

Vygotsky and emotion: an analysis of cocitation¹

Vygotsky e emoção: uma análise de cocitação

Vygotsky y emoción: un análisis de cocitación

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ABSTRACT

The aim of this article is to identify the seminal works on the subject of emotion and Vygotsky and his understanding of emotion. It is an exploratory study and uses bibliometrics for co-citation analysis, carried out in the Bibliometrix package. The Web of Science database was searched using the keywords: "Vygotsky and emotion", resulting in 108 documents. The co-citation matrix produced 5 niches (clusters), showing the authors who co-cited with each other. The clusters highlighted the following themes: development and internalization of emotions; *perezhivanie* in Cultural-Historical theory; child development; regulation of emotions and development of the mind. Among the most relevant works are: Vygotsky (1971), with the book *The Psychology of Art*; Van Der Veer and Valsiner (1994), with the book *The Vygotsky reader*; followed by Holodynski (2013), with the article *The Internalization Theory of Emotions: a cultural historical approach to the development of emotions*; Ratner (2000) with the article *A Cultural-Psychological Analysis of Emotions and Vygotsky* (1978), with the book *Mind in society: the development of higher psychological processes*. Vygotsky's approach highlights the need to consider multiple biological, social and cultural factors in understanding emotions, reflecting their complexity. Emotions are understood as higher psychological functions shaped by cultural, social and individual factors.

Keywords: Emotion; Vygotsky; Bibliometrics; Main works.

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RESUMO

O objetivo deste artigo é identificar as obras seminais sobre a temática emoção e Vygotsky e seu entendimento sobre a emoção. É uma pesquisa exploratória e utiliza a bibliometria para a análise de cocitação, executada no pacote Bibliometrix. Buscou-se na base de dados da Web of Science, utilizando-se as palavras-chaves: “*Vygotsky and emotion*”, originando 108 documentos. A matriz de cocitação originou 5 nichos (*cluster*), evidenciando os autores cocitados entre si. Os cluster evidenciaram as seguintes temáticas: desenvolvimento e internalização das emoções; perezhivanie na teoria Histórico-Cultural; desenvolvimento infantil; regulação das emoções e desenvolvimento da mente. Dentre as obras mais relevantes estão: Vygotsky (1971), com o livro *The Psychology of Art*; Van Der Veer e Valsiner (1994), com o livro *The Vygotsky reader*; seguidas por Holodynski (2013), com o artigo *The Internalization Theory of Emotions: a cultural historical approach to the development of emotions*; Ratner (2000) com o artigo *A Cultural-Psychological Analysis of Emotions* e Vygotsky (1978), com o livro *Mind in society: the development of higher psychological processes*. A abordagem de Vygotsky destaca a necessidade de considerar múltiplos fatores, biológicos, sociais e culturais na compreensão das emoções, refletindo sua complexidade. As emoções são entendidas como funções psicológicas superiores moldadas por fatores culturais, sociais e individuais.

Palavras-chave: Emoção; Vygotsky; Bibliometria; Principais obras.

RESUMEN

El objetivo de este artículo es identificar las obras fundamentales sobre el tema de la emoción y Vygotsky y su concepción de la emoción. Se trata de un estudio exploratorio y utiliza la bibliometría para analizar la co-citación, realizado con el paquete Bibliometrix. Se realizó una búsqueda en la base de datos Web of Science utilizando las palabras clave «Vygotsky and emotion», que dio como resultado 108 documentos. La matriz de co-citación dio lugar a 5 nichos (*clusters*), que mostraban los autores co-citados entre sí. Los clusters destacaron los siguientes temas: desarrollo e interiorización de las emociones; perezhivanie en la teoría histórico-cultural; desarrollo infantil; regulación de las emociones y desarrollo de la mente. Entre los trabajos más relevantes se encuentran: Vygotsky (1971), con el libro *La psicología del arte*; Van Der Veer y Valsiner (1994), con el libro *El lector de Vygotsky*; seguido de Holodynski (2013), con el artículo *La teoría de la internalización de las emociones: un enfoque histórico cultural del desarrollo de las emociones*; Ratner (2000) con el artículo *Un análisis psicológico-cultural de las emociones* y Vygotsky (1978), con el libro *La mente en la sociedad: el desarrollo de los procesos psicológicos superiores*. El enfoque de Vygotsky hace hincapié en la necesidad de considerar múltiples factores biológicos, sociales y culturales para comprender las emociones, lo que refleja su complejidad. Las emociones se entienden como funciones psicológicas superiores moldeadas por factores culturales, sociales e individuales.

Palabras clave: Emoción; Vygotsky; Bibliometría; Principales obras.

1 Introduction

The study of emotions is considered one of the most complex issues within psychology (MESQUITA, 2012). According to Mirza (2016, p. 02), “emotions give quality and meaning to our existence.” Vygotsky’s sociocultural theory has increasingly been used as an effective framework to explain the role of emotions in learning and development (CONG-LEM, 2022). Research on emotions shows that they are situated within both individual and social history, being subject to transformation and development. They are higher psychological functions that share both instinctive biological and socio-historical components (VYGOTSKY, 2017). Emotion, like other higher psychological functions such as perception, memory, and thought, is interdependent throughout the course of development, bringing about changes in the structure of consciousness. A function depends on how differentiated the others are (VEIGA, 2024).

The theme of emotions was the last line of study initiated by Vygotsky (2017), which remained unfinished due to his premature death. Nevertheless, his ideas serve as the foundation for studies within the Historical-Cultural Theory (HCT). Toassa (2011) states that the work “Theory of Emotions” advocated a shift in the philosophical model used to interpret and investigate neurological data, challenging the neurological knowledge available at the time.

Thus, when Vygotsky states that emotions are higher psychological functions, he offers a complex analysis of the topic, breaking with the dualism of his time, which was based on the evolutionary psychology of emotions, as represented by the James-Lange theory. Vygotsky criticizes this theory and proposes monism, in which phenomena cannot be studied in isolation. As higher or culturalized functions, emotions can be studied and developed as psychological processes.

It is evident that little attention has been given to mapping the field of research within the framework of Historical-Cultural Theory (HCT). No systematic review articles or state-of-the-art studies on this topic were found. Therefore, understanding this issue is essential for researchers, psychologists, educators, and other professionals who intend to study emotions, so that they may begin from a properly mapped research field.

In this context, the following questions arise: What are the seminal works on the theme of emotion and Vygotsky? And what is his understanding of emotion?

Based on the problem presented, this study aims to identify the seminal works on the theme of emotion and Vygotsky, as well as his understanding of emotion.

To address this objective, a co-citation matrix analysis was conducted through bibliometrics, using the Bibliometrix data package and document retrieval from the Web of Science repository.

2 Understanding Emotions in Vygotsky

Vygotsky (2017) criticized both the old and the new theories of his time. He challenged the conceptions that separate emotions from consciousness and attribute their origin to the activity of internal organs. For the author, this way of thinking excludes emotions from the general context of human psychological development, placing them in an isolated position.

According to Vygotsky, emotions cannot be seen as eternal, unattainable, and unchangeable, as such theories exclude the possibility of development and complexity. Nor can emotion be considered an innate reaction of the organism. It is illusory to think of its development by comparing it to Pavlov's stimulus-response reflexes. Vygotsky argues that emotions are complex and capable of development, being considered one of the higher psychological functions.

Thus, through the mediation of the word with meaning, human beings can develop and transform the social environment. Thought, according to the author, is always emotional; therefore, it cannot be studied separately (VYGOTSKY, 2017b).

Vygotsky oferece uma visão holística da emoção, examinando-a a partir de bases evolutivas, neurofisiológicas e histórico-culturais. Ele destaca que os processos emocionais e psicológicos são construídos sobre o mesmo mecanismo cerebral (CONG-LEM, 2022).

Another point criticized by Vygotsky is the explanation of human sensations solely through a causal relationship. He illustrates this with the example of a mother who has lost a child. If someone tells her that her sensations or emotions are merely physical symptoms, she will be outraged, because although she feels those symptoms, her feelings are much deeper.

According to Del Cueto (2015), Vygotsky's works clearly demonstrate a dialectical, anti-dualist, and anti-reductionist stance, as well as his attempts to construct a psychology capable of overcoming the crisis in which it was immersed. Vygotsky sought to develop a unified psychological approach, from a non-fragmented perspective.

Vygotsky stated that:

Emotion depends directly on the organization of consciousness, on the number and systematization of ideas through which external impressions are processed. It is simply that our emotions express bodily states, and the bodily states themselves are the expression of the order of our perceptions (VYGOTSKY, 2017, p. 284).

It is evident that the author was concerned not only with the development of stages of thought but also with the development of consciousness and personality as a whole, under the influence of social relations, language, and culture. Consciousness and emotions develop in relation to other mental functions and the social situation, through which they assimilate the social and cultural heritage.

In summary, Vygotsky, in much of his later work, criticized the existing theories of emotions of his time. He recognized that the field of emotion studies was marked by Cartesian dualism between materialism and idealism. The materialist understanding of emotions was grounded in naturalism, considering them manifestations of peripheral sensory organs, while the idealist approach conceptualized them on a subjective or spiritual plane. Vygotsky even praised Freud's psychoanalytic work for its developmental approach, understanding emotion as part of the psychodynamics of personality formation through different stages of childhood development (BURKITT, 2021).

According to Burkitt (2021), Vygotsky seemed to aspire to a historical materialist approach, in which lower emotions develop into higher emotions through the process of cultural development. From this perspective, emotions should never be conceived as separate from or opposed to thought; rather, emotion and thought are in a differentiated relationship across various types of thinking, such as realistic thinking and imaginative thinking. In an attempt to overcome the division between materialism and idealism, Vygotsky drew on the philosophy of Spinoza, who advocated the unity of mind and body in emotional experience.

Thus, emotion is a process subject to development and transformation; a higher psychological function that is simultaneously biological and social, complex and indivisible. To divide it into elements would mean losing the properties of the whole and, consequently, would make its explanation unfeasible.

3 Methodology

This is an exploratory study (GIL, 1999) that uses bibliometrics for co-citation analysis, conducted with the Bibliometrix package, developed in the R programming language by researchers Aria and Cuccurullo (2017).

The methodology followed these steps:

1- Initially, a search was conducted in the Web of Science database using the keywords: “Vygotsky and emotion.” English terms were chosen to broaden the results. The search retrieved 108 documents, which were imported in “bib” format and analyzed using the Bibliometrix package.

2- Bibliometric data analysis. Upon analyzing the data, co-citation analysis was selected, generating a co-citation matrix (Figure 1), in which five research niches (clusters) were identified. The co-citation matrix groups research by clusters, according to authors who reference other works; thus, an author who cites another’s work is linked by co-citation.

3- Survey of co-citation references shown in the bibliometric analysis. With the authors identified by the co-citation matrix, it was necessary to identify which works were referenced in each cluster. Since Bibliometrix does not display the references of these works, it was necessary to manually check the references shown by the program.

4- Analysis of the references to identify each cluster and the theme addressed. After locating each work, it was necessary to read them to discover the theme connecting each cluster and to identify the seminal works used by the researchers.

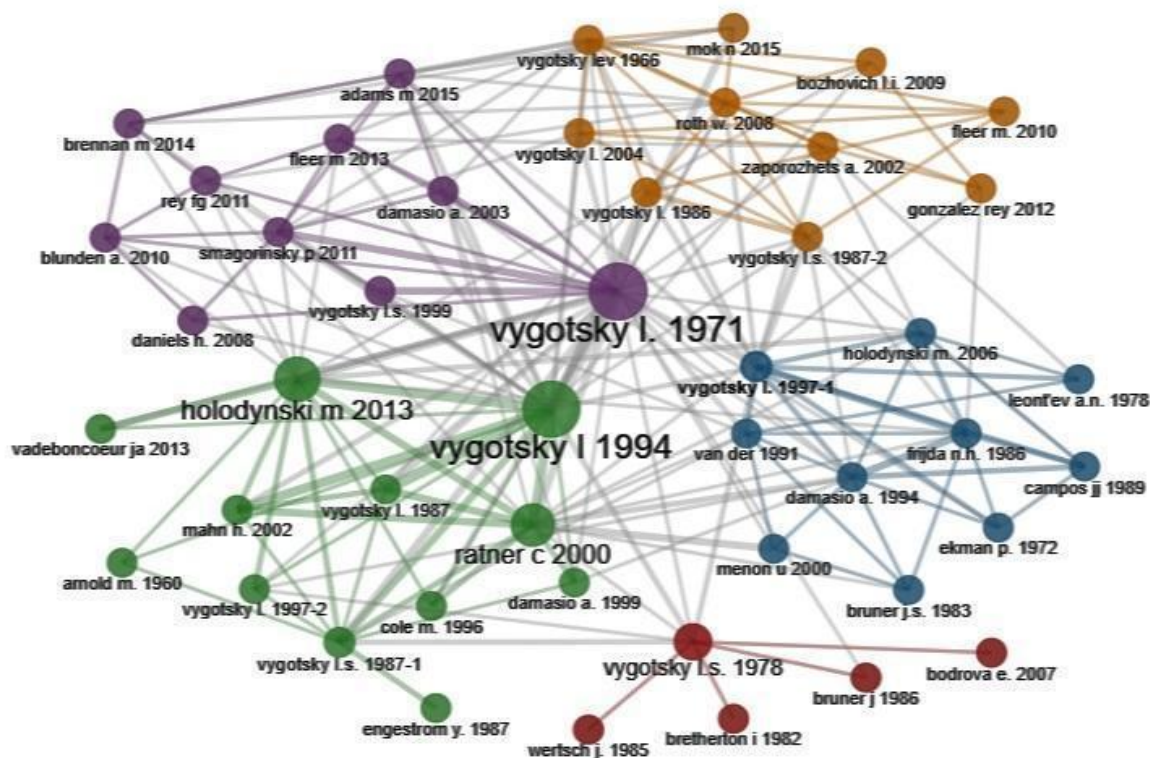
4 Results: Co-Citation Matrix

Co-citation studies are based on the frequency with which two authors or documents are cited together. When two authors are cited jointly in a subsequent work, there is a topical proximity between the cited authors. “Thus, the higher the frequency of co-citation, the closer the relationship between those cited authors” (GRÁCIO; OLIVEIRA, 2013, p. 197).

In this sense, through citation and co-citation studies, it is possible to assess the dialogue among researchers and their role in different areas of science. Therefore, it becomes a relevant analytical procedure as it contributes to the “visualization of the communicative and interactive process, as well as the underlying structure of a knowledge domain” (GRÁCIO; OLIVEIRA, 2013, p. 197).

With the co-citation matrix, it is possible to identify the primary works used by authors studying a particular theme, as well as to identify the common niches among these authors. Figure 1 shows the co-citation matrix, generated using the Bibliometrix data package, with the 108 documents imported from the Web of Science database.

Figure 1: Co-Citation Matrix



Source: Prepared by the researchers using the Bibliometrix software (2021).

It can be observed that the co-citation matrix generated five niches (clusters), highlighting the main works referenced in studies involving emotion and Vygotsky. There is the green cluster, with 12 references; purple, with 10 references; orange, with 10 references; blue, with 10 references; and red, with 5 references. It is also noted that the larger the circumference connecting the authors, the greater the number of citations, allowing the

identification of the main authors—that is, the most referenced works in the studies and research. The colors of each cluster were generated by the software and were not modified.

Next, we will analyze each cluster, highlighting the bibliographic works within each.

4.1 Analysis of the Green Cluster: Development and Internalization of Emotions

Belonging to the green cluster, we have the work organized by Van Der Veer and Valsiner (1994), *The Vygotsky Reader*, which includes 15 chapters covering fundamental themes studied by Vygotsky, such as: beyond Freud's pleasure principle; principles of social education for deaf and mute children in Russia; methods of reflexological and psychological investigation; the problem of the child's cultural behavior; the problem of the child's cultural development; concept formation in adolescence; adolescent imagination and creativity, among others.

Manfred Holodynski (2013), in his article, addresses the theory of internalization of emotions, presenting three general principles: development, mediation by signs, and internalization for the development of emotional expressions as a culturally evolved system of signs.

Carl Ratner (2000), in his article "A Cultural-Psychological Analysis of Emotions," presents the idea that activity theory is central to the cultural psychology of emotions. According to the author, biological processes such as hormones, neurotransmitters, and autonomic reactions mediate but do not determine the quality of emotional expressions; these are shaped by cultural processes and factors.

Vygotsky's work (1987) is part of the volume *The Collected Works of L. S. Vygotsky, Volume 1: Problems of General Psychology*. This volume contains a complete version of *Thinking and Speech*. The work encompasses the systematization of theory and psychological data concerning development in childhood: perception, memory, thought, emotions, imagination, and will.

Other authors linked to the green cluster include Cole (1996), Mahn (2002), Vadeboncoeur (2013), Vygotsky (1997), Arnold (1960), Damasio (1999), and Engeström (1987). These authors are less frequently co-cited but appear interconnected within the group due to their contributions. Two articles are from Vadeboncoeur (2013) and Arnold (1960), while the other authors have book

publications. Cole (1996) addresses psychological culture; Mahn (2002) considers the issue of trust from a Vygotskian perspective on emotions; Vadeboncoeur (2013) discusses social and emotional learning in the school environment from a Vygotskian perspective on unified learning.

In Vygotsky (1997, Vol. 4), we have the book *The Collected Works of L. S. Vygotsky*, Volume 4, which deals with the history of the development of higher psychological functions. Arnold (1960) is the oldest referenced work in the co-citations, with the article “Emotions, Personality.” Damasio (1999) reflects on the body and emotion in the formation of consciousness, and Engeström (1987) focuses on learning and expansive learning from an approach to development research.

Among the authors identified in the co-citation analysis, Magda Arnold (1960) and Antonio Damasio (1999) present approaches to emotion that diverge from the assumptions of Vygotsky’s Historical-Cultural Theory. Arnold, through the “Cognitive Appraisal Theory,” understands emotions as responses to cognitive evaluations of external events, triggered by immediate judgments of the situation. Unlike Vygotsky, who advocates for the cultural and social mediation of emotions, Arnold considers the origin of emotions to lie in individual mental processes, without emphasis on social interactions.

Similarly, Damasio (1999) approaches emotions from a neurobiological perspective, highlighting physiological processes and brain structures as determinants of emotional responses. He views emotions as universal and biological, whereas Vygotsky understands them as shaped by social and cultural contexts. This approach is criticized by Burkitt (2021), who points out Damasio’s disregard for the role of signs and social images that constitute human consciousness—elements that, according to Burkitt, are socially constructed rather than solely the result of brain activity. Furthermore, Toassa (2011) argues that Damasio conflates Spinoza’s thought with contemporary Darwinism, aligning him with social Darwinism, a concept far removed from the principles of Vygotsky’s Historical-Cultural Theory, which emphasizes the role of social interaction in human development.

In this niche, based on the work organized by Van Der Veer and Valsiner (1994), *The Vygotsky Reader*, the main theme linking the authors is related to emotions, whether it be the internalization of emotions or their analysis and development.

4.2 Analysis of the Purple Cluster: Perezhivanie in the Historical-Cultural Theory

The purple cluster is interconnected with ten co-cited authors. The most cited work within this group is Vygotsky's (1971) *Psychology of Art*, which addresses the study of art from a psychological foundation. To analyze the structure of artistic creation, it is necessary to reconstruct the total concept by examining all its aspects.

The second most cited reference in this cluster is Vygotsky's (1999a) *The Collected Works of L. S. Vygotsky: Scientific Legacy*, volume 6. This volume covers topics such as tools and signs in child development, emotions, and an analysis of the psychology of the creative work of the actor. In the chapter discussing instruments (tools) and signs in child development, practical intelligence is contrasted with the research approaches of Köhler, involving chimpanzees, as well as Piaget's studies with children on the emergence of signs and representational intelligence. The chapter on the Doctrine of Emotions contains a historical psychological investigation on the study of emotions, written between 1931 and 1933. Volume 6 of the collected works is among Vygotsky's final works and remains incomplete due to his premature death. This work highlights the tension between the older aspects of our nervous system and those arising from access to culture, as well as the importance of the historical and cultural perspective for understanding it. Finally, the book presents the psychology of the actor's creative process, which demonstrates the profound significance that art and the artist held in Vygotsky's psychological approach.

Among the works referenced in the purple cluster, which include articles, the following stand out: Smagorinsky (2011), Flear (2013), Adams (2015), Rey (2011), and Brennan (2014). The books cited include Vygotsky (1971 and 1999), Damasio (2003), Blunden (2010), and Daniels (2008).

Smagorinsky (2011) revisits Vygotsky's writings on art and emotion, focusing on two main areas: emotion in formal drama and emotion in everyday drama, both involving the concept of *perezhivanie*, although initially and not yet fully defined as an emotional experience.

Damasio (2003), in his book *Looking for Spinoza*, analyzes the concepts of joy, sadness, and the relationship between the brain and emotions. As previously discussed, Damasio is the only author, despite being co-cited, who presents divergences from the Historical-Cultural Theory.

Fleer and Hammer (2013) discuss perezhivanie in group dynamics within the Historical-Cultural Theory of emotional regulation, proposing that fairy tales can aid in the collective development of emotional regulation among children.

Adams (2015), together with Sue March, explores perezhivanie and discourse in the classroom within the historical-cultural theory. The article proposes a historical reading of argumentation in science classes, as well as highlighting the importance of design-based activity.

González Rey (2011) reexamines the definition of moments in Vygotsky's work, reflecting on the implications for his intellectual legacy. Brennan (2014) also addresses perezhivanie in the context of caregiving, arguing that the experience of caring for adults represents a significant area for investigation.

Blunden (2010) discusses interdisciplinarity within activity theory, offering a critique of the historical-cultural approach to activity. Daniels (2008) contributes with his book on Vygotsky and research, providing an overview of its implications for research and theoretical work, highlighting the influence of Vygotsky's writings.

The main theme that unites this group of authors is perezhivanie within the Historical-Cultural Theory. Researchers interested in this area will find significant contributions in the works of this cluster.

4.3 Analysis of the orange cluster: child development

In the orange cluster, there are ten authors interconnected, and no single work stands out with more citations than the others; all appear balanced, with the same size and number of cocitations. In this sense, the works are presented here in chronological order within this niche.

The first is an article by Vygotsky (1966), published in the journal *Soviet Psychology* by *Voprosy Psikhologii*, entitled *Play and Its Role in the Mental Development of the Child*, which addresses play and its role in the child's mental development. In this article, Vygotsky emphasizes the emergence of play, its genesis, and the role it plays in the development of the preschool-aged child.

The second and third works are two books by Vygotsky. The work *Thought and Language* (1986), also known as *Thinking and Speech*, and the work by Vygotsky (1987),

which, although referenced in the cocitation matrix as 1987-2, corresponds to the book *The Collected Works of L. S. Vygotsky: Problems of General Psychology*, volume 1.

The reference to Vygotsky (2004) corresponds to an article entitled *Imagination and Creativity in Childhood*. This article, published in the *Journal of Russia and Eastern Europe*, addresses imagination and creativity in childhood. Zaporozhets (2002) refers to an article also published in the *Journal of Russia and Eastern Europe*, which discusses the development of sensations and perceptions in early childhood and preschool age. In Roth (2008), there is another article published in the journal *Mind, Culture, and Activity*, which discusses knowledge, participatory thinking, and emotion.

In chronological order, we have Bozhovich (2009), an article that addresses the social situation of child development, published in the *Journal of Russia and Eastern Europe*. Marilyn Fleer (2010) refers to a book entitled *Early Learning and Development*, which deals with early learning and development from a historical-cultural perspective. On the other hand, González Rey (2012) discusses, in a book chapter, advances in the concept of meaning and subjective configurations in human development. This chapter is part of the book *Motives in Children Development*. Closing this niche is Mok (2015), the most recent article in chronological order, in which the author discusses the understanding of the concept of *perezhivanie* for sociocultural research.

It is observed that the key point uniting most of the works is the study of child development and early childhood. The majority of the works are dedicated to the study and research of this target audience, although the concept of *perezhivanie* also appears in some works aimed at children.

4.4 Análise do *cluster* azul: regulação das emoções

In the blue cluster, it is noted that there is no difference among the most cited authors, but it is observed that the works of Vygotsky (1997.1), Frijda (1986), and Campos (1989) are more interconnected in terms of references among themselves than the other works.

Vygotsky's book (1997.1) is part of the collection *The Collected Works of L. S. Vygotsky*, being volume 3, edited by Robert W. Rieber and Jeffrey Wollock, and deals with the problems of the theory and history of psychology. The work has 426 pages and is divided into two parts, with 15 chapters.

Frijda (1986) refers to a book titled *The Emotions*, in which the author discusses the motivational and neurophysiological preconditions of emotions and the ways in which emotions are regulated by the individual. However, Frijda's approach diverges from Vygotsky's, since while Frijda focuses on biological and physiological explanations of emotions, associating them with internal factors of the individual, Vygotsky sees them as products of social and cultural processes mediated by interactions and cultural symbols. Thus, Frijda's theory does not incorporate the sociocultural dimension of emotions, a central principle in Vygotsky's view, which considers the construction of emotions within interpersonal relationships and historical contexts.

The third work is Campos's (1989) article titled *Emergent Themes in the Study of Emotional Development and Emotion Regulation*. The article presents a reconceptualization of the nature of emotions and the importance of affect in the continuity of self-development, documenting the stability of at least two emotional dispositions: irritability and inhibition. It is noted that the three works share a common concern with emotion regulation.

Next, we have the work of Leontiev (1978), which addresses the themes of activity, consciousness, and personality. Another book in this cluster is by Van der Veer (1991), who, together with Valsiner, wrote *Understanding Vygotsky: A Quest of Synthesis*. This book presents one of the most comprehensive biographies of Vygotsky.

The book by Damasio (1994), *Descartes' Error*, discusses the relationship between emotion, reason, and the human brain. This work is considered one of the author's best-sellers. Damasio shows how the absence of emotion and feeling can destroy rationality. However, his approach, centered on neurobiological and physiological explanations, diverges from Vygotsky's perspective, which holds that emotions are primarily social and cultural constructions mediated by interactions. While Damasio emphasizes a biological and universal explanation of emotions, Vygotsky argues that they are formed and transformed in the context of social relations, being shaped by cultural and historical elements.

Another key work in this cluster is an article by Ekman (1972), coauthored with Friesen, titled *Universals and Cultural Differences in the Judgments of Facial Expressions of Emotion*, which analyzes facial expressions and cultural differences. Menon's (2000) article deals with the analysis of emotions as culturally constructed scripts, briefly

presenting the indigenous theory of emotions developed in Hindu India. The last reference in this cluster is a book by Bruner (1983), which addresses children's learning of language use. The author studies children in the context of their homes and in play activities such as hide-and-seek.

However, Ekman's approach differs from Vygotsky's perspective, since while Ekman seeks a universal explanation for emotional expressions based on innate biological characteristics, Vygotsky emphasizes that emotions are mediated and shaped by specific social and cultural interactions. Bruner, although addressing learning in a contextualized manner, focuses more on children's individual capacity to use language, without necessarily incorporating sociocultural dynamics as essential mediators for development, as advocated by Vygotsky's theory.

It is observed that, in this blue cluster, the theme that unites the authors is related to emotion regulation and emotions as a result of interaction with cultures. The social and cultural nature of emotions stands out, as they are seen as a product of the interaction between the individual and the social and cultural context.

4.5 Analysis of the Red Cluster: Mind Development

This is the smallest of the analyzed clusters, with references to five authors. The main reference connecting the others is Vygotsky's (1978) work *Mind in Society*, a book that addresses the development of higher psychological processes. The book covers topics such as tools and symbols in child development, the development of perception and attention, mastery of memory and thinking, the internalization of higher psychological functions, methodological issues, the interaction between learning and development, and the role of play in development.

Wertsch (1985) is also a key book addressing Vygotsky and the social formation of the mind. The author demonstrates how the notion of semiotic mediation is essential to understanding Vygotsky's unique contribution to the study of human consciousness. Bretherton (1982), together with Beeghly, produced an article focusing on the explicit formulation of theory of mind.

The final two works refer to books: Bruner (1986), which discusses "minds now and possible words." For Bruner, cognitive science has focused heavily on the logical and

systematic aspects of mental life—those thought processes used to solve puzzles, test hypotheses, and advance explanations. Bodrova (2007), with *Tools of the Mind: The Vygotskian Approach to Early Childhood Education*, addresses tools of the mind from a Vygotskian perspective in early childhood education.

Analyzing the red cluster, it is clear that the works are connected by the theme of the mind as a cultural construction and offer reflections on mind development from Vygotsky's historical-cultural perspective.

5 Data Analysis

When observing the co-citation matrix graph (Figure 1), it is noticeable that the most cited works are: Vygotsky (1971) and Van der Veer and Valsiner (1994), followed by Holodynski (2013), Ratner (2000), and Vygotsky (1978). We will refer to these as the top 5 works on the theme of emotion in Vygotsky. Table 1 presents these works.

Table 1: References of the Top 5 Most Cited Works

AUTHOR	YEAR	TITLE	PLACE / PUBLISHER / JOURNAL
VYGOTSKY, Lev Semionovitch	1971	<i>The Psychology of Art</i>	Nova Iorque: Mit Press
VAN DER VEER, René & VALSINER, Jaan	1994	<i>The Vygotsky reader</i>	Oxford: Backwell
HOLODYNKI, Manfred	2013	<i>The Internalization Theory of Emotions: a cultural historical approach to the development of emotions</i>	Mind, Culture and Activity
RATNER, Carl	2000	<i>A Cultural-Psychological Analysis of Emotions</i>	Cultura & Psicologia
VYGOTSKY, Lev Semionovitch	1978	<i>Mind in society: the development of higher psychological processes</i>	Cambridge: Harvard University Press

Source: Authors (2021).

The main work, interconnected with all the clusters, is the book *The Psychology of Art* (1971). The book, translated into Portuguese as *Psicologia da Arte*, is one of Vygotsky's earliest productions, the result of his doctoral thesis, and one of the works that established his reputation in the field of psychology. Its contribution continues to be

studied and discussed to this day. This is evident as it is the primary reference used in most scientific research, as can be seen in the co-citation matrix. According to Toassa (2011), this book is the author's most complex work due to the abundant presence of Russian artistic culture.

One of the main concepts discussed in the book is catharsis, which emphasizes the importance of artistic expressions as a social means to express emotions and self-regulate, since it deals with the individual's emotional conflicts, functioning as a discharge of energy. Vygotsky states that feeling is initially individual and, through the work of art, becomes social or generalized. For the author, art is the social within us; it guides us toward the future. "Art is the most important concentration of all the biological and social processes of the individual in society, serving as a means to balance the person with the world in the most critical and responsible moments of life" (VYGOTSKY, 1999b, p. 328-329).

The second seminal work, most cited among researchers, is the volume edited by René Van der Veer and Jaan Valsiner: *The Vygotsky Reader* (1994). The *Vygotsky Reader* covers the various fields in which Vygotsky worked, such as education, psychology, pedology, psychiatry, and defectology. It is a collection of his writings, translated across 15 volumes. The work also highlights lesser-known facets of Vygotsky's work, including his antifascist and pro-socialist writings, which appeared in English for the first time. One of the main points emphasized in the book is cultural development in the child, concept formation in adolescents, imagination, and creativity. These themes are directly connected to the study of emotions.

The third most cited work among researchers is the article by Manfred Holodynski (2013), which addresses the theory of the internalization of emotions. The author compares recent findings on emotions with Leontiev's activity theory approach. He explores Vygotsky's three general principles—development, mediation by signs, and internalization—applying them to the development of emotional expressions as a culturally evolved system of signs.

Holodynski (2013) addresses the main emergences that must be developed for the internalization of emotions: the emergence of the use of culturally expressed signs to contextualize the emotions of newborns, in the interpersonal regulation between caregivers and newborns; the emergence of intrapersonal regulation of

emotions derived from interpersonal regulation, using expressive signs as internal mediators—a process that begins in the preschool age; and the emergence of the internalization of emotional expressive signs, which will begin to operate as mental signs, or “inner speech.”

The second most relevant article among the authors is by Carl Ratner (2000), which presents a cultural-psychological analysis of emotions. The author advocates the revised activity theory perspective, considering it fundamental for the cultural psychology of emotions. Activity theory holds that cultural characteristics, development, and the functions of psychological phenomena are shaped by social activities and cultural concepts.

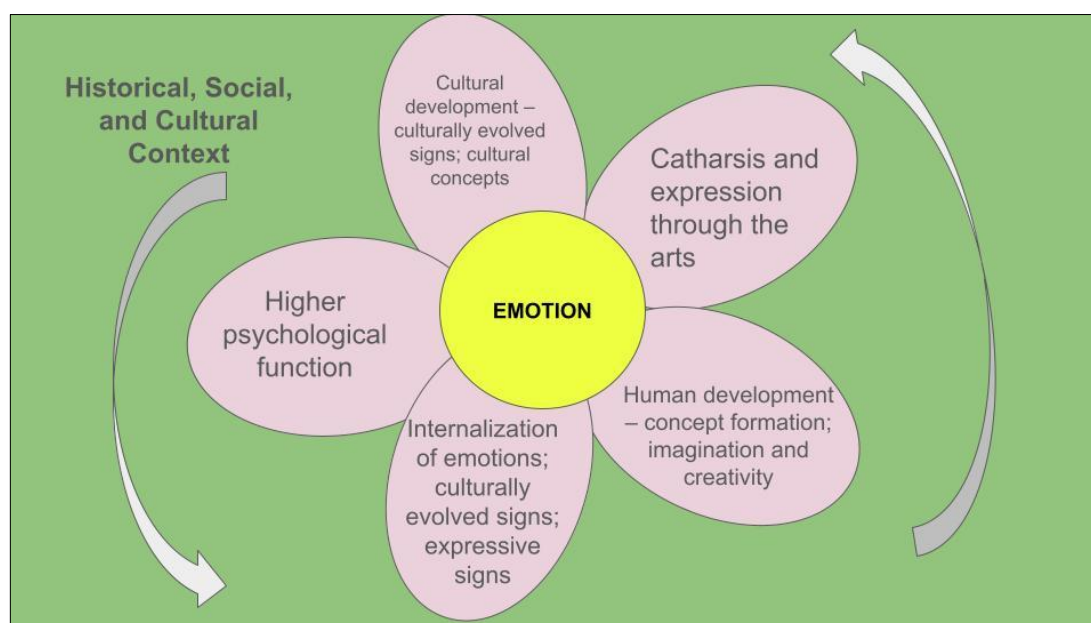
Ratner (2000) concludes that biological processes, such as hormones, neurotransmitters, and automatic reactions, underlie but do not determine emotional qualities and expressions. Specific qualities and expressions are shaped by cultural processes and factors. According to the author, “emotions are feelings that accompany thought” (Ratner, 2000, p. 6). The revised activity theory situates emotions within the scope of rational analysis and transformation, as it holds that inappropriate, antisocial, or debilitating emotions can be changed through modifications in cultural concepts and activities, as well as changes in socialization practices. Thus, substantial changes in the characteristics of emotions require understanding and altering the activities and cultural concepts that organize them.

The fifth most referenced work is Vygotsky’s (1978) book *Mind in Society: The Development of Higher Psychological Processes*. In this work, Vygotsky highlights that a child, at birth, is endowed only with practical consciousness, like other primates. The child’s psychic functioning is elementary, conditioned by genetic potential and the species’ survival limitations in the environment, which delimit the lower psychological processes. The major distinguishing factor of humans, setting them apart from animals in development, is what the author calls higher psychological processes. These represent the transition from a lower to a higher state—not spontaneously, but through language acquisition and social mediation. In the book, Vygotsky applies this theoretical framework to the development of perception, attention, memory, language, and play, examining its implications for education.

Among the top five works, three are books with direct contributions from Vygotsky himself, and two are articles based on his works: those by Manfred Holodynski (2013) and Carl Ratner (2000). Among these seminal works, it is notable that the most cited one, Vygotsky (1971), is located in the purple cluster, which addresses the theme of *perezhivanie* within the Historical-Cultural Theory (HCT), while the other four works belong to the green cluster, which focuses on the development, analysis, and internalization of emotions.

Figure 2 depicts a schematic of the interconnection among these five seminal works, highlighting the main contributions each offers regarding the theme of emotions.

Figure 2: Interconnection among the Seminal Works



Source: the researchers, 2024.

The figure, illustrated as a flower, reflects the intersection of each seminal work, showing how each part contributes to the overall understanding of emotions. In *Psychology of Art*, the concepts of catharsis and emotional expression through the arts are highlighted; in *The Vygotsky Reader*, the emphasis is on cultural development, concept formation, imagination, and creativity. Holodynski's (2013) article highlights the internalization of emotions, culturally evolved signs, and expressive signals. Ratner (2000) provides a cultural-psychological analysis of emotions and the cultural concepts that influence them. Finally, Vygotsky (1971) addresses the development of higher psychological functions.

According to the analyzed works, emotion is a higher psychological function that develops from complex factors, considering the social and cultural context. The internalization of external regulation performed by the social and cultural context enables the self-regulation of emotions, in a continuous negotiation with culture (STOLTZ et al., 2015). Moreover, catharsis, which manifests through artistic works, also constitutes a form of emotional expression and a means of self-regulation. Similarly, imagination and creativity are fundamental aspects of emotional development, being directly linked to emotion. Catharsis is a kind of aesthetic reaction, in which unpleasant emotions undergo a nervous discharge provided by art, transforming negative energy into positive (TOASSA, 2011).

For Vygotsky, imagination and fantasy are nourished by materials derived from a person's lived experience. The richer the human experience, the greater the material available to the imagination (FARIAS et al., 2010). Thus, imagination and fantasy are connected to emotion because what is created depends on the emotions and feelings that elicit emotional reactions. In this sense, creativity is a necessary condition for human existence and the most important activity, as it expresses consciousness, thought, and language (STOLTZ et al., 2015) originating from the will, and can be understood as an activity that promotes emotional self-regulation.

Vygotsky (2001) stated that it is not possible to study emotions in isolation. He used the example of water to illustrate his argument: just as water cannot be adequately understood by analyzing its constituent elements, hydrogen and oxygen, which by themselves contribute to combustion, emotion cannot be understood in isolation without considering the various biological and social factors involved in its process. Thus, separating the H₂O molecule compromises the understanding of water and its function. Similarly, the study of emotions must integrate the analysis of the multiple factors that influence them.

6. Final Considerations

The present study aimed to identify the seminal works on the theme of emotion and Vygotsky's understanding of emotion. Among the most relevant works are: Vygotsky (1971) and Van Der Veer and Valsiner (1994), followed by Holodynski (2013), Ratner (2000), and Vygotsky (1978). These works are the most referenced and can be considered seminal when the theme involves emotion in Vygotsky's framework.

By conducting a bibliometric co-citation analysis, five thematic niches or clusters were identified, as addressed in this article. Each cluster presents common themes that explain the co-citations among its works. The clusters were differentiated by colors: green, purple, orange, blue, and red. The green cluster included 12 authors interconnected by co-citations; the purple, orange, and blue clusters each contained 10 referenced authors; and the red cluster, the smallest, was referenced by 5 works.

In the green cluster, which is based on the work of Van Der Veer and Valsiner (1994), *The Vygotsky Reader*, the main theme uniting the authors is related to emotions, whether in the internalization of emotions or in their analysis and development. The central theme that connects the purple cluster is the exploration of the concept of *perezhivanie* within the Historical-Cultural Theory. The concept of *perezhivanie*, or lived experience, represents a unit that encompasses cognitive and affective aspects, internal and external, being also a unit of the social developmental situation. The social developmental situation is a concept used by Vygotsky to characterize the combination of internal developmental processes with external conditions.

The orange cluster is unified by a focus on child development and early childhood, with most works dedicated to the study and research of this target population.

Regarding the blue niche, the theme that connects the authors relates to the regulation of emotions and emotions as a product of cultures. The theme of the “social production of the mind” brings together the works in the red cluster; all these works reflect on the development of the mind according to Vygotsky.

The five clusters address important concepts from Vygotsky’s works in the study of emotions, such as: the development and internalization of emotions, the concept of *perezhivanie* and the social developmental situation, child development and the importance of play, emotion regulation, and the development of the mind through higher psychological functions. These studies remain relevant for contemporary society because, in an uncertain and fluid world, people increasingly need to develop their socio-emotional competencies and skills.

Emotions are higher psychological functions that develop through a complex interaction between cultural, social, and individual factors. Catharsis, explored in the psychology of art, illustrates how artistic expression offers a release valve for emotional

regulation, transforming lived experiences into expressive forms. The internalization of emotions and culturally evolved signs of expression shape and interpret feelings according to the cultural context, while imagination and creativity allow for an innovative and adaptive articulation of emotions in a process of self-regulation.

Vygotsky's approach to the development of higher psychological functions emphasizes the importance of considering multiple factors in understanding emotions. Therefore, the understanding of emotions must integrate biological, social, and cultural influences, reflecting the complexity and interconnection of the higher emotional experience characteristic of the human condition.

An important limitation of this study concerns the use of the Bibliometrix package for bibliometric analysis, which relies on international databases such as SCOPUS, Clarivate Analytics Web of Science, Cochrane Database of Systematic Reviews (CDSR), and RISmed PubMed/MedLine. This choice restricts the inclusion of research published in Brazilian journals and conferences, such as SciELO and the Brazilian Digital Library of Theses and Dissertations, which may affect the study's scope regarding national academic production. Although this international focus is relevant, it does not allow for a comprehensive analysis of Brazilian academic perspectives on the historical-cultural theory and its contributions to understanding emotions.

Moreover, it was observed that some authors present divergences concerning Vygotsky's theory, particularly regarding the concept of emotions. Authors such as Damasio, Ekman, and Frijda propose approaches that prioritize biological and universal explanations of emotions, focusing on neurophysiological and innate aspects. In contrast, Vygotsky argues that emotions are socially mediated and culturally shaped constructs that develop through interactions and sociocultural conditions. These theoretical divergences point to different ways of understanding the role of emotions in human development, reflecting the complexity of the subject and the multiplicity of possible approaches.

Finally, this article contributes to encouraging researchers to deepen their study of emotion in Vygotsky, considering the main works, research, and authors that explore the theme, as well as highlighting its potential for future studies.

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