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MATERIALITIES IN HIGHER EDUCATION: DESIGNING TEACHING VIDEOS AS A BREAK FROM TRADITIONAL SCHOOL TIME AND SPACE

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Abstract: In Higher Education in Uruguay, specifically within university undergraduate programs and tertiary teacher training courses, the implementation of virtual teaching modalities began in 2020 as a result of the COVID-19 pandemic. Initially, this process proved highly challenging, as the entire national educational system was formatted according to a school culture based on face-to-face instruction. Despite this, virtual teaching became the predominant modality between 2020 and 2021, subsequently transitioning toward hybrid teaching models (referred to as semipresencial in Uruguay), primarily in theoretical curricular units. The cases selected for this critical reflection on the curricular innovation of incorporating teaching videos into the hybrid modality include specific curricular units from the *Bachelor of Industrial Design* of the *Escuela Universitaria Centro de Diseño* (EUCD) of the *Facultad de Arquitectura, Diseño y Urbanismo* (FADU) de la *Udelar* and from Teacher Training and Primary Education programs at the *Consejo de Formación en Educación* (CFE) of the *Administración Nacional de Educación Pública* (ANEP). This emerging school grammar—characterized by a new conception of school time and space as structuring and structured dimensions of material school culture in Higher Education—implies significant changes regarding materialities and pedagogical-didactic decision-making for the training of designers and teachers at the beginning of the 21st century.

Keywords: Higher Education; Material school culture; Virtual Teaching and Learning Environments (VTLE); Teaching video.

Introduction

As a starting point for this critical reflection article, a brief contextualization is necessary. In Uruguayan Higher Education, there is both university-level education and non-university tertiary education (which comprises teacher and social educator training, collectively known as formación en educación). Specifically, within university undergraduate programs and tertiary teacher training courses, the implementation of virtual teaching modalities began in 2020 due to the COVID-19 pandemic. Initially, this process was highly difficult, as the entire educational system was formatted according to a school culture based on face-to-face instruction. Between 2020 and 2021, the virtual modality predominated; subsequently, there was a transition toward hybrid teaching models (referred to as *modalidad semipresencial* in Uruguay), primarily in theoretical curricular units. This was a forced and necessary incorporation of Information and Communication Technologies (ICT) into various educational settings as a result of an exceptional global pandemic context. This generated profound and highly significant qualitative changes in teaching and learning within Higher Education. Long before this, Cabero Almenara (2007) noted, almost premonitory, that in new, more technological formative environments, teachers and students would need to acquire minimum competencies to function adaptively within them. According to Castillo and Guerrero Contreras (2013):

> Regarding the university student, they must possess a set of competencies to properly and confidently

> assume the challenges of a new society; among these, we can cite academic competencies (with special emphasis on reading, writing, and communication), research competencies (observing, searching for information, determining hypotheses, presenting data, and evaluating), social competencies (collaborating, discussing, working in teams, and resolving conflicts), and currently, technological competencies, which require defined skills and abilities to achieve the exchange of academic information. (p. 187)

However, for any formal educational system, a process of change with natural times for transition and adaptation is not the same as a process involving disruptive and unexpected transformations resulting from a new pandemic context, such as the one experienced globally since 2020. In this sense, the greatest difficulty lay, and still lies, in achieving what Burgos and Lozano (2010) describe as "creating authentic learning environments, both for face-to-face education and for online education" (p. 248). This had also been proposed by Cabero Almenara (2007), applicable to Higher Education training, by noting that the exchange and access to information are not enough; it is also necessary to address students' academic performance, maintain interpersonal relationships, and pay close attention to the treatment of teaching content based on the resources and strategies used to achieve meaningful learning in a virtual training context.

Thus, starting in 2020, the use of Virtual Teaching and Learning Environments (VTLE) became widespread in Uruguayan Higher Education. In that national socio-educational context, VTLEs were no longer simple technological resources but became mediators for any possible planning model, including traditional planning. The proposed use of VTLEs in university and teacher training centers was as a support for face-to-face teaching that was not possible -but which was always maintained as entelechies references- and as a complement to courses framed within proposals planned for and from the pedagogical-didactic knowledge of the face-to-face modality. This process of forced immersion into VTLEs by Uruguayan Higher Education was accompanied by numerous analyses and justifications, both for and against, from pedagogical-didactic, psycho-pedagogical, communication theory, socio-historical, and even neurobiological-medical perspectives.

In this socio-educational context of national Higher Education, Prof. Mag. Walter Ariel Bobadilla Silvera and I conducted two research projects that serve as background for this critical-reflective article: "Comparison of the approach to pedagogical time in pre-pandemic and pandemic scenarios in teacher training in Uruguay"[1], conducted in 2020 and 2021; and "Comparison of the approach to pedagogical time in face-to-face and blended modalities in teacher training in Uruguay"[2], conducted in 2023-2024. Both studies are part of the research line "Mate-

1. The research results were presented at: I National Congress of Comparative and International Education - III Ibero-American Congress of Comparative Education - VIII Congress of the Brazilian Society of Comparative Education, September 1-3, 2021.

2. The research results were presented at the *II Teaching Conferences of the Social and Artistic Area of Udelar*, under Thematic Axis 6: *Digital tools and ar-*

rial school culture and its relationship with educational practices in teacher training in 21st-century Uruguay: a critical analysis of the hegemonic approach," for which I am the lead scientific researcher. Currently, this research line is part of the "Program of Decolonial Studies on Human Formation and Education"[3]. Among the main objectives of this line is to delve into the material dimension of school culture´s dialectic of hybridization processes that manifest emerging and innovative forms and contents in educational *praxis*. Both research processes were carried out based on our compared teaching experiences in face-to-face and blended modalities in Uruguay and aimed to generate a new corpus of knowledge regarding material school culture and educational practices in the blended modality in Uruguayan Higher Education. The epistemic basis of our research was what Zapata (2003) defines as virtual experiences: they "break the unity of time, space, and activity of face-to-face teaching, creating spaces for educational activity-spaces commonly called virtual learning and teaching environments" (p. 18). Likewise, they involve what is called e-learning, which implies formative proposals and processes of a virtual nature within the format of a classroom that is not physical but virtual. From this conceptual approach, in summary, the results of both research projects are as follows: Pedagogical time and space manifest differently in the face-to-face modality than in VTLEs. Within an educational institution, as a defined architectural school space with a double condition of confinement—the building itself and each of its classrooms—physical-bodily limitation is clearly demarcated. Spatial limits are a substantive part of visible materialities: walls, windows, doors, corridors, courtyards, and other shared spaces. In that materially defined school space, pedagogical time passes chronologically, orderly, and in a sequential-linear manner, with intervals for rest for both teachers and students. The organizational grid based on spatial availability defines places with pre-established objectives regarding their various possible uses within the educational institution. Face-to-face school grammar manifests daily, ordered according to pre-established curricular and regulatory criteria. Such grammar has endured in school time and space, and it can even be said that it has become naturalized. "Quizás la explicación a su no cuestionamiento tenga que ver con su cualidad de duración temporal" (Capocasale Bruno, 2021, p. 12). This was already mentioned by Tyack and Cuban (2001):

> Established institutional forms come to be interpreted by educators, students, and the public as necessary features of an "authentic school." They become fixed in place by daily custom in schools and by external forms, both legal mandates and cultural beliefs, until they are hardly noticed anymore. They simply become the way schools are. (p. 170)

tificial intelligence in teaching practices, Montevideo, September 10, 2025.

3. This research program is housed in the *Facultad de Humanidades y Ciencias de la Educación* of the *Udelar*, and is coordinated by Dr. Andrea Díaz Geniz, Dr. Magalí Pastorino, Dr. Alejandra Capocasale Bruno, and Mag. Romina Hortegano. It is an inter-institutional, interdisciplinary, and intersectional program.

In the aforementioned research, the empirical object of study is situated in national and public teacher training under the governmental authority of the *Consejo de Formación en Educación* (CFE) of the *Administración Nacional de Educación Pública* (ANEP). It should be clarified that both studies focused on teacher training for secondary and primary levels, excluding the training of social educators. In this way, in the courses of the curricular units selected in both investigations, an emerging school grammar could be observed in the VTLEs. The CREA-CFE Schoology educational platform offers greater flexibility in formative processes; it promotes student autonomy through a greater availability of pedagogical time and space that is not restricted to *curricular* pre-established. The possibility of synchronous encounters with physical--geographical spatial distance arises; the opportunity for asynchronous pedagogical-didactical work emerges -meaning that the teaching and learning process does not require simultaneity in time and space, offering students meaningful learning adaptable to their required rhythms and times. In short, within material school culture, digital/virtual materialities associated with the dimensions of school time and space must be addressed as fundamental when making pedagogical-didactical decisions. Planning, the selection of teaching methodologies, selected strategies, and chosen resources prove to be substantive in both the blended and face-to-face modalities. The blended modality is not simply the face-to-face modality moved to a virtual environment. This is not only a conceptual error but essentially a didactic one. VTLEs have their own qualities that create particular teaching and learning conditions that deserve to be addressed, understood, and researched in both their spatial and temporal dimensions. Currently, VTLEs are part of the central materialities of Higher Education and cannot be omitted as basic organizational components of this level of training. Furthermore, they deserve curricular consideration as they are fostering a novel material and symbolic school culture that is dialectically related to an inescapable emerging school grammar in the 21st century. Within these new materialities, the teaching video can be considered one of the elements that produce a rupture with the traditional school time and space of the face-to-face modality.

The role of the teaching video in VTLEs within Higher Education

When referring to a video to be incorporated as a didactic resource in courses nested within Virtual Teaching and Learning Environments (VTLE), there is often confusion between two concepts: the teaching video and the educational video. The educational video -also called a videogram- is a didactic resource that can be used in face-to-face, hybrid, or fully virtual teaching modalities. It allows for the transfer of knowledge and its assimilation by students. Its objective is to reach the goals proposed in the planning. These are often referred to as videograms and consist of audiovisual works such as films, documentaries, or digital videos. According to Bravo (1996), teachers use them to reinforce and, at times, evaluate certain contents addressed in class. It serves as a complementary medium to carry out teaching and learning processes. In contrast, the teaching video is designed, produced, and pre-evaluated specifically for use in working with certain knowledge

in class. Its didactic quality stems from its process of design, elaboration, and subsequent use. It is not a mere complement to the methodologies or strategies selected in the planning; it is a resource that possesses pedagogical-didactic value in itself. It aims to achieve meaningful learning beyond the specific objectives of a lesson plan, which relates specifically to the hybrid or blended teaching modality. Teaching videos in blended education represent the possibility for students to transition toward a new format of pedagogical time and space within the reference school culture. Their rupture with the necessary temporal synchronicity of face-to-face instruction accounts for an asynchronous pedagogical time that addresses the needs of different learning rhythms and students' daily life conditions. Bachman and Harlow (2012) establish that its design involves thinking about how to achieve the exposure of a set of images per second that are captured by a spectator who is both sender and receiver at the same time. Their research regarding nineteen of the most influential newspapers in Latin America -which incorporated multimedia and interactive elements into their websites, resulting in a more dialogic relationship with audiences- is an example of relevance applicable to teaching videos in VTLEs. An impression of movement is generated for the receiver from the audiovisual image (even if it only contains a teacher giving a class) that only educational multimedia can achieve. It breaks with the necessary stillness of the body within a classroom with desks that are sometimes not very ergonomic. The teaching video can be repeated by students as many times as they need or desire (Ros and Rosa, 2014). This vindicates respect for students' varying learning rhythms and times. In this sense, Bravo (1996) referred to the teaching video as a resource that, when used, produces substantive modifications in school time and space. That is to say, it changes the school grammar of the reference school culture.

Based on the above, this article aims to reflect critically on the role of the teaching video in Higher Education in Uruguay, starting from the COVID-19 pandemic context, as one of the most relevant and innovative materialities in the hybrid teaching modality within VTLEs. Below are the main reflections from my experience in its design, use, and evaluation within the reference educational context.

Firstly, the role of the teaching video in Higher Education within VTLEs gains relevance if the person who designs, produces, and pre-evaluates it before use is the teacher responsible for the course. Its importance is even greater if, in that video, the group of students sees the audiovisual image of their own teacher sharing, explaining, and transferring specific course content. This occurs because students will understand that what is audiovisual communicated in that video represents the central ideas of the topic being addressed. Secondly, this is consistent with the design of the teaching video by the course teacher. Design implies precise conceptual and didactic coordination with the developed planning, the selected planning model, the general objectives of the course, and the strategies and methodologies chosen for teaching in the VTLE -which, in my case, involve two virtual platforms: *Schoology* (CREA-CFE by CEIBAL-ANEP) and *Moodle (*EVA-FADU by Udelar). Both platforms allow for the uploading of these videos and enable the creation of consultation, exchange, and evaluation forums. This implies that teaching videos facilitate interaction with the teacher regarding their

content. Thirdly, teaching videos play a substantive role in peer exchange. They represent an opportunity for collaborative teamwork among students. Watching the videos individually at their own learning pace and then engaging in exchanges with teams formed for that purpose are clear examples of feedback in the construction of meaningful learning. Teaching videos should not be used simply as a technical complement, as they possess a didactic and communicational value that transcends their visible materiality. This is true to the extent that it can become the substantive materiality for a change in traditional school grammar, especially regarding school time and space.

Toward a New School Grammar in Higher Education

If one intends to present the potential change that the use of teaching videos generates in the grammar of Higher Education in Uruguay, it is worth mentioning a highly relevant research antecedent by Salazar Mera *et al*. (2018). Based on a study of a sample of 74 educators at the Faculty of Human Sciences and Education of the Technical University of Ambato (Ecuador)—who frequently design, produce, and reproduce their own teaching videos in teaching and learning processes—they concluded that:

> Most teachers use cell phones to capture images and sounds with their mobile devices and digital cameras. Most teachers use captured images for video editing. The software most used by teachers for video editing are those found online and are free, such as YouTube, Open Shot, We Video, and Windows Movie Maker. One-quarter of the teachers do not use a methodology for video editing. A small portion of surveyed teachers do not use videos posted on the web, such as YouTube and Vimeo. (p.)

It is evident that the design, production, evaluation, and reproduction of teaching videos do not require expert ICT knowledge or access to professional or sophisticated software. The will, mediated by free technological access associated with a planning model that incorporates the potential of innovations in materialities, provides evidence of a new expression in the school culture of Higher Education.

Regarding the use of video and the COVID-19 pandemic context—also mentioned in this article—it is worth noting the research by Pattier and Ferreira (2022), who studied the use of educational videos and teaching videos, especially driven by highly accessible platforms like YouTube. Their research was descriptive-inferential, based on a sample of 684 responses to online surveys at the University of Porto (Portugal). Among their conclusions, the following stands out: "regarding the degree of satisfaction with the use of videos in the teaching-learning process, this study concludes that both teachers and students have a positive degree of satisfaction" (Pattier and Ferreira, 2022, p. 193).

Thus, it is clear that the incorporation of teaching videos -and in some cases educational videos- has been gradually integrated as a digital materiality present in the scho-

ol grammar of Higher Education without seeking prior authorization. It has been a spontaneous incorporation resulting from certain contexts and their particular needs. To deny their existence or to fail to visualize the role of the teaching video within the curricular and pedagogical-didactic dimension -which transcends the space of computer education- would be to ignore the change brewing in the school grammar. A profound process of overlap between society and school culture is taking place. In the 21st century, the school form, with its implicit school grammar, has breached the walls of all educational institutions. Reference could be made to a "schooled society" (Capocasale Bruno, 2021, p. 58). Modern society was schooled starting in the 19th century; in the 21st century, primary, secondary, and even university and tertiary school culture is being heavily "socialized." According to Perrenoud (1996): "our society is schooled, incapable of thinking about education except according to the school model, even in domains foreign to the consecrated curriculum of general culture or vocational training schools" (p. 67). While in modern society the organization of school space and time was the model for the organization of school and non-school work, it is now being restructured, breaking the foundational matrix based on what occurs in social structures. This also affects the reconfiguration of educational practices and teaching-learning processes. Baquero, Diker, and Frigerio (2013) summarize it as follows:

> In others, elements such as the organization of school time and space; the modalities of classification and distribution of bodies in schools; the definition of positions of knowing and not knowing; the forms of knowledge organization for teaching purposes; the modalities of evaluation, promotion, and accreditation of students have been identified as practices that obey a set of highly stable rules that constitute what some authors have called school grammar or the 'hard components' of the school format. These rules, which operate as a background for the diversity of practices deployed in schools (sometimes as support points, sometimes as obstacles), would constitute the 'school form' (p. 8).

The instituted school grammar establishes the given places and objects with their historically objectified purposes and meanings, which integrate both symbolic and material school culture. In Higher Education, the incorporation of teaching videos as a digital object breaks with some dimensions of traditional school time-space and with the logic of the normalistic school form. In this sense, it could be said that this digital object and its use in VTLEs are part of the restructuring of material school culture, which possesses socio-historical continuities.

> The teaching video is a digital object that is part of the materialities of material school culture and, as such, is a "non-thing" (no-cosa) according to Han (2021). Beyond the negative connotations the philosopher assigns to the

process of dematerialization of reality in today's world, the teaching video can become a positive "non-thing" in terms of achieving meaningful learning. It is true, as he establishes, that with "non--thing" objects such as the smartphone -which he analyzes in detail- proximity is lost, unavoidable gaps open in the social space, and a material order of the world stabilized by tangible materiality is diluted. Nevertheless, the teaching video represents an opportunity for students who feel enclosed by physical limits and a conception of linear chronological time within school time and space. Traditionally conceived school time and space are inhibitors of diversity in learning processes. It is perhaps necessary to pay more attention to materialities in the school culture of Higher Education to guarantee it as a right:

> The materiality of school culture emits signals. These signals account not only for the reference school culture but for other cultural spheres that constantly permeate it. A materiality that represents an evidentiary key to the intercommunication codes between society and the educational institution. (Capocasale Bruno, 2021, p. 74)

Closing Remarks

Closing such a controversial topic is not a simple task. However, from my perspective -based on research antecedents and the critical reflections resulting from my experience as a Higher Education teacher who has incorporated self-authored teaching videos into VTLEs- I understand that: The pedagogical-didactic moment has arrived in Higher Education to overcome the normalistic foundational matrix that constrains school time and space to canons that do not respond to the characteristics of 21st--century society. Higher Education students belong to the 21st century, and their logic, social functioning, and conditions of existence belong to this century. The teaching video represents only one example of a "trace-object" (*objeto-huella*) that emits a signal regarding the needs for change in educational practices within the current institutional educational system. It is up to us to heed that signal in its fair and necessary measure.

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