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Transmodal Moments During Teaching of Writing in Emergency Remote Education: Cultural and Semiotic Practices

Momentos transmodales durante el proceso de enseñanza de la escritura en educación remota de emergencia: prácticas culturales y semióticas

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Abstract

Teachers and students constantly recreate meanings, conditioned by the digital media used in remote education during the pandemic. Semiosis is designed by teachers as learning games, involving students in the simulation of cultural practices in which didactic writing sequences are realized in chains that shift meanings between different semiotic modes, giving rise to transmodal moments. This study combines three theoretical approaches: socio-semiotic, anthropological-didactic, and didactic-disciplinary. Our objective is to explore semiosis in the transmodal moments that occur in the virtual interaction during a didactic sequence. From the qualitative point of view, this case study examines the simulation of cultural practices of a female student in the fourth year of Chilean elementary education, using the integrated analysis of semiotic chains and Hybrid Text-Image-Sound Systems (HTISS). The findings offer a description of the learning games associated with two cultural practices, whose cores of meaning shift between six links. The semiotic tracking reflects the tension between the agency of both meaning-makers: the didactic meanings proposed by the teacher and the thematic meanings proposed by the student realized in the semiotic ensembles of teaching and learning mediated by a digital platform, in which the recycling of videos and documents is utilized. However, the feedback reveals that visual meanings remain invisible.

Keywords: digital multimodal writing, transmodal moments, learning games, didactics on writing resemiotization

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Resumen

Profesoras/es y aprendices recrean significados constantemente, condicionados por los medios digitales usados en la enseñanza remota durante la pandemia. Los profesores diseñan significados como juegos de aprendizaje e involucran a los estudiantes en la simulación de prácticas culturales, en las cuales las secuencias didácticas de escritura se materializan en cadenas que desplazan los significados entre diversos modos semióticos, dando origen a momentos transmodales. Este estudio integra tres enfoques teóricos: socio-semiótico, antropológico-didáctico y didáctico-disciplinar. Nuestro objetivo es explorar la semiosis en los momentos transmodales ocurridos en la interacción virtual durante una secuencia didáctica. Desde lo cualitativo, este estudio de caso profundiza en la simulación de prácticas culturales de una estudiante de 4º año de educación básica mediante el análisis integrado de cadenas semióticas y SHTIS (Sistema-Híbrido-Texto-Imagen-Sonido). Los hallazgos ofrecen una descripción de los juegos de aprendizaje vinculados con dos prácticas culturales cuyos núcleos de significado se desplazan entre seis eslabones. El rastreo de núcleos refleja la tensión entre la agencia de ambos creadores, que se materializa en ensamblajes semióticos de la enseñanza y aprendizaje mediados a través de una plataforma digital, en la que destaca el reciclaje de videos y documentos. No obstante, la retroalimentación revela que los significados visuales siguen invisibilizados.

Palabras clave: escritura multimodal digital, momentos transmodales, juegos de aprendizaje, didáctica de la escritura, resemiotización

Introduction

The health crisis has obliged the education system to use emergency remote education (Hodges et al., 2020), which, without prior training or planning, has changed ways of teaching and learning, as well as the manners in which we communicate and interact pedagogically. The socio-semiotic perspective provides a framework that enriches the understanding of the virtual classroom and digital pedagogical and didactic tasks, since one of its main assumptions is that semiosis is closely related to learning, teaching, and assessment of these learning paths (Bezemer & Kress, 2016). From a Vygotskian perspective, we are semiotic beings and we become involved in culture progressively through cultural/semiotic tools that are learned through interaction (Wells & Mejia, 2005). In this study, we observe a chain of texts produced during the development of a didactic writing sequence in the virtual modality, mobilizing social and cultural practices whose meanings are realized through different semiotic resources in an incessant chain of resemiotization (Kress, 2010).

In order to address the phenomenon of resemiotization in educational contexts, we examine the complementarity of three theoretical approaches to make them interact as a whole. As a framework we use social semiotics, which, according to van Leeuwen (2005), is not a self-contained theory, but is applied to specific instances and problems and, therefore, not only requires semiotic concepts and methods, but also contributions from other fields. The problem we explore involves the didactics of written representation in the context of emergency remote education due to the COVID-19 pandemic. When looking at the digital texts that are exchanged virtually, the activities proposed by the teacher as a simulation of cultural practices are central. Therefore, in this study, social semiotics interact with the didactics of writing and the anthropological-cultural view to understand aspects of learning the forms of representation and relationships with others as part of cultural practices.

We study a chain of semiotic productions by a teacher in virtual interaction with one of her students, conceptualizing the texts temporarily exchanged through a platform as semiotic chains and the proposed didactic sequence as learning games that seek to simulate cultural practices (Sensevy, 2011). What interests us is observing resemiotization to learn from the moments in which the meanings realized in a given multimodal ensemble are then recreated in another. The objective is to explore transmodal moments in asynchronous online pedagogical interactions in a didactic writing sequence in order to understand the characteristics of teaching and the possibilities of semiotic learning for a fourth-grade student.

In what follows, we use the theoretical framework to synthesize the central ideas of the didactics of writing and the challenges of emergency remote education. We then review the semiotic perspective, using both the multimodal approach to understand resemiotization in remote education and the anthropological-cultural approach to resignify the didactic sequence as designs of learning games, framed by the semiotic possibilities of remote education.

Theoretical Framework

The process of teaching of writing in the context of emergency remote education

Hodges et al. (2020) warn us that we should not be tempted to believe that we have developed online education during the pandemic. Online education is planned and designed so that trained teachers can teach remotely. Instead, what we have experienced is a temporary shift in teaching during a time of crisis. In this context, in Chile, teaching teams have faced a challenge for which they have not been prepared, recontextualizing documents and guides that are now used online synchronously or asynchronously and which even require the mediation of families for students of some ages (Salas et al., 2020). The main objective during the emergency has not been to recreate the educational ecosystem, but to provide temporary access to teaching of the curriculum in an accessible manner and in accordance with what is available (Hodges et al., 2020).

Considering this situation, and specifically regarding the didactics of writing, teachers have had to incorporate strategies that allow the process of teaching writing to be scaffolded (Castellá et al., 2021; Delgado, 2021) through learning paths and didactic sequences that include digital and interactive resources (Reynols et al., 2020), alternation of synchronous and asynchronous periods and taking into account curricular prioritization (Propuestas Educación Mesa Social Covid-19, 2020; Sangrá, 2020), considering not only the focus of the process (Bereiter & Scardamalia, 1987; Camps, 2003; Cassany, 2012; Hayes, 2012; Grupo Didactext, 2015).

The transformation of teaching of writing began before the pandemic in various aspects. First, it is acknowledged that written text is multimodal; second, that digital didactic materials already coexisted with those on paper in many classrooms, being used by both teachers and students, incorporating images, video, audio, and web links, along with writing, modifying its didactics; and third, a new way of linking and mediating writing through available digital technologies has emerged, which has been accelerated by the pandemic.

With regard to the first point, Adsanatham et al. (2013) state that composing with words, sounds, images, and movement generates different actions and creative processes of writers, therefore, the teaching of writing in the online modality offers a synesthetic semiotic activity, in which writing is not the quintessential mode of representation, but other forms of representation and literacy are relevant.

This is connected to the second point: student texts and writing tasks or writing instructions involve alternate use of digital resources that mobilize specialized knowledge at each point in the writing process (Gordon et al., 2019; Navarro et al., 2021).

The representational resources available (modes and material media) in each phase of the writing process—(i) knowledge activation, (ii) planning, (iii) textualization, (iv) review and feedback, and (v) editing (Álvarez, 2010)—are adapted to the pedagogical ways of working in the emergency online mode and provide unexpected learning possibilities for students and also for their families in some cases.

For example, if the teacher requests digital planning of writing through a conceptual map or an outline, the preparation makes different demands of students than in the textualization stage, although both can be done using a word processor. Then, in the review and feedback stage, students and teachers have to know how to interact using the Word *track changes* tool, with which the corrections are made, and thus improve the draft. The different forms of textual construction and their semiotic work can limit or expand what can be designed and produced and, therefore, what students can learn, as well as what teachers can teach and assess (Bezemer & Kress, 2016). It should also be noted that not all of the teachers and students were previously technologically literate, but they have learned during the health crisis (Salas et al., 2020).

Finally, the third point is the manner of teacher-student interaction, because in teaching mediated by technology it is essential to create a solid interpersonal relationship, thus redressing the lack of proximity and immediacy on the platform (Coon et al., 2019). For this reason, Coon et al. (2019) propose that the teacher: i) incorporate a deliberate intervention to increase student motivation; ii) use strategies to demonstrate interest and involvement with the students; iii) implement intensive guidance that is designed to increase the student's capacity for success; iv) guide students on all options and possible paths to achieve the task; and v) anticipate any potential difficulties the students may face.

A social semiotic view of the classroom: multimodality in the simulation of cultural practices

Social semiotics is a theory that applies to specific instances and problems and therefore requires not only semiotic concepts and methods, but also contributions from other fields (van Leeuwen, 2005). In this case, we will observe the semiotic landscape of teaching and learning of writing in emergency remote education from the perspective of the multimodality grounded in the simulation of cultural practices.

We will highlight three ideas of the multimodal approach based on social semiotics. The first is that the social sphere drives and lies at the basis of semiotics (Gualberto & Kress, 2019). This has become clear in the context of the pandemic, as social actors have seen the possibility of sustaining the school through remote education (Navarro et al., 2021).

The second idea is that learning is closely related to semiosis, or in other words, one learns by creating meaning or representing (Bezemer & Kress, 2016). In this case, semiosis is mediated technologically by screens and various software programs available to teachers and students. Learning about communicative resources is understood as semiotic access to enable participation in school activities specifically, and in society and culture generally, through the design, production, and distribution of meanings (Kress, 2010, 2014), which in this case are digital.

The third idea is that this theory appeals to a certain generosity in recognition. If educational institutions and their members ignore certain resources in order to create meanings, they collaborate in concealing semiotic work and, in particular, its creators, reinforcing traditional conventions and power differences. Therefore, the multimodal approach promotes the recognition and valuation of all the semiotic resources that are used on a day-to-day basis in semiotic practices to legitimize meanings and creators of meaning that usually go unnoticed (Bezemer & Kress, 2016).

Based on these principles, we recognize semiotic practices that have begun to become more stable in emergency remote education, revealing the incessant semiosis mediated by digital technology as continuous processes of meaning-making, that is, social practices under development in a situated manner (Iedema, 2003). In these processes we find certain prototypical signifiers that allow us to permanently recreate meanings for teaching and learning (Stein, 2008), which, in turn, are related to other previously stated meanings (Bakhtin, 1982), forming links in a complex chain. We therefore define a semiotic chain as a chain of texts in which meaning is created through different signifiers linked by a theme (Newfield, 2014). Each text, as a link in a chain of meanings, can maintain or combine semiotic modes, being realized in different ways, with possibilities and limitations (Kress, 2010; Newfield, 2014). In the chains, spoken meanings appear, then images, and then writing, because semiotic mobility is a predominant feature in current processes of literacy (Newfield, 2015). The potential of the resources is exploited by meaning makers, offering different perspectives of the world that they approach and represent (Kress, 2020).

Tracking multimodal meaning-making sequences involves tracking the routes through which representations migrate and mutate, showing how ideas form, develop, and change (Newfield, 2014). A transmodal moment is one in which a meaning-maker constructs a new sign complex by changing the modes by which the meaning is made between one link in the semiotic chain and the next; for example, reading a written text aloud involves shifting from the semiotic writing mode to the speaking mode (Manghi, 2017). This shift is a moment of semiotic redesign instantiated by agentive meaning-makers in a representational and historical context and, given the materiality of the media, modes, and their possibilities of semiosis, it changes the meaning and the meaning-maker themself in the process (Newfield, 2015).

Resemiotization as a theoretical and methodological concept enables us to study the sequence of texts as a semiotic chain to track the semiotic mobility that is so common in educational practices (Newfield, 2014). Culture is created and reproduced in the processes of resemiotization (Achugar & Oteiza, 2014).

That said, from an anthropological-didactic perspective, the practices of teachers and students can be studied by simulating aspects of socio-cultural practices through the model called learning games (Sensevy, 2011; Santini et al., 2018). In these games of simulation, the configuration of a discursive order of artifacts and semiotic media is described and the actions that the learner is expected to generate during the situation are modeled, familiarizing them with aspects of the expert practices of an artist, writer, athlete, scientist, or other social referent. He or she will therefore be able to appropriate knowledge, attitudes, and procedures (Sensevy, 2011; Gruson et al., 2012).

The key in learning games is the progressive simulation of certain aspects of expert practices. This simulation is generated by students from situations that are designed by the teachers to be as authentic as possible and which have an internal logic. The teacher helps his or her students to understand this logic, guiding them and drawing their attention to relevant aspects of these social practices (Sensevy, 2007, 2011) that are linked to a source community or thought collective (Fleck, 2008).

The simulation of cultural practices involves an appropriation of knowledge practices in which the student has an experience similar to that of a writer, an athlete, or a mathematician. In terms of the epistemic nature, knowledge develops relationships, differences, and similarities with other knowledge in practice (Sensevy, 2011).

Proposing situations for students to simulate cultural practices of reference requires good knowledge on the part of the teacher of the knowledge practices modeled as the source epistemic games, while the students develop a knowledge practice as an elementary epistemic game (Sensevy, 2011). In this case, the curricular teaching content related to writing in school practices are intertwined with learning about different cultural forms of

representation and communication. Since representation and communication are semiotic practices that we develop on a daily basis, it is these that enable us to participate in cultural practices and thus demonstrate our interest and agency (Canale, 2019; Kress, 2014).

The various activities and pedagogical decisions made by teachers in online education have become an ideal area in which to track and analyze semiotic displacement (Newfield, 2014) in a didactic writing sequence.

Methodology

The objective is to explore the transmodal moments in asynchronous digital didactic interactions between a student and her teacher during a didactic sequence in order to understand its potential for teaching and learning. Using a qualitative approach, a case is studied (Vasilachis, 2009) on the implementation of the didactic sequence in an emergency remote education setting. The object of study are the texts exchanged through a virtual platform between the teacher and student during the implementation of a didactic sequence.

The selection of the sample involves an instrumental case (Stake, 2007) with which we seek to examine the interaction between the three theoretical/methodological frameworks and explore the description of online didactic interaction as resemiotization. The complete corpus entails the digital written material and the audiovisual record of nine classes, of which three are synchronous and six asynchronous. This study focuses on the asynchronous classes.

The online classes were carried out in the context of the pandemic in a Chilean subsidized private school, which implies that teacher and student have technological devices, internet connection, and basic digital literacy. The interaction between fourth-grade students (9 and 10 years old) and their elementary school teacher for the asynchronous class modality is achieved through the WebClass virtual platform for the exchange of various school activities. The sequence of interactions includes the delivery of instructions for activities and modeling by the teacher, as well as assignments by the students, within the framework of the *Noticiero* (News Report) class project.

In a second instance, the case study becomes intrinsic as we focus on the semiotic productions exchanged between the teacher Paula and one of her students, Maite. This is an interesting case because of the particularity of their semiotic productions, which combine linguistic resources with drawings and photographs in a significant manner. The research has the support of the PUCV bioethics committee—as part of the SCIA-ANID CIE160009 project—and the participants gave their informed consent.

Table 1
Summary of texts that form the corpus: asynchronous exchange on platform (see Figure 2)

Texts	Didactic sequence	Text format exchanged on platform	
		Teacher	Student
1	Modeling instructions	Video Word document	
2	First draft		Word document
3	Feedback	Word document	
4	Second draft		Word document
5	Instructions	Video	
6	Final production		Video

Source: Prepared by the authors.

As the transcription is already considered part of the analysis (Bezemer & Mavers, 2011), a Hybrid Text-Image-Sound System (HTISS) (Blocher & Lefeuvre, 2017) is used, making use of still images and annotations to reconstruct classroom situations (Morales, 2014; Sensevy, 2011), positioning them on time scales with micro (minutes) meso, and macro (hours, months) organization.

The transmodal moments are analyzed using the integrated analysis methodology (Newfield, 2015), which combines an analysis based on the text with another one that tracks the semiotic chain, constructing an overall analysis. An intermediate stage is added to these two analytical stages, which enables us to transition towards the tracking of meanings from a didactic perspective.

The texts are first analyzed in detail in terms of the mode, materiality, medium, discourse, genre, site of exposure, and audience, and compared with each other to identify the transformations of meaning (Kress, 2010; Stein, 2008). The second step is to identify one or more common core/s of meaning across the sequence of texts. In this study, the core of meaning emerges from the conceptualization of semiotic practices as cultural practices in a didactic situation. Once the core/s that we are interested in tracking have been identified, we move on to the third stage of the analysis: tracking meanings. This shows how the semiotic resources and texts transform, develop, and lead to others in a continuous process of meaning-making.

Results

The results are organized into two levels. The first provides a general description of the class project *Noticiero de Curso* (Class News Report), analyzing the convergence of cultural practices in the didactic sequences proposed by the teacher, understood as learning games. It is from here that the thematic areas that link the texts are derived, giving rise to a characterization of the didactic interaction in each activity conditioned by the online setting. In the second level, the focus is on the interaction between the teacher and a student. We analyze the semiotic chain of the process of teaching writing, as well as its limitations and possibilities, identifying the transmodal moments and the cores of learning that migrate through each link. Finally, the analysis examines the way in which two cores of meanings affect the cultural practices underlying the learning games in this case study.

First level: cultural practices and didactic panorama

Cultural practices in the class project *Noticiero de Curso*. The first look at the classroom project is based on cultural and semiotic practices. The audiovisual news report, as part of the subject of Language and Communication, entails developing learning games that seek to simulate the practices of a writer and a journalist, as they are both communicators. The writer's practice is generic and the journalist's practice is specific. That is, the cultural practice of writing can be developed in different fields, but here it is done specifically in the field of the journalist.

The two cultural practices thus come into play in the activities proposed by the teacher. These learning games are intended for students to simulate writing as expert writers do (learning game 1) and, specifically, to communicate as journalists do. That is, they know how to write a news story (learning game 2) and also communicate orally by reporting in front of a camera (learning game 3), as shown in Figure 1.
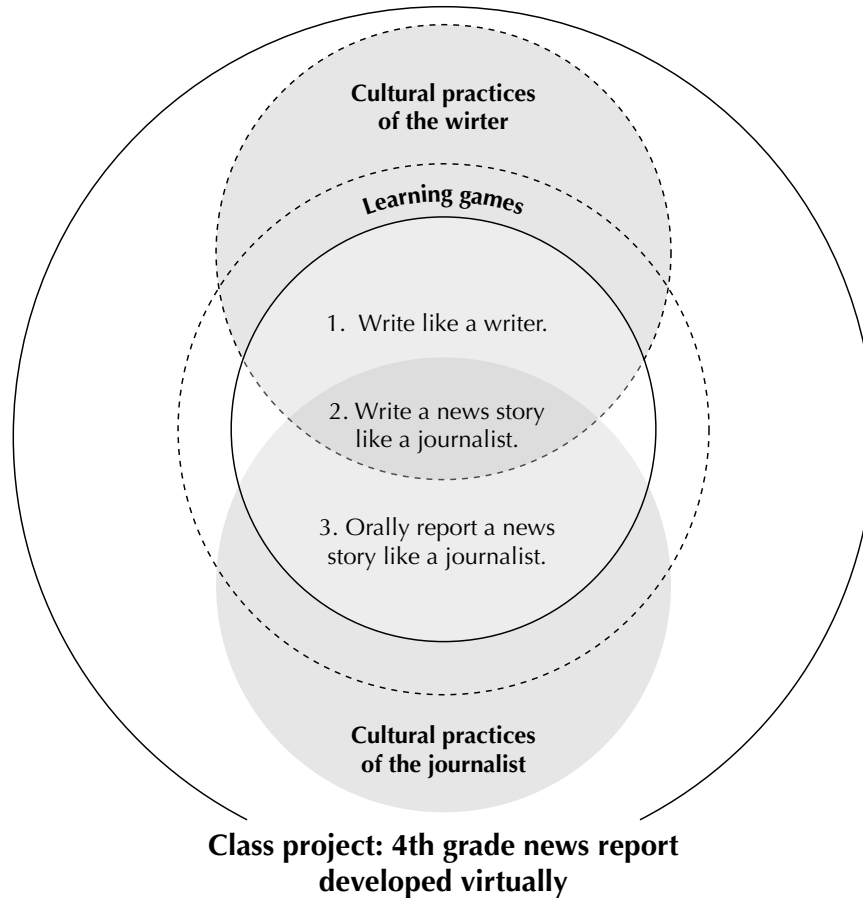
**Cultural practices
of the wirter**

Learning games

1. Write like a writer.

2. Write a news story
like a journalist.

3. Orally report a news
story like a journalist.

**Cultural practices
of the journalist**

**Class project: 4th grade news report
developed virtually**

Figure 1. *Cultural practices and learning games*

Source: Prepared by the authors.

The learning games are designed by the teacher Paula for her students in an online setting, which means her didactic design takes place in a special way, combining different semiotic resources to achieve her didactic objectives.

Didactic overview: didactic areas and cores of meaning. The news reporting project is carried out through an educational platform for which the teacher designs and produces short video clips and downloadable Word documents for the students. In the same space they upload their designs and productions in Word format, with videos and photographs (see Table 1).

For the appropriation of cultural practices through learning games, the teacher uses four central didactic areas. The first is intended to develop knowledge about writing as a process and the second about the discursive news genre. These correspond to the generic practice of the writer and the specific practice of the journalist, respectively. The didactic area of language management is transversal, which is different depending on the mode in which the practice needs to be semioticized. There is one language management for the written mode and another for the spoken mode, which correspond to didactic areas three and four. The cultural practices and didactic areas are shown in Figure 2.
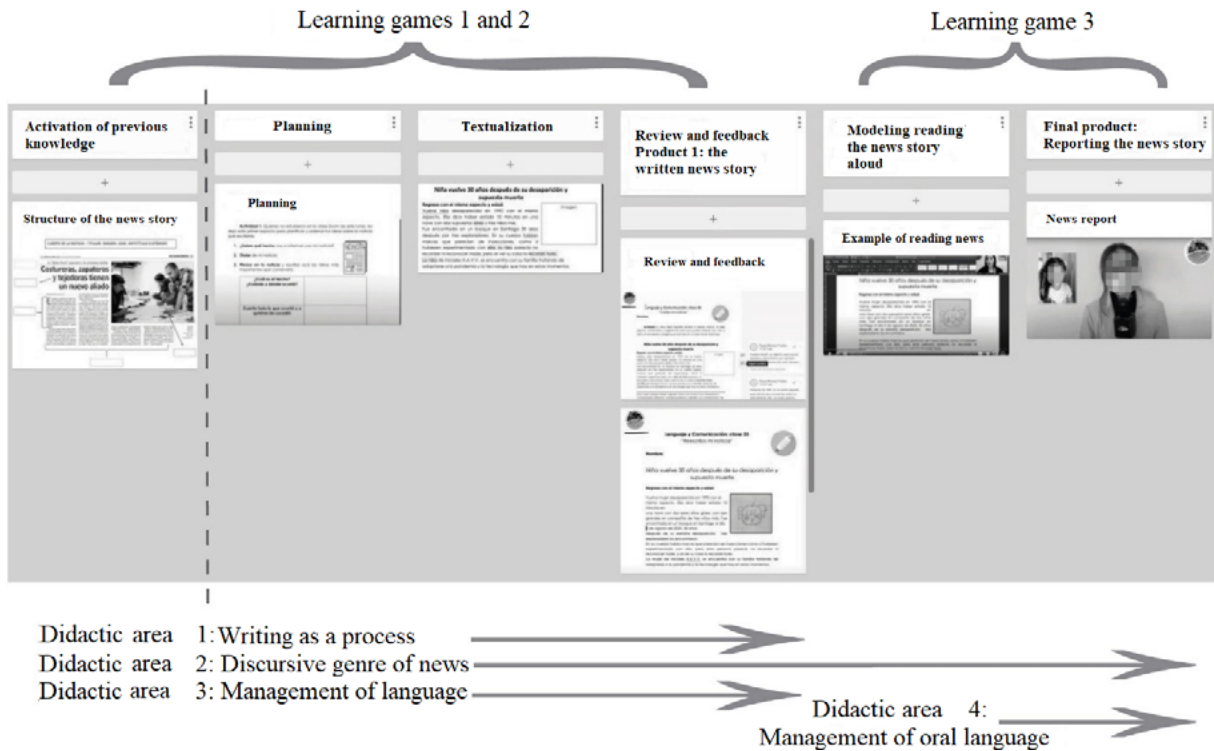
Figure 2. *Didactic sequence and themes of the class project: the News Report*

Source: Prepared by the authors.

Bearing in mind that the final product is a video of an oral news report by each of the students, the learning games designed by the teacher first involve writing what will be reported in the news story. The sequence thus begins with an emphasis on didactic theme 2: conceptualization and understanding of the genre type, and learning game 2: writing like a journalist. In the first synchronous classes, the teacher conceptualized the knowledge of the news as a discursive genre, incorporating the students' prior knowledge and activities to recognize the macrostructure and, through learning guides, directing the students in planning the writing.

This is where didactic area 1 appears, involving the writing process as a generic cultural practice, applied to the specificity of the news report proposed by the students. The learning games proposed by the teacher corresponds to didactic area1: simulating the writing process, which includes planning, textualization, review, and editing (considering feedback). This begins by modeling the writing process in a video clip and a digital learning guide. When advancing to the textualization stage, the students complete two drafts of the written text, with feedback from the teacher. At this stage, didactic area 3 appears: the management of written language. The teacher emphasizes not only the writing of ideas, but also spelling, vocabulary, coherence, and the cohesion of the text.

The final phase of the didactic sequence focuses on didactic area 4: management of oral language, which revolves around learning game 3: pretending to be a journalist or reporter. In an audiovisual clip, the teacher models the reading of the written news, providing strategies of oral expression to move from the written to the spoken.

Second level: resemiotization in a case of teaching writing online

Semiotic overview and transmodal moments. We now examine the class project and its didactic sequence from a multimodal perspective, conceptualizing it as a semiotic chain, through a general or satellite description (Kress, 2010). From this description onwards, we examine the interaction between the teacher and one of the students, Maite. The focus is their semiotic work carried out through the virtual educational platform, which made it possible to exchange digital multimodal texts in which they conduct their didactic interaction. The moments of asynchronous interaction form the semiotic chain shown in Figure 3.
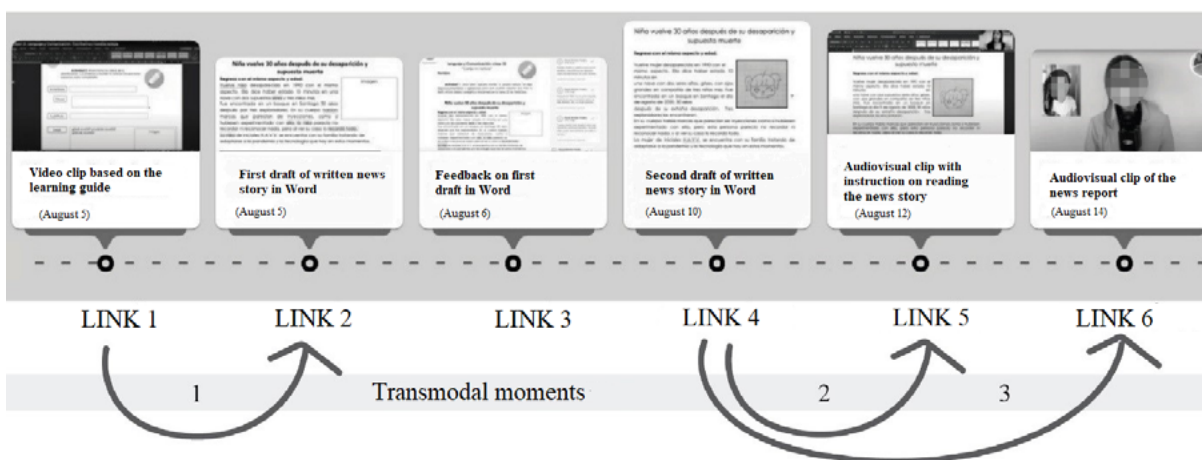

Figure 3. *Transmodal moments in the semiotic chain*

Source: Prepared by the authors.

The chain shows us the path of meanings. In that chain we can identify six links in which the activities are carried put in two types of digital media: Word documents and videos; in each of the texts a variety of semiotic resources are combined.

Link 1. *Clip of instructions from the learning guide.* Audiovisual production in which the teacher shows a Word document, a written digital learning guide. Using her voice, she scrolls through the guide on the screen with the cursor, orally explaining the news writing task to her students. The documents shown are made available to the students on the platform in Word format.

Link 2. *First written draft of the news story.* Production written by Maite. Word document in which Maite responds to the written assignment, based on the template or graphic format provided by the teacher.

Link 3. *Feedback on the first draft.* Production written by the teacher, who makes interjections in Maite's production. The teacher uses the comments tool in the Word document to provide written feedback to the student.

Link 4. *Second written draft of the news story.* Multimodal production by Maite. The student rewrites her news story in the Word document. She includes a photograph of a pencil drawing made in a notebook.

Link 5. *Clip of instructions to read the news report.* Audiovisual production by the teacher. Addressing the group of students, she projects the second draft of the news story written by Maite on the screen, orally modeling how to report the story. Her small image is shown in the upper corner of the screen.

Link 6. *News clip. Audiovisual production.* The student records and edits the audiovisual news report, combining her image, voice, music, and background photographs.

The multimodal texts are linked to each other by means of the resources with which they are produced through the semiotic chain, as well as the meanings.

The resources are recycled in the chain. We see this in the case of the digital guide and the second draft, which are later resemiotized in the videos, or in the case of the graphic format of the news story that appears in the written learning guide in link 1 and is then repeated in links 2, 3, and 4.

In relation to the cores of meaning tracked in the chain, these correspond to the didactic areas mentioned above. So, the first core of meaning is focused on the writing process, the second addresses knowledge of the news genre, the third involves the use of written language, and the fourth the use of oral language. A fifth core of meaning is added to these, which is the theme or content of the news story proposed by the student, which emerges in writing from link 2 and ends with the final audiovisual production of the news report.

It should be noted that changes of semiotic modes occur between some of the links in the chain. Therefore, as shown in Figure 3, there are three transmodal moments in the didactic sequence. We examine them in detail below.

What are the limitations and possibilities demonstrated by the transmodal moments in the semiotic chain for teaching writing? The first transmodal moment emerges from the transition from link 1 to link 2. The shift from the teacher Paula's video clip to the writing of Maite's first draft leads to changes in the ways of constructing the meanings of her news story. The second transmodal moment takes place from link 4, Maite's second draft, to link 5, which is the teacher's clip with instructions for reading the news story. Finally, the third transmodal moment includes links 4, 5, and 6, in which the written and audiovisual modes are recycled in order to prepare the student's final video. Below we explain how the cores of meaning migrate in each of these moments, identifying the limitations and possibilities they show.

Transmodal moment 1. In this moment, three core areas of meaning are mobilized: i) the process of writing, ii) the conceptualization of the news genre, and iii) the use of written language.

Maite's use of the teacher's video clip enables her to create her text and design the written product. In this phase, the tracking of the three cores indicates that the student mobilizes decisions and chooses the resources from the teacher's video.

The design and audiovisual production of the teacher's clip involves five phases based on the design and the structure of the learning guide, thus highlighting the cores of meaning 1, 2, and 3. The teacher begins by projecting the first page. Here, she motivates student participation by means of two resources: an avatar with a dialogue bubble, as a representation of herself to introduce the didactic unit, and voice inflections to invite students to work. From phase two onwards, she links core of meaning 1 with core of meaning 2, starting by recalling the activity done in the synchronous class: planning of the writing (core of meaning 1). To do this she recycles a double-entry table in the guide and by means of oral instructions, emphasizing the importance of planning the news story.

Phase three focuses on the textualization of the news story, which incorporates core meaning 3. The teacher explains each of the stages of the news story structure, synchronizing what is shown with what is said: with the cursor, she shows the written names of each section of the news story and the rhetorical structure displayed by

means of empty boxes moving down the page, orally describing and adding examples at the same time. This allows specific oral instructions to be given on how the students should write. Phase four of the review of the written news story emphasizes core of meaning 4: written language skills, specifically grammar, spelling, and vocabulary. In a box with the image of a lightbulb, in a written list that the teacher reads to the students, she draws attention to the review done by an expert writer regarding these aspects. Finally, in phase five, the teacher again uses her avatar with the written slogan *You're an expert*, appealing to warm encouragement (Jarpa et al., 2020) to relate to her students. She explains and gives examples orally and, with the help of the cursor, she shows how a table should be completed. In a double-entry table she horizontally places stars with which she asks students to self-evaluate themselves with a level of achievement for the activity and vertically she writes the criteria with which they should be evaluated.

Having done this, what happens and how do these cores of meaning migrate in Maite's draft text? First, core of meaning 5 appears, the news story proposed by the student: the abduction of a girl by aliens. Along with this, she expands core of meaning 2 by including other cultural knowledge not presented in the clip, such as giving the initials of the name of the child mentioned in the news story.

Second, the written text includes most of the instructions given multimodally by the teacher Paula, recycling the graphic rhetorical structure of the news by writing in the boxes, following the oral instructions. With respect to cores 1 and 2, Maite adds the typography resource and uses a large font size and bold text to write the title, as well as the subheading. When writing the body of the news story, she provides the content of the lead (core of meaning 2) and respects the number of paragraphs indicated graphically (core of meaning 3). The student leaves the image box empty.

We highlight the digital learning guide considering the discursive and didactic approaches of writing. Here we can identify two complementary genres: the didactic guide and the news guide; the former is the pedagogical support of the latter, since it is implemented in a video that contributes to the online interaction of the teacher with the student.

In this respect, online teaching reshapes the role and scope of the guide, which in this case is the visual support of the teacher's oral instructions. The video clip replaces the classroom interaction, so the teacher designs a dialogic space by anticipating possible questions or difficulties that students may have before the writing assignment (Coon et al., 2019), reducing the time to 9 minutes instead of the 30 or 45 minutes in the face-to-face modality. The digital guide promotes autonomy through different didactic strategies: instructions, explanations, examples, comments, schemes, among others, which can be reviewed repeatedly. Semiotic production and distribution are a potential for the didactic objectives.

Transmodal moment 2. Here we report the change of mode from a digital text written by the student (product 1: written news story) to the teacher's video clip with instructions for the creation of the audiovisual news report. In this moment, four cores of meaning are essentially mobilized: the knowledge of the genre along with the content of the news story, and the transition from the use of written language to oral language.

Draft 2 of Matie's multimodal production is recycled in Paula's video. In this draft, the structure of her news story is complete, including an image that contributes to both core 2 and core 5. In order to do this, she inserts into the box the photographic record of a drawing done by hand on a page of a notebook. The Japanese manga-style drawing represents the face of a girl stained with dirt and the remains of tree branches in her hair; this adds information to the written description, emphasizing where the girl was found (a forest), how she was found (disheveled), and reinforces the idea of who the protagonist is: a girl, despite the fact that the student changed this word to 'woman' in the written text.

When tracking these meanings we can identify various possibilities and limitations. On the one hand, given the virtual interaction of links 2 and 3, which influence link 4, we observe a limitation in the written feedback. The teacher asks Maite to include synonyms to replace the word 'girl' and thus make the text less repetitive. As she does not have the possibility of repeating the instruction, the student replaces the word 'girl' with 'woman', a change that alters the original meaning of the news story. This shows the effect of the asymmetrical relationship between teacher and student, since she follows the teacher's instructions. Since there is no synchronous face-to-face interaction, neither of them notices that this changes the meaning of the news story.

On the other hand, virtuality offers the possibility of reusing the written news story to model reading aloud, emulating the practice of the reporter, that is, the resemiotization of a written news story into a spoken news story. The first ensemble incorporates writing, typography, and image; while the second includes speech and prosodic elements. Here it is clear that the semiotic ensembles set in motion for cultural practice 2 and 3 are different; as the signs change, the meanings also change, the intonation translates the typography in some way, but the meaning represented by the image drawn by Maite is lost.

Transmodal moment 3. This involves three links that converge and are recycled to produce the final video for Maite's news report. At this point it can be observed that there is a convergence of the cores of meaning (2, 3, 4, and 5).

Core of meaning 3 with core 5 are projected to the end of the chain. With respect to the tracking from link 4 to 6, the use of the written word 'girl', which had been changed in the final text of the news story, returns to the oral account. We recall that in link 4 Maite followed the instructions given in the teacher's written feedback: to expand descriptions by using qualifying adjectives and also adding the image. This instruction is also projected to link 6. In other words, the multimodal description in writing and image is recycled in the audiovisual format, as Maite mentions the characters, while displaying an illustration of the aliens and two photographs of the protagonist of the news story.

With respect to the tracking between links 5 and 6, the student uses all of the instructions provided by the teacher Paula in link 5 (video clip with instructions for the creation of the television news report) and takes them to link 6, particularly with respect to the core involving oral language management. The teacher's clip models a specific journalistic practice: that of the reporter. For this purpose, the teacher takes Maite's news story as an example and uses it to model various prosodic elements such as accent, intonation, pauses, and rhythm. The effect of this core of meaning amplifies the potential meaning of Maite's news video, as she performs a visual characterization of a reporter.

The resources used by Maite in her video have an impact on two different cores of meaning: 4 and 5. Therefore, the prosodic elements account for the learning of oral language and enrich the content of the news, while the use of suspenseful music as a backdrop for her news report and the inclusion of photographs of the protagonist (girl) before and after her disappearance contribute to core 5. The outfit and the mask for live reporting demonstrate knowledge of a cultural practice and place us in the current context of the pandemic.

Finally, the possibilities of designing and producing the video at home allow Maite to have support from her family (including initials in police cases) and the option of editing. All of this has an impact on core of meaning 5, since the news content proposed by Maite is reinforced with all these semiotic modes, producing a video that simulates the cultural practice of the reporter and achieves the objectives established in learning game 3.

How do the meanings migrate during the simulation of cultural practices? Based on the above analyses, we will look at an example to illustrate the migration of an element of core meaning 3: the use of synonyms, which converges with core 5 of the news story. We will reconstruct aspects that the student simulated from the cultural practices underlying the proposed learning games, shaping both her actions and the meanings co-constructed together with the teacher.
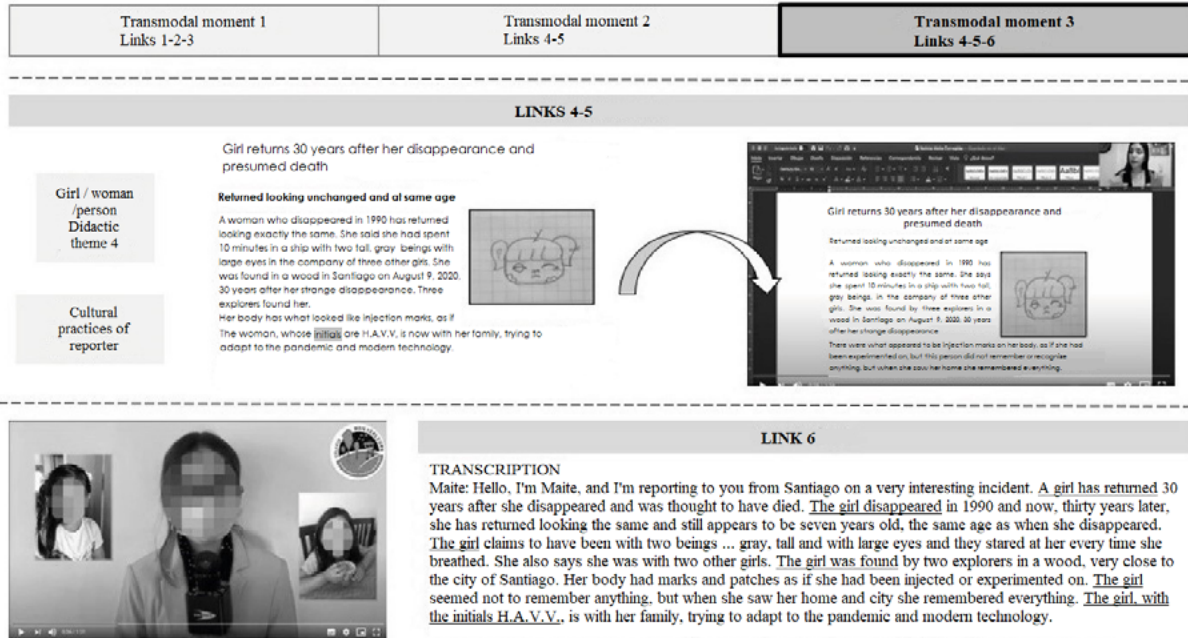
Figure 4. *Migration of the meaning 'girl'*

Source: Prepared by the authors.

During the modeling of the writing process (link 1), Paula works on written language strategies, proposing a learning game where her students have to simulate the practice of an expert writer using synonyms. She focuses their attention on repetition of words, arguing in writing for expanding vocabulary using synonyms, which is exemplified orally with the word 'girl'. She suggests using proper nouns or the word 'woman'. However, in transmodal moment 1, Maite's written production (draft 1), she repeats the word 'girl' three times. We note that Paula assumes that Maite did not follow the instruction and corrects her in the Word document, instructing her to use synonyms or use the person's name (link 3). This creates a tension that is resolved by Maite modifying her written action, as in her second draft she replaces the written word 'girl' three times, twice with 'woman' and once with 'person', but she includes a drawing of a girl. Therefore, transmodal moment 1 is projected between two discontinuous links, from the oral instruction (link 1) to draft 2 (link 4). Maite meets the teacher's expectation by using synonyms that make sense in the context of the didactic activity, but not with the context of the news story.

We can observe that in transmodal moment 2, the shift from the corrected draft (link 4) to Paula's modeling of the orality of the news story (link 5), the meaning of this set of words, understood by both as synonyms, is maintained. However, transmodal moment 3 undergoes a change (Figure 4). Maite, who plays at simulating a reporter, decides to modify her multimodal production, replacing the written synonyms with the word 'girl' in her oral discourse, together with the inclusion of photographs of girls. With these two choices she confers internal cohesion on the design of her story (core of meaning 5). Thus, we observe that, in addition to the proposal to simulate cultural practices (expert writer/journalist-writer, and reporter), there is also the context of school practices (teacher and student). The teacher's interest in working on synonyms takes priority in the school context to develop the use of written language. Maite enters into this logic, but by playing the game of oral reporting she displays her agentivity as a creator of meanings, since she designs and produces her multimodal ensemble with words and images as a function of the news narrative, taking advantage of the modes available for virtuality.

Discussion and Conclusions

Examining multimodal practices in remote teaching reveals, on the one hand, the relationship between the use of the teacher and students' semiotic resources, the production of curricular knowledge, the subjectivities of each one, and the pedagogical link (Jewitt, 2008; Coon et al., 2019), and, on the other hand, that the simulation of cultural practices in virtuality is central to the didactics of writing and is performed in a multimodal way (Navarro et al., 2021).

In emergency remote education, the creation of meanings during the implementation of a didactic writing sequence is realized in a continuous series of digital multimodal texts, some created by the teacher and others by the student, which creates a chain of links and transmodal moments that we do not notice on a day-to-day basis. Here we emphasize the importance of understanding didactic interaction as constant resemiotization and the possibilities of recycling both meanings and resources or multimodal ensembles as a phenomenon that should not have a negative connotation, as it is transversal in exchanges for learning cultural practices.

The anthropological-didactic analysis shows us that a transmodal moment can affect one or more continuous or discontinuous links, reminding us that learning is not linear. The practices are modeled by the student according to decisions based on the logic of the context, attributing different meanings to elements that may be similar, as in the case of the use of written synonyms adapted to the school context, or the decision to use a precise lexicon and photographs, responding to the simulated oral context of the news report. The student also introduces elements of her identity into this logic of the game, such as the Japanese style of her drawing. This case study shows us that the teacher still gives priority to writing in multimodal productions, without considering the meanings contributed by the images, required as part of the semiotic design of the task. The feedback considers only the written production, which ignores some of the meanings created by the student and reduces the concept of semiotic production in a monomodal manner. This situation cannot be directly attributed to a lack of technological literacy in emergency remote education (Salas et al., 2020), but rather to the hegemony of written language in educational contexts and the myth that the other resources only provide support, reiterating the written meanings. Considering the principle of generosity of recognition (Bezemer & Kress, 2016), this situation constitutes a challenge for face-to-face and remote education that is clearly multimodal.

Semiotic tracking through the chain helps us to understand how meanings migrate and mutate during learning in the virtual school context. Signs are mobilized in each transmodal moment, limiting or enhancing the scope of the didactic writing sequence. Thus, for example, the recycling of semiotic ensembles, specifically the teacher's videos or the exchange of Word documents, provides particular possibilities for asynchronous teaching. Digital semiotic practices make it possible to reuse these texts in different media for different purposes. This resemiotization operates as a facilitator of the learning process, since it promotes semiotic access (Kress, 2020) and progressively scaffolds the appropriation of the cultural practices involved, integrating the four didactic areas through learning games.

In this didactic situation, the semiotic work is done by the teacher and the student, both as rhetorical and agentive creators, although the student's space is more restricted. In the online context, power is also disputed and this is carried out in a multimodal manner. Teacher and students approach, represent, and exploit the semiotic possibilities of resources to provide a different perspective of the world (Kress, 2020). The formation of technologically mediated meaning-makers also needs to be developed in a reflective and critical way (Navarro et al., 2021).

This study demonstrates online teaching as a learning space that, far from comparing with face-to-face encounters, resignifies the use of digital didactic resources and amplifies their potential meaning in new learning games, giving teachers and students the opportunity to interact and appropriate culture, which is currently also widely distributed through various online platforms.

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