPT 3.5 at first struggled with morphological segmentation, but there was noticeable improvement over a month's time. For instance, it changed the segmentation of the pseudoword *γουκραπινός* from *γου-κραπινός* to *γουκραπ-ινός* recognizing the suffixal status of the *-ινός* constituent. Moreover, it successfully identified highly marginal forms like *προβατακιών* and even provided a speculative suggestion for what it considered as a correct grammatical form, proposing *προβατιών* as a potential correction. Additionally, it was successful in identifying pseudo-nouns like *φραμοτήτων*. Unfortunately, however, ChatGPT 3.5 went a step further by linking the constructed words it was presented with, which were devoid of meaning, to segmentally similar existing words, proposing *φράγμα* as a plausible associated word to *φραμότητα*. Finally, we would be remiss not to emphasize that ChatGPT 3.5 showed improved performance in distinguishing inflectional from derivational suffixes. It also performed noticeably well in identifying plural forms in nouns and adjectives.

The results of our study appear to confirm earlier research on the application of ChatGPT in English-language linguistics classes (e.g., Ronan & Schneider, 2023; Loock & Holt, 2024). ChatGPT performed quite well on easier and more basic activities but showed significantly lower performance on the more difficult tasks, like morphological segmentation. In line with Ronan and Schneider (2023), we argue that providing ChatGPT with theoretical linguistic knowledge could potentially enhance its performance in more demanding linguistic tasks.

To conclude, ChatGPT 3.5 appears to complement modern teaching approaches by improving students' awareness of morphophonological patterns and structures. Its interactive features, which combine questioning and language experimentation, improve students' critical thinking and involvement in learning. More importantly, working with ChatGPT exposes students to artificial intelligence technologies, thereby strengthening their digital literacy—a skill that is becoming increasingly important in today's classroom. We strongly believe that the next step in this line of research could be an experimental study investigating whether using ChatGPT to access and interpret linguistic structures can assist students in improving their linguistic analysis skills regarding more complex linguistic concepts (see Loock & Holt, 2024).

References

Amin, M. Y. M. (2023). AI and Chat GPT in language teaching: Enhancing EFL classroom support and transforming assessment techniques. *International Journal of Higher Education Pedagogies*, 4(4), 1–15. <https://doi.org/10.33422/ijhep.v4i4.554>

Apostolouda, V., Kosmidis K., Kanetidis M., & Revithiadou, A. (2023). Syllable, Bigram, and Morphology-Driven Pseudoword Generation in Greek and a Protocol for Pseudoword Assessment. PREPRINT (Version 1) available at Research Square.
<https://doi.org/10.21203/rs.3.rs-3495627/v1>

Apostolouda, V. (2018). *Πειραματικές διερευνήσεις στον τονισμό της Ελληνικής* [Experimental investigations on Greek stress]. Unpublished doctoral dissertation, Aristotle University of Thessaloniki. <http://dx.doi.org/10.12681/eadd/44406>

Coleman, J., & Pierrehumbert, J. (1997). Stochastic phonological grammars and acceptability. In J. Coleman (Ed.), *Computational Phonology: Third Meeting of the ACL Special Interest Group in Computational Phonology*, (pp. 49–56). Association for Computational Linguistics.

Gavriilidou, Z. (2024). *Διδάσκοντας και μαθαίνοντας γλώσσα με το ChatGPT* [Teaching and Learning Language with ChatGPT]. Εκδόσεις Κριτική.

Han, Z. (2024). ChatGPT in and for second language acquisition: a call for systematic research. *Studies in Second Language Acquisition*, 46(2), 301–306.
<https://doi.org/10.1017/S0272263124000111>

Hong, W. C. H. (2023). The impact of ChatGPT on foreign language teaching and learning: Opportunities in education and research. *Journal of Educational Technology and Innovation*, 5(1). <https://doi.org/10.61414/jeti.v5i1.103>

Huang, J., & Li, S. (2023). Opportunities and challenges in the application of ChatGPT in foreign language teaching. *International Journal of Education and Social Science Research*, 6(4), 75–89. <https://doi.org/10.37500/IJESSR.2023.6406>

Kartal, G. (2023). Contemporary language teaching and learning with ChatGPT. *Contemporary Research in Language and Linguistics*, 1(1), 59–70.

Kim, S., Shim, J., & Shim, J. (2023). A study on the utilization of OpenAI ChatGPT as a second language learning tool. *Journal of Multimedia Information Systems*, 10(1), 79–88.
<https://doi.org/10.33851/JMIS.2023.10.1.79>

Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *Relc Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>

Kohnke, L. (2023). L2 learners' perceptions of a chatbot as a potential independent language learning tool. *International Journal of Mobile Learning and Organisation*, 17(1/2), 214–226. <https://doi.org/10.1504/ijmlo.2023.128339>

Kostka, I., & Toncelli, R. (2023). Exploring applications of ChatGPT to English language teaching: Opportunities, challenges, and recommendations. *TESL-EJ*, 27(3).
<https://doi.org/10.55593/ej.27107int>

Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410. <https://doi.org/10.3390/educsci13040410>

Loock, R., & Holt, B. (2024). Augmented linguistic analysis skills: Machine translation and generative AI as pedagogical aids for analyzing complex English compounds. *Technology in Language Teaching & Learning*, 6(3), 1–27.

<https://doi.org/10.29140/tltl.v6n3.1489>

Onal, S., & Kulavuz-Onal, D. (2023). A cross-disciplinary examination of the instructional uses of ChatGPT in higher education. *Journal of Educational Technology Systems*, 52(2), 301–324. <https://doi.org/10.1177/00472395231196532>

Protopapas, A., Gerakaki, S., & Alexandri, S. (2006). Lexical and Default stress assignment in reading Greek. *Journal for Research in Reading*, 29, 418–432.

<https://doi.org/10.1111/j.1467-9817.2006.00316.x>

Protopapas, A., Tzakosta, M., Chalamandaris, A., & Tsakoulis, P. (2012). IPLR: An online resource for Greek word-level and sublexical information. *Language Resources and Evaluation*, 46(3), 449–559. <http://dx.doi.org/10.1007/s10579-010-9130-z>

Revithiadou, A. (1999). *Headmost accent wins: Head dominance and ideal prosodic form in lexical accent systems*. Holland Academic Graphics.

Revithiadou, A. (2007). Colored turbid accents and containment: A case study from lexical stress. In S. Blaho, P. Bye, & M. Krämer (Eds.), *Freedom of analysis?* (pp. 149–174). Mouton de Gruyter. <https://doi.org/10.1515/9783110198591.149>

Revithiadou, A., & Spyropoulos, V. (2016). Stress at the interface: Phases, accents and dominance. *Linguistic Analysis*, 41(1–2), 3–74.

Ronan, P., & Schneider, G. (2023). Can Chat GPT solve a Linguistics Exam? *ArXiv*, abs/2311.02499. <https://doi.org/10.48550/arXiv.2311.02499>

Song, C., & Song, Y. (2023). Enhancing academic writing skills and motivation: assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students. *Frontiers in Psychology*, 14, 1260843. <http://dx.doi.org/10.3389/fpsyg.2023.1260843>

Yan, D. (2023). Impact of ChatGPT on learners in an L2 writing practicum: An exploratory investigation. *Education and Information Technologies*, 28, 13943–13967.

<https://doi.org/10.1007/s10639-023-11742-4>

Xiao, Y., & Zhi, Y. (2023). An exploratory study of EFL learners' use of ChatGPT for language learning tasks: Experience and perceptions. *Languages*, 8(3), 212.

<https://doi.org/10.3390/languages8030212>

Appendix: Online (anonymous) questionnaire for students

1. What do you know about ChatGPT? Have you used it? If yes, for what reasons?
2. What is your instructor's attitude towards ChatGPT and artificial intelligence applications in general? Does she encourage or discourage their use? Can you provide specific examples?

3. You used ChatGPT 3.5 for morphology and phonology topics. In which of the following areas do you think it was most successful? Choose one answer.
4. Mention three major mistakes you found in ChatGPT's responses to the activities provided to you.
5. Did you try to give your own commands? In which language? Were the results more or less successful in Greek or in English?
6. What do you think are the advantages and disadvantages of using ChatGPT 3.5 in morphology and phonology classes?
7. What do you think are the general advantages and disadvantages of using ChatGPT 3.5 for your studies?
8. Is there anything that concerns you regarding the use of artificial intelligence applications in your studies?