APPROXIMATIONS BETWEEN VISUAL LANGUAGE DEVELOPMENT AND SECOND LANGUAGE ACQUISITION: HOW CULTURAL ASPECTS PERMEATE LEARNING

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Abstract: In this study, we look for links between acquiring a second language and developing a visual language and the cultural aspects involved in learning, based on concepts such as Hernandez's Visual Culture and David Ausubel's Meaningful Learning Theory (MLT). The research is qualitative, and the data collection strategies were a Systematic Bibliographic Review in a database of scientific works and an unsystematic literature review to list the authors who are references in the areas. The selected studies provide models and strategies for visual literacy based on analyzing and producing everyday images. Finally, a discussion is presented on how cultural aspects permeate verbal and visual literacy processes.

Keywords: Verbal language; Visual Language; Visual culture.

APROXIMAÇÕES ENTRE O DESENVOLVIMENTO DA LINGUAGEM VISUAL E A AQUISIÇÃO DE UM SEGUNDO IDIOMA: COMO OS ASPECTOS CULTURAIS PERMEIAM O APRENDIZADO

Resumo: Neste estudo, procuramos ligações entre a aquisição de uma segunda língua e o desenvolvimento de uma linguagem visual e os aspectos culturais envolvidos na aprendizagem, com base em conceitos como a Cultura Visual de Hernandez e a Teoria da Aprendizagem Significativa (MLT) de David Ausubel. A pesquisa é qualitativa e as estratégias de coleta de dados foram uma Revisão Bibliográfica Sistemática em um banco de dados de trabalhos científicos e uma revisão assistemática da literatura para elencar os autores que são referências nas áreas. Os estudos selecionados fornecem modelos e estratégias de alfabetização visual baseadas na análise e produção de imagens cotidianas.

Por fim, é apresentada uma discussão sobre como os aspectos culturais permeiam os processos de alfabetização verbal e visual.

Palavras-chave: Linguagem verbal; Linguagem Visual; Cultura visual.

APROXIMACIONES ENTRE EL DESARROLLO DEL LENGUAJE VISUAL Y LA ADQUISICIÓN DE UNA SEGUNDA LENGUA: CÓMO INFLUYEN LOS ASPECTOS CULTURALES EN EL APRENDIZAJE

Resumen: En este estudio, buscamos vínculos entre la adquisición de una segunda lengua y el desarrollo de un lenguaje visual y los aspectos culturales involucrados en el aprendizaje, a partir de conceptos como la Cultura Visual de Hernández y la Teoría del Aprendizaje Significativo (TAS) de David Ausubel. La investigación es cualitativa, y las estrategias de recolección de datos fueron una Revisión Bibliográfica Sistemática en una base de datos de trabajos científicos y una revisión bibliográfica no sistemática para listar los autores referentes en las áreas. Los estudios seleccionados proporcionan modelos y estrategias de alfabetización visual basados en el análisis y la producción de imágenes cotidianas. Por último, se presenta una discusión sobre cómo los aspectos culturales impregnan los procesos de alfabetización verbal y visual.

Palabras clave: Lenguaje verbal; Lenguaje visual; Cultura visual.

1.   Introduction

The unique ability to communicate, and mainly to communicate abstractions, is what differentiates Homo sapiens from other animals and what has possibly defined our survival and the expansion of life on Earth (Harari, 2020). Human language is complex and versatile; from the connection of a limited series of sounds and signs, we produce infinite words and phrases with different meanings. "We can thus consume, store, and communicate an extraordinary amount of information about the world around us" (Harari, 2020, p.31). Our ability to communicate something abstract, something we cannot see, is due to our capacity for imagination. The same imagination also enables us to create something new.

According to Othero (2011), all human beings can acquire and develop language in their genetic code, which is unique to the human species.

Just like verbal language, whether oral or written, visual language communicates, and its ability to be taught and learned is innate to all humans[5]. Suppose writing uses an alphabet and symbols to represent phonemes, whose combination of letters forms words, and these communicate concepts and ideas similarly. In that case, images are made up of elements that can be combined and then read and interpreted by those who know this language. However, it is not enough to "know" the symbols. Mastering visual language requires the ability to combine them in such a way as to express something, understand the meanings, reflect on the images, and create value judgments (DONDIS, 2015, p.6). Nevertheless, understanding the messages implicit in these images is something to be learned, as they represent and help construct the values of the culture in which they are inserted.

Therefore, our aim in this study is to analyze how cultural aspects permeate the teaching and learning of verbal languages, the acquisition of a second language, and visual languages. For this study, we chose a broad concept of culture formulated by Vitória and Emmendoerfer (2024, p.146): culture is "everything we cultivate and everything we are cultivated by." In other words, it is a set of teachings and beliefs that guide what is built in the present and what is desired for the future, but which is constituted by "what has been handed down to us over time, in the sense of the past."

The search for articles was carried out using a Systematic Bibliographic Review of the literature on the Capes Journal Portal, combining the terms "literacy," "learning," and "visual literacy." The following filters were used to select the articles: year of publication between 2014 and 2024, written in English, Portuguese, or Spanish, peer-reviewed, and open access. The result was quite significant, with

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5   Here we are referring to a context of standard cognitive development of a sighted person.

445 publications. The subsequent reading of the titles and abstracts revealed many papers in biology, anatomy, physics, chemistry, or technology teaching, which were excluded, and those where access to the full text was unavailable. We selected the articles by Brown and Savić (2023), Cavalcante (2022), Guinibert (2020), Hellman and Häikiö (2024), Silva and Almeida (2018) and Silva and Palaré (2023). We have included in this article some authors who are relevant in the academic world and whose studies address visual literacy: Dondis (2015), Leborg (2016), Hernández (2000), Fontoura (2004), and also authors who are essential bibliographies in the field of education, such as Paulo Freire (2021), David Ausubel (MOREIRA, 2012) and José Moran (2018).

2.   Verbal and visual communication modalities

Mastering a language (verbal communication) involves assimilating its vocabulary and structures. For second language learners, structures from the mother tongue can be transferred (LUCHESA, 2017). These structures also exist in the visual communication modality.

> What is expressed in verbal language, produced using texts, through the choice between different classes of words in a syntactic structure is, in visual composition, expressed through the choice between different uses, images, colors, layouts, or other composition structures (Silva and Almeida, 2018, p.40).

There are cases where the visual and verbal modalities are complementary, where the image is not just for illustration or adornment but has the function of communicating more efficiently or quickly than could be expressed in words, for example, in instruction manuals, advertising texts, and teaching materials. The combination of non-verbal and written verbal devices is called multimodality and is of fundamental importance within the communication process (SILVA and ALMEIDA, 2018).

In language teaching, images are widely used as teaching resources to reinforce the verbal message and contribute to learning. However, these images are not neutral; on the contrary, they carry meanings and the cultural values of their producers and often reinforce stereotypes. For this reason, Critical Visual Literacy is needed, which can be used in the classroom by questioning students, including avoiding the teacher's ideological bias, about the messages and discourses implicit in the images (BROWN and SAVIĆ, 2023).

3. Visual Literacy and Visual Culture

Vision is a fundamental form of communication for learning, through which we can understand and react to the environment. "Seeing is a direct experience, and using visual data to convey information represents the closest we can get to the true nature of reality" (DONDIS, 2015, p.7). However, there is still no understanding of the complexity involved in human intelligence, of which visual expression is a product (DONDIS, 2015). Even though vision is natural, creating and understanding messages can be achieved through study.

Leborg (2016, p.5) states that his reason for writing a Grammar of Visual Language is the same as the reason for writing a grammar of any other language: "to define its basic elements, describe its guidelines and processes and understand the relationships that exist between each of the individual elements that make up a system."

Visual literacy involves knowing the symbols, understanding the meanings, and interpreting the messages through images. There is no systematic grammar or rigid rules, so syntax and the essential elements of visual composition are used (DONDIS, 2015; LEBORG, 2016; CAVALCANTE, 2022). As defined by Cavalcante (2022, p.3):

> Visual Literacy is an elementary part of visual grammar that seeks to understand the arrangement of the basic elements (point, line, plane, texture, dimension, direction, scale, movement, color, and tone) in composition through its structure (repetition, gradation,

similarity, etc.) and design fundamentals (balance, tension, contrast, rhythm, layers, transparency, etc.).

Visualizing also means forming mental images, such as a route to follow, a product to find, or idealizing and visualizing a project before sketching it out. This pre-visualization is related to design thinking, creativity, and imagination needed to solve problems and make unexpected discoveries.

Design thinking and interdisciplinarity are characteristics of design that are desirable for the education of all people (FONTOURA, 2004). For professionals who work with images, such as designers, as well as knowing how to read images, there is the need to create them for a particular social group "in such a way that their aesthetic structure is as coherent as possible, both in its elements, composition, meaning and purpose" (DONDIS, 2015, p. 6). This idea of visual literacy focussed on forms is quite a rationalist, and therefore, "we must pursue visual literacy in many places and many ways" (DONDIS, 2015, p.18).

Hernández's (2000) concept of visual literacy breaks away from Dondis's (2015) functionalism and understands communication through images as the result of social, cultural, and historical characteristics. Hernández (2000) argues that reading and interpreting images should be critical, looking beyond the representation and its immediate meanings and considering the discourses they construct or reinforce.

Hellman and Häikiö (2024) present in their article reflections on a national project called Visual Storytelling and the Art of Reading Images, carried out in Sweden between 2019 and 2020, whose aim was to develop competencies in visual storytelling and image interpretation for Visual Arts educators and teachers. According to the authors, the content of Visual Arts education is altered when visual culture is introduced, as it enables new ways of thinking and practicing the subject because 'the role of visual culture in education is to develop a critical perspective on images and cultural ways of seeing and making images' (HELLMAN and HÄIKIÖ, 2024, p.50).

The European Network for Visual Literacy (ENViL) has developed a Common European Framework of Reference for Languages, which aims to describe the competencies needed by European citizens to participate responsibly in society, particularly in activities related to culture, which includes the subject of Visual Arts, which in Europe covers multiple forms of expression, such as crafts, multimedia, art history, image analysis, and aesthetics. However, it has been realized that standardization is not possible since an observation is never neutral; it always depends on personal experiences and social, cultural, and historical contexts (HELLMAN and HÄIKIÖ, 2024).

Hellman and Häikiö (2024) also discuss the 'academisation of aesthetic subjects at school, which implies more reading and writing as opposed to image making in visual arts education.' The authors suggest that the link between analyzing and creating images occurs when discussing complex images and how to communicate visually or express oneself artistically.

Silva and Palaré (2023) investigated the consequences of the workload reduction of Art in primary education in Portugal in terms of the visual literacy of students entering higher education in Visual Arts. A survey of drawing teachers for this course at two Portuguese universities showed that most first-year students do not master basic terminology or the essence of visual communication; that is, they lack visual literacy. Another relevant finding was that some students demonstrated a lack of general knowledge of drawing as a tool, little versatility in using different media, and inadequate use of materials, which indicates a lack of familiarity with such materials and media. The authors assume that this situation may reflect socio-economic relations since education in Portugal is free, and purchasing materials is the family's responsibility so financial difficulties can hinder access to the necessary technology.

Encouraging the production of images is also a way of developing visual language. Even in theoretical subjects, it is possible to synthesize ideas in concept maps to clarify and deepen concepts and ideas. Another way is to use technology to model and simulate processes

and systems and create websites or social networks for cooperative learning. By creating images using visual strategies, students can express their different opinions, thoughts, and feelings (HELLMAN and HÄIKIÖ, 2024). Brown and Savić (2023) suggest 'redesign' as an educational tool to discuss cultural representations and motivate the production of visual representations while encouraging students to question their knowledge, beliefs, and attitudes related to images.

Guinibert (2020) proposes a pedagogical model that describes how visual literacy skills can be acquired in informal learning environments. In other words, how a student's everyday physical environment can become a space for visual literacy provides the proper learning support. The author starts from the assumption that visual analysis is a means of learning visual literacy skills and that visual communication resources are ubiquitous, which favors peer learning in informal environments. 'However, if all a learner had to do was think critically about the images they encounter, obtaining visual literacy skills would be a simple undertaking, and learners could potentially learn by osmosis' (GUINIBERT, 2020, p.174).

Nevertheless, even when surrounded by visual references, students have difficulties reading images, which indicates the need for mediation. Visual literacy learning is theorized as a circular reference, which brings up the dilemma: to feel and select, you must first know, but to know, you must first feel and select (GUINIBERT, 2020).

To overcome this dilemma, the model proposed by Guinibert (2020) has nine pedagogical assumptions:

1. Conducting visual analysis of noteworthy examples of visual communication within a learner's environment provides a means for learners to more deeply engage with visuals and learn from them
2. Learners must impart and be receptive to different understandings of visual literacy
3. Learning visual literacy is a collaborative activity
4. Learning is triggered by contingent encounters with examples of visual communication in a learner's environment

5. Learners need to examine and investigate their environment's examples of visual communication as a means of learning
6. Provide a means to highlight or direct learners to examples of visual communication
7. Provide ubiquitous access to learning support
8. Provide context-aware learning
9. Learning needs the ability to be personalised[6] to accommodate a learner's environment, goals, interests, and preferences

This model corroborates Paulo Freire's pedagogy, which recommends 'establishing an intimacy between the curricular knowledge fundamental to students and the social experience they have as individuals' (FREIRE, 2021, p.32). This social experience includes the relationship individuals have with the messages disseminated by the media (television, cinema, internet), which can be used as allies because of the possibility they offer to critically discuss the content and understand the ideological bias of their discourse (FREIRE, 2021, p.136). Contemporary young people often only use images to communicate (HELLMAN and HÄIKIÖ, 2024), and getting closer to the students' reality includes familiarising yourself with their visual world and ways of communicating.

Similarly, David Ausubel's Meaningful Learning Theory (MLT) (MOREIRA, 2012) also uses the student's prior knowledge to teach something new. It defines what is already known as the most critical factor in learning. According to MLT, new information interacts with a pre-existing knowledge structure, which Ausubel calls a 'subsumption factor' and supports retaining the new information. In this interaction, the new concepts are combined and incorporated into the cognitive structure more completely (MOREIRA, 2012).

Guinibert's model (2020) is also aligned with active methodologies, which are pedagogical models in which the student takes a more significant leading role. 'In a broad sense, all learning is active to some degree because it requires different forms of internal and external

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6   Australian English spelling.

movement, motivation, selection, interpretation, comparison, evaluation and application from the learner and the teacher' (MORAN, 2018, p.1). Adopting active methodologies allows students to participate more effectively in the learning process. The autonomy given to students will enable them to bring their daily lives into their reflections, work, and productions through practical situations, individual and group productions, and progressive systematizations.

4.   Discussion of Results

Language acquisition, whether verbal or visual, occurs through the assimilation of codes and structures. However, more than simply combining these codes does not guarantee understanding the messages expressed in the texts or images; a critical analysis that considers the cultural values permeating the narratives is needed.

Just like second language acquisition, visual language can be learned and improved. When learning a foreign language, it is expected to transfer structures from your mother tongue, and attention should be paid to vocabulary, false cognates, or cultural issues such as expressions that are common in one culture but can sound highly offensive in another. These differences should also be observed when communicating only through images, which is common among contemporary young people, since these images (emojis) can have different meanings in each culture, such as hands with palms joined, which in Eastern culture means a respectful greeting and in Western culture represents prayer.

The development of visual language is also crossed by visual culture, which permeates and constitutes each person's visual repertoire. Likewise, an image carries cultural values from the society in which it was produced, and some symbols or figures may have different connotations in another culture, so it is essential to discuss these differences when teaching visual language. These relationships can be observed and are exemplified in Figure 1 below:

Figure 1 – Relationship between verbal and visual
language acquisition and cultural aspects
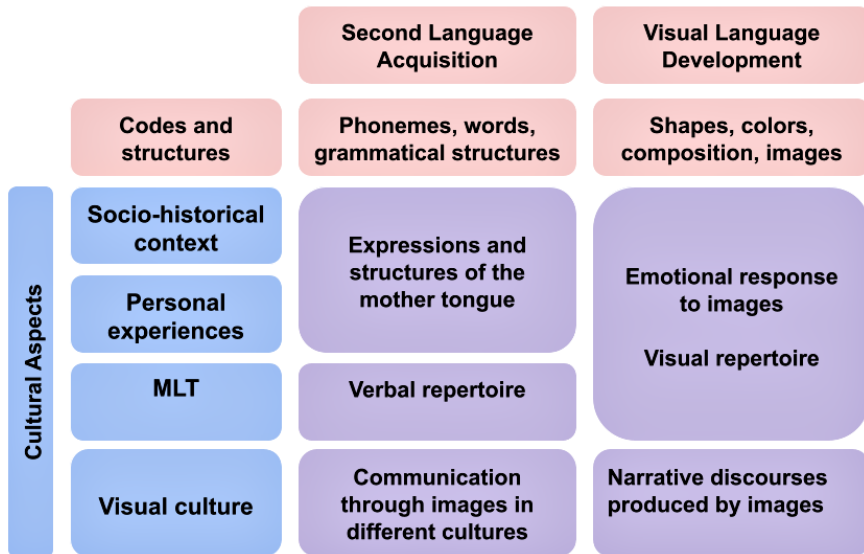
Source: The Authors (2024)

One way of reflecting on visual culture and the discourses it produces or reinforces is to use visual references that are part of the student's daily life: news, a contemporary series or film, artistic productions, and advertising images, among other possibilities of imagery references. Using these references as triggers for debates related to curriculum content enables students to learn more meaningfully while stimulating greater student protagonism, especially in peer learning. However, the abundance of visual stimuli a person is exposed to in this "digital world" makes it difficult to distinguish what is relevant to be analyzed. Hence, a teacher, professor, or specialist has to mediate this critical reading.

Some authors suggest that encouraging image production is a way of developing visual language. Even in theoretical subjects, it is possible to synthesize ideas in concept maps to clarify and deepen concepts and ideas.

5. Final considerations

To reflect on the similarities and how cultural aspects permeate the teaching and learning of verbal and visual languages, we conducted a Systematic Bibliographic Review that indicated that research on this subject is recent and still in its infancy. The studies selected for this article converge in the understanding that verbal and visual languages are complex and have vocabulary and structures that can be learned. However, to master and critically analyze them, understanding the cultural values permeating them is also necessary.

Corroborating Freire (2021) and the Meaningful Learning Theory (MLT), visual literacy can occur in the analysis of everyday images, such as artistic production, audiovisual, or advertising materials, as long as we seek to identify the discourses that these materials propagate or construct.

Among the analyzed studies, those from collecting empirical data with students or teachers were carried out in other countries. Hence, the suggestion for further developments is to conduct similar research with Brazilian students and teachers to verify how visual literacy occurs nationally.

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