

**Note-writing as an intellectual craft: Niklas Luhmann and  
academic writing as a process<sup>1 2 3</sup>**

***A escrita de notas como artesanato intelectual: Niklas Luhmann e  
a escrita acadêmica como processo***

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**Abstract**

Despite numerous indications that academic writing is a means toward intellectual discovery and not just a representation of thought, in Brazil, it is seen more as a product of studies and subjects than an integral part of university education. This article presents note-taking, an apparently simple and supposedly archaic activity, as a way through which academic writing is eminently oriented towards constructing an authorial thought. To this end, we discuss recent findings in the historiography of writing that show note-taking as an essential practice in the development of modern intellectuality. We also present an emblematic case, in the 20th century, of the fruitful use of a note-taking system created by German sociologist Niklas Luhmann. Finally, we point out that the value of note-taking goes beyond mere historical curiosity, constituting an additional tool for a daily life in which satisfaction and a sense of intellectual development are at the center of academic life.

**Keywords:** academic writing, academic literacy, Niklas Luhmann, Research Methodology

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## Resumo

A despeito dos inúmeros indícios de que a escrita acadêmica é um meio de descoberta intelectual e não apenas uma representação do pensamento, no contexto brasileiro, tal prática tem sido conceituada mais como produto de pesquisas e disciplinas do que como parte integrante da formação universitária. O objetivo neste artigo é apresentar a tomada de notas, uma atividade aparentemente simples e supostamente arcaica, como um artifício no qual o exercício da escrita acadêmica é orientado eminentemente para a construção de um pensamento autoral. Para tanto, discutimos os recentes achados na historiografia da escrita que expõem a tomada de notas como uma prática essencial no desenvolvimento da intelectualidade moderna, e, em seguida, apresentamos um caso emblemático, no século XX, do profícuo uso de um sistema de tomada de notas do sociólogo alemão Niklas Luhmann. Por fim, apontamos que o valor da tomada de notas vai além da mera curiosidade histórica, constituindo-se como ferramenta auxiliar para um cotidiano no qual a satisfação e o senso de desenvolvimento intelectual estejam no centro da vida acadêmica.

**Palavras-chave:** escrita acadêmica, letramento acadêmico, Niklas Luhmann, metodologia de pesquisa

## Writing as a discovery process

A statement crosses the debates about the teaching of academic writing for over half a century: academic writing is a complex process of discovery and not merely the product of the final phase of subjects and studies (Murray, 1972; Kellog, 1994; Kellog et al., 2016; Peary, 2016; Elbow, 1998; Boice, 1994; Rose, 1980; Flower & Hayes, 1984; Wrigley, 2019; Pinto, 2016). In this scenario, the processual character of academic writing is interpreted as an inseparable part of intellectual formation. Writing is not simply a way of saying what someone knows but one of the most effective ways to unveil what there is to say. As Baker (1985) suggests, "in fact, writing creates a thought and the capacity to think: with writing you discover thoughts that you barely knew you had" (p. 2-3).

This perspective about the role of writing is equally identified in the discourse of renowned intellectuals from different knowledge areas when explaining their writing processes. Names as anthropologist Clifford Geertz (Olson, 1991), philosopher Slavoj Žižek (Taylor,

2005), physicist Richard Feynman (Gleick, 2011), and the philosopher and historian Michel Foucault (2010) are among those who converge toward the same opinion on writing: it is a way of discovering and not a device that can be triggered after someone knows everything there is to know about a research problem. Even if sub-theorized, such a perspective about the role of writing radically differs from the position of most academics who have difficulties writing. Fluent and renowned authors tend to involve themselves with previous writing strategies during the whole research, for example, by taking and organizing notes, used later in the texts to be published. At the same time, academics who experience constant difficulties in writing do not often appeal to pre-writing strategies. These famous authors also insist on writing their texts, even with incipient knowledge of the investigated theme (Boice, 1994; Hjortshoj, 2001; Peary, 2016). About this striking difference between those who write fluently and those who have writing blocks, Murray (1972) affirms, in a classic article on the field of writing theory, that the most productive writers in any genre tend to spend around 80% of the time pre-writing, 15% revising, and only 5% creating the final text.

Despite these findings, writing as a process and way of intellectual discovery has rarely been a concern in Brazilian higher education, a context in which we would expect a greater awareness of the organization of science and the definition of a researcher's personal and professional identity in all knowledge areas. We could say that the posture is often inverse. In Brazilian universities, we might say that writing has been kept more as a product to be evaluated than a process to be continually developed (Martín, 2018). Considering this scenario, in this article, we aim to present to the Brazilian academic public a type of academic writing guided mainly toward constructing an authorship thought: note-taking.

Note-taking can be conceptualized as a type of pre-writing. This writing guarantees the writer a safe space to write roughly, germinally, and experimentally without the need to make this writing phase public or be peer-evaluated. It is, at the same, an essential phase for the future writing of high-quality academic texts. Therefore, note-taking decreases social and psychological pressure on academic writing, which is often the main reason for many academics to experience difficulties in starting, continuing, and ending their texts fluently, creatively, and comfortably (Cruz, 2020). Besides this, contrary to common intuition, the permission for approximate writing tends to increase the quality of formal writing instead of decreasing it, as many would think (Elbow, 2012).

By introducing the theme and discussing the value of academic writing through note-taking, we aim to present two dimensions of this writing practice. First, we present a historiographic dimension, in which note-taking is increasingly perceived, since the last decade, as a constituent cultural practice of modern intelligentsia, when the increase of printed information and a new way of relating with knowledge demanded efforts to create memory technologies that were widely disseminated in Europe. Second, we have a dimension practice of note-taking illustrated through its singular use in the second half of the 20<sup>th</sup> century: the slip boxes by German sociologist Niklas Luhmann (1927-1998). Finally, we argue that the interest in the theme surpasses the simple historical curiosity or unreflective attachment to academic productivism. It becomes a vital issue for debates aiming a university routine guided toward satisfaction, a sense of discovery or the formation of an authorship thought in which the process, and not the product, is the focus of writing and academic life.

## **Note writing in modernity: materiality, external memory, and new possibilities of authorship**

The interest in the practical, material and everyday dimensions of writing is recent in the historiography of this activity (Williams, 2014). Blair (2010) affirms that the historiography of note-taking started only in the last decade when this practice was no longer seen as a simple strategy of individual study or a "memory crutch" and started to be unveiled as a fundamental device in the formation of modern modernity. These facts suggest how much writing has been immune to analysis that exposes their social and material production conditions and the analysis of the role of different writing modalities in the production of modern knowledge.

In general, the historiography of note-taking writing has shown the impact of tensions between oral culture and the emerging typographic culture in the modern intellectual environment in the 16<sup>th</sup> century as vital to understanding that historical phenomenon. In that period, the predominant values of Classic Rhetoric, in which orality occupies the center of intellectual practice, are gradually substituted by the values of a new material culture based on writing technologies conceived to fulfil the demand for forms of external memories, seen as indispensable to a moment of an increasing volume of information (Cevolini, 2018, 2020; Schmidt, 2018).

The creation of the mobile press, in the mid-15<sup>th</sup> century, plays a determinant factor in the emergency of note-taking practice. In this context, the competence of oral exhibition of knowledge acquired through memorization starts to lose its appeal as proof of intellectual capacity. In its place, the “art of aphorisms”, already present among the Greeks, is resumed, initially with the use of note-taking notebooks (*commonplace books*), characterized by original notes and copies of excerpts from the works read, done in chronological and thematic order (Cevolini, 2020). Nevertheless, the need to recover information emerges with the increasing number of notes, mainly in the academic context. With it, the creation of techniques and indexation systems becomes increasingly more sophisticated (Blair, 2010).

While in the rhetoric culture, the note-taking books had the role of an auxiliary memory, which the erudite could go back to consult the material to be memorized, in the typographic culture, writing in books had the psychological role of “improving oblivion” (Cevolini, 2018). Commonplace books allowed scholars to remove from their minds what seemed interesting, storing them for future use and thus having enough disposition to continue reading.

The values of novelty and creation preached by the Renaissance culture, contrary to collectionism, radically decreased the appeal of the erudite encyclopedic knowledge, famous until that time and disseminated through commonplace books. Besides this, in this context, material innovations – such as the production of long-lasting papers, the use of single-cut paper sheets and its filing based on criteria such as theme, chronology, and alphanumerical organization – result in the desire to construct knowledge that will go beyond seeking to collect information and, at the same time, are compatible with them. In this process, the prerogative that the note should have a semantic structure closed on itself was essential. This assumption was broadly disseminated through an extensive pedagogy of note-taking in writing manuals, from the 16<sup>th</sup> to the 18<sup>th</sup> centuries. The idea that these notes should be guided toward the interest of their writers and the possible associations with the previous notes in the personal archive was also new at the time (Cevolini, 2018).

Besides allowing the creation of external memory in the intellectual work, this new way of writing carries an innovative role in the history of writing: a note becomes a physical and intellectual object highlighted in the context in which the note was conceived (Blair, 2010), an operation that allows its re-contextualization through original and highly personal recombinations (Cevolini, 2018). The notes’ externality and physicality, and the deliberate effort

to build new relations between the notes that connect different themes are characteristics that establish germinal versions from what we now know as Cybernetics: a way of creating an evolution of thought through apparent chaos of dispersed information and the resource of hypertextuality, only possible with the storage, filling, and indexation of notes (Maxwell & Armen, 2013).

This modern scenario of transformations in the relationship with knowledge included note-taking as a central artifice in the emergency of writing technologies. In this direction, the first effort was taken by Vincent Placcius, who described in 1689 a complex cabinet to organize notes to be collectively inserted and rearranged (Cevolini, 2018). The second documented case was in 1740 when Thomas Harrison invented a cabinet with drawers, which worked as a file for paper notes, alphabetically organized. The "ark of studies", as Harrison named it, created innumerable possibilities of combination and recombination of notes and was one of the similar inventions at the period when the physical handling of academic knowledge represented an increasing doubt on the capacity of individual memory, and the restless search for new uses and technologies of external memory (Malcolm, 2004).

Not only do writing habits go through changes with the increasing use of note-writing systems at the beginning of the modern era, but so did reading ones. Note-taking books, for example, helped readers memorize information for future oral presentations. In its turn, in typographic culture, the writing of independent notes makes reading a practice aiming to go beyond accumulating knowledge, mainly toward constructing new knowledge (Cevolini, 2020, p. 14). Therefore, reading habits become directly connected to the readers' previous interests, as the possibilities of notes' combination and recombination create a context for guided reading to help trains of thought, idea networks, and fill gaps in arguments. Thus, reading habits are increasingly more guided by the readers' interests, who seek, at each new note, to become themselves authors through new relationships as new notes are added and manipulated in the card files.

## **The fruitful and deliberate use of note-writing: the case of Niklas Luhmann**

Despite the advancement of the uses and dissemination of the writing system between the 16<sup>th</sup> and the 18<sup>th</sup> centuries, the diffusion and theorization of this writing practice diminish during the 19<sup>th</sup> and 20<sup>th</sup> centuries in the panorama of modern intellectual culture. Nonetheless, this does not mean that writing by note-taking has become completely neglected. We usually say that note-taking has become a private and sub-theorized activity in the routine of academic life, probably as a result of the ideological advancement of the social division between manual and intellectual work, a division that erases the relations between the material conditions and the everyday attitudes of academic life (Becker, 2015; Löfgren, 2014).

Though the value of note-taking is present in the discourse of the 20th and 21st centuries, this practice is rarely theorized or presented as an essential constitutive element of knowledge production (Wilken, 2010). When mentioned, note-writing discourses are almost always present in informal communication, like interviews, documentaries, or biographic and autobiographic reports (e.g. Barthes, 1977; Benjamin, 2006; Moisés, 1999; Skinner, 1981; Taylor, 2005).

Even among the authors from knowledge areas in which note writing is a vital part of the academic activity, as is Anthropology, the theme is sub-theorized. This is precisely the case of anthropologist Clifford Geertz, who, though one of the leading names responsible for explicating the essential role of writing in the construction of social phenomena, does not theorize in his work the role played by field and reading notes (Emerson, Fretz & Shaw, 2010). Even more surprising is that Geertz himself affirmed that, before starting to write his more important books, he had accumulated reading and field notes for almost a decade (Olson, 1991).

## **Luhmann and the case of the “slip boxes”**

Niklas Luhmann (Lüneburg, Alemanha, 1927-1998) was one of the last authors of the 20th century dedicated to producing a grand social theory. Luhmann studied Law between 1946 and 1949 and worked in public administration for around ten years (Bechmann & Stehr, 2002). In this period, even before any institutional connection as a university professor, he practiced note-writing, aware that this activity could be helpful for writing some specific project and as a long-term research program (Schmidt, 2018).

Luhmann’s academic career started in the 1960s when, while working in public administration, he applied for a position as a professor at Bielefeld University. In 1968, when taking over the position, Luhmann proposed, as part of his work plan, a research program lasting 30 years, aiming to develop a general theory of society. The sociologist fulfilled this proposal, leaving several articles and books to be published posthumously. In his fruitful trajectory, Luhmann published around 550 articles and 50 books, making him an unprecedented editorial phenomenon in the history of Sociology in the 20<sup>th</sup> century (Schmidt, 2016).

Despite his productivity, what distinguishes Luhmann’s work is the intrinsic and deliberate connection of his ambitious research program with his writing and reading method. As Luhmann (1992) stated, what explained his thought and production was his *zetteltkasten*, which can be translated as “slip box” or “card file”. More than an archive to recover memories, his slip box was a powerful “communication partner” to him. Considering that writing was a form of discovery, he argues that his card file constantly showed him that “it would be impossible to think without writing, at least in the case of any sophisticated thought, in network” (Luhmann, 1992, p. 3).

The construction of a card file as done by Luhmann is a rare case in the intellectual history of the 20<sup>th</sup> century, as it was not only done but theorized, publicized, and assumed by the sociologist as central to the construction of his work. By doing that, Luhmann distinguishes himself from the norm of human and social sciences in the 20th century, in which the writing practice is, as Becker (2015) suggests, an eminently private activity whose process is void of theorizations.

Luhmann made explicit the materiality and logic of his work as a researcher to those who sought him hoping to find the holy grail of academic writing in his famous card files (Schmidt, 2016). However, as Luhmann observes, almost everyone who sought him was disappointed when they saw an old simple wooden cabinet full of drawers filled with apparent standard notes, often yellowed by time, with information that did not seem to explain his impressive intellectual production. “People show up, see everything and nothing more than that, as in pornographic films; consequently, they leave disappointed” (Luhmann, quoted in Cevolini, 2018, p. 393). There is nothing special in Luhmann’s writing method besides recovering, in the 20<sup>th</sup> century, a system of external memory able to provide the conditions to create, through decades, an authorship of articles and books coherent with his research program.

## **A card file and its uses**

Luhmann wrote around 90 thousand notes during his career. He wrote the notes in handmade A6 cards organized into two great collections. The first, produced between 1951 and 1962, with around 23 thousand notes. The second collection, between 1963 and 1997, with around 67 thousand notes. The first collection comprises Luhmann’s initial interests in Political Science, Organization Theory, Philosophy, and Sociology. The second is guided toward expanding his interests, attempting a general theory of society with different themes, such as communication theories, decision-making processes, cybernetics, love, and others (Cevolini, 2018; Schmidt, 2016).

In Luhmann’s system, the notes are phrases or short paragraphs expressing original ideas or comments on the ideas of other authors. Luhmann is radical in his proposal that the note should be written with one’s own words and sum up the idea as much as possible. In the upper left corner, Luhmann inserted an identification code for the note. In the upper right corner, he would write one or two keywords. The author wrote the idea only on one side of the note to ease its handling and reading in his extensive file. Bibliographic references were added on the back of the note when necessary. Hence, the note is always self-contained, a semantic unit written to be understood in isolation and at any given time in the future. However, a new note almost always seeks to articulate the existing notes in the file, constantly formulating and reformulating arguments, definitions, questions, and answers in his research program (Schmidt,

2018). To Luhmann (1992), this process implied the interdependence of his readings, the writing of new notes, and the file organization. “Because of this, when reading, I always have in my mind the question of how the books I read can be integrated into the note-filling system” (Luhmann, 1992, p. 3).

## **The note as a materialized thought**

To Luhmann, a note is the physical manifestation of thought, an object that can be physically manipulated to create new ideas and be connected with new notes. So, for instance, a note on the theme *of politics* can be connected with another on *education, architecture, and nutrition* without any explicit connections because these relations are established by the authors when trying to answer their research questions. This perspective, according to Luhmann, is compatible with the concept of General Design of the Brain, created by the neurologist W. R. Ashby, a pioneer in the Cybernetics field. Ashby (1970) argued that the capacity of the brain to deal with significant amounts of information results not from the accumulation of knowledge point by point but from its capacity to establish relations among infinite categories (Ashby, 1970). Nowadays, studies mainly in the field of Psychology corroborate this perspective, indicating that human language, especially in academic activity, develops significantly as people make deliberate efforts to connect concepts, theories, examples and experiences from different orders (Ambrose et al., 2010; Lang, 2016).

As shown, to allow for connections and not simply filling ideas, thus becoming a proper external memory, Luhmann conceived his system with elements that effectively allowed the filling, connection, and recovery of information. These three elements are materialized from the single alphanumeric record in each note, the creation of keywords shared by different notes, and links among the notes, creating a set that allows for an index, which works as a system of references and consultation.

The alphanumeric record grants the note a fixed position in the file so that it can be recovered and associated with another note at any time. The keywords are present in each note, allowing the recovery of notes from the index and the spontaneous connection between notes written in different moments but that share the same keyword. Notes retrieved from the index with keywords are automatically associated into clusters of related notes. Additionally, the

connection of notes is established by creating links between different notes, spatially separated in the file. This is done by writing in one note the identification code of another, which the author wants to associate.

Filling a note in a fixed position in the file is the most fundamental level of organization in Luhmann's system. To do so, he organized the notes in a sequence that respected the adequate development of a theme, always attributing to each note an alphanumeric code. Any note in the file would be concretely close to other notes with content related by the author.

For example, the first note with content on a theme – Academic Writing – would start with code 1.1, in which 1 identifies a new theme in the file and 1.1. recognizes it as the first note on that theme. A second note on the same theme is numbered 1.2, with .2 showing that this was the second note on the theme, and so on. If, at a certain moment, based on the reading of another source, the author has an insight on the theme or a new idea, it is written in a new note whose most adequate position is between note 1.1 and note 1.2, the author would give the code 1a to the new note, and it would be physically inserted in the file after note 1.1. With this alphanumerical system, Luhmann opens endless possibilities of new notes at any moment and location in the file, expanding the depth of his thoughts with every new insertion.

To illustrate this possibility, we present below a brief example from the note file of one of the authors of this article. This example shows how a new theoretical elaboration emerges as new notes written based on different readings are connected and organized. In this file, the section of notes starts with note 1.1. is dedicated to the theme of Academic Writing. In the notes 1.10a and 1.10b, we find the content organized below:

**Figure 1**

**Note 1.10a**

Note: 1.10a

Keywords: academic writing; psychological difficulties

*In the psychological literature, it is recurrent the statement that the difficulties in academic writing result, among other things, from the strong social control of this literary genre. In other words, few literary genres are as controlled as academic writing by many superpositions of described and non-described rules.*

**Figure 2**

**Note 1.10b**

Note: 1.10b

Keywords: academic writing; psychological difficulties

*In the debate about academic writing block, the psychological dimension of academic writing has been especially mentioned concerning the creative process of this literary genre.*

On the same day notes 1.10a and 1.10b were created, one of the authors of this article read a related text, at first, with another theme in his binder: Creativity Psychology. The text is Freud's (2019/1908) "Creative writers and daydreaming". This reading resulted in a new note the author filed after note 1.10a. Therefore, the new note was physically inserted between notes 1.10a and 1.10b, receiving the code 1.10a1:

**Figure 3**

**Note 1.10a1**

Note: 1.10a1

Keywords: creative writing; Freud

*Freud identifies a recurrent characteristic among creative writers: these subjects feel they are allowed to write their daydreams with no concern with the quality of writing because they know that the formal quality of a text is reached with secondary composition processes, such as review and edition. On the other hand, Freud argues that little creative writers feel they are not allowed to write their daydreams. Hence, he concludes that creative writers present smaller levels of inhibition than "blocked" writers.*

On these occasions, one or more new notes are commonly written due to file organization. Generally, these notes express the development of arguments derived from comparison, insights, and the author's notes. As was the case shown in the following note:

**Figure 4**

**Note 1.10a2**

Note: 1.10a2

Keywords: academic writing; social control

*Suppose that for creative writing, one needs the psychological sense of permission to express daydreaming, which will only be revised later. In that case, it is highly probable that, in the scope of academic writing, the permission for a theoretical daydream, for example, rarely occurs because there is a high level of social control over this textual genre.*

This note led to the creation of another.

**Figure 5**

**Note 1.10a3**

Note 1.10a3

Keywords: notes; academic writing; daydreaming

*The permission to write notes in which any thoughts (“daydreams”) on any theme can be recorded seems to establish a space of psychological permission for literary creation in academic writing. Here, the note initially seems a type of daydream, as described by Freud. The privacy of the note and the fact that it is not yet a formal text opens up possibilities to test ideas and insights through a more informal language, which will only be revised in the future. Thus, the initial concern is more on forming a new meaning than a demand for quality in writing, even before the idea is fully formed. The note helps to create a new idea with no immediate concern with correctness and precision.*

The insertion of new alphanumeric slots in the code of the notes represents thoughts' ramifications and deepening that can be endlessly developed during extended periods, as a new note can be archived and connected to the files at any moment. Thus, in Luhmann's 'slip box' we can see notes coded as 1.3a72b1 that show the extension the notes can acquire within the binder.

## **Connections and endless possibilities of discoveries**

Besides the work of the physical organization and codification of notes, Luhmann also created links among distant notes within his file. These links are established by writing, in a given note, the identification code of another note the author wants to associate. This is useful because, considering the physical disposition of the notes in the file, a note is immediately followed by another note. However, with the creation of links, this can be followed by any other note, thus, participating in multiple sequences of notes and creating different conversations in different parts of the file.

A complementary connection inherent to Luhmann's note system is the creation of an index with the keywords attributed to the notes. In this index, each keyword is followed by the codes of notes with them. These notes work as a starting point for a sequence of notes organized in the file. Thus, if the file has a sequence of ten notes organized to represent the development of an idea and all of them share a keyword, the index only associates the keyword with the first note of this sequence. With this strategy, Luhmann organized the indexation of themes existing in his file, not to catalogue each note with precision but to identify an internal network of notes related to each other, which continuously opened the array of possibilities of relations between new and old notes and among themes that are, at first, conceptually disconnected.

The recovery of notes creates a context for complex and unexpected connections that would not happen otherwise. For example, while the recovery of one note from the index grants access to a sequence of notes, the recovery of two or more notes organized under one keyword gives the reader-writer access to at least two sequences of notes that, at that moment, were not placed in parallel. This allows for the joint reading of notes that the writer did not previously connect. This type of connection intensifies the possibilities of new theoretical relations due to its element of serendipity: a surprise emerged from the relations that did not exist so far, something close to what Roland Barthes called a 'controlled accident' with the writing and organization of notes (Wilken, 2010).

Finally, about the organization of notes and Luhmann's reference system, Schmidt (2018) perceived that, in the files of the German sociologist, all the resources organized allowed him to create an expressive fluency in the summaries to be used when writing books and articles. In these cases, the idea was less to establish a connection network, like those within his card

files, but rather to establish a linear and structural logic of existing and connected notes, creating a cohesive and coherent text to be written and edited, and published.

## **A brief synthesis of the value of notes in the intellectual work**

The procedures used by Luhmann show that a significant part of his time was dedicated to organizing his card file. With all this process Luhmann (1992) claimed he always wrote his books and articles with a sense of knowledge and direction, highlighting that, when experiencing difficulties to continue a text, he decided not to insist on writing, as most people do. His immediate attitude was to return to his files to create more notes, connections, and an organization of thought so that his return to writing could happen as best as possible.

Despite all the efforts of the file's internal organization, creating and organizing the notes did not happen in an entirely orderly fashion, with no challenges or wasted efforts. The analysis of Luhmann's writing system indicated that many notes entered at "dead ends", as they were never recovered or connected to his reference system (Schmidt, 2018). Luhmann did not perceive this as a proof of fallibility or a total waste of work time but as a necessary waste of "ruminant" notes or a cluster of notes with no specific destination, which could or not be adequately connected in his file.

At first, this phenomenon can be seen as a waste of time in creating notes. Nonetheless, this type of exercise seems to be an inevitable component of high-level literary activities (Louise, 2014). Indeed, it would often be essential to understand concepts, theories, and research problems, and discover the ways not to follow in an intellectual investigation. Therefore, this apparent waste of writing should not be discarded as useless (Schmidt, 2016).

At this point, we should resume the implications of a note system, such as Luhmann's, on the role of reading in academic writing. Reading guided by note-taking goes beyond the traditional conception of this activity to accumulate knowledge to be recovered in the future, as if reading was a process temporally distant from writing and incorporated into the individual memory, naively considered as a computational system of information storage. In the perspective of Luhmann's writing system, reading and writing are close processes, in temporal and spatial terms, in a continuous feedback. Hence, note-guided reading situates readers in an

eminently active position, as they are constantly seeking to create answers to their research questions.

When the reading is deliberately guided to associate it with other previously written notes, the recovery of connected memories tends to amplify, reflecting, to a great extent, the formation of authorship thought instead of simply repeating the thought of others. About this effect, studies on learning psychology have been indicating that the formation of long-term memories on abstract contents, as is the case of scientific and philosophical knowledge, happens mainly when there is a deliberate effort of the readers to produce a connection between what is studied in the present and what was studied in the past. At the same time, the literature on the theme highlights that the capacity to make theoretical connections is one of the main predictors of students' effective intellectual development in any knowledge area (Lang, 2016).

When writing this synthesis about Luhmann's note-writing system, many readers might conclude that connecting ideas already happens mentally and does not demand writing notes. Indeed, the capacity to create connections among unexpected thoughts is typical of human language (Barnes-Holmes et al., 2004). However, the card file might increase the probability of connections not simply happening but more frequently, more sophisticatedly, and with ramifications typical of the construction of complex argumentative structures. Moreover, the card files allow the recovery of those connections for long periods, in Luhmann's case, for decades.

Another issue that the reading of this article raises is the relationship between note-writing and the use of digital Technologies, such as text-processing software, reading software, and applications for information filing, recovery, and organization, known as *Personal Knowledge Management* (PKM) system. In the last decade, several applications were developed to emulate Niklas Luhmann's writing system, such as *The Archive* and *Zkn3*. Besides this, other applications, such as *Notion*, *Roam Research*, and *Obsidian*, though not openly aiming to emulate Luhmann's card files, have compatible tools with many of the principles of the writing system posed by the German intellectual.

The debate about these digital technologies is more present in the informal environment of the internet than in academic literature. Writing technologies have been disseminated and debated mainly in virtual forums and social networks, where professionals and students from different knowledge areas share information through tutorials, tips, and experience reports.

However, an initial analysis of these sources suggests that, despite the frequent reference to Luhmann's note system in these contexts, we cannot affirm that the use of computer technologies reproduces, in all aspects, that system of note writing and filing. This happens because a large part of the proposed uses of these types of software are more guided toward more accessible information storage and retrieval, organized in closed categories, than focused on Luhmann's main proposal of note-writing, i.e., creating a long-lasting complex intellectual work that does not follow a linear logic of thought and in closed categories.

## **Final remarks**

The increasing and intense advancement of neoliberalism in the global university environment deepens relationships with the academic life that transform their essential activities, such as writing, into products that can be created as fast as possible (Davies & Bansel, 2005). The debate about note-writing represents a position contrary to this logic. Such a practice is imminently guided toward the writing process, and the construction of authorship thought in the long term. In this sense, our purpose in introducing Niklas Luhmann's note-taking model does not intend to propose it as a model to be strictly followed. The intention is to show how he maintains the principles of fluent and creative writing in his use of note-taking files. These characteristics were present at the beginning of modern European material culture – but are still very valuable today -mainly when we perceive that the German sociologist's writing system is coherent with the contemporary mass production about the learning processes of complex academic abilities.

Certainly, as shown, it is only possible to talk about the use of notes nowadays considering the role of new information and communication technologies, such as computers, and their possibilities to create and file notes. At first, the tendency is to suppose that such writing technologies would undoubtedly be more efficient and productive for writing. However, blindly believing that digital tools would lead to greater, better, and more efficient control of the writing process would be an extrapolation, which has no solid ground in the current literature about some writing dimensions. For example, Blair (2010) hypothesizes that paper note files often last longer than computer ones, which would be more susceptible to damages, losses, and obsolescence. The physical handling of notes, the file organization as a whole, and the role of

handwriting have been identified in the last years as more effective ways of learning complex content than using typed writing (Maxwell & Armen, 2013). We should mention that, unlike what is assumed, typed writing would be more connected to the increase in academic writing difficulties than its fluency or learning benefits (James, 2017; Mueller & Oppenheimer, 2014; Wrigley, 2019).

On the efforts involved in the analogical way of writing, as those present in Luhmann's note-writing system, we point out that it involves a significant psycho-motor complexity. Hence, writing, organizing, filling, combining and re-combining, and creating links and indexes are more than mechanical ways to deal with knowledge. They build ways of thinking by involving the whole body. Regarding this, there is increasingly more evidence showing that the sophisticated use of hands reflects writers' cognitive processes and produces new ones. Thus, the hands are more than the mind or brain servants. They are an active part of the possibility of creating original thoughts (Sennett, 2009; Shapiro, 2019; Tallis, 2003).

At least, these questions suggest that the practice of academic writing is permeated by assumptions that naturalize such an important activity, which is, in fact, deeply psycho-social. In the case of note-writing, this is evident when showing how this practice is established by social, historical, and cultural conditions, rarely considered as factors related to our ability to write and think innovatively.

In this sense, the debate on note-taking established here is connected to questions rooted and naturalized in the academic environment from the early days of modernity, as the idea of intellectual genius, i.e., someone capable of thinking and writing creatively and innovatively due to some unique sensibility, disconnected from any materiality and technical mastery of writing. The central role of writing and note filing as a constitutive part of the emerging modern thought denotes the impossibility of keeping a romanticized view of academic life, as if it were disconnected from the relationships established by men and women with the material world and its manipulation as part of their capabilities of doing culturally-praised things, such as writing and thinking in an enriched way. In this article, we treated these issues to recover the image of academic writing as an artisanal work. This process intertwines the writers' lives and their manual engagement with the universe of written language to create it in a creative, motivating, accessible, satisfying, and attractive way. We have sought to do this in the article by the writing, filing, and note organization inspired by Niklas Luhmann's writing system.

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## ERRATUM

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Where it reads:

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Read:

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