

Publication list
Manuela Macedonia, PhD
September 2025

Articles in peer reviewed journals

1. **Macedonia, M.**
Your Body as a Tool to Learn Second Language Vocabulary
Behavioral Sciences 15 (8), July 2025
<https://www.mdpi.com/2076-328X/15/8/997>
2. **Macedonia, M., Mathias, B., Rodella, C., Andrä, C., Sedaghatgoftar, N., Repetto C.**
Reduction in physical activity during Covid-19 lockdowns predicts individual differences in cognitive performance several months after the end of the safety measures
Acta Psychologica 250, 104472, 2023
<https://www.sciencedirect.com/science/article/pii/S0001691824003494>
3. **Macedonia, M. Mathias, B., Lehner, A., Reiterer, S.M., Repetto, C.**
Grasping virtual objects benefits lower aptitude learners' acquisition of foreign language vocabulary
Educational Psychology Review 35 (4), 115, 2023
<https://link.springer.com/article/10.1007/s10648-023-09835-0>
4. **Macedonia, M., Grenier J., Repetto, C., & Wriessnegger, S.**
Gesture based word (re) acquisition with a virtual agent in augmented reality: A preliminary study.
Annual Review of Cybertherapy and Telemedicine, July 2022
<https://www.arctt.info/volume-20-summer-2022>
5. Mathias, B., Andrä, C., Schwager, A., **Macedonia, M.**, & von Kriegstein, K.
Twelve-and fourteen-year-old school children differentially benefit from sensorimotor-and multisensory-enriched vocabulary training
Educational Psychology Review, March 2022
<https://link.springer.com/article/10.1007/s10648-021-09648-z>
6. Mathias, B., Waibel, A., Hartwigsen, G., Sureth, L., **Macedonia, M.**, Mayer., K. & von Kriegstein, K.
Motor cortex causally contributes to vocabulary translation following sensorimotor-enriched training
The Journal of Neuroscience, October, 2021
<https://www.jneurosci.org/content/41/41/8618>
7. Repetto, C., Mathias, B., Weichselbaum, O., **Macedonia, M.**
Visual recognition of words learned with gestures induces motor resonance in the forearm muscles
Scientific Reports, August 2021
<https://www.nature.com/articles/s41598-021-96792-9>

8. Mathias, B., Sureth, L., Hartwigsen, G., **Macedonia**, M., Mayer, K. & von Kriegstein, K.
Visual sensory cortices causally contribute to auditory word recognition following sensorimotor-enriched vocabulary training,
Cerebral Cortex, September 2020
<https://academic.oup.com/cercor/advance-article/doi/10.1093/cercor/bhaa240/5909778>
9. Sureth, L., Klingebiel, A., **Macedonia**, M., von Kriegstein, K., Andrä, Ch., Mathias, B., Hartwigsen, G., Mayer K., Hartwigsen, G.
Foreign language vocabulary learning: Is doing better than seeing or listening?
Frontiers. Research Topic: Everything you and your teachers need to know about the learning brain, Frontiers Young Minds, July 2020
<https://kids.frontiersin.org/article/10.3389/frym.2020.00089>
10. **Macedonia**, M., Lehner, A. & Repetto C.,
Positive effects of grasping virtual objects on memory for novel words in a second language
Scientific Reports, 01 July 2020
<https://doi.org/10.1038/s41598-020-67539-9>
11. Mathias, B., Andrä, Ch., Schwager, A. **Macedonia**, M. & Von Kriegstein, K.
Learning Foreign Language Vocabulary with Gestures and Pictures Enhances Vocabulary Memory for Several Months Post-Learning in Eight-Year-Old School Children
Educational Psychology Review, April 2020
<https://doi.org/10.1007/s10648-020-09527-z>
12. Mathias, B., Sureth, L., Hartwigsen, G., **Macedonia**, M., Mayer K. & von Kriegstein, K.
A causal role of sensory cortices in behavioral benefits of 'learning by doing'.
arXiv preprint arXiv:1903.04201, 03 November 2019 <https://arxiv.org/abs/1903.04201>
13. **Macedonia**, M.
Embodied Learning: Why at school the mind needs the body
Front. Psychol., 01 October 2019
<https://doi.org/10.3389/fpsyg.2019.02098>
14. Mathias, B., Klingebiel, A., Hartwigsen, G., Sureth, L. **Macedonia**, M., Mayer K. & von Kriegstein, K.
Sensorimotor cortices causally contribute to auditory foreign language vocabulary translation following multisensory learning
Brain Stimulation, Volume 12, Issue 2, Pages 401-402, March-April, 2019
<https://doi.org/10.1016/j.brs.2018.12.295>
[https://www.brainstimjrn.com/article/S1935-861X\(18\)30714-9/fulltext](https://www.brainstimjrn.com/article/S1935-861X(18)30714-9/fulltext)
15. **Macedonia**, M., Repetto, C., Ischebeck, A. & Mueller, K.
Depth of encoding through observed gestures in foreign language word learning
Front. Psychol. - Language Sciences, 8 January, 2019
<https://doi.org/10.3389/fpsyg.2019.00033>
16. Wriessnegger, S.C., Hacker, C. **Macedonia** & M. Müller-Putz, G.R.
The impact of gestures on Formal Language learning and its neural correlates: A study proposal
In Information Systems and Neuroscience, Springer, 2019
https://link.springer.com/chapter/10.1007/978-3-030-01087-4_10

17. **Macedonia, M.**, Hammer, F. & Weichselbaum, O.
Guided Embodiment and Potential Applications of Tutor Systems in Language Instruction and Rehabilitation. In Cognitive Aspects of Interactive Technology Use: From Computers to Smart Objects and Autonomous Agents
Frontiers in Psychology, Research Topic, 13 June, 2018
<https://www.frontiersin.org/articles/10.3389/fpsyg.2018.00927/full>

18. Repetto, C., Pedrolì, E. & **Macedonia, M.**
Enrichment effects of metaphoric gestures and pictures on abstract words in a second language
Frontiers in Psychology, 15 December 2017
<https://www.frontiersin.org/articles/10.3389/fpsyg.2017.02136/full>

19. Mayer, K.M., **Macedonia, M.** & von Kriegstein, K.
Recently learned foreign abstract and concrete nouns are represented in distinct cortical networks similar to the native language.
Hum Brain Mapping, June 2017, doi: 10.1002/hbm.23668
<http://onlinelibrary.wiley.com/doi/10.1002/hbm.23668/abstract;jsessionid=73B81ABE5776E367B296C4F43153888E.f03t04>

20. **Macedonia, M.** & Repetto, C.
Why Your Body Can Jog Your Mind
Frontiers in Psychology, March 2017, doi: 10.3389/fpsyg.2017.00362
<http://journal.frontiersin.org/article/10.3389/fpsyg.2017.00362/full>

21. Repetto, C., Serino, S., **Macedonia, M.** & Riva, G.
Virtual Reality as an embodied tool to enhance episodic memory in elderly
Frontiers in Psychology, November 2016, doi: 10.3389/fpsyg.2016.01839
<http://journal.frontiersin.org/article/10.3389/fpsyg.2016.01839/full>

22. **Macedonia, M.** & Müller, K.
Exploring the Neural Representation of Novel Words Learned through Enactment in a Word Recognition Task.
Frontiers in Educational Psychology; 28 June 2016.
<http://dx.doi.org/10.3389/fpsyg.2016.00953>
<http://journal.frontiersin.org/article/10.3389/fpsyg.2016.00953/full>

23. **Macedonia, M.** & Repetto, C.
Brief Multisensory Training Enhances Second Language Vocabulary Acquisition in Both High and Low Performers.
International Journal of Learning, Teaching and Educational Research; March 2016, Vol. 15, No. 3, pp. 42-53.
<http://www.ijlter.org/index.php/ijlter/article/view/578/pdf>

24. **Macedonia, M.**
Learning Styles and Vocabulary Acquisition in Second Language: How the Brain Learns.
Frontiers in Educational Psychology; 25 November 2015.
<http://dx.doi.org/10.3389/fpsyg.2015.01800>
<http://journal.frontiersin.org/article/10.3389/fpsyg.2015.01800/full>

25. Mayer, K.M., Yildiz, I.B., **Macedonia, M.** & von Kriegstein, K.
Visual and motor cortices differentially support the translation of foreign language

words.

Current Biology 2015 Feb 4. pii: S0960-9822(14)01569-3.

<https://doi.org/10.1016/j.cub.2014.11.068>

<http://www.cell.com/current-biology/abstract/S0960-9822%2814%2901569-3>

26. **Macedonia, M.**

Bringing back the body into the mind: Gestures enhance word learning in foreign language.

Frontiers in Educational Psychology; 09 December 2014.

<https://doi.org/10.3389/fpsyg.2014.01467>

<http://journal.frontiersin.org/Journal/10.3389/fpsyg.2014.01467/abstract>

27. **Macedonia, M., Bergmann, K. & Roithmayr, F.**

Imitation of a pedagogical agent's gestures enhances memory for words in second language.

Science Journal of Education, October 2014, Volume 2, Issue 5, Pages 141-145

<http://article.sciencepublishinggroup.com/pdf/10.11648.j.sjedu.20140205.15.pdf>

28. **Macedonia, M., Kern, R. & Roithmayr F.**

Do children accept virtual agents as foreign language trainers?

International Journal of Learning, Teaching and Educational Research,

August 2014, Volume 7, Issue 1, Pages 131-137

<http://www.ijlter.org/index.php/ijlter/article/view/145>

29. **Macedonia, M.**

A Bizarre Virtual Trainer Outperforms a Human Trainer in Foreign Language Word Learning. International Journal of Computer Science and Artificial Intelligence, June 2014, Volume 4, Issue 2, pages: 24-34.

<http://www.jcsai.org/paperInfo.aspx?PaperID=15181>

30. **Macedonia, M. & Klimesch, W.**

Long Term Effects of Gestures on Memory for Foreign Language Words Trained in the Classroom. Mind, Brain, and Education, Volume 9, Issue 1, June 2014, pages: 74-88.

<https://doi.org/10.1111/mbe.12047>

<http://onlinelibrary.wiley.com/doi/10.1111/mbe.12047/abstract>

31. **Macedonia, M., Groher I. & Roithmayr, F.**

Intelligent Virtual Agents as Language Trainers Facilitate Multilingualism. Frontiers in Psychology. Special Issue on Educational Psychology: Beyond the 21st Century. Volume 5, 295, 14 April 2014. doi:10.3389/fpsyg.2014.00295

<http://journal.frontiersin.org/Journal/10.3389/fpsyg.2014.00295/full>

32. **Macedonia, M.**

Pronunciation in foreign language: How to train? Effects of different kinds of training in perception and production of the Italian consonant / ʎ / by adult German learners
Journal of Education and Training Studies, 2014, Volume 2, Issue 1, January 2014, pages: 53-62.

<https://doi.org/10.11114/jets.v2i1.205>

<http://redfame.com/journal/index.php/jets/article/view/205>

33. **Macedonia, M.**

Learning a Second Language Naturally - The Voice Movement Icon Approach

Journal of Educational and Developmental Psychology, November 2013, Volume 3, Issue 2, November 2013, pages: 102–116.

<https://doi.org/10.5539/jedp.v3n2p102>

<http://www.ccsenet.org/journal/index.php/jedp/article/view/29700>

34. **Macedonia, M.**

Three Good Reasons why Foreign Language Instructors Need Neuroscience

Journal of Studies in Education, 2013, Volume 3, Issue 4, pages: 1–20.

<https://doi.org/10.5296/jse.v3i4.4168>

<http://www.macrothink.org/journal/index.php/jse/article/view/4168>

35. Bergmann, K. & **Macedonia, M.**

A Virtual Agent as Vocabulary Trainer: Iconic Gestures Help to Improve Learners' Memory Performance

Lecture Notes in Computer Science, Volume 8108, 2013, pages: 139–148

https://doi.org/10.1007/978-3-642-40415-3_12

http://link.springer.com/chapter/10.1007%2F978-3-642-40415-3_12#page-1

36. **Macedonia, M.** & von Kriegstein, K.

Gestures enhance foreign language learning

Biolinguistics, 2012, Volume 6, Issue 3-4, pages: 393–416.

<http://www.biolinguistics.eu/index.php/biolinguistics/article/view/248>

37. **Macedonia M.** & Knösche, T.R.

Body in Mind: How gestures empower foreign language learning. Mind, Brain and Education, 2011. Volume 5, Issue 3, December 2011, pages: 112–128.

<https://doi.org/10.1111/j.1751-228X.2011.01129.x>

<http://onlinelibrary.wiley.com/doi/10.1111/j.1751-228X.2011.01129.x/abstract>

38. **Macedonia, M.**, Müller, K. & Friederici A.D.

The impact of iconic gestures on foreign language word learning and its neural substrate.

Human Brain Mapping, 2011. Volume 32, Issue 6, June 2011, pages: 982–98.

<https://doi.org/10.1002/hbm.21084>

<http://onlinelibrary.wiley.com/doi/10.1002/hbm.21084/abstract>

39. **Macedonia, M.**, Müller, K. & Friederici A.D.

Neural correlates of high performance in foreign language vocabulary learning.

Mind, Brain and Education, 2010. Volume 4, Issue 3, September 2010, pages: 125–134.

<https://doi.org/10.1111/j.1751-228X.2010.01091.x>

<http://onlinelibrary.wiley.com/doi/10.1111/j.1751-228X.2010.01091.x/abstract>

40. **Macedonia, M.**, Müller, K. & Friederici A.D.

Symbolic gestures enhance foreign language vocabulary learning.

NeuroImage, 2009. 47(Supplement 1), S121.

[https://doi.org/10.1016/S1053-8119\(09\)71138-3](https://doi.org/10.1016/S1053-8119(09)71138-3)

41. **Macedonia, M.**

Games in language teaching.

British Journal of Learning Support, 2005. Volume 20, Issue 3, August 2005, pages: 135–140.

<https://doi.org/10.1111/j.0268-2141.2005.00377.x>

Edited book

1. Andrä, Chr. & **Macedonia, M. Editors**
Bewegtes Lernen
Ein Handbook für die Forschung und Praxis
Lehmanns Media Verlag, Leipzig, March 2020, Softcover, 355 S.

Contributions in Conference Proceedings (selected)

1. Wriessnegger, S.C., Hacker, Chr., **Macedonia, M.** & Müller-Putz, G.R.
The impact of gestures on Formal Language learning and its neural correlates: A study proposal
In: Davis, F. D.; Riedl, R.; vom Brocke, J.; Léger, P.-M.; Randolph, A. (Eds.): Information Systems and Neuroscience: Gmunden Retreat on NeuroIS 2018. Springer Verlag, Berlin et al. 2018 (Serie: Lecture Notes in Information Systems and Organisation)
2. **Macedonia, M.**
Multimodales sensomotorisches Fremdsprachenlernen durch Voice Movement Icons.
In Conference Proceedings: Vierte gesamtschweizerische Tagung für Deutschlehrerinnen und Deutschlehrer, Tagungsband 2, Bern 2011, S. 59-66, 11-12. Juni 2010, Bern (CH)
3. **Macedonia, M.**
Neural correlates of high performance in foreign language vocabulary learning.
In Conference Proceedings: International conference on multilingual individuals and multilingual societies, 6-8. Oktober 2010, Hamburg (D).
4. **Macedonia, M.**
Wie konkret kann die Hirnforschung Pädagogen helfen? Das Beispiel Fremdsprachen.
In Conference Proceedings: Lerntheorien. Von der Wissenschaft in die Praxis und zurück, Reihe Loccum Protokolle Band 15/10, Rehburg-Loccum 2010, S. 87-95, 09-11. April 2010, Loccum (D).
5. **Macedonia, M.**, Müller, K., Friederici A.D.
Symbolic gestures enhance second language vocabulary learning.
In Conference Proceedings: International Conference on Neurobilingualism - Bilingual functioning from infancy to adulthood, 19-20. September 2009, Bangor (GB).
6. **Macedonia, M.**, Müller, K., Friederici A.D.
The impact of motor learning of foreign language vocabulary on memory and its neural substrate. In Conference Proceedings: Conference on perceptual learning, motor learning, automaticity, 09-12. Dezember 2008, Amsterdam (NL).
7. **Macedonia, M.**
Fremdsprachenlernen und Dyslexie: Der sensomotorische Weg.
Tagungsband der 11. Tagung des Verbandes Dyslexie Schweiz -Legasthenie und Fremdsprachen, 02-04. Juni 2007, Zürich (CH), S. 25-29.

Book chapter(s)

1. **Macedonia, M.**
Voice Movement Icons: Wenn der Körper Wörter in der Fremdsprache lernt
In Bewegtes Lernen, Hrsg. Andrä & Macedonia, SS. 22-40, 2020
Lehmann Verlag, Berlin
2. **Macedonia, M.**
Voice Movement Icons in der Praxis
des Fremdsprachenunterrichts (am Beispiel von Italienisch)
In Bewegtes Lernen, Hrsg. Andrä & Macedonia, SS. 326-334
Lehmann Verlag, Berlin
3. **Macedonia, M.**
Fremdsprachen lernen mit Bewegung. Wie man natürlich und effizient lernt.
In Gombos, Georg (Hrsg.): Mehrsprachigkeit grenzüberschreitend. Modelle, Konzepte,
Erfahrungen. S. 115-130. Drava Verlag, Klagenfurt 2013

Italian Language Instruction Books (For University and School)

1. **Macedonia, M.**
Wirtschaftsitalienisch Lehr- und Exercise Book
Oldenbourg Verlag, München/Wien, 2008, Book, hard cover, 318 pages.
2. **Macedonia M.**
Wirtschaftsitalienisch Lehrbook. Oldenbourg Verlag, München/Wien, 2005, 3. edition,
1. edition 1998, Book, hard cover, 178 pages.
3. **Macedonia, M.**
Italienisch für alle. Oldenbourg Verlag, München/Wien, 1999, Book, hard cover, 513
pages.
4. **Macedonia, M.**
Made in Italy. Oldenbourg Verlag, München/Wien, 2001, Book, hard cover, 302 pages
5. **Macedonia, M.**
Italienisch für den Beruf. Langenscheidt, München, 2014, new edition, 1. Edition 2001,
Book, Softcover, 80 S pages
6. **Macedonia, M.**
Wirtschaftsitalienisch Übungsbuch Exercise book
Oldenbourg Verlag, München/Wien, 2005, Book, hard cover, 195 pages.
7. **Macedonia, M.**
Wirtschaftsitalienisch. Oldenbourg Verlag, München/Wien, 2005, Audio CD.

Books for L2 practice and L2 teaching materials

1. **Macedonia, M.** (teaching material, game)
Il grande gioco dei verbi (Italian Version).
The big game of verbs (English Version).
Le grand jeu des verbes (French Version).

El grande juego de los verbos (Spanish Version).
Das große Spiel der Verben (German Version).
ELI, Recanati (Italien), 5. Edition, 2005, 1. Edition 1998, Game with cards and dice

2. **Macedonia, M.** (Book for L2 practice)
Sinn-voll Fremdsprachen unterrichten. Veritas Cornelsen, Linz/Berlin, 2005, 2. Edition, 1. Edition 2001, Book, Softcover, 130 S.
3. **Macedonia, M.** (teaching material, game)
Sprachspiele. Veritas Cornelsen, Linz/Berlin, 2014, 7. Edition, 1. Edition 2000, Book, Softcover, 152 S.
4. **Macedonia, M.** (teaching material, game)
Sprachspiele II. Veritas Cornelsen, Linz/Berlin, 2004, Book, Softcover, 80 S.
5. **Macedonia, M.** (Booklet for chat users)
Ch@ttare con l´Italia: Chatführer für Lernende der italienischen Sprache.
Langenscheidt, München, 2001, Booklet, Softcover, 45 S.

Non fiction books – Books on the brain for laymen

1. **Macedonia, M.**
Koch dich klug! Genussvolle Rezepte für ein gesundes Gehirn
Edition a Verlag, Salzburg, April 2024, Hard Cover, 236 S.
2. **Macedonia, M.**
Wellness für das Gehirn
Edition a Verlag, Salzburg, April 2024, Hard Cover, 236 S.
3. **Macedonia, M.**
Iss dich klug! Und dein Gehirn freut sich
Ecwin Verlag, Salzburg, Februar 2021, Hard Cover, 210 S.
4. **Macedonia, M.**
Runter vom Sofa!
Brandstätter Verlag, Wien, Oktober 2019, Hard Cover, 190 S.
5. **Macedonia, M.**
Beweg dich und dein Gehirn sagt Danke
Brandstätter Verlag, Wien, September 2018, Hard Cover, 192 S.
6. **Macedonia, M. & Höhl, S.**
Gehirn für Fortgeschrittene
Schez-Verlag, Linz, 2013, Softcover, 148 S.
7. **Macedonia, M. & Höhl, S.**
Gehirn für Einsteiger
Schez-Verlag, Linz, 2014, 2. Edition, 1. Edition 2012, Softcover, 148 S.
8. **Macedonia, M.**
Fremdsprachenlernen und Gedächtnis
Sensomotorisches Encodieren durch Voice Movement Icons. Trauner Verlag, Linz, 2004,

Book, Softcover, 184 S.