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Tapping into the Right-Brain: Using Visual Culture to Accelerate Early-Stage Adult Maltese Language Learning

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Abstract

Recent evidence suggests that right-brain practices play an important role in language learning. However, little is known about how visual culture can be used to stimulate these practices and increase language knowledge retention in adult second language learners. This study explores the role of right-brain processes through visual culture, focusing on teaching Maltese to international adults. The study conducts a focus group of twenty-seven teachers to investigate various visual culture practices used in language classes. The findings have significant implications for language researchers and teachers beyond the specific context of Maltese language learning. By highlighting the role of right-brain practices and their potential impact on language learning, this study offers pedagogical implications that extend to other language-learning contexts. It provides valuable recommendations for employing specific visual culture practices to facilitate language learning, including drawing, sketching, orthographic mapping, the memory palace approach, wordless picture books, picture-based learning methods, infographics, Face Memory Game, Spot the Difference, Word Search Puzzles, the Hidden Object Game, videos, the Shadow Matching, Find the Differences, and colour-coding methods. These recommendations can inform language researchers and teachers seeking to enhance learning outcomes through visual culture practices in various language learning contexts.

1. INTRODUCTION

The process of language learning is a complex phenomenon from a neurophysiological perspective, which involves the development of reading, speaking, writing, listening, and comprehension skills (Ampera et al., 2021). Various teaching techniques for learning a second language (L2) exist in the modern educational system and can be chosen to suit any type of learner. It should be noted that visual methods of learning are widely used among educators nowadays (Lenkaitis and Hilliker, 2019). Visual methods include drawing, picture-based learning, graphics and motion on flashcards, card memory games, watching videos, virtual reality, and wordless picture books (Kalaja and Pitkanen-Huhta, 2018). Visual methods help to attract and maintain students' attention, as well as motivate them.

1.1. Problem Statement

The study aims to investigate the role of right-brain practices through visual culture in the early stages of learning Maltese as a second language (ML2). Little is known about the role of visual

culture in helping students learn an L2 through the perspective of the functionality of the right brain hemisphere. ML2 is a relatively new subject in Malta, and most teachers who started their teaching career before 2014, were not trained how to teach ML2. The research problem lies in the fact that adult learners of ML2 reported that it would be better for them to remember vocabulary and learn ML2 the way they learned other languages, partly through the use of visual culture and music, especially in the early stages of second language acquisition (SLA).

1.2. Research Aims and Questions

The main research goal of the study was to carry out a critical investigation of the importance of right-brain practices through visual culture in the early stages of adults learning ML2. The research findings could lead to instructional methods that potentially improve students' success in learning any L2. In particular, they could enhance adult learners' pronunciation skills and increase the retention of new vocabulary and grammar concepts. They could also provide useful guidelines for teachers who were not trained on how to teach an L2. As explained above, the current study targets an evident research gap since no study to date has investigated the significance of right-brain practices through visual culture in the early stages of learning ML2 which could be easily applied to any other L2.

The following were the research questions:

1. How can an educator increase right-brain activities in the language classroom?
2. How can teachers present visual culture in the Maltese language classroom?
3. Which language skills/competences could be improved through visual activities?

2. LITERATURE REVIEW

2.1. The theoretical framework of Right-brain Processes

Since this study focuses on the role of right-brain processes in language learning, the theoretical framework for this study drew on theories that suggest that the right hemisphere of the brain is involved in processing visual and spatial information and that visual stimuli can enhance language learning by stimulating the right hemisphere (Qi et al., 2019; Yang, 2023; Bak, et al., 2016; Nilsson, et al., 2021).

The theoretical framework of right-brain processes in language learning is based on the understanding that the two hemispheres of the brain (left and right) have different functions, and that language processing involves both hemispheres. The left hemisphere is typically associated with language processing, including grammar, syntax, and vocabulary, while the right hemisphere is involved in processing visual and spatial information, such as images, patterns, and shapes (Nilsson, et al., 2021).

Bialystok has focused on the effects of bilingualism on the brain and has found that bilingual individuals show enhanced cognitive control, which may be related to the involvement of the right hemisphere in language processing (Yang, 2023). Roehr-Brackin (2018) has researched the use of visual input in language learning and has found that visual input can help learners better understand the structure and meaning of new words and phrases. This is very important in the early stages of language acquisition. Bak has researched the effects of age on language learning and has found that older learners may benefit from visual input and other techniques that engage the right hemisphere of the brain (Bak, et al., 2016).

Research in neuroscience and psychology suggests that visual and spatial information can enhance language processing by stimulating the right hemisphere of the brain (Nilsson, et al., 2021). For example, studies have shown that when language learners are exposed to visual

stimuli, such as pictures, videos, or diagrams, they are better able to remember and use new vocabulary and grammar rules (Roehr-Brackin, 2018). Visual stimuli can also help learners to form mental connections between words and concepts, which can enhance their overall language proficiency.

One theory that has been proposed to explain the role of right-brain processes in language learning is the "Dual Coding Theory". According to this theory, information is processed in two separate but interconnected systems: a verbal system that processes language-based information and a nonverbal system that processes visual and spatial information (Luo, 2022). When information is presented in both verbal and nonverbal formats, learners are more likely to retain and retrieve that information (Luo, 2022).

Another theory that has been used to explain the role of right-brain processes in language learning is the "Memory Palace" or "Method of Loci" technique. This technique involves creating a mental image of a physical space (such as a room or a street), and then associating each item or concept to be learned with a specific location within that space (Ralby, Mentzelopoulos and Cook, 2017). This technique is particularly effective for language learners because it engages the right hemisphere of the brain, which is involved in processing spatial information (Ralby et al., 2017).

Consequently, the theoretical framework of right-brain processes in language learning suggests that visual and spatial information can play an important role in language processing and retention and that language teachers can use visual stimuli and techniques to enhance language learning for their students.

2.2. The use of right-brain practices through visual culture

The use of right-brain practices through visual culture in the early stages of learning an L2 has received attention from scholars (Xing et al., 2015; Bidelman and Howell, 2016; and Qi et al., 2019). Studies suggest that the right hemisphere of the brain plays an important role in L2 sound identification, but the successful acquisition and retention of an L2 also depend on the disengagement of the right hemisphere function and the level to which neural systems can reorganize during learning (Suzani, 2018). The influence of right-brain visual practices in the early stages of SLA on students' learning outcomes is essential (Jeong et al., 2021).

To engage the right-brain hemisphere, educators are recommended to put emphasis on using pictures, showing videos, telling and understanding stories in L2 instead of focusing on grammatical rules (Nielsen, et al., 2013; Jeong et al., 2021). The integration of L2 visual culture into lessons is possible owing to the usage of manipulatives, including images, posters, ceramics, models, wordless books, and drawings (Kalaja and Pitkanen-Huhta, 2018). Such integration can promote student engagement, stimulate communication in L2, develop creativity, increase comprehension, and decrease psychological barriers connected with practising an L2 (Kalaja and Pitkanen-Huhta, 2018). Visual methods also have a crucial impact on creating long-lasting memories and strong impressions on students. For example, when a student watches a movie in L2, they are exposed to L2 sounds, and the student begins to realise how these sounds may be employed in a real-life context.

Using visual culture during L2 classes could develop sensory perception and experiences that increase learners' cognitive abilities in L2 (Matusiak, et al., 2019; Philominraj, Jeyabalan and Vidal-Silva, 2017). Visual art could have a great number of advantages for students who learn Maltese, and thus it is suggested to be used in ML2 classes even with adults. With the help of visual art, it becomes possible to investigate cultural aspects and contemporary issues of society

(Kiss and Weninger, 2017). Visual texts used during L2 lessons carry different meanings, and therefore, they can be considered a valuable tool for students to develop intercultural communicative competence and cultural awareness (Pitkanen-Huhta and Pietikainen, 2016).

The importance of visual tools for stimulating intercultural communication is a crucial benefit of visual culture, especially in light of recent globalization processes (Kiss and Weninger, 2017). The use of creative texts described in the Common European Framework of Reference has a motivational value for international students, and it also provides an easy integration of language skills from a linguistic perspective (Camilleri Grima and Mantellato, 2021; Bobek and Tversky, 2016). Therefore, the use of visual culture to facilitate ML2 learning for adults is a topical research area that is important from a practical perspective, and it is recommended because it is not commonly used, particularly with adult learners of ML2.

3. RESEARCH METHODOLOGY

3.1. Qualitative Research

The interpretivism research philosophy has been chosen for this study. This type of research philosophy depends on interpreting or comprehending the inner perceptions of the research participants. Interpretivism helps fully realize the psychology of participants and understand their attitude to a research problem (Saunders, Lewis and Thornhill, 2020). A qualitative research methodology was employed in this study because the issue of right-brain practices through visual culture in the early stages of learning ML2 has not yet been investigated. Hence, interpretivism could provide an opportunity to explore teachers' perspectives regarding visual culture in the ML2 class, because according to Creswell and Creswell (2018), qualitative research methods allow for the analysis of participants' experiences, concepts, and opinions.

3.2. Focus Group Methodology

The focus group was chosen as the primary data collection method for this study. Compared to interviews, focus groups allow participants to express a range of thoughts and interact with other participants, thereby delivering more insights into the problem under investigation (Breakwell, Wright, and Barnett, 2020).

The focus group session lasted three hours and was conducted online via Zoom for the participants' convenience. The session was structured around a set of pre-determined open-ended questions designed to elicit detailed responses about the use of visual culture in early-stage adult Maltese language learning. These questions were developed based on the research objectives and the existing literature on visual culture and language learning.

The focus group was structured around the following open-ended questions:

- How can teachers present visual culture in the Maltese language classroom?
- What visual art activities do teachers conduct in the language classroom?
- What is the role of the teacher when using visual arts in a language classroom?
- Which language skills/competences are improved through visual activities?
- How can visuals be used to enhance speaking, listening, writing, or reading activities?

These questions were designed to explore the use of visual culture in the Maltese language classroom, the types of visual art activities conducted, the role of the teacher in these activities,

the language skills that are improved through visual activities, and how visuals can enhance different language activities.

3.3. Data Analysis

The data analysis process involved several steps. First, the focus group discussion was transcribed verbatim. Next, the transcript was read and re-read to gain a thorough understanding of the data. The data was then coded using NVivo, a qualitative data analysis software. The coding process involved identifying significant phrases or sentences related to the research objectives and labelling them with appropriate codes.

The codes were then grouped into potential themes and sub-themes. These themes were reviewed and refined to ensure they accurately represented the data. The themes were then used to interpret the data and answer the research questions. This process of thematic analysis allowed for the identification of specific themes and sub-themes related to the use of visual culture in early-stage adult Maltese language learning.

The qualitative validity of the results was ensured through member-checking, where the participants were allowed to review and confirm the accuracy of the themes identified. This process helped to ensure the findings accurately reflected the participants' experiences and opinions.

3.4. Participants

This study involved 27 participants who taught ML2 to adults on a part-time basis. These educators provide private lessons of ML2 to adults at home, online, or in evening classes. Among the 27 participants, 10 were full-time primary school teachers, five were middle school teachers, and four were employed as secondary school teachers. Eight other participants were freelance teachers of business English, medical English, and English as a second language for adults. The researcher used purposive sampling by selecting participants who teach ML2 to adults on a part-time basis and hold a TEFL Certificate. The requirement for a TEFL certificate was essential because visual culture is not being used in ML2 lessons for adults, as the majority of educators teaching ML2 only received training on how to teach Maltese as a first language. The training of teachers to teach ML2 started in 2018. Thus, the researcher sought educators who held a TEFL certificate, indicating that they had received training in teaching a foreign language, even though it is not in teaching Maltese as a foreign language.

3.5. Member Checking and Snowball Sampling Technique

The study used thematic analysis to process the data collected, with the help of the NVivo program, which allowed for the identification of specific themes and sub-themes. The qualitative validity of the results was ensured through member-checking. The participants were recruited using a snowball sampling technique and all ethical considerations were taken into account during the focus group, with participants signing informed consent forms and their anonymity maintained. These methods are by the recommendations of scholars such as Saunders et al. (2020), Breakwell et al. (2020), and Braun and Clarke (2021).

4. RESULTS

Due to the usage of thematic analysis, Table 1 below shows the study's main themes and sub-themes of right brain practices through visual culture that the participants use in the early stages of L2 teaching.

Table 1: Themes and Sub-Themes

Themes	Sub-themes
Visual practices	Playing/Drawing/Sketching, Matching Games, Orthographic Mapping, the Memory Palace Approach, Wordless Picture Books, Picture-based Learning Methods, Infographics, and Using Videos
Development of language skills by using visuals	Speaking, Listening, Comprehending, Reading, Writing, and Critical and Creative Thinking Skills
The teacher's role when using visuals in the L2 classroom	Encouraging students to explore, Helping them build additional connections
The working memory	Sketching, Drawing, Painting
Creativity	Turning off students' logical ideas and developing a project
Recognition	Face Memory Game, Spot the Difference, Word Search Puzzles, the Hidden Object Game, Have I Seen it or not? Exactly the Same, the Shadow Matching, and Find the Differences
Learning to read	Colour-coding Methods, Incorporation of Symbols in Visuals and Stories, Displaying Sound Spelling
Storytelling	Reciting/Narrating a Story
Activity-based learning	Sound Recording Using Multi-Channel Software, Enacting the Story with Puppets

4.1. Visual Practices

Playing/drawing/sketching

Twenty-three participants out of twenty-seven including Teachers 2, 3, 24 and 27 discussed how incorporating art and play can be effective in language learning. The teachers mentioned various techniques such as drawing without looking at the paper, collaborative sketching games, using real-life objects, and playing games to help students engagingly memorise new vocabulary. The participants admitted that they use these techniques with younger students but not with ML2 adult students. They highlighted the value of these teaching methods, which not only help with language learning but also encourage collaboration and communication among students. Additionally, the use of drawing/sketching may be more effective for adult learners to retain knowledge compared to book-based learning (Nielsen et al., 2013).

Matching Games

Teacher 10 describes the matching game as a visual tool that can be used by both teachers and students and explains how to conduct this game. The game involves flipping cards to find pairs, and the player with the most pairings wins.

> *To play the matching game, teachers may use a set of matching game cards. The cards are typically laid face down on the table, and students flip two cards at a time to try to locate matching pairs in the fewest number of flips possible. If a pair is not found, the cards must be turned back down.*
>
> Teacher 10 (female; Primary school)

Research has shown that the matching game offers several benefits, including the stimulation of the brain's right hemisphere, enhancement of attention, facial recognition and visual memory (Brady, Alvarez and Störmer, 2019; Qi et al., 2019).

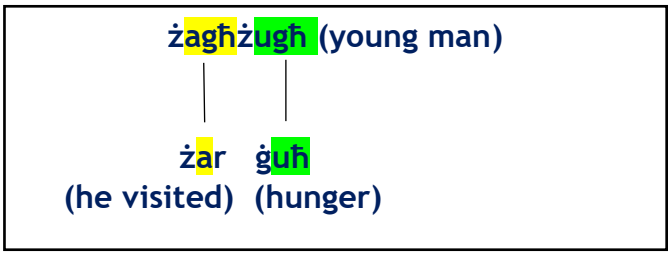
Orthographic Mapping

Six primary school teachers, four middle school teachers, two secondary school teachers, and three EFL/Business English/Medical English teachers have discussed the orthographic mapping method and how it is used by various teachers in different educational settings. According to Kilpatrick (2015), this method is defined as a technique that enables the instant recognition and effortless recall of unknown words (see Figure 1), as Teacher 12 has mentioned.

> *I implement orthographic mapping, in which we begin with a long word, such as 'żagħżugħ' (a young man), and then colour-code the two complicated phonemes* (see Figure 1). *Even in a lengthy word, after the sound-spellings are underlined, only a few letters need to be modified. This is necessary for young learners to correctly pronounce 'agħ' as /a:/ in the word 'żar' (he visited) and 'ugħ' as /uh/ in the word 'ġuħ' (hunger).*
>
> Teacher 12 (female; Primary School)

Figure 1 Caption: Orthographic Mapping: Colour-Coding the Complicated Phonics in a Large Word.

Figure 1 ALT-TEXT: Orthographic Mapping: Illustrative image of a large word with colour-coded letters representing phonics components. It is prominently displayed against a neutral background. The word's size and visibility are emphasized. Colour-coded letters visually depict intricate phonics patterns, facilitating understanding and analysis.



Teachers 6 and 10 described how they apply the orthographic mapping method by colour-coding the same sounds and teaching from whole to parts (see Figures 2 and 3).

> *Although children can hear details such as GĦI in Maltese sounding like long A as in /ai/ in English, students must do something with that information to use it in real life. One method to facilitate students' use and retention of GĦI (long A) is to develop other GĦI words* (see Figure 2) *by writing them on small cards. Subsequently, students can tell a tale using the words they wrote on the cards, and the teacher can ask them to create pictures to accompany the story.*

The teacher can also prepare a word bank on the whiteboard for students to use and see if the words inspire ideas for a picture or caption.

Teacher 6 (female; Primary School)

Figure 2 Caption: Orthographic Mapping: Colour-Coding Same Sounds in Words.

Figure 2 ALT-TEXT: Orthographic Mapping: Colour-coded representation of words with corresponding phonetic sounds. The figure shows four sets of words with different colour-coding schemes, arranged in columns. Each column represents words with similar sounds. The colour-coded letters highlight the consistency in sounds across the words, aiding in understanding and analysis of phonetic patterns.

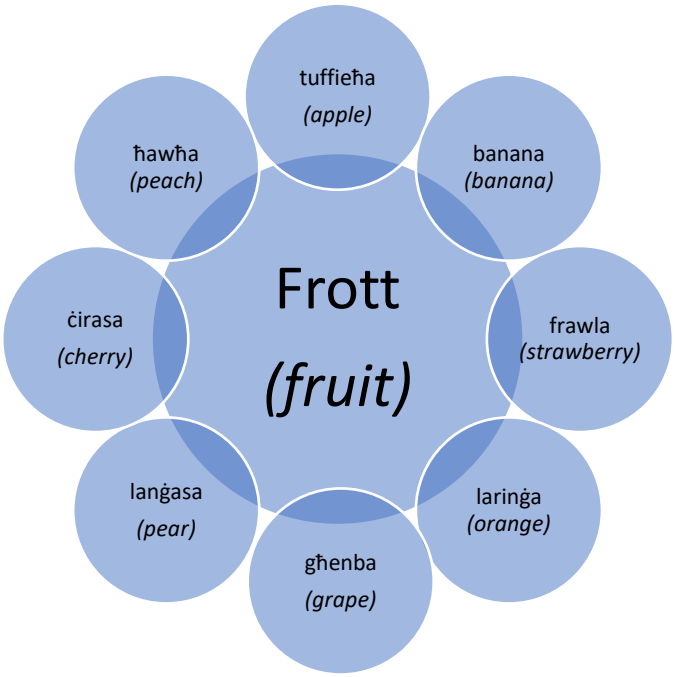
GĦI	EJ	GĦU	AR
miegħi	mexxej	biegħu	mar
(with me)	*(leader)*	*(they sold)*	*(he went)*
tiegħi	bennej	tiegħu	sar
(my/mine)	*(builder)*	*(his)*	*(he became)*
friegħi	kerrej	miegħu	tar
(branches)	*(tenant)*	*(with him)*	*(he flew)*

Before starting a topic, such as fruits, I usually ask my students to bring their photos or pictures related to the topic. Then they can present their photo and explain how it relates to the topic (see Figure 3).

Teacher 10 (female; Primary School)

Figure 3 Caption: Teaching from Whole to Part: Visual Orthographic Mapping.

Figure 3 ALT-TEXT: Visual Orthographic Mapping: Illustration demonstrating the teaching approach from whole to part. The figure showcases the process of breaking down words into visual components, aiding in understanding and learning orthographic patterns.



According to the respondents, the orthographic mapping method can be viewed as a creative technique because it allows students to use visual elements, such as memes, videos, and pictures, to learn and retain information faster. Adult learners could also benefit from this method in memorizing vocabulary, sounds, and grammar rules more efficiently.

The Memory Palace Approach

In the broadest sense, the memory palace technique could be regarded as a tool that leverages visualization of familiar spatial environments to increase information recall (Varilias, 2019; Reser et al., 2021). The memory palace technique was successfully used by seven participants to improve their student's ability to recall information. As shown in the example given by Teacher 24, the memory palace approach could be particularly suitable for ML2 adult learners with memory issues. The teacher uses the memory palace approach to help students memorize the days of the week by having them draw a palace/home and insert each day into a different room.

> *As an example of the memory palace approach, I have used this technique to help my students memorize the days of the week in Maltese. I ask my students to draw a palace and then to visualise each day of the week in a different room of the palace. The Maltese word for Sunday (il-Ħadd) is placed in the palace's entrance hall, while Monday (it-Tnejn) is placed in the sitting room. Tuesday (it-Tlieta) is placed in the kitchen, Wednesday (l-Erbgħa) is placed in the bathroom, Thursday (il-Ħamis) is placed on the staircase, Friday (il-Ġimgħa) is placed in the bedroom, and Saturday (is-Sibt) is placed on the roof.*
>
> Teacher 26 (female; Middle School)

Wordless Picture Books

The use of wordless books in language learning has been discussed by eleven teachers, including Teacher 22.

> *In class, I tend to use wordless picture books to enable my students to narrate a story using only visuals. During the TEFL course, I attended, we were advised that wordless picture books can foster critical analysis, meaning construction, and storytelling, regardless of the students' reading skills. Therefore, I prefer to use them at the outset of language learning.*
>
> Teacher 22 (female; Primary School)

Research has shown that the engagement of the right brain hemisphere is required for processing visual information (Nielsen et al., 2013). This citation supports the use of picture books in language learning, as they specifically aim to engage the right brain hemisphere to facilitate language acquisition.

Picture-based Learning

Twenty-seven teachers discussed the effectiveness of picture-based learning methods for SLA. Among them, Teachers 1, 10, 15, 16, 20, and 24 provided specific examples of visual practices used in language learning. For instance, Teacher 1 displays pictures around the classroom and asks students to describe them in Maltese. Teacher 10 has students colour pictures and identify vocabulary, while Teacher 15 who teaches Medical English to adults uses X-ray images and photographs to discuss medical vocabulary. Teacher 16 creates flashcards with visual cues related to themes such as animals, food and clothes. Teacher 20 uses PowerPoint presentations and movies to explain body language and facial expressions. Teacher 24 uses graphs and charts to organise concepts and explain views.

> *I use graphs and charts to engage learners, enabling them to retain knowledge, organise concepts and explain their views more clearly. I also use Venn Diagrams (which represent comparisons and contrasts), Timelines (which visually represent a series of events or tenses), Inverted Triangles (which progress from broad topics to specific ones), Story or Essay Planners (which guide students through the necessary steps to complete their tasks), and Charts for listing word families (with columns for verbs, adjectives, adverbs, nouns, and other related words. For example, the words in Maltese "ipparteċipa" (he participated), "jipparteċipa" (he participates), "parteċipant" (participant), "parteċipazzjoni" (participation).*
>
> Teacher 24 (female; Middle school)

Furthermore, Teacher 26 noted that visual methods can help students investigate L2 cultural aspects. Generally, these teachers highlighted the effectiveness and versatility of picture-based learning methods in SLA which can be used in teaching ML2 to adults.

Infographics

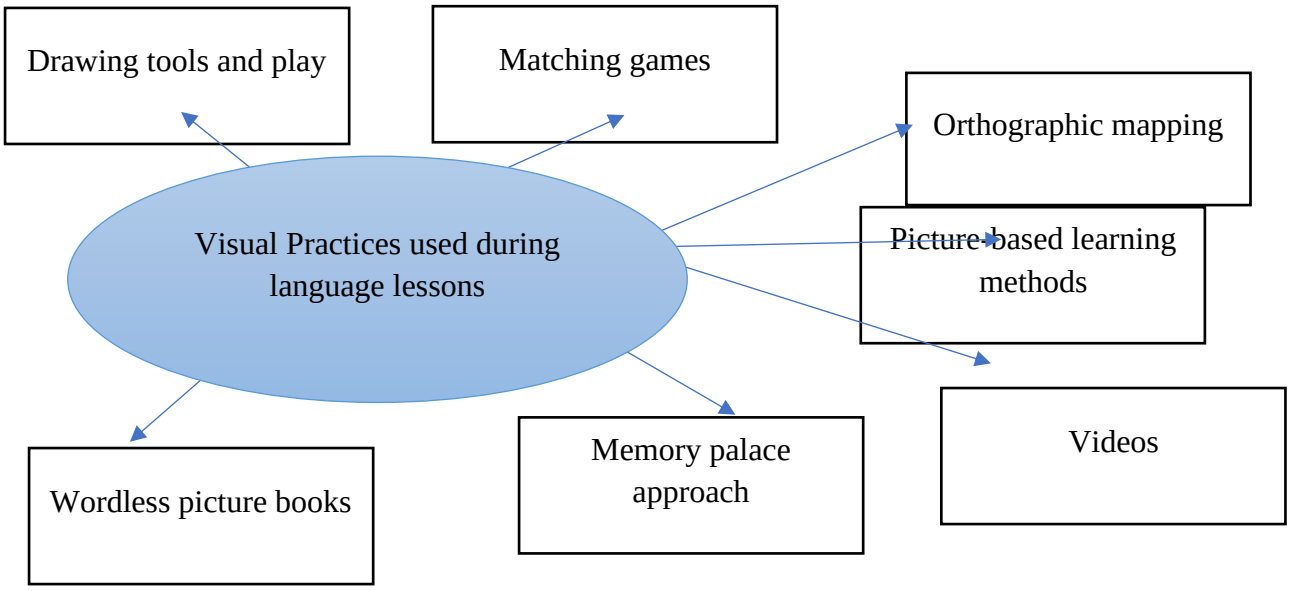
Teachers 5 and 23, who teach EFL, utilize infographics to enhance vocabulary retention among their students. Infographics are visually appealing representations of information, designed for quick comprehension. These teachers believe infographics facilitate better understanding and retention of new vocabulary and can be a time-efficient learning method. Teacher 5 specifically appreciates the online accessibility of infographics, making them convenient teaching resources. However, both Teachers 5 and 23 acknowledge that the effectiveness of infographics can vary depending on individual learning styles and preferences. While infographics are beneficial supplements to language instruction, they may not suffice as the sole means of teaching new vocabulary or concepts.

Using videos

Teachers 20, 1, 16, and 2 use videos in their language lessons to enhance learning. Teacher 20 employs kinetic typography videos, which merge words and moving images to enhance the material's visual appeal and challenge the students. Teachers 1 and 16 encourage students to create their own videos using devices like iPads or mobile phones. Teacher 2 explores the potential of Augmented Reality (AR) for a more immersive experience. The literature supports the effectiveness of videos for language learning (Nielsen, et al., 2013), which could be applied to ML2 adult learners. Figure 4 depicts the type of visuals that the participants use during their full-time career, which could also be employed for teaching ML2 to adults.

Figure 4 Caption: Visual Practices mentioned by the participants.

Figure 4 ALT-TEXT: Visual Practices used during language lessons: An image depicting various visual techniques used during lessons. It includes drawing tools and play, matching games, orthographic mapping, picture-based learning methods, wordless picture books, memory palace approach, and videos.



4.2. Language Skills and Critical Thinking

Teachers 1, 2, 3, 5, 8, 13, 14, 15, and 26 employ various methods to enhance language skills and critical thinking through visual culture (Ampera et al., 2021). Teacher 1 uses pictures as a

guidepost for a writing task, encouraging students to create stories using the pictures as inspiration, thereby enhancing language skills and practising tenses.

Teacher 2 advises students to explain and visualise, using the example of one student describing an artwork to another student who has their eyes closed or turned away from the artwork. This promotes descriptive language use and critical thinking. Teacher 3 employs various visuals, including photographs, sculptures, and movies, to facilitate discussions and analysis of art, aiding in vocabulary and grammar development.

Teacher 5 implements a class blog where students select photos and explain their preferences, fostering authentic conversations and interactions among students. Teacher 13 uses "flashcards in classic games" to get students moving and engaging with flashcards, reinforcing speaking skills in pairs or small groups. Teacher 14 encourages students to create memes as a writing task, allowing even lower-level students to participate and practice their language skills.

Teacher 15 poses "open-ended questions about images, architecture, or artwork" promoting critical and imaginative thinking, while improving speaking and listening skills. Teacher 26 uses visual images to facilitate students' interaction and "they form their associations". The students are pushed to invent a narrative and draw links between the images by showing them a picture of a depressed man and an empty food bowl. Students are encouraged to write on the photographs and read their work aloud to the class, which helps them improve both their writing and reading skills as well as their critical thinking abilities.

Teachers 5 and 8 employ the slow reveal method to assist students in identifying the assumptions they make when viewing a picture without context. The students' preconceptions and associations can be changed by gradually revealing information about the artwork, such as the background of the artist and the historical setting in which it was created. This method helps students improve their comprehension and analytical abilities in addition to their critical thinking skills. Teacher 8 uses "imaginative reading as a speaking task", showing students a picture and asking them a series of questions to encourage them to think critically about an artwork and practise their language skills.

These teachers employ visual culture and various strategies to enhance language skills and critical thinking among students, fostering engagement, authentic conversation, descriptive language use, higher-order thinking, comprehension, analysis, and meaningful learning experiences.

Working Memory

The theme of working memory and its enhancement through the use of visuals and gestures was explored in this study. Teacher 10 suggested that activities such as sketching, drawing, and painting can be effective in developing students' creativity and turning off conscious ideas. Teachers 9, 11, 13, and 15 also emphasised the importance of using visuals such as artwork, maps, graphs, and pictures to help students retain new L2 concepts and vocabulary. Teacher

11 highlighted the use of a well-known artwork, "The Virtues of Mankind" by Giuseppe Cali, to introduce Maltese culture to students. By explaining parts of the artwork and asking students to sketch it, the teacher encouraged students to see the artwork as if for the first time and retain more information about it.

> *In class, I display artwork to help students become acquainted with Maltese culture. "The Virtues of Mankind" by Giuseppe Cali, which hangs over the stage in the Salesian Theatre, is ideal for this purpose. Without revealing the name of the painting, I explain its different parts and encourage students to sketch it individually or in groups. This exercise helps students see the artwork as if for the first time and enhances their understanding of it.*
>
> Teacher 11 (Male; adults - Business English)

The use of visuals in the classroom has been shown to activate the right-brain visual-spatial abilities of students, helping them to retain information more effectively (Bobek and Tversky, 2016). As such, the incorporation of visuals and gestures in language teaching can be an effective strategy to enhance student's working memory and improve their overall learning experience.

Creativity

The theme of creativity in language teaching was highlighted by all participants including Teachers 11 and 12, who emphasised the value of using visual tools to promote creative thinking in students. Teacher 11 suggested that working with pictures can encourage students to turn off their logical ideas and tap into their creative side, while Teacher 12 advocated for the use of projects such as posters, paper-mâché, or 3D sculptures to promote students' creativity and engagement in the classroom.

This emphasis on creativity aligns with Kalaja and Pitkanen-Huhta's (2018) that using visual tools in language classes can foster creative thinking in learners. By offering opportunities for students to participate in hands-on, imaginative tasks, language instructors can create a more stimulating and relevant learning environment. Consequently, students may have a better grasp of language concepts and enhance their language skills. Such creative projects could be employed with ML2 adult learners to enhance their creative and language skills.

Recognition

The phenomenon of recognition is a crucial cognitive process that enables individuals to identify and categorise information based on their previous experiences and knowledge (Wei et al., 2017). The brain's right hemisphere is responsible for recognition and is consistent with prior research, indicating the right hemisphere's dominance in visual perception and processing (Wei et al., 2017).

Teachers 15, 16, 17, and 21 highlight the significance of the recognition process in various learning areas such as language acquisition, attention, concentration, and reasoning abilities. Teacher 15's Face Memory Game improves visual scanning, planning, and spatial memory, crucial for language learning. Teacher 16's Spot the Difference game enhances visual attention, scanning, and comparing abilities, beneficial for language and detail-oriented activities. Teacher 17's Word Search Puzzles aid in visual recognition, conceptualization, and

concentration. Teacher 21's Hidden Object Game reinforces attention, reading, and memory skills. Incorporating these games into ML2 learning activities can effectively enhance adult learners' recognition skills and cognitive abilities.

Teachers can integrate the mentioned games into ML2 learning activities for adult learners to offer engaging and effective ways of improving recognition skills and developing cognitive abilities like learning and memory. These games provide interactive and enjoyable approaches to enhance learners' cognitive processes and contribute to their overall language acquisition journey.

Learning to read

Teachers 18, 19, and 22 shared strategies to simplify reading for students through right-brain activities. Teacher 18 emphasized displaying frequently used words on classroom walls and incorporating symbols in visuals and narratives to connect sounds to letters. Teacher 19 and Teacher 22 utilized charts and displays of sound spellings, along with colour coding, to teach students that sounds can be spelt in different ways. By grouping words according to similar spelling patterns, students develop a better understanding of spelling patterns. Table 2 illustrates this approach.

Table 2: The Use of Colour-Coding Techniques to Encourage Pattern-Seeking

GĦI	EJ	GĦU	AR
miegħi (with me)	mexxej (leader)	biegħu (they sold)	mar (he went)
tiegħi (my/mine)	bennej (builder)	tiegħu (his)	sar (he became)
friegħi (leaves)	kerrej (tenant)	miegħu (with him)	tar (he flew)

These approaches contribute to enhancing students' reading skills and simplifying the process of transitioning from spoken to written language by incorporating visual aids and right-brain activities. These visual techniques can be used to support adult ML2 students in enhancing their reading skills in Maltese.

Storytelling

Speaking activities for storytelling were discussed by twenty-three participants as a means to enhance fluency. Teacher 1 uses a story map or graphics cards to guide students in narrating a story, promoting understanding and engagement. On the other hand, Teacher 13 incorporates videos to encourage students to adopt different perspectives and narrate from alternate viewpoints, fostering creativity and fluency development. Primary school students often rely on visual aids like story stones to aid in story retention, while older students recite stories. These findings indicate that videos and visuals can be effective teaching tools for ML2 adult learners, supporting the development of their speaking skills.

Five teachers commented on the theme of activity-based learning, which is an approach used with both young learners and EFL adult learners. Teacher 4 engages her students in activity-based learning by showing them photos and prompting them to describe the setting or illustrate character features, allowing them to build vocabulary and develop speaking skills. Teacher 16 encourages students to create a cartoon version or a story map to explore how artists express their ideas, fostering creativity and critical thinking skills about the subject matter.

Other participants in the study suggested various activities, including creating models, painting and sketching scenarios, enacting stories with puppets or costumes, performing sections of a

picture tale, constructing models, and creating cartoon versions or story maps. These activities aim to be enjoyable and engaging while helping students develop their language skills.

These teachers' examples demonstrate how activity-based learning can be effective for both young and adult learners of Maltese, making language learning more engaging and enjoyable while facilitating the development of language skills in a meaningful way.

4.3. Comparative Analysis of Visual Practices for Beginner and Advanced Adult Learners of Maltese or any other language

Visual Practices

For beginner adult learners**,** visual practices such as playing/drawing/sketching and matching games can be particularly effective. These techniques, which include drawing without looking at the paper, collaborative sketching games, using real-life objects, and playing games, help students engagingly memorize new vocabulary. The use of drawing/sketching may be more effective for adult learners to retain knowledge compared to book-based learning (Nielsen et al., 2013).

For advanced adult learners**,** techniques such as orthographic mapping and the memory palace approach can be more beneficial. Orthographic mapping allows students to use visual elements, such as memes, videos, and pictures, to learn and retain information faster. The memory palace technique leverages visualization of familiar spatial environments to increase information recall (Varilias, 2019; Reser et al., 2021). This approach could be particularly suitable for ML2 adult learners with memory issues.

Wordless Picture Books

Wordless picture books can be used effectively across all levels of language learning. For beginner learners, these books can foster critical analysis, meaning construction, and storytelling, regardless of the student's reading skills. For advanced learners**,** these books can be used to engage the right brain hemisphere, which is required for processing visual information (Nielsen et al., 2013), and facilitate language acquisition.

Picture-based Learning

For beginner adult learners**,** picture-based learning methods such as displaying pictures around the classroom and asking students to describe them, having students colour pictures and identify vocabulary, and creating flashcards with visual cues related to themes such as food, furniture and clothes can be particularly effective. These methods provide a visually engaging way to introduce new vocabulary and concepts.

For advanced adult learners**,** techniques such as using X-ray images and photographs to discuss medical vocabulary, using PowerPoint presentations and movies to explain body language and facial expressions, and using graphs and charts to organise concepts and explain views can be more beneficial. These methods allow for a deeper exploration of complex topics and facilitate a more comprehensive understanding.

Infographics

Infographics can be utilized effectively across all levels of language learning. For beginner learners**,** infographics can serve as visually appealing representations of information, designed for quick comprehension and enhanced vocabulary retention. For advanced learners**,** infographics can be used as a time-efficient learning method that facilitates better understanding and retention of new vocabulary.

Using Videos

Videos can be an effective tool for both beginner and advanced learners. For beginners**,** videos can enhance the material's visual appeal and challenge the students. For advanced learners**,** videos can provide a more immersive experience, especially when augmented reality (AR) is used.

Language Skills and Critical Thinking

Methods to enhance language skills and critical thinking through visual culture can be adapted for both beginner and advanced learners. For beginner adult learners, methods such as posing open-ended questions about images, architecture, or artwork can promote critical and imaginative thinking, while improving speaking and listening skills. The slow reveal method can assist students in identifying the assumptions they make when viewing a picture without context, thereby improving their comprehension and analytical abilities in addition to their critical thinking skills.

For advanced adult learners, methods such as using visual images to facilitate students' interaction and encouraging them to invent a narrative and draw links between the images can be particularly effective. These methods can help students improve both their writing and speaking skills as well as their critical thinking abilities.

Working Memory

For both beginner and advanced adult learners, the use of visuals and gestures can enhance working memory. Activities such as sketching, drawing, and painting can be effective in developing students' creativity. The use of visuals such as artwork, maps, graphs, and pictures can help students retain new L2 concepts and vocabulary.

Creativity

For both beginner and advanced adult learners, the use of visual tools can promote creative thinking. Working with pictures can encourage students to turn off their logical ideas and tap into their creative side. Projects such as posters, papier-mâché, or 3D sculptures can promote students' creativity and engagement in the classroom.

Recognition

For beginner adult learners, games such as Face Memory Game, Spot the Difference, and Word Search Puzzles can be particularly effective in improving visual scanning, planning, spatial memory, visual attention, scanning, comparing abilities, visual recognition, conceptualization, and concentration. These games provide interactive and enjoyable approaches to enhance learners' cognitive processes and contribute to their overall language acquisition journey.

For advanced adult learners, the Hidden Object Game can reinforce attention, reading, and memory skills. This game can effectively enhance adult learners' recognition skills and cognitive abilities.

Learning to Read

For beginner adult learners, strategies such as displaying frequently used words on classroom walls and incorporating symbols in visuals and narratives to connect sounds to letters can simplify reading. Charts and displays of sound spellings, along with colour coding, can teach students that sounds can be spelt in different ways.

For advanced adult learners, grouping words according to similar spelling patterns can help students develop a better understanding of spelling patterns. These approaches contribute to enhancing students' reading skills and simplifying the process of transitioning from spoken to written language.

Storytelling

For beginner adult learners, using a story map or graphics cards to guide students in narrating a story can promote understanding and engagement. Visual aids like story stones can aid in story retention.

For advanced adult learners, incorporating videos to encourage students to adopt different perspectives and narrate from alternate viewpoints can foster creativity and fluency development.

Activity-based Learning

For beginner adult learners, activity-based learning methods such as showing photos and prompting students to describe the setting or illustrate character features can be particularly effective. These methods can allow students to build vocabulary and develop speaking skills. For advanced adult learners, methods such as creating a cartoon version or a story map to explore how artists express their ideas can be more beneficial. These methods foster creativity and critical thinking skills about the subject matter.

While some visual practices may be more suited to certain levels of language learning, all can be adapted and utilized effectively across all levels, from beginner to advanced adult learners. The key is to select and adapt the methods that best meet the learners' needs and learning styles.

5. DISCUSSION

This study provides an intriguing exploration of the role of right-brain practices in language learning, particularly in the context of teaching Maltese to international adults. The study's methodology involved conducting a focus group of twenty-seven teachers, which allowed for a comprehensive investigation of various visual culture practices used in language classes.

The findings of the study highlight the effectiveness of several visual culture practices, such as drawing, sketching, orthographic mapping, and various games. These practices not only facilitate language learning but also encourage collaboration and communication among students. However, the participants did not provide how these practices can be adapted for different learning styles or learners with specific needs.

The study also discusses the use of the matching game and orthographic mapping in language learning. While these methods have been shown to stimulate the brain's right hemisphere and enhance attention, facial recognition, and visual memory, the study does not provide empirical evidence to support these claims. The inclusion of infographics and videos in language learning, as discussed in the study, further underscores the potential of visual culture practices in enhancing language learning. Infographics, as utilized by Teachers 5 and 23, are visually appealing representations of information that can facilitate better understanding and retention of new vocabulary.

The use of videos in language lessons, as described by Teachers 20, 1, 16, and 2, offers another innovative approach to language learning. The use of kinetic typography videos, student-created videos, and Augmented Reality (AR) provides a more engaging and immersive learning experience. However, similar to infographics, the effectiveness of videos may also depend on individual learning styles and preferences.

The study also discusses various methods employed by teachers to enhance language skills and critical thinking through visual culture. These methods, which include using pictures as guideposts for writing tasks, explaining and visualizing, using flashcards in classic games, creating memes as a writing task, and posing open-ended questions about images, architecture, or artwork, offer a more interactive and engaging approach to language learning. They not only enhance language skills but also foster critical and imaginative thinking.

The use of playing/drawing/sketching in language learning, as discussed by the majority of the participants, underscores the importance of interactive and engaging methods in teaching. These techniques not only aid in memorizing new vocabulary but also foster collaboration and communication among students. However, the analysis reveals a gap in the application of these techniques with adult learners, suggesting a potential area for further research and practice.

Orthographic mapping is another method discussed in the analysis. The detailed descriptions provided by the teachers give valuable insights into its application in different educational settings. The use of colour coding in orthographic mapping, as described by Teacher 12, is particularly interesting. It simplifies the learning process and aids in the recognition and recall of unknown words. However, the analysis could benefit from a more in-depth discussion on how this method can be adapted for learners with different proficiency levels or learning styles.

The Memory Palace Approach, as used by seven participants in the study, leverages visualization of familiar spatial environments to increase information recall. This technique could be particularly suitable for ML2 adult learners with memory issues.

Wordless Picture Books, as discussed by eleven teachers, foster critical analysis, meaning construction, and storytelling, regardless of the students' reading skills. The engagement of the right brain hemisphere is required for processing visual information, supporting the use of picture books in language learning.

Picture-based Learning, discussed by twenty-seven teachers, is another effective method for second language acquisition. The use of pictures around the classroom, colouring pictures to

identify vocabulary, using X-ray images and photographs to discuss medical vocabulary, creating flashcards with visual cues, using PowerPoint presentations and movies to explain body language and facial expressions, and using graphs and charts to organise concepts and explain views are some of the visual practices used in language learning. These practices not only facilitate language learning but also encourage collaboration and communication among students.

This study provides a comprehensive exploration of the role of visual culture practices in language learning. They highlight the potential of these practices in enhancing language learning outcomes and offer practical recommendations for their application. However, they also reveal certain gaps and areas for further research, particularly in the application of these practices with adult learners and learners with different needs. Despite these limitations, the study makes significant contributions to the field of language studies and has the potential to inform future research and teaching practices. Its focus on the role of right-brain practices and visual culture in language learning represents a novel approach that could reshape traditional teaching methods and enhance language learning outcomes. The inclusion of the Memory Palace Approach, Wordless Picture Books, and Picture-based Learning further underscores the potential of visual culture practices in language learning. However, the effectiveness of these practices may vary depending on individual learning styles and preferences, suggesting the need for a more personalized approach to language instruction. Despite these considerations, this study offers valuable insights and contributes significantly to the field of language studies.

5.1. Limitations of the Study The use of right-brain practices through visual culture

The study has several limitations. Firstly, there are ongoing debates on the functions of the right and left-brain hemispheres in language learning leading to contradictory opinions among researchers (Qi, et al., 2019). Secondly, the small number of participants in the focus group is due to the limited availability of ML2 teachers in Malta. Thirdly, the study relies on teachers' experiences, which may introduce biases, and the findings cannot be generalized due to the small sample size. Lastly, the study lacks the perspective of adult students, focusing solely on the teachers' viewpoint.

5.2. Recommendations The use of right-brain practices through visual culture

The study recommends incorporating right-brain activities and visual culture methods, such as drawing tools, matching games, orthographic mapping, wordless picture books, and videos, in ML2 classrooms for adult learners. These right-brain practices can enhance language skills and improve learning outcomes.

However, the impact of these practices on the right hemisphere and their effectiveness for adult learners in the early stages of learning Maltese needs further research. Participants in the current research may not have enough knowledge of the impact these practices can have on the right hemisphere, especially for adult learners, since these visual methods that they mentioned, were not used in the ML2 classroom for adults. To address this, it is recommended that a follow-up study be conducted focusing on the perspectives of adult learners. This could be achieved through individual interviews or another focus group with adult learners who have experienced these visual practices in their language learning journey. For instance, adult learners could be asked about their experiences with the visual practices mentioned by the teachers, such as playing/drawing/sketching, matching games, and orthographic mapping. They could provide feedback on how these practices have impacted their language learning, which skills they feel have been improved, and any challenges they have encountered. Moreover, adult learners could provide insights into how these visual practices compare to

more traditional, book-based learning methods. They could also suggest improvements or modifications to these practices based on their personal experiences. By exploring adult learner viewpoints, the study could provide a more comprehensive understanding of the effectiveness of visual practices in language learning. This would not only validate the teachers' perspectives but also ensure that the practices are meeting the learners' needs and preferences.

The study also suggests exploring the influence of visual methods on the left hemisphere to better understand the role of both brain hemispheres in language learning. This could involve neuroscientific studies to examine how different visual practices stimulate the left and right hemispheres during language learning.

This study also recommends further research to evaluate the effectiveness of these right-brain practices on actual ML2 proficiency and retention over time. It is indeed crucial to assess not only the immediate impact of these practices on language learning but also their long-term effects. Therefore, the study recommends conducting longitudinal studies to track the progress of adult learners who have been exposed to these visual culture methods in their ML2 classrooms. These studies could measure learners' proficiency levels at regular intervals and monitor their retention of the language over an extended period. This would provide valuable insights into the sustainability of the learning outcomes achieved through these practices. Furthermore, these studies could also explore whether the benefits of these practices extend beyond language learning, such as enhancing learners' creativity or problem-solving skills, which are often associated with right-brain activities. By doing so, future research can provide a more holistic understanding of the potential of visual culture in ML2 or any other language learning.

By incorporating these recommendations, future research can continue to advance our understanding of the role of visual culture in language learning and contribute to the development of more effective teaching strategies.

5.3. The implications of the study findings for language researchers and teachers

The findings of this study have important implications for language researchers and teachers. The study emphasises the need to incorporate visual culture practices into language teaching methods for adult learners, going beyond traditional approaches that focus solely on linguistic processes.

By incorporating visual elements, such as drawing, wordless picture books, and videos, teachers can create a more immersive and enjoyable learning environment, increasing learner engagement and motivation. The study also highlights the potential benefits of visual culture practices during the early stages of language acquisition, suggesting techniques like picture-based learning methods and memory palace approaches. These practices can help adult second language learners build a solid foundation in the target language. Additionally, the study identifies memory-enhancing aspects of visual culture practices, such as infographics and memory games, which can aid in vocabulary acquisition and improve memory retention. Finally, incorporating visual materials that showcase the target culture can promote cultural understanding and foster intercultural competence among language learners. Consequently, this research provides valuable recommendations for language researchers and teachers to enhance language learning outcomes by integrating visual culture practices into instruction.

6. CONCLUSION

The study explored the importance of using visual culture and right-brain practices in teaching ML2 to adult learners. Qualitative data was collected from 27 teachers who teach ML2 to adult learners part-time. While the teachers admitted to using visual methods to develop speaking and writing skills, and enhancing right-brain skills through visual activities for other students (i.e., Primary, Middle and Secondary students, and adult students of English), they do not use them to teach the ML2 adult students they have. The study concludes that visual culture practices could be effective in developing the right brain hemisphere's ability, which could be important, particularly in the early stages of language learning. It presents promising research for further exploration in teaching ML2 to international adults.

REFERENCES

Ampera, D., Iskandar, Y., Tabieh, A.A.S., & Soomro, Z.A. (2021). The role of visuals in cultural learning in the EFL classroom. *The Asian ESP Journal, 17*(3), 1-14.

Bak, T.H., Long, M.R., Vega-Mendoza, M., & Sorace, A. (2016). Novelty, Challenge, and Practice: The Impact of Intensive Language Learning on Attentional Functions. *PLoS ONE 11*(4): e0153485. https://doi.org/10.1371/journal.pone.0153485

Bidelman, G.M. & Howell, M. (2016). Functional changes in inter- and intra-hemispheric cortical processing underlying degraded speech perception. *NeuroImage, 124*(1), 581-590. https://doi.org/10.1016/j.neuroimage.2015.09.020

Bobek, E. & Tversky, B. (2016). Creating visual explanations improves learning. *Cognitive Research: Principles and Implications, 1*(27), 1-17. https://doi.org/10.1186/s41235-016-0031-6

Brady, T.F., Alvarez, G. A. & Störmer, V. S. (2019). The Role of Meaning in Visual Memory: Face-Selective Brain Activity Predicts Memory for Ambiguous Face Stimuli. *Journal of Neuroscience 39*(6) 1100-1108. https://doi.org/10.1523/JNEUROSCI.1693-18.2018

Braun, V. & Clarke, V. (2021). *Thematic analysis: A practical guide*. Thousand Oaks, CA: Sage Publications.

Breakwell, G.M., Wright, D.B., & Barnett, J. (2020). *Research methods in psychology*. Thousand Oaks, CA: Sage Publications.

Camilleri Grima, A. & Mantellato, M. (2021). Expressing a personal response to a creative text in the 'Maltese as a foreign language' class. *Malta Review of Educational Research, 15*(2), 269-291.

Creswell, J.W. & Creswell, J.D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.

Jeong, H., Li, P., Suzuki, W., Sugiura, M., & Kawashima, R. (2021). Neural mechanisms of language learning from social contexts. *Brain and Language, 212*. https://doi.org/10.1016/j.bandl.2020.104874

Kalaja, P., & Pitkanen-Huhta, A. (2018). ALR special issue: Visual methods in applied language studies. *Applied Linguistics Review, 9*(2), 1-14. https://doi.org/10.1515/applirev-2017-0005

Kiss, T., & Weninger, C. (2017). Cultural learning in the EFL classroom: The role of visuals. *ELT Journal, 71*(2), 186-196. https://doi/org/10.1093/elt/ccw072

Lenkaitis, C.A., & Hilliker, S.M. (2019). *Engaging teacher candidates and language learners with authentic practice*. Hershey, PA: IGI Global.

Luo, L. (2022). A Study on the Application of Computer-Aided Dual-Coding Theory in English Vocabulary Teaching. *Scientific Programming*, *6*, 1-10. https://doi.org/10.1155/2022/5951844

Matusiak, K.K., Heinbach, C., Harper, A., & Bovee, M. (2019). Visual literacy in practice: Use of images in students' academic work. *College & Research Libraries 80*(1), 123-139.

Nielsen, J.A., Zielisnki, B.A., Ferguson, M.A., Lainhart, J.E., & Anderson, J.S. (2013). An evaluation of the left-brain vs. right-brain hypothesis with resting state functional connectivity magnetic resonance imaging. *PLOS One 8*(8), 1-17. https://doi.org/10.1371/journal.pone.0071275

Nilsson, J., Berggren, R., Garzón, B., Lebedev, A.V., & Lövdén, M. (2021). Second Language Learning in Older Adults: Effects on Brain Structure and Predictors of Learning Success. *Front Aging Neuroscience 3*(13): 666851. https://doi.org/10.3389/fnagi.2021.666851

Philominraj, A., Jeyabalan, D., & Vidal-Silva, C. (2017). Visual learning: A learner centered approach to enhance English language teaching. *English Language Teaching, 10*(3), 54-63.

Pitkanen-Huhta, A., & Pietikainen, S. (2016). Visual methods in researching language practices and language learning: Looking at, seeing, and designing language. *Research Methods in Language and Education, 1*, 1-13. https://doi.org/10.1007/978-3-319-02329-8_29-1

Qi Z., Han M., Wang Y., de los Angeles C., Liu Q., Garel K., Chen E., Whitfield-Gabrieli S., Gabrieli J.D.E., & Perrachione T.K. (2019). Speech processing and plasticity in the right hemisphere predict real-world foreign language learning in adults. *NeuroImage, 192*, 76-87. https://doi.org/10.1016/j.neuroimage.2019.03.008

Ralby, A., Mentzelopoulos, M., & Cook, H. (2017). Learning Languages and Complex Subjects with Memory Palaces. Immersive Learning Research Network. iLRN 2017. *Communications in Computer and Information Science, 725*, 217-228. Springer, Cham. https://doi.org/10.1007/978-3-319-60633-0_18

Reser, D., Simmons, M., Johns, E., Ghaly, A. & Yunkaporta, T. (2021). Australian aboriginal techniques for memorization: Translation into a medical and allied health education setting. *PLoS One, 16*(6). https://doi.org/10.1371/journal.pone.0251710

Roehr-Brackin, K. (2018). *Metalinguistic Awareness and Second Language Acquisition*. Routledge. https://doi.org/10.4324/9781315661001

Saunders, M.N.K., Lewis, P., & Thornhill, A. (2020). *Understanding research philosophies and approaches*. New York, NY: Springer.

Smiciklas, M. (2012). *The Power of Infographics: Using Pictures to Communicate and Connect with Your Audiences*. Pearson: Que Biz-Tech.

Suzani, S.M. (2018). The role of brain dominance in the pedagogical strategies used by Iranian ELT teachers. *International Online Journal of Education and Teaching, 5*(4), 705-722.

Varilias, L. (2019). Imagining a Memory Palace: Method of Loci and the Effect of Object and Spatial Imagery Skill. South Orange, New Jersey: Seton Hall University Dissertations and Theses (ETDs). 2644. https://scholarship.shu.edu/dissertations/2644

Wei, H.S., Sulaiman, T., Baki, R., & Roslan, S. (2017). The relationship between brain dominance and Japanese language academic achievement. *International Research Journal of Education and Sciences, 1*(2), 48-57.

Xing, S., Lacey, E.H., Skipper-Kallal, L.M., Jiang, X., Harris-Love, M.L., Zeng, J. & Turkeltaub, P.E. (2015). Right hemisphere grey matter structure and language outcomes in chronic left hemisphere stroke. *Brain, 139*(1), 227-241. https://doi.org/10.1093/brain/awv323

Yang, Z. (2023). The Effect of Learning a Second Foreign Language at an Early Age. *Journal of Education, Humanities and Social Sciences, 8,* 340–344. https://doi.org/10.54097/ehss.v8i.4271

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