

The importance of Computer-Assisted Language Learning (CALL) in revitalising and preserving Maltese

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How to cite: Żammit, J. (2024). The importance of Computer-Assisted Language Learning (CALL) in revitalising and preserving Maltese. In Y. Choubsaz, P. Díez-Arcón, A. Gimeno-Sanz, J. Hriňák, X. Liashuk, S. Pokrivčáková & H. Vančová (Eds.), *CALL for Humanity - EUROCALL 2024 Short Papers*. <https://doi.org/10.4995/EuroCALL2024.2024.19012>

Abstract

Maltese, a unique Semitic language influenced by Arabic, Italian and English, faces challenges as a minority language in the digital age. This study examines the potential of Computer-Assisted Language Learning (CALL) in addressing these issues. One-on-one interviews with 34 Maltese teachers revealed challenges like limited digital resources, insufficient integration into educational technologies, and a lack of CALL tools tailored to Maltese. These challenges are worsened by the small number of native speakers and the influence of English, which is also an official language in Malta. However, the study highlights the importance of CALL in revitalising and preserving Maltese. CALL can provide interactive language learning apps, online courses, and digital archives, making learning Maltese more accessible and engaging. It can also foster a sense of community among learners and native speakers, promoting cultural preservation and language transmission. This study contributes to the discourse on endangered languages and CALL, emphasising the need to support linguistic diversity and connect Maltese learners and communities. It underscores the hope of ensuring the survival and flourishing of this unique language in the technological era.

Keywords: Computer-Assisted Language Learning (CALL); digital language preservation; minority languages in the digital age; Maltese language.

1. Introduction

In the digital age, minority languages face significant challenges and opportunities. Maltese, a unique Semitic language with Arabic, Italian, and English influences, exemplifies this struggle (Żammit, 2023). As the digital landscape progresses, preserving and revitalising Maltese has become increasingly urgent (Żammit, 2020). This study explores how Computer-Assisted Language Learning (CALL) can address the specific challenges Maltese faces as a minority language in the digital era.

Brincat (2011) highlights the historical and sociolinguistic development of Maltese, noting its distinct position as a Semitic language written in Latin script. Borg et al. (2014) emphasise its morphological and syntactic complexity, underscoring the difficulties in creating effective CALL tools for Maltese. Żammit (2024) focuses on how digital tools can enhance Maltese language acquisition and cultural preservation. Technology's potential to support minority languages, as discussed by Thorne et al. (2012) and Olko and Sallabank (2021), suggests that CALL can play a key role in promoting linguistic diversity.

Despite the progress, Maltese still suffers from limited digital resources, a lack of integration into educational technologies, and the dominance of English, which is also an official language in Malta. These challenges hinder the Maltese language's transmission and preservation, necessitating targeted interventions through CALL.

1.1 Statement of the Problem

Despite its rich linguistic heritage, Maltese faces significant challenges in the digital age. The limited availability of CALL tools, insufficient integration into educational technologies, and the influence of English further marginalise Maltese speakers. This study examines how CALL can support the preservation of Maltese in a rapidly evolving digital environment.

1.2 Aims of the Study

This study aims to:

- identify the specific challenges Maltese faces as a minority language in the digital age.
- examine the potential of CALL in overcoming these challenges.

1.3 Research Questions

The research questions of this study were the following:

1. What are the primary challenges Maltese faces as a minority language in the digital age?
2. How can CALL be utilised to address these challenges and support the revitalization and preservation of Maltese?

By addressing these questions, the study provides insights into how digital tools can support linguistic diversity and ensure the survival of Maltese in the technological era.

2. Method

2.1 Context and participants

This study employed purposive sampling to select participants who are secondary school teachers actively involved in teaching the Maltese language. The sample consisted of 34 teachers, ensuring a comprehensive understanding of the challenges faced in the educational context. The age range of the participants was between 25 and 61 years old, distributed as follows: 8 teachers in their 20s, 10 in their 30s, 9 in their 40s, 6 in their 50s, and 1 teacher who was 61 years old. The gender distribution included 20 female and 14 male teachers.

2.2 Data collection

Data collection was conducted through one-on-one semi-structured interviews, each lasting approximately 30 minutes. This approach allowed for an in-depth exploration of the teachers' experiences and perceptions concerning the challenges of teaching Maltese in the digital age. In total, 34 interviews were conducted, amounting to approximately 17 hours of cumulative interview time.

The semi-structured format balanced a flexible, conversational approach with specific guiding questions. The interview questions focused on the following key areas:

- Challenges in teaching Maltese: "What are the primary challenges you face when teaching Maltese, particularly regarding digital tools or resources?"
- Use of technology: "How do you currently use technology, if at all, in your Maltese language teaching? What tools or platforms do you find helpful or lacking?"

- Perceptions of CALL: "What is your understanding of Computer-Assisted Language Learning (CALL), and how do you think it could support Maltese language teaching?"
- Digital resource needs: "What specific digital resources do you think would help improve the teaching and learning of Maltese?"
- Community and cultural aspects: "In your opinion, how important is fostering a sense of community or cultural preservation in your teaching? Can technology support these efforts?"

This structure ensured consistency across interviews while providing flexibility for participants to elaborate on their individual experiences and offer unique insights.

2.3 Data analysis

The data were analysed using a thematic approach, facilitated by Nvivo software. This method involved coding the interview transcripts to identify recurring themes and patterns. The thematic analysis allowed for the systematic categorization of data, providing a clear framework to understand the challenges and potential solutions for integrating CALL in the teaching of Maltese. Nvivo enabled efficient management and analysis of the qualitative data, ensuring that the findings were both rigorous and comprehensive (Goyal & Deshwal, 2023).

2.4 Ethics

Ethical considerations were paramount throughout the study. Permission for conducting the interviews was obtained from the Faculty Research Ethics Committee (FREC), ensuring that the study adhered to ethical standards and guidelines. The participants were informed about the purpose of the study, and their consent was obtained before the interviews. Confidentiality and anonymity were maintained throughout the research process, with all data securely stored and accessible only to the research team.

3. Results

The interviews with 34 Maltese language teachers revealed several key challenges in the context of Computer-Assisted Language Learning (CALL) and the broader digital landscape. The findings highlight issues related to limited digital resources, insufficient integration of educational technologies, and specific concerns regarding the tools available for teaching Maltese. The following quotations illustrate the teachers' perspectives and experiences, providing a nuanced understanding of these challenges.

3.1 Lack of interactive digital resources

All the 34 participants consistently pointed out the scarcity of interactive digital resources tailored for Maltese. Teacher 1 stated, "We need more interactive apps and games that can engage students. Right now, there are barely any resources that make learning Maltese fun and interactive." Similarly, Teacher 13 remarked, "Other languages have a wealth of digital tools, but for Maltese, we're lagging far behind. This makes it harder to motivate students." Teacher 34 agreed with Teacher 1 and Teacher 13, emphasising, "The lack of digital resources is a major barrier. We need tools that can capture the students' interest and make learning Maltese enjoyable and effective." In contrast, Teacher 22 expressed a slightly different perspective, suggesting, "While interactive resources are important, I find that traditional teaching methods supplemented with technology can also be effective. Sometimes, simplicity works better than complex digital tools."

However, Teacher 15 disagreed with this viewpoint, arguing, "Simplicity might work, but it won't engage today's students like interactive apps and games can. We need to keep up with the digital age if we want to keep Maltese relevant and interesting for the younger generation." Furthermore, Teacher 28 highlighted a practical concern, stating, "Even the few interactive resources we have often lack updates and maintenance. This inconsistency frustrates both teachers and students, undermining their effectiveness."

Therefore, while there was a consensus among the 34 teachers regarding the need for more interactive digital resources for teaching Maltese, there were varying opinions on the best approach to enhance engagement and effectiveness in Maltese language learning. Addressing these concerns is crucial to overcoming the challenges posed by the digital age and ensuring the vitality of Maltese as a minority language.

3.2 Absence of VR and AR games

Another significant challenge highlighted by 29 teachers was the absence of Virtual Reality (VR) and Augmented Reality (AR) games specifically designed for learning Maltese. Teacher 8 noted, "I've seen firsthand how effective VR and AR can be in language learning for other languages. It's a shame we don't have similar tools for Maltese." Teacher 21 echoed this sentiment, by stating, "The immersive experience of VR and AR could change how we teach Maltese. It's disappointing that these technologies are not being used." Teacher 12 agreed with Teachers 8 and 21's viewpoints, by emphasising, "VR and AR could make learning Maltese more engaging and memorable. Students would be more motivated to practise and improve their language skills in a virtual environment."

Nevertheless, Teacher 19 provided a counter perspective, saying, "While VR and AR are exciting, they are also expensive and require significant technical support. It may not be feasible for all schools to adopt these technologies." Teacher 27 echoed this concern, by adding, "The infrastructure for VR and AR in our schools is lacking. Before we can introduce these technologies for Maltese language learning, we need to address these logistical challenges." Furthermore, Teacher 33 suggested a middle ground, by stating, "While VR and AR would be beneficial, we should focus on enhancing existing digital resources first. Improving accessibility and functionality of current tools should be our priority."

While there was enthusiasm among teachers for integrating VR and AR into Maltese language education, practical considerations such as cost, infrastructure, and feasibility present significant hurdles. Balancing innovation with practicality is essential to effectively harnessing technology to support language learning and ensuring the future viability of Maltese in the digital age.

3.3 Ġabra online dictionary limitations

The online dictionary *Ġabra*, a staple resource for Maltese language teachers, has been identified with significant limitations. Teacher 5 highlighted, "We rely on *Ġabra* a lot, but it lacks pronunciation guides, which is a big drawback." Similarly, Teacher 18 emphasised, "The absence of pronunciation guides in *Ġabra* poses a significant challenge. Students need accurate pronunciation guidance to learn and use Maltese effectively." Supporting this sentiment, Teacher 10 noted, "Pronunciation is crucial, especially for non-native learners. *Ġabra*'s lack of this feature undermines its utility in the classroom."

In contrast, Teacher 25 provided a different perspective, suggesting, "While *Ġabra*'s pronunciation feature would be beneficial, its comprehensive database and detailed definitions are still valuable. It remains an indispensable tool despite its limitations." Teacher 29 echoed this sentiment, by stating, "*Ġabra* may not be perfect, but it's one of the few resources we have that offers detailed explanations and examples. We've learned to work around its shortcomings." Moreover, Teacher 14 proposed a solution-oriented approach, saying, "We should advocate for improvements in *Ġabra*'s functionality, including adding pronunciation guides. It's time to enhance our digital resources to better support Maltese language learning."

These participants recognised *Ġabra*'s importance as an online dictionary for teaching Maltese, however, there was a consensus on the need for enhancements, particularly in providing pronunciation support. Addressing these limitations is crucial for improving the efficacy of digital tools in supporting Maltese language education and ensuring comprehensive language learning experiences for students.

3.4 Challenges with AI

Twenty-eight teachers also reported significant challenges with AI tools designed for teaching Maltese. Teacher 11 pointed out, "Sometimes AI generates non-existent words in Maltese, which confuses the students." Similarly, Teacher 27 shared a similar experience, stating, "AI is not always reliable for Maltese. It often comes up with incorrect translations or made-up words." Teacher 20 agreed with these concerns, adding, "The inaccuracies in AI translations can lead to misunderstandings and errors in students' Maltese language learning process. It's frustrating when technology designed to assist ends up confusing." However, Teacher 26 provided a nuanced perspective, by suggesting, "While AI has its flaws, it can still be a valuable tool if used correctly. Teachers need to guide students on how to verify and critically assess AI-generated content."

3.4.1 Using English for creative writing aids

Another significant challenge identified by teachers is the necessity of using English-centric AI tools for activities in Maltese classes. Teacher 15 explained, "We often ask students to use AI to find pictures for their creative writing, but they have to input their queries in English. This doesn't make sense when we're trying to immerse them in Maltese." Teacher 30 echoed this frustration, stating, "Using English as a medium undermines our efforts to promote the Maltese language and culture in the classroom. It's counterproductive and disappointing." Teacher 9 shared a similar sentiment, saying, "Students should be able to engage with AI tools in Maltese to fully integrate technology into our language teaching methods. This current reliance on English limits their learning experience." On the other hand, Teacher 24 offered a pragmatic perspective, by acknowledging, "While it's not ideal, sometimes we have to work with what's available. Integrating more Maltese-friendly AI tools should be a priority, but in the meantime, we must find ways to adapt and supplement."

While AI technology offers potential benefits for language learning, the challenges of accuracy and language integration persist for teachers of Maltese. Addressing these issues is crucial to harnessing technology effectively in supporting Maltese language education and fostering a deeper cultural understanding among students.

3.5 Integration into educational technologies

The integration of Maltese into mainstream educational technologies emerged as a significant concern among 32 teachers. Teacher 3 noted, "Educational platforms often support multiple languages but rarely include Maltese. This limits our ability to use these technologies effectively." Similarly, Teacher 19 concurred, stating, "We need better integration of Maltese into widely-used educational tools. It's essential for providing a comprehensive learning experience." Teacher 6 expanded on this point, by emphasising, "When educational technologies exclude Maltese, it creates barriers for both teachers and students. We need inclusive platforms that cater to the linguistic diversity of our classrooms."

However, Teacher 14 offered a different perspective, suggesting, "While integration is important, we should also consider developing specific tools and resources designed specifically for teaching Maltese. This targeted approach could address our unique educational needs more effectively." Teacher 25 provided a pragmatic viewpoint, stating, "Improving integration is a step in the right direction, but it requires collaboration between educators, developers, and policymakers to ensure that Maltese is not overlooked in the digital education landscape." Additionally, Teacher 32 highlighted the broader implications of inadequate integration, saying, "When educational technologies neglect Maltese, it perpetuates the marginalization of our language and culture. We must advocate for equitable access to digital resources for all languages."

Therefore, while these teachers agreed on the urgent need for better integration of Maltese into educational technologies, there were diverse perspectives on the strategies and approaches to achieve this goal. Addressing these challenges requires systemic changes and collaborative efforts to ensure that Maltese language education is supported and enhanced in the digital age.

3.6 Community and cultural preservation

Despite the challenges identified, all 34 teachers emphasised the potential of Computer-Assisted Language Learning (CALL) in fostering a sense of community among learners and preserving Maltese cultural heritage. Teacher 7 commented that CALL “can help connect learners and native speakers, creating a community that supports each other. It's not just about learning the Maltese language; it's about nurturing a connection to our cultural roots.”

Teacher 25 echoed this sentiment, stating, “By leveraging technology, we have an opportunity to preserve our cultural heritage and ensure that Maltese continues to thrive for future generations. Technology can be a powerful tool in this endeavour.” Teacher 16 agreed with these perspectives, highlighting, “Technology allows us to reach Maltese speakers globally, strengthening our cultural identity and sense of belonging. It's about uniting our community through language and shared experiences.” In contrast, Teacher 29 expressed caution, noting that while CALL “offers connectivity, we must ensure that it does not dilute the authenticity of our cultural practices. Preserving traditions alongside language is equally important.”

Teacher 12 offered a practical insight, by suggesting that CALL “can supplement traditional methods of cultural transmission, by offering new avenues for engagement and learning. It's about striking a balance between innovation and tradition.” Moreover, Teacher 18 emphasised the role of education in cultural preservation, stating that through CALL, “we can teach not only the language but also the values and traditions embedded in Maltese culture. It's a holistic approach to ensuring our heritage endures.”

In general, while CALL presents opportunities for fostering community and preserving Maltese culture, the participants recognised the need for thoughtful integration and balanced approaches to maximise its benefits in language education. Addressing these considerations is vital to safeguarding the rich cultural heritage associated with the Maltese language in the digital age.

These findings underscore the urgent need for more tailored digital resources and better integration of Maltese into educational technologies. While current CALL tools provide a foundation, significant improvements are necessary to fully support the teaching and learning of Maltese. Addressing these challenges is crucial for preserving and revitalising the Maltese language in the digital age, ensuring it remains a vibrant and integral part of Malta's cultural heritage.

4. Discussion

The findings from the interviews with Maltese language teachers shed light on several critical challenges facing CALL in the context of teaching Maltese. These challenges resonate with broader discussions in the field of educational technology and language learning, as evidenced by studies and scholarly insights.

The consensus among teachers regarding the scarcity of interactive digital resources tailored for Maltese mirrors findings in other language education contexts. Żammit (2024) similarly discusses the inadequacy of digital tools for supporting Maltese language learning, emphasising the need for innovative solutions to engage students effectively. The discrepancy between the availability of digital resources for widely spoken languages versus minority languages like Maltese underscores a systemic issue in educational technology development (Żammit, 2023).

While some teachers advocated for simplicity in teaching methods supplemented with technology, others argued for the necessity of interactive apps and games to engage contemporary learners. These perspectives align with current debates in CALL literature, where the balance between traditional pedagogical approaches and technology-enhanced learning experiences is continuously explored (Levy & Stockwell, 2006).

The absence of VR and AR games for learning Maltese reflects broader global trends in educational technology adoption. Weng et al. (2024) discuss the potential of immersive technologies like VR and AR in enhancing language learning experiences, highlighting their effectiveness in other language contexts. However, the practical

challenges such as cost and infrastructure identified by teachers in this study resonate with Abid et al. (2022), emphasising the need for sustainable and scalable implementations of these technologies in language education.

Similarly, the concerns raised about AI tools generating inaccuracies and relying on English-centric interfaces align with current critiques in AI-assisted language learning. Some current studies underscore the importance of AI tools in language education while acknowledging the need for improvements in accuracy and language integration specific to less-resourced languages (Moorhouse & Kohnke, 2024). These studies highlight the potential of AI to enhance language learning but also caution that its effectiveness is limited in the context of minority languages like Maltese, where tools often fail to address linguistic nuances and specific cultural needs.

The call for better integration of Maltese into mainstream educational technologies resonates with broader discussions on linguistic diversity and educational equity. Żammit's (2024) exploration of CALL's role in supporting linguistic diversity underscores the necessity of inclusive educational platforms that cater to the needs of minority languages. The findings from this study underscore the urgent need for policy interventions and collaborative efforts to ensure equitable access to digital resources for all languages, including Maltese.

Furthermore, the participants' perspectives on CALL's potential to foster community and preserve Maltese cultural heritage align with scholarly discussions on the role of technology in cultural sustainability. Kim (2020) highlights how CALL can facilitate connections among language learners and native speakers, contributing to the preservation and transmission of cultural knowledge. The balanced approach advocated by teachers resonates with García, et al. (2017) emphasis on integrating technology with traditional cultural practices to ensure authenticity and relevance.

The challenges identified by the Maltese language teachers in this study underscore the complexities and opportunities inherent in integrating CALL into Maltese language education. These findings align with current scholarly debates and highlight the urgent need for tailored digital resources, improved integration of Maltese into educational technologies, and strategic use of technology to preserve its cultural heritage. Addressing these challenges requires collaborative efforts among educators, policymakers, and technologists to ensure that Maltese language education remains vibrant and relevant in the digital age.

5. Conclusions

The findings from this study provide useful insights into the challenges and opportunities of integrating CALL in the context of teaching Maltese. Through the interviews with 34 Maltese language teachers, several key themes emerged, highlighting critical areas for improvement in digital resources, educational technologies, and cultural preservation efforts.

Firstly, the study underscores the pressing need for more interactive digital resources tailored specifically for teaching Maltese. Teachers unanimously expressed their frustration over the lack of engaging apps and games that could effectively motivate students. This echoes broader discussions in educational technology, emphasising the importance of innovative and interactive learning tools to enhance student engagement and learning outcomes. Secondly, the absence of VR and AR applications designed for learning Maltese presents a significant gap in current educational technology offerings. While teachers recognise the potential of these immersive technologies to revolutionise language learning, practical barriers such as cost and infrastructure remain formidable obstacles. Thirdly, the study highlights the limitations of existing AI tools for teaching Maltese, particularly concerning accuracy and integration with the language's unique features. Teachers expressed concerns about AI-generated content that often lacks contextual accuracy and relies on English-centric interfaces, hindering its effectiveness in supporting language learning. The integration of Maltese into mainstream educational technologies emerged as another critical concern among teachers. The study advocates for policy interventions that promote inclusive digital platforms capable of supporting linguistic diversity. This aligns with broader efforts in educational policy to ensure equitable access to educational resources for all languages, thereby safeguarding linguistic and cultural diversity.

Furthermore, the study underscores CALL's potential to foster community among learners and preserve Maltese cultural heritage. The teachers emphasised the role of technology in connecting Maltese speakers globally, nurturing a sense of cultural identity, and transmitting cultural values alongside language skills.

Limitations of the study

Despite its contributions, this study is not without limitations. The sample size of 34 Maltese language teachers may not fully represent the diversity of perspectives within the educational community. Future studies could benefit from larger and more diverse samples to capture a broader range of experiences and insights.

The study primarily relied on qualitative interviews, which provide rich contextual data but may limit generalizability. Combining qualitative findings with quantitative measures could offer a more comprehensive understanding of the challenges and effectiveness of CALL in Maltese language education.

This study focused on current challenges and opportunities without delving deeply into the longitudinal impacts of integrating CALL in Maltese classrooms. Future research should explore the long-term effects of digital technology adoption on language proficiency, cultural preservation, and educational outcomes over extended periods.

Further Studies

Building on the findings of this study, future research directions are suggested to advance the field of CALL and support efforts to preserve the Maltese language and culture in the digital age. Longitudinal studies are recommended to assess the sustained impact of digital technologies on Maltese language learning outcomes and cultural preservation. Additionally, comparative studies should investigate the effectiveness of various digital resources, such as interactive apps, VR / AR, and AI tools, in enhancing student engagement and language proficiency across diverse linguistic contexts.

Policy and implementation studies are needed to explore how educational policies and institutional frameworks can facilitate the integration of CALL for minority languages like Maltese, emphasising equity and accessibility. Furthermore, employing user-centred design approaches is crucial to developing and evaluating digital resources that cater specifically to the needs of Maltese language learners and educators. Addressing these research gaps will not only contribute to the advancement of CALL but also support ongoing efforts to preserve and promote the Maltese language and culture. This study underscores the importance of targeted interventions and collaborative initiatives in leveraging educational technology for the benefit of Maltese language education and cultural preservation.

Acknowledgements

The researcher extends heartfelt gratitude to the 34 Maltese language teachers who generously shared their time, experiences, and insights during the one-on-one interviews conducted for this study. Their valuable contributions formed the foundation of the research and provided critical perspectives on the challenges and opportunities of integrating CALL in the context of teaching Maltese. Without their willingness to participate and their dedication to improving language education, this study would not have been possible. Their contributions are deeply appreciated.

References

- Abid, H., Mohd, J., Mohd A. Q., & Rajiv S. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275-285.
<https://doi.org/10.1016/j.susoc.2022.05.004>

- Borg, A., Caruana, S., & Vella, A. (2014). *Perspectives on Maltese linguistics*. Berlin: Akademie Verlag.
- Brincat, J.M. (2011). *Maltese and other languages: a linguistic history of Malta*. Sta Venera, Malta: Midsea books.
- García, O., Lin, A.M.Y. & May, S. (2017). Bilingual and Multilingual Education. *Encyclopedia of Language and Education (ELE) (3rd Edition)*. Springer Cham. <https://doi.org/10.1007/978-3-319-02258-1>
- Goyal, M., & Deshwal, P. (2023). Online post-purchase customer experience: a qualitative study using NVivo software. *Quality & Quantity*, 57, 3763–3781. <https://doi.org/10.1007/s11135-022-01492-9>
- Kim, D. (2020). Learning Language, Learning Culture: Teaching Language to the Whole Student. *ECNU Review of Education*, 3(3), 519-541. <https://doi.org/10.1177/2096531120936693>
- Levy, M., & Stockwell, G. (2006). *CALL Dimensions: Options and Issues in Computer-Assisted Language Learning* (1st ed.). Routledge. <https://doi.org/10.4324/9780203708200>
- Moorhouse, B.L., & Kohnke, L. (2024). The effects of generative AI on initial language teacher education: The perceptions of teacher educators, *System*, 122, 103290. <https://doi.org/10.1016/j.system.2024.103290>
- Olko, J., & Sallabank, J. (2021). *Revitalizing endangered languages: A comprehensive guide*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781108641142>
- Thorne, S. L., Sauro, S., & Smith, B. (2012). Technologies, identities, and expressive activity. In J. Herschensohn & M. Young-Scholten (Eds.), *The Cambridge Handbook of Second Language Acquisition* (pp. 508-528). Cambridge: Cambridge University Press.
- Weng, Y., Schmidt, M., Huang, W., & Hao, Y. (2024). The effectiveness of immersive learning technologies in K–12 English as second language learning: A systematic review. *ReCALL*, 36(2), 210–229. <https://doi.org/10.1017/S0958344024000041>
- Żammit, J. (2020). The benefits and challenges of distance education in teaching Maltese as a second language to adults. *Malta Review of Educational Research*, 14(2), 273-299.
- Żammit, J. (2023). Exploring the effectiveness of Virtual Reality in teaching Maltese. *Computers & Education: X Reality*, 3, 100035. <https://doi.org/10.1016/j.cexr.2023.100035>
- Żammit, J. (2024). Sailing or Stumbling: How Do Adult Learners Navigate the Realm of Online Maltese Language Learning? *International Journal of Linguistics and Translation Studies*, 5(3), 29–44. <https://doi.org/10.36892/ijlts.v5i3.464>