



# The teaching of graphic design in the first months of the pandemic. Transformations from the Public University in Latacunga-Ecuador

La enseñanza del diseño gráfico en los primeros meses de pandemia. Transformaciones desde la Universidad Pública en Latacunga-Ecuador

*Vilma Lucia Naranjo Huera*

LEAD AND CORRESPONDING AUTHOR  
CONCEPTUALIZATION - DATA CURATION  
FORMAL ANALYSIS - RESEARCH  
METHODOLOGY - PROJECT MANAGEMENT  
RESOURCES SUPERVISION - VALIDATION  
VISUALIZATION - WRITING

*vilma.naranjo@utc.edu.ec*  
Technical university of Cotopaxi  
Latacunga, Cotopaxi, Ecuador  
ORCID: 0000-0003-3506-7021

*Diego Fernando Chasi Montaluisa*

SECOND AUTHOR - CONCEPTUALIZATION  
DATA CURATION - RESEARCH - METHODOLOGY  
RESOURCES - VALIDATION  
VISUALIZATION WRITING

*diego.chasi7271@utc.edu.ec*  
Technical university of Cotopaxi  
Latacunga, Cotopaxi, Ecuador  
ORCID: 0000-0001-9281-9977

*Leonel Estuardo Moya Caisa*

THIRD AUTHOR - CONCEPTUALIZATION  
DATA CURATION - RESEARCH - METHODOLOGY  
RESOURCES - VALIDATION - VISUALIZATION  
WRITING

*leonel.moya9457@utc.edu.ec*  
Technical university of Cotopaxi  
Latacunga, Cotopaxi, Ecuador  
ORCID: 0000-0002-0075-6639

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## Abstract

As a result of the health emergency caused by COVID-19 that Ecuador and the world went through, education suffered a severe blow, for which the institutions involved sought alternatives to continue with their tasks in the midst of the crisis. In this context, higher education authorities were forced to take measures that involved bringing professional instruction to the virtual environment. This change was taken in different ways by the actors involved in the formation of the design. In this article we explore aspects such as the digital divide, changes in work and educational dynamics, emotional well-being and the teaching-learning process in a graphic design workshop. This inquiry was carried out through interviews, document analysis and results of the Visual Communication course of the Graphic Design career at the Technical University of Cotopaxi, during the first months of the pandemic, which correspond to the academic period May-September 2020. The findings show that teachers had to adapt unexpectedly to new teaching and communication modalities, and that students developed ways of learning, such as autonomous work with the teacher's guidance. Thus, the opportunities and limitations of an environment in which the design and its contents had to adjust to the realities of an unprecedented moment are observed.

**Keywords:** Teaching, graphic design, pandemic, human relations, basic professional training

## Resumen

Una raíz de la emergencia sanitaria por COVID-19 que atravesaron el Ecuador y el mundo, la educación tuvo un duro golpe, por lo cual las instituciones involucradas buscaron alternativas para seguir con sus tareas en medio de la crisis. En este contexto, las autoridades de la educación superior se vieron obligadas a tomar medidas que supusieron llevar la instrucción profesional al entorno virtual. Este cambio fue tomado de diferentes maneras por los actores implicados en la formación del diseño. En este artículo exploramos aspectos como la brecha digital, los cambios en la dinámica laboral y educativa, el bienestar emocional y el proceso enseñanza-aprendizaje en un taller de diseño gráfico. Esta indagación se realizó mediante entrevistas, análisis de documentos y resultados de la asignatura de Comunicación Visual de la carrera de Diseño Gráfico de la Universidad Técnica de Cotopaxi, durante los primeros meses de la pandemia, que corresponden al periodo académico mayo-septiembre de 2020. Los hallazgos muestran que los docentes debieron adaptarse imprevisiblemente a nuevas modalidades de enseñanza y comunicación, y que los estudiantes desarrollaron modos de aprendizaje, como el trabajo autónomo con la guía del maestro. Así, se observan las oportunidades y las limitaciones de un entorno en que el diseño y sus contenidos debieron ajustarse a las realidades de un momento inédito.

**Palabras clave:** Enseñanza, diseño gráfico, pandemia, relaciones humanas, formación básica profesional

## Introduction



As a result of the health emergency caused by COVID-19 that Ecuador and the world experienced, educational institutions sought alternatives to continue their work in the midst of the crisis. Higher education was forced to take measures that involved bringing professional training to a virtual environment. In Design careers, this change was taken in different ways by the actors involved.

As Aguilar Gordón (2020) comments, the learning process goes beyond school education, but it is this type of preparation that forms the subject who acquires his ontological condition through his relationship with others. Thus, institutional teaching-learning was adapted to the conditions of confinement. Physical spaces were replaced by virtual ones and new communication and relationship channels predominated: new technologies were the tools that allowed interaction in this context.

The present investigation explores these aspects related to the teaching of graphic design in virtual classes. The analysis variables correspond to the digital divide, changes in work and educational dynamics, emotional well-being and the teaching-learning process in a design workshop. This case study was carried out in the Visual Communication subject of the Design career of the Technical University of Cotopaxi (UTC), taught at the third level, during the first academic period developed in the pandemic, May-September 2020. The data for this inquiry they were raised through interviews and analysis of academic documents and results obtained.

The first section of this article observes scenarios and problems of teaching in the pandemic. The second, exposes the way in which UTC teachers and students lived and adapted to these changes. In this process both constraints and opportunities arose. In a third and fourth sections we reflect, from the voice of the actors, on the new teaching-learning processes and on the interaction between teachers and students in this new virtuality. A fifth part analyzes the development of the UTC design workshop in this context. Finally, reference is made to the results of the projects carried out within the Visual Communication subject and conclusions are drawn.

### ❖ *Scenarios for teaching in the pandemic*

Different studies related to education in a pandemic reflect on learning in virtual settings. Floralba Aguilar Gordón (2020) describes the different realities of educational communities and mentions that the virtual environment produced new ways of understanding pedagogical processes that go beyond established education modalities. These are adapted to confinement conditions where new technologies are the tools that allow interaction. Thus, he states that:

The management of the virtual space in the teaching and learning process in times of pandemic requires transformations in the way of being, thinking and acting of the subjects involved, it entails new ways of teaching and learning. (Aguilar Gordon, 2020, p. 221)

Valero, Castillo, Rodríguez, Padilla and Cabrera (2020) investigate the challenges of virtual education during the COVID-19 pandemic. This study acknowledges challenges such as computer accessibility and connectivity in rural areas. In this sense, it identifies structural deficiencies linked to the digital divide and the need for digital literacy for students and teachers, in a context in which virtual education is a requirement to continue with training programs. Likewise, it observes the importance of the use of digital learning resources to avoid a loss of communication, without failing to point out the difficulties that arise in the interaction crossed by the new media.

More specific analyzes, referring to the education of graphic design in a pandemic, account for various situations and the differentiated methodologies that should have been applied in this context. Edgar Oswaldo González Bello and Arodi Morales Holguín (2021) analyze the frequency of the use of technologies and digital platforms for the training of the graphic designer through the management of Information and Communication Technologies (ICT) in remote teaching, from experience of Graphic Design teachers in Mexico. In his work, it was identified that the use of digital platforms by Graphic Design teachers is notable. However, among the circumstances that produced the technological transition, caused by COVID-19, is that the use of computer systems is intensive, although their use is frequently limited to the consolidation of information repositories and communication with the student, which is increasingly automated. Teaching focused on design turns out to be different from that of other disciplines, since the dynamics of the subjects include different scenarios and methods, ranging from the traditional classroom to computer centers, to the workshop, and to open (outdoor) spaces for subjects such as drawing, photography and others.

For his part, Andrea Rivadeneira Cofre (2021) mentions that transferring the physical space of the class to a virtual space (or virtual classrooms), as a tool to carry out the teaching-learning process, implies the development of the stages of: contextualization, experimentation, action, reflection and evaluation by the teacher. In addition to the indispensable factor of communication with students, that is, the contact between teacher

and students as part of the pedagogical and guiding objectives. At the same time, online education proposes didactic strategies and techniques where the student is responsible for their learning: an impact factor that results in changes in the role played by students, who will show new characteristics such as autonomy, proactivity, reflection and collaborative and communicative learning.

On the other hand, Olivia Frago Susunaga (2021) reflects on the complexity of teaching design in times of COVID-19 and points out the urgency of implementing specific practices for its teaching-learning from the virtual environment. In the new environment, some activities were stopped and others were started. Among them, design teaching had to evaluate subjects, since some, due to their characteristics, could not be taught at a distance. So, to achieve the learning objectives, the teacher chose to focus on the investigative and practical fields, aimed at developing student skills through technological means. On the other hand, the author concludes that each student, teacher or person perceives the pandemic scenario at their convenience, according to their emotional and cognitive situations.

For other researchers, such as Juanes, Munévar and Blandón (2020), in a pandemic, the use of digital tools in the academic field was limited by the capacities of teachers and students to access and manage ICTs, since, initially, when a virtual study plan was formulated, the proposed teaching methods faced, in some cases, with the scarce training of teachers in ICT and in new pedagogical and didactic methodologies. Now, concepts such as "reverse pedagogy" or "inverted classroom", "collaborative learning" or "virtual reality" become essential when using technological means for remote teaching. In the development of virtual classes, it is not enough to master a certain area of knowledge, to have the desire to share it with others and for the class to be interesting or entertaining for the student; Basic teacher training in ICT is necessary, which involves the management of virtual classrooms, in addition to equity, access, relevance and coverage of virtual education.

### **❖ Digital resources and personal well-being in the public university**

Before the pandemic, education by virtual means already existed with central concepts such as e-Learning, which entails the pedagogical and technological duality. Francisco José García Peñalvo (2005) defines it as:

remote training that, through technological platforms, enables and makes access and time in the teaching-learning process more flexible, adapting them to the abilities, needs and availability of each student, in addition to guaranteeing collaborative learning environments through the use of synchronous and asynchronous communication tools, enhancing in short the management process based on competencies. (p.2)

Among the disadvantages of the use of virtual media in education, observed by Carlos Ruiz Bolívar (2011), is that:

The adoption of b-Learning requires relearning the traditional roles of the actors in the educational process. In this sense, it is necessary to consider the previous technological mastery of the students, the training of the teaching staff, the institutional endowment of technological infrastructure and a process of design and planning of the instruction in a conscious and rigorous way, all of which, in a first stage, demand for more time dedicated by the teacher. (p.27)

These advantages and disadvantages of e-learning were felt since, in response to the new scenario of the public university, the UTC decided to resume classes in virtual mode from May 25, 2020. This was a challenge for both teachers and students, since it was necessary to adapt to a new way of teaching-learning through the Internet and the new conditions of remote education. Next, some emerging themes are synthesized regarding the problems and opportunities of learning mediated by technological tools.

To investigate the institutional context, information was collected from teachers who have been linked to the area of education since their training. Through interviews, several criteria were obtained that these experts considered relevant and that affected the teaching-learning processes of the entire institution. These criteria emerged from the opinion expressed in six interviews that were transcribed from the original recording to reduce the data, in an analysis close to the Strauss and Corbin (2002) methodology. In addition, it should be noted that the interpretations, based on inquiries, were made taking into account and confronting the roles of teachers and students.

Table 1. Problems and opportunities of virtual learning in a pandemic

Emerging issues	ProblemsO	pportunities	Actors
Digital resources	Digital divide and difficulties in access to connectivity due to socioeconomic factors	Training in new digital tools for learning	Students
	Digital gap and difficulties in access to connectivity due to generational factors	Learning to use new digital tools for teaching	Teachers
University and work	Need for employment to cover connectivity expenses, and personal and family expenses	Development of synchronous classes that fostered opportunities to work and study	Students
	-Layoffs due to budget education -Work overload	Use of confinement time for self-training and continuation of postgraduate studies	Teachers
Emotional well-being	Social distance that caused stress	Family coexistence	Teachers / students

Source: Self made

As the points in Table 1 show, the pandemic brought inconveniences and possibilities for teachers and students in different aspects, and generated multiple responses. The most notable problem was the digital divide, which affected a large number of UTC students and faculty in different ways. Some students had connectivity and smart technological equipment with data plans<sup>1</sup>; those without these devices could not access permanent connectivity. Several families, not having access to this equipment, found themselves in need of acquiring it, which meant changes in the distribution of their economic income. Other students, not having enough money, opted to contract temporary data plans. Students from other provinces of Ecuador returned home to study from home, and were forced to contract Internet services and learn the use of new digital tools that helped them in the training process.

Likewise, the socioeconomic sphere was notably affected by the context of the pandemic. In some unfortunate cases, the heads of households have died during this crisis. As a consequence, many students had to go out to look for a job and work to cover their personal and family expenses. In these circumstances, some students connected to the class to be present, while they continued with their work activity.

According to the interviewees, the UTC had virtual tools such as a repository and a system for students to take their exams, but these tools were not interactive enough to offer closer contact between students and professors. Due to this, and due to an institutional policy, it was decided to use free digital tools with different functions (including applications for virtual conferences, virtual classrooms, repositories, shared presentations and chats from the Google Suite), in order to provide the better conditions for interaction between teachers and students.

In the virtual classroom, for example, the teacher was able to assign tasks and useful bibliography for student learning, who, once they completed their work, uploaded it to the platform to receive the respective feedback and evaluation. Even with all these resources, class participation was affected by virtual communication and coexistence mediated by electronic devices. On the other hand, the resource of recorded classes enabled the observation and self-criticism of some teachers.

Faced with these new challenges, problems and possibilities, teachers experienced changes in their work dynamics. Some took advantage of the confinement to train themselves in different ways, and followed training courses or continued with postgraduate studies; while others were fired due to budget cuts, which brought work overload for the teachers who kept their jobs.

Teachers and students had to change their daily routine, and some took care of their children or younger siblings while they carried out their

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<sup>1</sup> Data plans refer to the availability of the Internet, and of the applications and programs that are activated with this computer network, on mobile devices.

academic tasks. The social distance caused stress for both teachers and students; however, virtual classes provided opportunities for family life and online education. This confirmed that teaching and learning are social functions through which the student learns from the environment in which he is, and in doing and experimenting together with peers and teachers.

### ◆ **Graphic design and teaching processes in a pandemic**

The UTC Graphic Design career saw the need to devise a curricular reform that would adapt to virtuality, integrating new teaching modalities. Likewise, before the pandemic, a curriculum was proposed with subjects focused on projects, with the desire that the student body develop heterogeneous processes to solve a problem (Cabrera, Falconí, Mullo and Ureña, 2021).

In this sense, certain investigations argue that pedagogical models are transformed with the different circumstances that surround them, and that:

[These changes are] always focused on seeking positive strategies to improve student training; These same ones are in charge of projecting the processes of the formation of an institution, aimed at the search for the appropriate method that allows the development of the best learning environment. (García Cordero and Buitrago López, 2017, pp. 119-120)

Within the framework of the educational model of the UTC, the teacher develops strategies for teaching-learning. In this regard, the teacher trained in Graphic Design more than in the educational field is faced with the challenge of training the student and, at the same time, transmitting their practical knowledge in an understandable way for them. It is recognized that there are different capacities for this; however, devising didactic ways to reach design students will always be the key to educational success. In face-to-face, the student interacts directly with the teacher, but in tele-education this is not possible in the same way. These challenges were already presented in face-to-face classes, therefore, virtuality meant going a step further.

As a solution to part of these problems, Sánchez Borrero (2021) refers to the teaching of Graphic Design as an appropriation of didactics and learning of project disciplines, but aimed at virtual contexts. He comments that the project method and the integrative project were used in a pandemic to develop "the editorial design of didactic resources" (Sánchez Borrero, 2021, p. 174) as a way to consolidate the transmission of knowledge that considers the personal situation of each student. This, while the dimensions of the design education ecosystem are interconnected: professional practice, teaching, students and teaching guidance (Sánchez Borrero, 2021). The author considers that the fields of design are adapting to educational, labor, social, economic and com-

municational realities, overcoming technological and psychological barriers. For this reason, academic experimentation is of great importance where, with the teacher's guidance, the theory and skills developed by students are applied to explore solutions. The exercises stimulate students' thinking at a level of complexity that society needs, and they link their learning to the physical, social and cultural environment.

The teaching process proposed by the Visual Communication chair of the Graphic Design career at UTC was developed in this same sense. During the pandemic, the learning of Graphic Design students was focused on autonomous work and collaborative work. The teachers, in particular, established didactic strategies adapted to the virtual environment and confinement, in order to create an adequate educational environment to the extent that the contingency allowed. The use of technological tools that are within reach was the best ally to face the new reality. These media were a fundamental pillar for the Chair of Visual Communication to continue its development, and students and teachers to carry out their activities integrating formative research and the link with the context of the student himself.

Thus, generating an adequate teaching process was essential, since students need to have a theoretical and practical knowledge of everything that takes place in the classroom for better learning (Briede-Westermeyer, Balic and Leal Figueroa, 2019), considering that In the future, his job will be to design for the public to whom his work will be directed (Gamonal and García, 2015). For certain authors, the design based on investigative processes contributes to the fulfillment of this objective:

Research-based design can help define the target audience, substantiate a concept, propose an aesthetic, or measure the efficiency of a campaign. Tools such as market research, ethnographic study or data analysis can be used to better reach the target audience. (J. O'Grady and V. O'Grady, 2018, p. 11)

The teaching-learning of the Visual Communication subject used autonomous and collaborative work oriented to a design project. Once related to the didactic strategies to be implemented, the student became the person in charge of their learning, who seeks information and selects it, analyzes it, and evaluates it for the construction of knowledge. If autonomous learning is a factor that promotes the development of the student's skills, he will build his knowledge through learning based on his own experiences (Castaño Zapata, Castañeda Marulanda and Tamayo Alzate, 2022). For this to happen, the teacher builds the experience to be carried out with the students, and guides, motivates and helps them so that they can develop their abilities in the virtual environment (Rivadeneira Cofre, 2021).

On the other hand, as already mentioned, virtual education is a challenge for students and teachers. Virtuality can become tedious, and in



tele-education distractors from electronic devices are more frequent than in face-to-face. Added to this are problems such as the ergonomic condition in which the student and teacher find themselves when developing virtual classes, which turns out to be physically and mentally exhausting (Villota, Salguero, Villegas and Valencia, 2022). To avoid this, the UTC proposed a process that involves hours of practice, where the student acquires their own experiences and online classes are prevented from becoming monotonous.

**Teaching process and participation**

The way in which the teacher develops his chair was altered in the pandemic environment, since the process of mastering the subject of each subject had to adapt to the new reality. To understand how the teaching and participation in the UTC was lived, we go to the six interviews carried out with the teachers. They reflect on this change in an emphatic way, mainly pointing out the problems and opportunities that this unusual reality brought. Similarly, through in-depth interviews, eight students from the Visual Communication department were asked to reflect on the problems and opportunities that they and their classmates faced.

Table 2. Problems and opportunities in the virtual teaching and participation process

Emerging issues	ProblemsO	pportunities	Actors
Participation in class	-Virtuality reduces student participation	Recorded classes allow self-observation and self-criticism of the teacher	Students/Teachers
Educational process	-Misinterpretation of the contents -Weak evaluation of their training	-Work with learning guides -Search for new forms of evaluation through results -Collaborative work and teamwork become relevant	Students
	-Students who pass the subject in an unethical manner by copying -Weakness in academic training	-Awareness of autonomous learning -Search for quality in students' final projects	Students

Source: Self made

**Virtuality reduces student participation**

As mentioned in Table 2, the interviews show that during the virtual reality, the teachers were concerned because the interaction of the students was limited, because the students were expected to turn on the camera more and participate by turning on the microphone and the chat. This was a matter of debate, since the authorities and student leaders advocated for those students who did not have sufficient technological and connectivity resources to comply with this type of synchronous interaction. Likewise, attendance at synchronous classes was justified due

to student labor issues. The solution to this problem was asynchronous participation through recorded classes and forums, among others. The teacher had to resort to new didactic communication tools to maintain contact with the student.

However, the students and teachers interviewed considered that they were not ready for virtuality and that it took teachers at least two academic cycles to understand this new methodological process. The interviewees considered that what some teachers did, in the first months, was to replace the blackboard with a digital screen. In such a way that the same procedures of the face-to-face modality were used, limited to the transmission of contents. In fact, some were slow to innovate in the way they teach their classes. So, in the first months, the methodology for virtual teaching was almost not renewed. The needs for distance learning with synchronous and asynchronous participation could also not be fully understood.

Another problem perceived by the teachers was that the contents taught to the students were misinterpreted in their theoretical elements. However, the learning guides were helpful in following the topics. And an awareness of autonomous learning was necessary on the part of the students, who, due to the need to solve the work guides, chose to expand the study topics.

Autonomous work requires skills for information inquiry, analysis, inference, argumentation, synthesis, abstraction, reflection, and interpretation with the teacher's guidance. The students considered that they were not ready for this type of learning, that is, they were not prepared to learn on their own. Although the students could have had approaches to this formative modality, it was not the case of the majority of the students, since the general system of primary and secondary education has not placed emphasis on developing abilities for autonomous work.

To the problems of the student with the autonomous work and the little preparation of the teacher for the virtual classes, the need of students and teachers to comply with the contents of the syllabus and with the registration of four grades in an academic cycle was added.

In response to this work overload, collaborative strategies were an opportunity to encourage teamwork and cope with academic tasks. This benefited both teachers and students.

In this regard, Sánchez Borrero (2021) points out that:

The method of learning and teaching theoretical aspects is another variable that must be adapted to the new stage of virtual teaching, the teacher must develop tools that facilitate understanding and even better if they are collaborative. (p.180)

At UTC, what was indicated by Sánchez Borrero (2021) became necessary as progress was made in a teaching process where students held virtual meetings to solve theoretical tasks in teams, while practical tasks were carried out individually, for isolation restrictions.

At the UTC it was considered that theoretical learning was more viable, since during the confinement it was impossible to access the institutional laboratories and workshops required for practical work. The UTC promoted a strategy based on the academic product, which can be an essay or a project, among others; that is, it can be a theoretical or practical work, or a complement between these two. In the Design major, the academic product is understood as the final practical work.

### ***Evaluation***

For Fardoun, González, Collazos and Yousef (2020), evaluation is one more instance of the training process and occurs throughout its development. The authors emphasize that the teacher must understand the evaluation as an act of feedback in teaching-learning, otherwise, this evaluation is removed from the training and is taken by the students as something to comply with to obtain "simply" a grade. .

In the UTC, formative evaluation is a topic of discussion, since there is no agreement on the times in which formative evaluation notes should be recorded. During the pandemic, the four records of the formative evaluation per academic cycle continued to be maintained, in addition to the final and grace evaluation. The recording of four formative assessment notes is considered by teachers and students as excessive, since it does not allow time for qualitative feedback before recording each note, and this was aggravated by virtuality. Some teachers in the first months of the pandemic resorted to exams to justify recording grades every four classes.

Due to the limited time, some teachers believed that the evaluation was getting out of hand. That is, the teacher did not know how the exam and the autonomous work had been resolved, since the student should have rejected the temptation to resort to copying and plagiarism, actions that were facilitated in the virtual environment. There could be the prejudice of some professors that "all" students cheated, but in this case the situation and the scenario experienced had to be considered: the use of available resources to achieve the objective of knowledge that may not have been fully achieved. of course, given the multiple difficulties of the virtual modality. "Making use of the resources that are available is not cheating," the students commented.

The first months of the pandemic and the virtual classes left experiences that were interpreted from the vision of each one. Thus, teachers recognized that they acquired new teaching tools and strategies due to the pressure of virtual work and academic requirements. And, for their part, the students interviewed identified, from the pandemic, the

importance of practice, collaborative work, autonomous work and the optimization of the teacher's guide.

### **Graphic design project and workshop**

In the Visual Communication subject, the fundamentals of communication are addressed, as well as the relationships of design and culture to create a design project. In this case, the students were proposed to create a poster that was linked to the communication problems of the student's context. The students looked for problems that they found in their environment and were related to the pandemic, which were analyzed through their causes and effects to find possible solutions from visual communication and the creation of creative motifs. After several reflections on the visual communication needs found in their environment, the students of the Visual Communication subject design workshop concluded that their way of contributing was through the construction of messages related to the care of sanitary regulations, with which problems caused by disposable biosecurity implements, with the emotional well-being and economic difficulties of their relatives in the first months of the pandemic. Once the communication problem to be addressed was defined, the creation of a poster that communicated these messages with illustrations was proposed. Some posters would be of a commercial nature and others linked to the difficult conditions of confinement and biosecurity.

For the development of the poster, several activities were proposed that combined theory and practice. The schedule of activities was adjusted to the times required by the institution for the 16-week training period, during which time the students had to develop the poster as a final project, so that their progress was evaluated every four weeks.

The theoretical work was approached through the discussion of readings. Thus, the students carried out an exercise in which they dealt with the themes of the syllable. This process of theoretical foundation was developed through the analysis of texts, which generated debate and encouraged collaborative thinking. Virtual media were used for the partial search for information, which came to complement the understanding of the topics covered. For the practice component, the strategy of the manual workshop was drawn up.

Table 3. Themes of the Visual Communication course and work schedule

THEMES OF THE CURRENT MESH AND WORK SCHEDULE							
Subject: Visual Communication		Year: Third year "A, B and C"					
Thematic Units	Subcontent	Readings for autonomous work	Teaching	Hs	Activities for the design of posters motifs	Hs	Week
1.Fundamentals of visual communication	Concept of visual communication design Information, noise and redundancy	Frascara Reading: Graphic design as a communication process. pp. 22-33 Baldwin, J., Roberts, L. & Casals, M.F. (2007). Visual communication: from theory to practice. Parramón	Videoconference	4	Analysis and discussion of bibliographic materials Readings	8	1-2
	Semiotics	The context Research for the analysis of the recipient in their cultural environment	Videoconference	4	Diagnosis of factual problems and visual communication problems in the family environment  First partial evaluation	8	3-4
2.Design and culture	Culture Popular culture	Research to define the visual message and creative strategy	Group workshop	4	Virtual fieldwork	8	5-6
	Cultural context and message (brief)	Jenn Ken Visocky O'Grady (2018) Research Handbook for Designers. Barcelona: Blume	Videoconference	4	Brief for the creation of a poster that communicates the needs and expectations of the student in the context of the pandemic  Second partial evaluation	8	7-8
3. Design of visual communication	Designing for a real world	Reading: All design is political second and third part, the political economy of signs, the political designer, commercial reality pp. 128-145 Reading: design under threat? Now we are all designers, The MAC generation. No: more rules, the field of cultural production, is design art? Circular logic, under the surface pp. 146-157	Videoconference	4	Case studies	8	9-10
	The visual message Conceptual proposal (Counter-brief)	From visual language to visual message pp. 21-24 (Acaso M. 2009)	Virtual design workshop	4	Data generation and information search Idea generation  Third partial evaluation	8	11-12

4. Visual language	Visual language (collection of referents to illustrate)		Virtual design workshop	4	Elaboración de un cartel	8	13-14
	Configuration elements and composition						
	Reflection of visual elements and their meanings		Online evaluation forum	4	Presentation of the proposal in a virtual space of 2 minutes per student  Fourth partial evaluation	8	15-16

Source: Self made.

A graphic design project will always start with a problem whose final result is variant. The designer generates innumerable ideas and only a few of them will cross the threshold of what is feasible. Since the first image is rarely the final one, and since the problem itself can transform as the project evolves in its process, designing involves various techniques. As Ellen Lupton (2015) points out, procedures such as research and visual documentation, brainstorming, visual data dumping, forced associations, sketching, among others, can be used. Next, we refer synthetically to these techniques mentioned by the author:

- ❖ Brainstorming: it consists of "bombarding a problem" with a multiplicity of solutions, the same ones that will help to find a possible proposal in a simple way.
- ❖ Research and Visual Documentation: analyzes graphics to be related to the design project. In this modality, by reviewing visual documents, recurring similarities and differences are identified that help to distinguish the brand or the created form.
- ❖ Forced associations: consists of choosing an interesting association, even if it is contrasting or absurd. To do this, brainstorming lists are combined. This will serve to raise important questions. Finally, results are imagined from the linked ideas.
- ❖ Visual dumping of data: it refers to making simple sketches focused on a purpose. It is a visual brainstorming that makes new approaches to the initial ideas, combining the insistence on new sketches with defined and emerging concepts. The task is carried out by setting a time (Lupton, 2015).

In the design workshop of the UTC, to guide the student in his project in an adequate way, the hours of virtual interaction with the professor were taken as class-hours where the students receive lectures and instructions.

In the feedback and tutorial hours, the students had the opportunity to present their progress during the week for possible improvement before receiving new class material. Likewise, the student was encouraged to review additional information available on the Internet, such as tutorial videos and those related to the subject.

As part of the investigative process of the graphic project, and with the objective of using visual communication models and techniques learned in the chair, the students identified communication needs in their sectors of residence, of which, after an analysis by the teacher and of the student himself, one was chosen (per student) to continue with the next step: the gathering of information. This activity was carried out by the students through interviews and surveys that would normally be done in person. However, due to the health emergency, they had to look for alternatives for these inquiries, such as digital tools, mobile applications, and websites, which favored data collection.



Figure 1. Survey carried out by a student from the Visual Communication Department for the preparation of a poster focused on raising awareness of compliance with biosafety standards in public transport.

Source: Keyla Milena Valladares Beltrán, 2020.



Figure 2. Interview conducted by a student from the Visual Communication department.

Source: Edison Toapanta, 2020.

In this process, the students collected important information that allowed them to understand the problem posed, recognizing causalities that, after being analyzed, guided the student to find possible solutions until reaching the most appropriate one. Later, a brainstorming was developed based on references that helped the student to have a clearer picture of what he was building. Sketching was the main tool to advance the work that represented the basis of the graphic project. The teacher accompanied and guided the students during these activities, in order to guide and provide feedback on the project during the course of the workshop. Likewise, the students recognized that they relied on material available on platforms such as YouTube for the development of design and illustration techniques.

Below is a comparative table of similarities and differences between the workshop carried out in person (before the pandemic) and the virtual workshop (carried out during the health crisis). It describes the learning scenario, the brief, and the resources and tools used in the design workshop in both modalities.



Table 4. Comparative chart of the design workshop before and during the pandemic

Face-to-face workshop	Virtual workshop
<b>Physical classroom</b>	<b>Virtual classroom</b>
Tables and chairs	Platform and web service
Blackboard	-Connection from home through smartphones, tablets or computers
-Platform for videoconferences -Projector -Digital presentations -Bibliography and digital documents -Web to watch thematic videos	-Virtual whiteboard application -Digital presentations -Bibliography and digital documents -Or other web platforms to watch videos thematic -E-mail -Cloud to upload files
<b>BriefV</b>	<b>irtual brief</b>
Face-to-face interviews with design clients and actors involved with the project	Chats and video calls to carry out interviews with actors involved with the project
Web information search engines and libraries	Virtual Web information search engines and virtual libraries
<b>Analog resources and toolsV</b>	<b>irtual resources and tools</b>
Chairs and tables	-Application to mark and correct sketches -Sending sketches by mobile applications or tablet -E-mail -Cloud to upload files
Paper, pencil, eraser	Virtual paper, pencil, and eraser
Blackboards	Recorded classes

Source: Self made.


The Chair of Visual Communication of the Design major at UTC found itself vulnerable and lacking in interaction during the pandemic, since teachers and students had to face a virtual environment, leaving behind the essential coexistence for the design workshop. In relation to this aspect, Porlán (2020) mentions that:


Human relationships that are established in direct contact are richer and more complex than those that occur at a distance. As we know, the human brain processes much more information than it receives through verbal transmission, with non-verbal communication (gestural, auditory, bodily, etc.) being an essential part of the dialogue between people. (p.5)

The visual communication design workshop is related to direct feedback processes, which are difficult in the virtual modality, especially when making observations and suggestions. In the face-to-face modality, the attendance of students and the teacher was sufficient to comment and directly correct the proposals. It is recognized that the workshop is a legacy of the field of arts and crafts, where master and apprentice interact for the transmission of knowledge.

García Cordero and Buitrago López (2017) mention that, at present, the teaching of graphic design preserves the perception and practice of empiricism, where the routine of the workshop is developed. There, knowledge is transmitted and built, and the collective correction of sketches takes place. This process is led by teachers who appropriate knowledge in search of reflection, critical thinking and theoretical conceptualization. This deliberation nourishes the whole: the student and his classmates, and the teacher.

This process became more complex in the virtual workshop, because more than two devices were needed to carry out the class and receive indications and appreciations. Added to this was the large number of applications required for visualization and communication. In the case of the practical workshop, sketches were made by hand. So, a device was required to capture the manual sketch in a digital photograph, and in this way make it possible to send the image to the teacher at that very moment.

Despite the development of technology in the last three decades, the face-to-face workshop offers greater facilities for students to interact and understand. They mentioned that they prefer the face-to-face workshop to the virtual one: they considered that in face-to-face they received better feedback or it was more understandable. This, perhaps, due to the lack of technological resources and, mainly, because human relations and non-verbal communication were affected during the virtual workshop. 

 **Conclusions** One of the main problems identified in this research on the teaching of graphic design in the pandemic was the high cost (social and economic) of changing from face-to-face to virtual with its technological means. Accessibility to technology and its tools, even at present, is limited. Initially, students devised ways to access virtual education using devices at their disposal, such as tablets and smartphones. However, there were shortcomings and technological deficiencies for the majority of the students interviewed.

Teachers made limited use of new technological tools that replaced traditional teaching methods. Even so, they reinvented their way of educating, and opted for new sources of knowledge and communication to

complement their work. The virtual search for information in bibliographic sources, documentaries and tutorials has become an indispensable resource in distance education and to be able to solve activities proposed in virtual classes.

The difficulties of interaction and communication behind the screens was another important issue. The specific case of the teaching-learning of graphic design was not the exception, where these problems were largely corroborated. Teachers and students recognized the design workshop as an instance that, above all, needs the interaction of the actors involved. The change from the workshop to the virtual space required greater technological resources and the mastery of new tools that encourage self-learning.

The results obtained in the Visual Communication Chair project show that different educational conditions give way to new training processes in graphic design. New processes, such as synchronous and asynchronous classes, allow students to provide feedback through the information generated in class at a time that suits them. In addition, electronic means are used to automate the delivery of tasks and to solve the information search needs.

The teaching of graphic design can be adapted to new media through the virtual classroom, although it is restricted by technological and connectivity conditions.

Virtual university education requires a greater reflection on the interaction and communication needs of the student, as well as more precision of the academic and evaluative contents by the teacher. You also need your own motivation, commitment and initiative when it comes to exploring new ways to achieve your study objectives. Design education adapted to online devices is a new research horizon for the Ecuadorian public university, and helps to recognize that new pedagogical processes can be generated that favor the optimization of time in face-to-face interaction.

The new tools favor design didactics; however, one must not lose sight of the fact that design workshop activities require complex human relationships that only occur in coexistence. It could be thought that ICTs contribute to free admission to university education and make it more widespread. However, the challenge of the public university is also to achieve an educational quality that contributes to the resolution of social problems and not increases them, as can happen with the automation of human interactions.

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### ◆ About the authors *Vilma Lucia Naranjo Huera*

He obtained a degree in Graphic Design from the Israel Technological University, Quito, Ecuador (2006). In 2014, he obtained a Master's degree in Corporate Communication Management (DirCom) from the University of the Americas, Quito, Ecuador. She has professional experience as a corporate graphic designer in various companies in Ecuador. Since 2008, she is a teacher and tutor of the Graphic Design career at the Technical University of Cotopaxi, Ecuador. He has participated in national and international conferences as a speaker and columnist on topics related to graphic design and culture. He works on formative research projects, investigates the problems of graphic design in the Cotopaxi microenterprise and its links with popular culture. She is currently a doctoral candidate in Design at the University of Palermo, in Argentina.

### *Diego Fernando Chasi Montaluisa*

Bachelor of Graphic Design from the Technical University of Cotopaxi, Latacunga, Ecuador (2022). He has professional experience as an independent graphic designer in brand creation, editorial and advertising strategy in different ventures in Ecuador; He has also carried out work focused on creativity based on the investigation of strategic branding and leadership problems.

### *Leonel Estuardo Moya Caisa*

Bachelor of Graphic Design from the Technical University of Cotopaxi, Latacunga, Ecuador (2022). He has professional experience as a teaching assistant at the Technical University of Cotopaxi (2021). He has also worked as an independent graphic designer for start-ups in Ecuador, audiovisual production projects for social networks, editorial design, photography and web design.



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