

Ontology of Backgrounds in Distance Learning. Correlations between Virtual Backgrounds and Educational Relationship.

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Abstract

The paper presents a research focused on virtual backgrounds in distance learning (in Italian: DaD) during the first lockdown due to the COVID-19 pandemic by March up to June 2020, and their impact on educational relationships. The research is based on the analysis of the answers that 1283 teachers and 1018 students gave participating in two online surveys. According to data inferred from the analysis, during the online lessons, in most cases the teachers and students chose a specific setting background, and their choice had a significant impact on attention, motivation, and empathic involvement. So much so, the teachers changed their virtual settings to obtain better results. But the motivations for changing the backgrounds have been very different between teacher and student: 50.6% of teachers changed their background to improve the relationship with students, 44.5% to make their role more authoritative, while 70.9% of students changed the background to fully feel comfortable in watching themselves on screen.

Furthermore, the survey asked teachers to choose and explain virtual backgrounds that they think could be used for improving face-to-face learning; students, to choose virtual image backgrounds that they would like behind the teachers in the classroom. More than 1,000 background images with descriptive referred captions were uploaded, which we have classified in five ontological categories. Both in the quantitative and qualitative information inferred by the analysis of such data, real different subcultures between teachers and students bring out. Research in this sense has gathered valuable information on the importance of the visual context even in face-to-face teaching. The research was also an opportunity to investigate the level of the teachers' and students' visual culture. The conclusions lead us to question the actual value of virtual backgrounds also in the perspective of Integrated Teaching (in Italian: DID): can they be considered only part of the setting or something more to improve the educational relationship?

Keywords 1

Distance Learning, Integrated Learning, Virtual Background, Visual Culture, COVID-19 Pandemic

1. Introduction

This research is to be placed in the cultural field of studies that investigate «history and theory, conceptual status and methodological nature of a device such as the screen» [1]. In Distance Learning, the narrow space of PC or mobile screens provides very few variations to ensure attention and motivation for learning. Even the physical space where teachers and students place themselves to connect is important. For many of them, the home-space was small and not peaceful: on average in

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OECD countries, 9% of 15-year-old students do not have a quiet place to study at home [2]. Compared to the European average (15.5%), in Italy, people living in overcrowded homes are 27.8% (Fig.1).

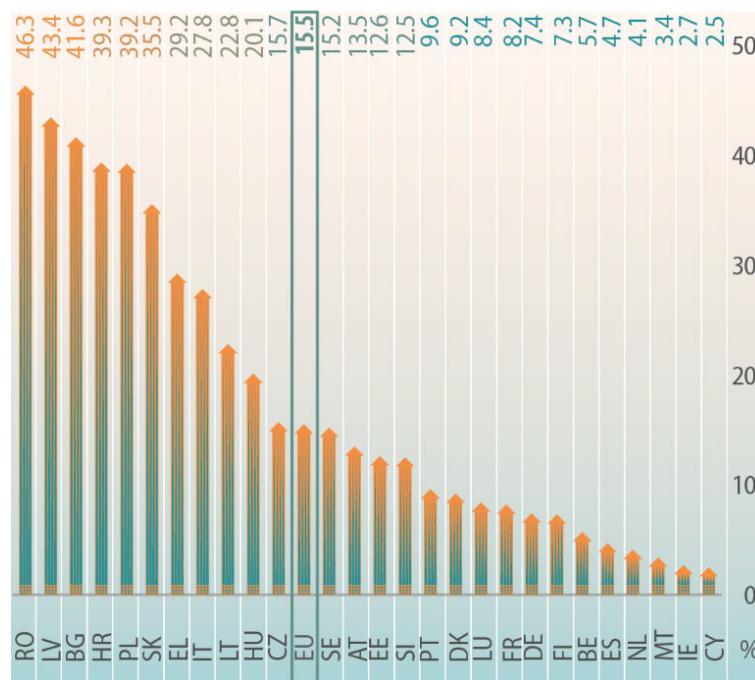


Figure 1. People living in overcrowded households. Data Source: Eurostat (2020)

During the 2020 first lockdown due to COVID-19 pandemic, the situation worsened due to the difficult access to the network, or to the unavailability of adequate digital devices, particularly for students. The 2020 Eurydice Report shows that, in Europe, only a quarter of education systems use a wide range of measures to support disadvantaged students [3].

The October 2020 Report of the Italian Alliance for Sustainable Development (ASVIS) [4] talks of inequalities during the months of the lockdown.

The Italian Central Statistics Institute (ISTAT) [5] estimates that about three million students between the ages of 6 and 17 had difficulty following classes remotely, especially due to lack of devices in the family. This situation is particularly accentuated in the South of Italy, where it affects about 20% of minors.

This is a particularly serious phenomenon, given that the crisis increases the likelihood of school dropout, especially in the most vulnerable population. As we show in the following paragraph, Distance Learning has been not the same for everyone on many levels. Among young students, the “class-place” often corresponds to their own room for 59.9% of students, while 24% of them connected online from the kitchen, and 33% often changed place, probably due to the co-presence in the same room of other family members.

Probably, these data are in itself not significant because other variables come into play, nevertheless they cast a glance on students’ discomfort.

A survey published online by the Demopolis Institute online survey of November 2020 [6] has still confirmed the people opinion about the use and functions of Distance Learning, the danger of regression in learning, the study method, and the inequalities in access to devices.

2. Motivation of the research

Our reflection on the backgrounds in Distance Learning, both in terms of inclusion, and in terms of the risk of poor educational, had already begun in the form of email-dialogue between the authors of this research at the beginning of the lockdown in March 2020 [7].

We know that, historically, school environments have been configured as the “Non-Lieux” [8] space-time dimensions that, linked to their physicality, leave few or no traces in the memory of both

individuals and communities. Scarce contacts are established with the environments and contexts: classrooms, corridors, laboratories, libraries, or other spaces where the educational lifecycle of individuals evolved and transformed over the years are almost always reduced to faded memories, few or nothing of them remain in both individual and collective memory. How to recover all these elements of exchange, interaction and sociality that distinguish teaching is an issue, because the positive emotions related to being well together «are a formidable means of learning» [9] [10]. In the best hypotheses, they are recovered through faded photograph of “institutes”, self-referential and insignificant sets of real school contexts.

Starting by the above reflections, we designed a research focused on the role of backgrounds in Distance Learning during the first pandemic lockdown. Our opinion was that the pandemic experience has marked a turning point in the view that the backgrounds reduce the quality and effectiveness of the educational relationship.

The first-rate objective of the research was to understand if the background played a role and had importance in the educational relationship: is it just an element of context, or may the background counteract “poor school learning”? How can the background impact attention, motivation and empathic engagement in the educational relationship? Is it necessary to see the face of the other person in Distance Learning? And beyond the face, what else can online class nourish? Is the online class by voice only as effective?

In order to answer to above and many other questions, we based our research on indirect interaction through online survey. WordPress was the platform we use for structuring it. In planning the questions, we balanced quantitative and qualitative analysis methods, with the aim to classifies the data inferred by the interviewees’ replies. We addressed the analysis of data by explaining ontological categories of backgrounds, and for each of them, we hypothesized on the possible effects of the educational relationship, depending on the teaching style chosen by the teacher.

On the basis of the categories that emerged, the research suggests backgrounds that best correspond to strengthening the educational relationship from an Integrated Learning perspective, introduced by the D.M. n. 89 of 7/8/2020.

3. The design on online survey “Behind the Teachers” and “Behind the Students”

The online survey has been not based on a representative sample but on the spontaneous participation of teachers and students. We planned two versions of the survey, one “Behind Teachers” and one “Behind Students”, almost identical but using a slightly different lexicon adequate to addressees². They were published online in April 2020 and disseminated thanks to the precious participation of some Regional School Offices (USR), in particular Puglia and Calabria. 1,283 teachers, and 1018 students aged between 10 and 20 participated.

The survey has been articulated in 12 questions concerning to the following three topics of interest to investigate:

1. Relationship between subject and home-environment: background choice, positioning, care, variables;
2. Relationship between subject and displayed backgrounds: impact, observation, attention, involvement, empathy;
3. Opinions of the interviewees from a didactic perspective in face-to-face and Digital Learning: request for images and related captions, relationships between choice of images, reasons for the choice.

The third area introduced some variants compared to the questions of a traditional survey.

Firstly, to give the research greater statistical weight and visibility as suggested at European and international level³, we introduced questions concerned gender adding to traditional male/female the LGBT category, in which 12 students and 1 teacher recognized themselves.

² <https://docs.google.com/forms/d/1RjfGeMzm1xKfgzNpF4reVb-2DQnTIBThUxLPw5cZ57I/edit>;

https://docs.google.com/forms/d/11_kjTOfLNDuLLxt4yIAInPjYFprTYJnZcwCAPtXLG4w/edit

³ <https://www.unfe.org/definitions/> and <https://www.ohchr.org/Documents/Publications/BornFreeAndEqualLowRes.pdf>

The second variant was to replace the North/Center/South/Islands geographical distinction with City (Regional Capital, Provincial Capital), Municipality, Commune. In our opinion these criteria could better represent the stratification of the density of the population and the connectivity for a research that had as its object online relationships.

We have not summarized these two points, but they have been extensively documented in the researchers' internal report.

The third variant is related to the qualitative analysis. A critical issue of using qualitative analysis in the surveys is the risk of researchers' subjective involvement when they classify the data. Normally, lacking information inferred by primary sources, researchers classify according to their own planned categories, which always imply subjectivity, even though they try to neutralize connections to their own cultural, social and political values. So, in order to avoid subjectivity, the categorization must be carried out by at least two researchers who, by comparing themselves, define and share the same classification.

In the 1950s, the anthropologist John Collier was the first to note how, in some scientific fields, images could have the value of data to use for categorization, while in others they were completely marginal or, at most, they had an illustrative function of data. To avoid the risk of the researcher's subjective involvement in the anthropological investigation carried out through visual images, Collier devised a method of direct involvement of the interviewees: he provided them with devices by which they could personally record their stories, without any interference from interviewers.

But we know that «the photographic image, even though it is a trace (and not a construction obtained by combining different photographic traces), is never just the transparent account of an event. It is always an image that someone has chosen: “to photograph means to frame, and to frame means to exclude” (Sontag, 2010)» [11]. Except for the so-called iconic images, normally attributable to a unique meaning – for example, images with the Euro symbol or Twins Tower –, visual representations are completely subjective. Perhaps for this reason, their use in surveys is rare.

Meo [12] already used, deeply articulated and explained this unusual survey method: «The interviews, when visual materials are used to complement the texts and readings, allow to express concepts in a deeper way and a deeper knowledge of the concepts. Images, in fact, encourages reasoning or analogies and metaphors, and this allows the interviewee to overcome a superficial level of knowledge and awareness».

Isabel de Maurissens together with Maria Chiara Pettenati, Indire Research Director, had already used this method too, but for a training purpose, to stimulate reflection through a visual balance of skills⁴. Instead, also for having qualitative analysis avoiding subjectivity, in this survey we used the method named “Native Image Making”, which «consists in asking the subjects involved to translate specific concepts into images, in order to encourage them to visually express their attitude towards a given phenomenon» [11].

So, we asked teachers and students to upload image with linked descriptive caption for explaining their choice. This has allowed us to collect, analyze and classify in five categories a big amount of images giving certain results, in particular regarding the students, and to take into account the different visual culture between teacher and students. We think that this method needs to be deepened with further research.

4. The relationship between subject and home-environment: background choice, positioning, light and variables

The first research topic was focused on the relationship by subject and his home-environment in the Distance Learning. Almost all the teachers connected from indoors (98.2% against 1.2% outdoors including balcony, terrace, courtyard, garden): 63.8% connected from the study, 32.7% from the living room, 16% from the kitchen, 8.2% from the bedroom, and the rest from other places. 20% of them used more than one space.

98% of the students connected by an internal space; more than a third of the students used more than

⁴ Training course on education for sustainable development, USR Calabria (Maria Teresa Bello), in July 2018, in which, through a visual survey, a “visual assessment of skills” was asked, consisting of an interview with the photo elicitation technique and carried out online. The goal of this experiment was to allow teachers to visually self-assess their global citizenship skills and how they were integrated with the objectives of the 2030 Agenda in their activities.

one space, mainly their room (59.9%), the living room (34.6%), the study (25.5%) and the kitchen (15.9%) These percentage confirm the above-explained OECD data that many young people do not have a quiet place to study and lives in overcrowded houses. Regarding the environment where teachers and students were positioned, we included a question on the awareness of lighting. 84.1% of teachers and 65.2% of students took care of the lighting. Of course, light is an important factor in connecting to a screen (reflections, etc.), but is it also an important factor for learning? A high-school teacher (male, 36-50 years old), imagining his classroom, put the accent on lighting: «White walls and natural lighting that illuminates the desk, in order not to repeat the Digital Learning experience where the lighting was always artificial». Asking about the function of the light in the classrooms is not a rhetorical question because, with a few tricks, you can change the 'light' setting, improving the environmental relationship.

The influence of natural light on attention and concentration has been demonstrated by many scientific studies. Among the several, Edwards and Torcellini [13] devoted an entire chapter to schools. In essence, their study evidenced the incidence of natural light, not only on the physical state of the pupils but also on other factors such as attention, concentration, especially reading and even on school attendance, and finally also on learning.

As we have seen, in Digital Learning, the relationship between subject and environment, positioning, light, were handled by the teacher but also by the students, forced to give weight to contextual factors because they are influential. Unlike the classroom, where the setting is taken for granted and very often unchangeable, we see a first significant difference between the variables of the context in which the subjects can have some influence. In this sense, Digital Learning has given teachers, but also students, the opportunity to influence the learning environment in terms of lighting.

5. The relationship between subject and displayed background: impact, observation, attention, involvement, empathy

The second research topic was more closely related to teaching, focusing on how the background impact the educational relationship, and in particular important elements such as motivation, attention, empathic involvement.

We asked students and teachers if they were aware of the backgrounds behind them: 82.8% of teachers and 89.25% of students had awareness of the background.

Can we attribute a heuristic value to this kind of perception during an online video lesson? As John Berger [14] argued: «Seeing is much less spontaneous than we tend to believe, a large part of seeing depends on our habits and conventions. The images are no longer silent and still, and they are no longer a pilgrimage destination because they reach us everywhere, on different supports, but the degree and modality in which they reach us depends on our gaze which will inevitably change their original meaning. Educating to see brings us experiences, broadens our knowledge and puts us in relationship with others and ourselves» [11].

From the analysis of data, it appears that 17.7% of teachers changed the backgrounds against 25.5% of the students (Fig. 2).

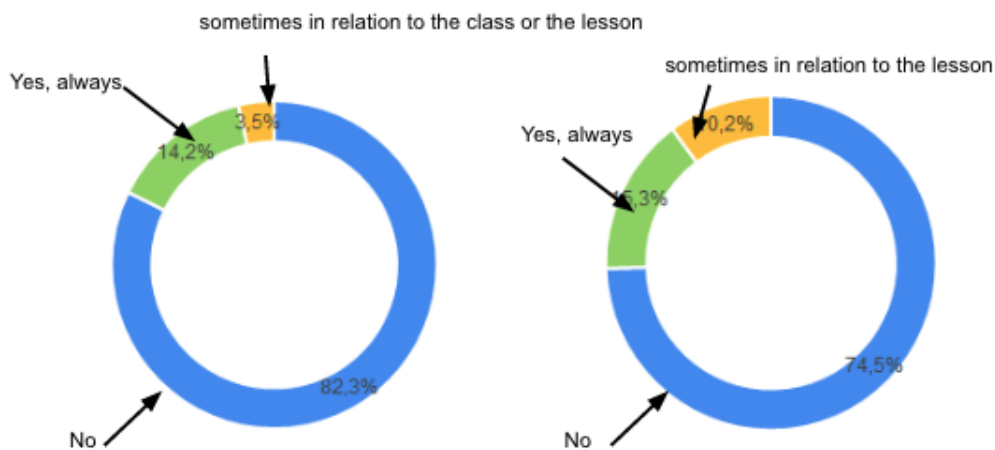


Figure 2. Teachers. Background changes

Student. Background changes

But the interesting thing is to understand their motivation for the change (Fig. 3).

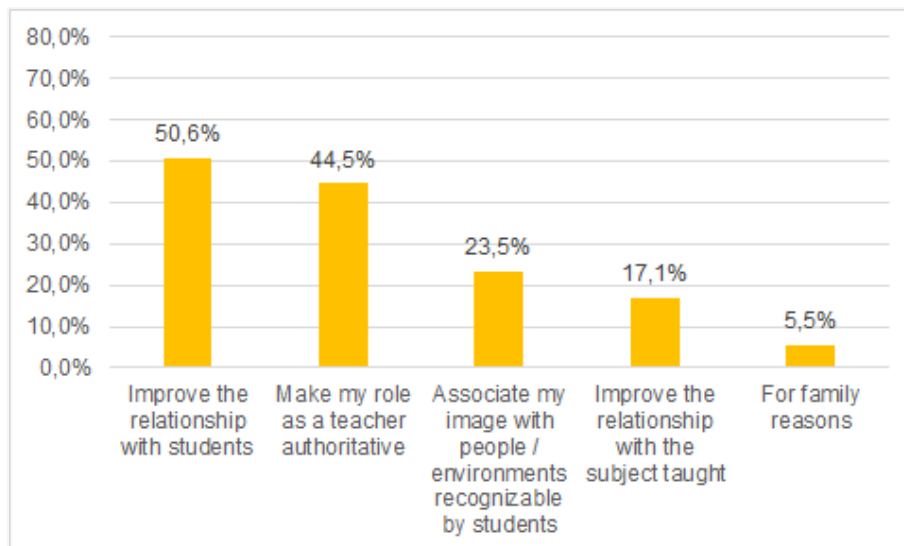


Figure 3. Teachers. Reasons for changing background (calculated on who answered yes/sometimes = 25%)

The main motivation for teachers is the improvement of relations with students (50.6%), followed by the attempt to make their role authoritative (44.2%); 23.5% wanted to associate their image and/or recognizable contexts, 17.1% wanted to improve the relationship with discipline, 5.5% identified family reasons. From the Demopolis Survey [6] already cited, it appears that:

«Almost 8 out of 10 parents have had direct experience of Distance Learning, which – according to the interviewees' testimonies – was experienced by their children mainly using tablets and PCs (77%). But in a non-residual dimension of cases (20%) the children followed the lessons and did the teaching through a common smartphone. The lack of adequate IT devices and suitable connections proved to be a problem in 14% of cases, but it grows to 22% in the South and on the Islands. In the experience of the interviewees, the difficulties of children and young people in following distance learning were mainly of a different nature: the main problem, indicated by 45%, was the poor attention span in distance learning, achieved in the home environment. It is no coincidence, therefore, that only a minority of parents are satisfied with the experience; 54% say they are dissatisfied».

The students' replies to the same question are very surprising (Fig. 4). For 70.6%, the main reason is to feel comfortable seeing themselves on screen, and only 15.0% want to improve the relationship with the teacher, 3.9% want to improve relations with other students in the class, 2.2% look to associate their image with famous people and/or contexts (influencers, bloggers), and for 2.2% the family is mentioned. The students therefore gave a lot of weight to seeing their icons during the lesson and the mirroring of their image on screen, rather than being a means of relating.

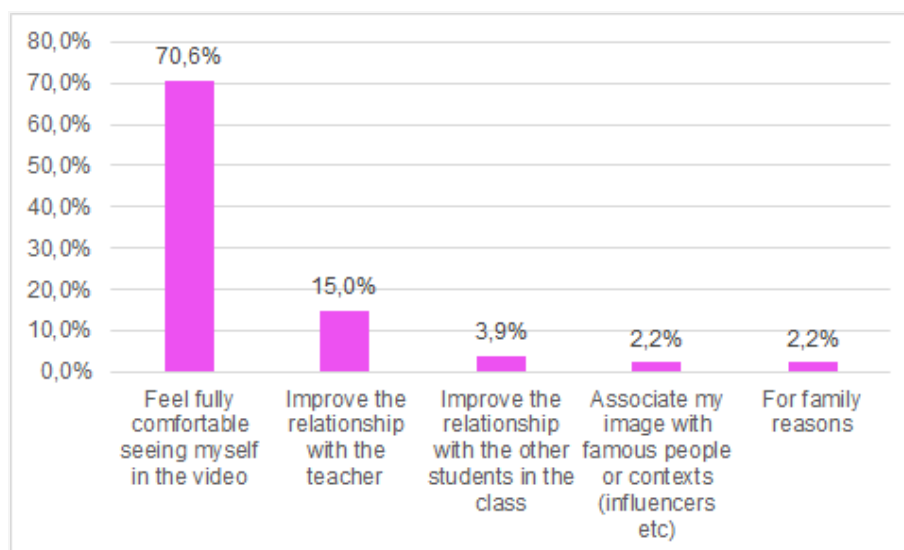


Figure 4. Students. Reasons for changing your background (calculated on who answered yes/sometimes = 25%)

A connected interesting topic have been to understand if the change of the teacher background had an influence on the student. For the students (73.5%) the response was positive: 46.2% thought that the background improved their level of attention, for 27.3% it improved the level of empathy and communication with the teacher, and for 18.7% it fostered their motivation. Even for teachers the response was positive, as 86.4% feel they have helped students by changing the background. For 59.5% their change improved attention, for 53.5% it fosters empathy and communication, for 23.8% it increased the level of motivation and involvement.

So, we can surely assume that the background played a significant role for both sides. In particular for empathy, we relied on Goleman's [15] definition of the concept of "empathy triad":

- Cognitive empathy refers to the ability that allows us to understand what another person may think.
- Emotional empathy refers to the ability that allows us to understand what another person may feel.
- Empathic concern refers to the ability that allows us to understand what another person needs us to do.

Of course, online, empathy and involvement are important and the above three degrees of empathy, cognitive, emotional, but also empathic concern are necessary: «A background with a warm and relaxing color, so that the children feel enveloped and reassured, like a big hug. Also, an integral part are the posters and drawings, which cheer up and make the environment a familiar and personalized place» (Female, Primary School). Can we read in this teachers' comment in the choice of a background an empathic concern?

Certainly, technology has changed the way students interact with each other: «although there is still no conclusive evidence on the extent to which digital technology influences the capacity for empathy» [15]. Several relevant results on the effects of digital technology are summarized by the authors in this table (Fig. 5 and 6).

Table 2. Effects of digital technology use on children's empathy

Type	Digital technology	Increase in children's empathy			Decrease in children's empathy
		General/ other	Cognitive	Affective	
Prosocial training programs	<i>Cybereduca video game 2.0</i> (Garaioqordobil and Martínez-Valderrey, 2015)		x		
	<i>Media Heroes</i> (Schultze-Krumbholz et al., 2016)		x	x	
	<i>Crystals</i> (Kral et al., 2018)	x			
	<i>Inter-Life</i> (Devlin et al., 2015)	x			
	<i>Virtual reality immersive system</i> (Lorenzo et al., 2016)	x			
Digital technology in the classroom	Digital tools: animated stories, discussion forum, mind mapping tool and learning journal (Jaosanurak, Chanchalor, Murphy, 2016)	x			
	Location-based augmented reality (AR) (Efstathiou, Kyza, Georgiou, 2018)	x			
Online Communication	Social Media (General, Facebook, Twitter) (Errasti, Amigo, Villadano, 2017; Vossen, Valkenburg, 2016)		x	x	x
	Internet use (Flores and James, 2012; Lozada and Tynes, 2017)	x			x
Digital technology for leisure	Screen devices (Prot et al., 2014; Twenge and Campbell, 2018)	x			x
	Media content (series, movies, video games; prosocial, violent) (Prot et al., 2014)	x			x
	Video games (prosocial, violent) (Gabbadini et al., 2016; Greitemeyer and Mügge, 2014; Harrington and O'Connell, 2016; Prot et al., 2014; Szyck, Mohammadi, Münte, te Wildt, 2017)	x			x

Source: compiled by authors on the basis of the literature review.

Figure 5. Flecha, Pulido, Villarejo et al (2020)

According to the authors, attention is also «an essential factor for the functioning of other cognitive processes such as the ability to consistently maintain and manipulate information, self-regulation, time management and the ability to anticipate events» [15].

The attention «both at an anatomical and behavioral level, refers to the systems that allow people to knowingly process information» [15].

Table 3. Effects of the use of digital technology on children's attention capacity

Type	Digital technology	Improve attention capacity	Reduce attention capacity	No significant effect
Computerised cognitive training programs	BrainGame Brian, a newly developed computerised training program (Aarnoudse-Moens et al., 2018)	X		
	Cogmed, a computer/tablet-based working memory (WM) training program (Pearson 2016; Hessel et al., 2019)	X		
	ACTIVATE™, a computerised intervention addressing multiple cognitive functions (Bikic et al., 2018)			X
Digital technology in the classroom	Tablets in the classroom (Camacho Martí, Esteve Mon, 2017)	X		
	Touch-screen tablets (Duijzer et al., 2017; Chen et al., 2017)	X		
	Wearable and mobile devices (Liang et al., 2019)	X		
	Augmented reality (Cai et al., 2019)	X		
	Mobile Gamification Learning System (Su and Cheng, 2015)	X		
Influences of using digital technology on children's attention capacity at school	Mobile devices (tablets and smartphones) (Hosokawa and Katsura, 2018)		X	
	Digital technology (Ra et al., 2018) (Aagaard, 2015)		X	
	Video game or computer time outside of school time (Liu et al., 2016)		X	
	Mobile devices (Kay, Benzimra, Li, 2017)		X	
	Tech distractions (online games or videogames, sending or receiving text messages) (Xu, 2015)		X	

Source: compiled by the authors on the basis of the literature review.

Figure 6. Flecha, Pulido, Villarejo et al. (2020)

Regarding motivation, also the data inferred by the Report of another survey of INDIRE published online in December 2020 [16] registered an increase in the level of motivation in Digital Learning: «it shows an improvement in the responsibility with which students carry out the assigned tasks». In addition, about 1/3 of teachers in secondary and primary schools declare improvements in students' levels of motivation. Finally, 31.8% of secondary school teachers declare they have strengthened the capacity for cooperation and collaboration.

On the other hand, some teachers note a deterioration in the Digital Learning on the didactic quality and a deterioration in the quality of attention by students: «In the face of a share of teachers who detect improvements through the Digital Learning, there is also a part, on average more consistent, of teachers who, on the contrary, notice a worsening of the didactic quality, on various aspects. In kindergarten, over 74% of teachers recorded a deterioration in the quality of the relationship between peers; this aspect is also the most critical for primary and lower secondary school, while in upper secondary school, there is above all a deterioration in the quality of attention by students».

6. The relationship between subject and displayed background: impact, observation, attention, involvement, empathy

The third research topic was the request to interviewees to upload an image with related descriptive caption.

The question for students was the following:

“If you could choose backgrounds and settings behind the teachers for classroom teaching, upload an image that represents the one/s you would prefer to see”.

The same question was asked to the teachers, with the variant of uploading the image they would

put behind them, always with description. But a low number of teachers give feedback, and this has been an issue for qualitative analysis. From a methodological point of view, it means that while a reading and categorization of the visual data has been possible for the survey “Behind the students”, it was not the same for the teachers. Despite this, we were still able to represent the teachers’ vision with an additional question compared to the students, that was:

“If you were to choose backgrounds for classroom teaching, which types do you consider functional and for what reasons would you prefer them?”

So, finally we can analyze and reliably classify the data inferred by the uploads. Nevertheless, the analysis and categorization were not exempt from some other critical issues.

A first issue was to verify for each uploaded resource both the internal coherence between image and caption, and the external coherence between image + caption [11]. In particular, in the case of images whose contents were attributable to different categories, the difficulty was to assign them to the appropriate one by identifying the prevailing content. In some cases, the attribution of an image to a category was uncertain, but the related caption written by the user allowed us to correctly connote the content and to assign the resource to a defined category.

Another difficulty was determined by the teachers who refused to upload images and only commented in descriptive captions, declaring that they considered the theme inconsistent with face-to-face teaching. We have included these comments in a generic section, together with poorly represented visual topics, reserving to deepen and classify them in further research developments.

The interviewees uploaded an overall corpus of over 1,100 images and related descriptive captions, which highlighted their expectations with sufficient clarity. 100% of the students uploaded an image against 7.4% of the teachers. As for the comments, on the other hand, 61% of the students have added a comment to their image, while for the teachers 89% of those who uploaded an image described it.

With the support of Daniela Bagattini, INDIRE Research Assistant, finally we classified the data into five categories:

- Neutral
- Nature
- School
- Culture
- Other

The following figures show the percentage related to each category for teachers and students. (Fig. 7 and 8).

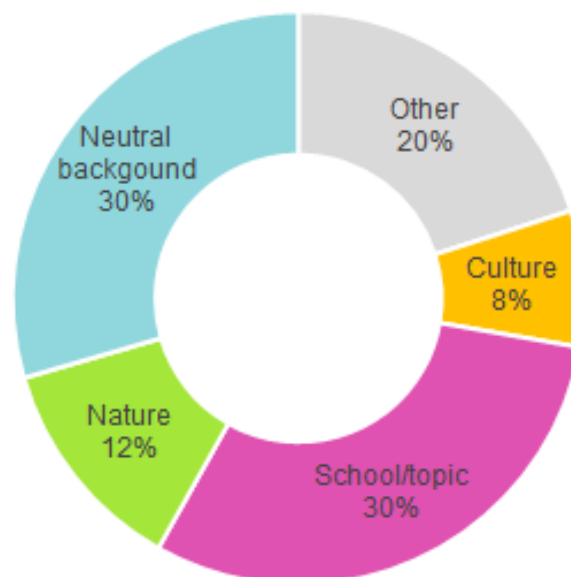


Figure 7. Teachers. Choices of backgrounds behind their backs

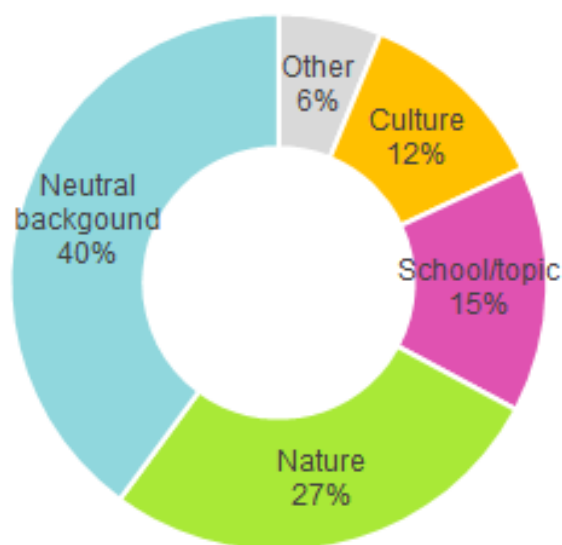


Figure 8. Students. Choices of backgrounds behind their backs

6.1. The “neutral” and “disciplinary” backgrounds as a “lean office” for teachers and students

We interpreted the predominant choice of the neutral background in 29.5% of teachers (almost on a par with the “school” choice for teachers) and for 40% of students as a choice of “lean office”⁵, but perhaps also of “Non-Lieux” outlined by Augé [8], intended as places where the teacher is isolated from the environment with no object that can distract the students from listening him. But the space must be inhabited as well as online: “the place is essential” [17].

Mostly students between the ages of 15 and 18, 45.7% of the total number, uploaded a neutral image. The most recurring motivation for this choice is precisely the theories of the “lean office” to avoid distractions and help concentration, as it emerges from most of the related captions uploaded: “I would prefer not to see anything, what interests me is the explanation” (female, 14-18 years old); “I have no preference, the background and the environment in which the professors carry out their work does not affect their skills and preparation” (female 15-18 years old); a white background is commented as: “a nice white wall” (LGBT, 15-18 years old); a neutral background has the caption: “I prefer a white background because it gives me peace of mind and consequently I can concentrate better” (female 15 - 18 years); a background representing a white wall has the comment “A uniform background or school” (female 14-18 years). Finally, an image representing a white wall and two chairs with this caption: “It is very relaxing and, in my opinion, affects the concentration of the students” (female 15-18 years).

Wondering about the reasons for the choice of neutral backgrounds, in addition to the influence of the school environment, which is very reminiscent of the “lean office”, we can assume that young people of this age probably have an indigestion of images with video games, series, and images in general, and prefer a no-place.

Most teachers (29%) imagine a “neutral background” essentially for the same reasons as students. Comments are very similar: “Backgrounds with colours, maximum two/three colours, not too bright and with few decorations so as not to distract pupils.” (female, 36-50); or “Neutral background to focus students' attention on the lesson” (female, 25-35 years old).

⁵ The lean office concept developed in the 1970s was introduced during the conference with Hubert Mansion, Maria Chiara Pettenati, Isabel de Maurissens, “Riconnettere le scuole alla natura: basi scientifiche, esperienze e formazione per coltivare benessere, attenzione e motivazione”, webinar E-Twinning, 18 giugno 2020. <http://www.indire.it/2020/06/16/educazione-alla-sostenibilita-il-18-giugno-un-webinar-con-hubert-mansion-delluniversite-dans-la-nature/>

These comments make us reflect on the cultural reference of the teacher-student relationship, where the teacher has a predominant, asymmetrical role that excludes any “interference” between the two. The polarization of the attention on oneself in order not to distract the student perhaps refers us to a transmissive teaching model and reminds us, as mentioned at the beginning of the paragraph, of a “lean office” or non-place.

But which place does the teacher or the student want to represent with the image of neutral background without any contextualization? They are certainly not looking for relational or historical identity places, so, at the end, it looks a lot like Augé’s non-physical places where the person is only what he does or who lives as passenger, customer or driver: in this case, as a teacher who “imparts” the lesson by online connection with the students. The polarization of the attention on oneself in order not to distract the student perhaps refers us to a transmissive teaching model and reminds us, as mentioned at the beginning of the paragraph, of a “lean office” or non-place.

For having a good online lesson, our point of view is that there may be elements, anchors, even metaphorical ones that can be remembered as places, made by people also in relation to discipline. These anchor-places can be represented by backgrounds to contextualize the subject, but above all, to meet and also help online and to have an experience precisely to avoid Han’s nihilistic thought: «you go anywhere without experience. We take note of everything without ever reaching knowledge. We crave lived experiences and exciting emotions in which, however, we always remain the same. Friends and followers accumulate without ever truly meeting the Other» [18].

6.2. The “school” category as an emotional place for students and as a comfort zone for teachers

“School-discipline” is the category most chosen by teachers (30%): one teacher out of three chose the school context as a background. This seems to us a comfort zone where the teacher feels at ease because of known contexts, but at the same time it could also be interpreted as a non-place, where the interaction with the environment is very limited. Somehow, if we sum the “school” background with “neutral”, almost 60% of teachers still have the conviction that their figure is self-sufficient and that the context could not add anything to their teaching.

The images with backgrounds that recall both internal and external of schools represents 15% of the students uploads. It is striking that the idea of the classroom, even in the very young (10-14 years), is still very transmissive with the desks arranged in three rows in front of the chair.

In this category, we have included all the backgrounds related to the school as a concept, both the environment and the teaching, both the exteriors and the interiors. The category is extremely interesting for those who study learning spaces because the pupils show us how they perceive the classroom, teaching, the teachers, the physical school space, but also more affective aspects related to these environments.

Almost all of the images refer to an extremely traditional environment with a transmissive didactic. An example for everyone in which the image represents a completely classic classroom with the arrangement of the desks in a classic way for a transmissive lesson: “Colorful and welcoming classroom, equipped with all the necessary material for the quiet development of the lessons” (female 15-18 years old). Only one student uploaded an image of an innovative school, with the setting up of the spaces that make one think of the Agorà of the INDIRE 4+1 model⁶, with the comment: “A modern school but one that remains serious“ (male 10-14 years old).

From this category, the need to re-read the spaces in order to include spaces for Digital Learning emerges. A student says: “It would be nice to have the image of our school during the lessons” (female, 10-14 years old). Always referring to the external image of the school, and to the need to ideally “unite” these two spaces, a student declares: “It would be desirable to consolidate the scholastic aspect of video lessons and have a similar background so as not to detract from teaching” (female 14-18 years old). Another student comments an image of a quiet living room-dining room (presumably her house): “I would love it if, at school, you could breathe the air of home, perhaps with some more furniture in the classrooms and more light” (female 15-18 years old).

⁶ <https://www.indire.it/progetto/11-modello-1-4-spazi-educativi/>

The pragmatic gaze of this young makes us question what a classroom means for boys. An image of classical classroom, however without a teacher or pupils, with the comment: “A classroom is a room where there are pupils, and professors to teach” (female 14-18 years old).

The image of the school from the outside recalls the centrality of the school in the life of young students, a feeling of nostalgia and the need to go back to school: “I chose this image as a setting for classroom teaching because it reminds me of traditional lessons and above all the traditional school” (female, 10-14 years old). Sometimes, the images also tell us about the idealization of the professors. Image of a very luxurious room with caption: “I expected professors like those who supported us to have expensive, luxurious houses but instead I found that they are normal people” (male 10-14 years old). It therefore seems that Digital Learning also carries some elements of reality.

Finally, the emotional side with the image of the outside of the school: “The school is a beautiful place where you share sad and happy moments and create new friends” (male 10-14 years old). Another student: “The photo I uploaded is a photo of my school that I missed very much in this lockdown period and that I would like to see again in September” (female, 10-14 years old). And always with the exterior of the school: “I really missed school in this period, so I wanted to put this photo because I hope to return soon” (female, 10-14 years old). Again, an image of the outside of the school with caption: “It's a blackboard with the words welcome back to school” (male 10-14 years old).

With respect to the course subjects, whilst for the teachers many backgrounds could reflect the subjects taught, one student uploads an image of a chalk blackboard with a geographical map next to it stating: “So the professors with the blackboard and a map in the background can facilitate the explanation” (female 10-14 years old).

It is striking that 17% of youngest students (10-14 years old) express an emotional feeling between the image and the related caption. We speculated that it was the younger students who missed school the most.

Addressed to teachers, the “school” category could have been more correctly called “discipline”. The teachers’ comments mainly refer to this category (30%) because all the answers are strictly concerned to their classroom and their discipline, and almost consider the background as a visual support to the lessons.

On the other hand, some of them have seen the possibility of interacting with the background as in these two cases: “I would choose a simple background in order not to distract their attention and would focus more attention on the feedback to collect as many inputs as possible to improve skills and knowledge of both the protagonists of the relationship” (female over 51 years old teaches at primary school). Another: “Backgrounds relevant to the topics of the lesson or to the socio-cultural theme of the day (as Google does when adapting the logo). There are events and anniversaries (Day of Remembrance, Pi greek day, just to give contrasting examples) that could offer ideas for graphic research while giving tools for in-depth analysis and reflection” (female over 51, teaches in primary school).

6.3. Contextualizing the educational relationship: Nature allied for study

Compared to the data for both student and teacher categories, the images or comments regarding the setting outside the classroom concern 40% (nature + culture) for students and 32% (nature + culture) for teachers.

About this category, we think that information inferred by the data are mostly due to the particular period of the lockdown, when both students and teachers were locked in the house. If the data were confirmed also during the Integrated Learning, we would have a clearer vision of the possible role of tangible and intangible cultural heritage in the school, and also of the fact that the context and setting can be part of the teaching levels, and not just an accessory in a particular way.

Perhaps, for the students this represents a transition as their second choice are images of nature for 27.3%. It has just been established that nature and images of nature are not a distraction, but rather they represent relaxing moments that help concentration⁷.

⁷ Etwinning Conference Pettenati, de Maurissens, Mansion, Educazione alla sostenibilità, June 18 2020. <http://www.indire.it/2020/06/16/educazione-alla-sostenibilita-il-18-giugno-un-webinar-con-hubert-mansion-delluniversite-dans-la-nature/> : “recover their attention threshold and it has been measured in very interesting research that there is an increase in employee

The images of nature have been understood in the strict sense, mountains, forests, sea (which are the majority), flowers, animals, but also the representation of flowers in a painting. Many students invoke feelings such as tranquillity, relaxation, calm, but also concentration and recalling the beauty of nature, etc.

Here some examples follow: image of a sky with white clouds with the caption, "It calms me to see it in a calm background" (female, 10-14 years); image of the blue sky with the caption: "An image that represents the ideal climate I would like in class, that is, a serene, relaxing and stimulating atmosphere, all at the same time" (LGBTQ 14-18 years). Another: "The uploaded image gives me a sense of tranquillity and calm that I sometimes lose during lessons". (female, 14-18 years). Nature seems to be an ally for studying: "I would like to have this image because it inspires me with joy and light, very important and fundamental objects that would be used when studying" (female, 15-18 years); a young student with the image of a cherry tree in bloom and the caption: "It reassures me" (female 10-14 years).

Nature as a neutral background also helps concentration: image of the sea with the caption: "The sea relaxes me and helps me concentrate" (female 15-18 years); image of a cliff with caption: "the sea (is) a source of inspiration" (female, 10-14 years); image of a woodland with the caption: "Being in contact with Nature" (female, 15-18 years); image in B/W of a storm with the caption: "Even before a storm, the beauty of the sky is priceless" or (male, 15-18 years). Image of mountains with caption gives a sense of freedom to this student: "This photo was taken in the mountains and gives me a sense of freedom" (female, 15-18 years). To conclude, among the many comments, the image of a crystalline sea recalling the poetry of Ungaretti: "I light up with immense" (female, 10-14 years); a young student who would like to have lessons outdoors, whose image shows a beautiful landscape with the caption: "I'd like to have lessons outdoors" (female 10-14 years). For this category, younger people have a slight tendency to prefer images of nature as the backgrounds for their classroom.

In the teacher uploads nature represent 12% of the total images. Perhaps this is the largest gap of an idea of backgrounds between teachers and students, but some teachers attribute substantially the same benefits as students to the presence of nature: "Natural backgrounds because they are relaxing and instil confidence" (female, over 51 years). A teacher uploaded an image of an immense forest, another "trees because the child feels free" (female, primary school 36 to 50 years). Another one is lucky enough to have a view of the garden of the school: "The ones I have in my school, that is, glass windows from which you can see the luxuriant vegetation of the school garden. To feel immersed in nature" (female, over 50 years). A comment that we find truly effective in terms of sustainability in the criteria "nature" but also "discipline" is the following: "A wonder of nature ... uncontaminated again?" (female, over 51 years). Another one refers to the enhancement of the territory: "The naturalistic ones of their own territory because I love it" (female, over 50).

6.4. The Culture category: the book renaissance

The "Culture" category represents 12% of the images uploaded by students about what they would like to see behind their teachers. Many of the images uploaded in this category refer to libraries, which can be summarized in this image of a library with the following comment: "The library image is the equation fitting of knowledge = of power = of energy" (female, 15-18 years). Libraries and books are the majority, but there are also some European capitals, monuments, squares.

productivity of 25% when offices are "vegetalized", so it is enormous: 25%! And exactly the same thing in schools. By giving the child taking a lesson the ability to restore his attention, he is allowed to some extent to "leave and then come back" and this allows him to stay (attentive) much longer. Among other things, in the offices, when the impact of "a view on nature" was studied "in relation to professional absence", what is called "sick leave" people who leave because they are sick, have seen a reduction of 15% compared to those workers who had no view of nature. Therefore, if it is true for the attention of employees and also true for the attention of children, it is therefore very important to start by saying that we must make the educational environments alive (full of life). It is necessary for the child to be in contact with living elements such as in offices because absenteeism will significantly decrease. What has been measured in the experiences made in nature with students, what is called "redirections" has been studied and that is the number of times the teacher has to stop to redirect the students' attention to do what they ask for. do. These redirections in the moment in which there was a context of nature decreased drastically. It is therefore proof that where there is a visual context, because we only talk about this, there are other aspects, but a natural visual environment allows them to renew their attention and keep their energy within the group. I wanted to add that as far as social interactions between children are concerned, if there is a courtyard with natural elements it is evident that the interactions are much richer, and I think this also constitutes, I myself am a teacher, I know the problem very well, I teach adults, but I know very well, that they need to have social attractions and team spirit to want to continue together, and this team spirit is manifested even more with activities that take place outside in nature.

Another comment underlines the analogy of the book with the computer caption. “I chose this image because due to Covid-19 we have studied some topics from a computer that has now become our book” (male 14-18 years).

The presence of books and libraries is therefore still very rooted in young people as a symbol of culture in contrast with the data on scarce reading by young people as already noted. In the OECD Pisa 2018 report⁸, Italian students obtained 476 points in reading, compared to the OECD average of 487 points, ranking between the 23rd and 29th place among the OECD countries.

Only 8% of teachers has chosen this category. In part, this figure is surprising for its lack of representation in a category that perhaps most of all should promote it. We believe that it must be related to the fact that, from this point of view, the school still is not very permeable to the territory and has no effective link with culture. For Italy, assumption strikes and perhaps saddens since our is one of the countries with the most cultural heritage in the world. Depending on the definition of Cultural Heritage, Italy concentrates from 60% to 75% of all the artistic assets existing on each continent.

From 12% of teachers, here is a significant comment: “I would choose works of art, with maxims drawn from literary works. I believe that art is the right background for transmitting positive messages capable of predisposing students to a positive attitude of learning and emotional participation “(female over 51, primary school).

6.5. The Other category denies the teachers’ need for a background

The Other category (6%) contains all the images that are not included in the above described. For students, there is no shortage of peace images. A student has used a character from a famous cartoon with the following caption: “the image I uploaded has a meaning of peace but also of weapons” (male 10-14 years). Another student uploaded a drawing representing Giovanni Falcone (female 10-14 years).

On the teacher side, it is worth noting that many of them have never asked themselves the question of backgrounds, or do not consider it important, or have experienced it and they don't give value. All of them declare that the background does not affect their teaching: “In my opinion, the background is absolutely not an aspect that can affect the didactic action in any way” (female 36-50 years, the lower secondary school); again: “It is superfluous to think about it” (female over 51, lower secondary); a teacher of upper secondary school says: “I don't care” (female over 51 years old); another one: “I don't think it's appropriate, the attention and interest of the students does not depend on the backgrounds but on the emotions they feel” (female, over 51 years old high school)”. A high school teacher commented: “None. According to my experience, the background did not affect the teaching”. In primary school: “In my experience, the background did not affect the teaching” (female, over 51 years, primary school); another one: “I don't think to choose backgrounds, there is much more to do in class than think about the background” (female, over 51 years).

Some teachers consider the backgrounds as an object of agreement between them and the class: in particular in primary school, the tendency is to put the artifacts made by the children themselves in the background. Some example: one asks the pupils to choose: “Multimedia backgrounds, but also some made by pupils” (female, 36-50 years, primary school); another one declared: “I would choose for example drawings made by the children themselves” (female, 36 to 50 years, primary school).

Even upper secondary teachers express this concept: “It would be advisable to choose with the children to make the environment more encompassing, to give more personality to the environment” (female, 36-50 years). Other teachers would take the children themselves as a model: “Background walls with images of children engaged in group work”, and “background with images of children engaged in group work” (females, over 50 years old in upper secondary school).

Another group choose “familiar backgrounds” without specifying which ones (35-50 years old, female, upper secondary school), or prefer “Images of real life” (female, upper secondary). And again: “the more familiar environments allow for greater empathy” (female, over 50 years old primary school).

Finally, we can hypothesize that the Distance Learning weakened the division between the professional and personal world when a teacher declares: “An environment with many books, a small sofa and a coffee table in a corner of the classroom...” (female, over 50 years old, primary school);

⁸ https://www.oecd.org/pisa/Combined_Executive_Summaries_PISA_2018.pdf

another one: “Background with domestic furniture, to favour the welcoming atmosphere during the lesson” (female). The inclusion of the family would be also a good solution: “Backgrounds with personal and family images to connect with students and build trust” (female, upper secondary school). About the lack of technological support some teachers declared “To have at least one interactive whiteboard”.

7. A final overall analysis of image data

The great quantitative difference between the data uploaded by students and teachers shows the ease of interacting with images by the young and the different “weight” of respective visual subcultures.

Moreover, the overall analysis of images and captions shows that the students’ awareness and maturity in describing the chosen images is striking, even in the 10-14 age bracket. They provide comments such as two different descriptions of images representing waves: “The uploaded image gives me a sense of tranquillity and calm that I sometimes lose during lessons”: (female, 14-18 years); “I would like to have this image because it inspires me with joy and light, very important and fundamental objects that would be useful for studying” (female, 15-18 years).

The images they uploaded are a mine of various information on their cultural and social behaviour. As an example: the cultural background chosen by 12% of the students, often represented by books, shelves, libraries, is in clear contrast with the national data on reading. These images show the social constructs of meaning on the part of the subjects who produce them, and of particular interest is the reason why teachers and students have changed their backgrounds.

By The visual analysis we notice that the teacher seeks interaction, the student seems to denote a narcissistic trait. But, in our opinion, this is not only the case: «the smartphone has the function of a digital mirror for the post-infantile reenactment of the mirror stage: it opens up a narcissistic space, a sphere of the Imaginary in which to close oneself» [19]. Seeing it from another aspect, the images for the students are intended as conversational, in addition to the evident daily immersion with video games and social networks. While the teacher not frequently uses the images, and the visual is a means which he has yet to learn to use not as illustration but as data.

This is an uncharted question of the educational relationship, in the sense that: «the digital connection favours symmetrical communication» [19]. Many teachers are used to talking face-to-face to their students but, in Distance Learning, they see themselves only mirrored by their own camera: as Byung-Chul Han [19] states, gazes never meet online. In addition to centrality of the face [20], the background in the screen opens up to an elsewhere. The digital backgrounds, unlike the classroom (indoor), open up to the environment (outdoor). All these aspects have been summarized in the diagram below (Fig. 9), which was partly based on the one proposed by Prosser [21] but adapted to Distance Learning for illustrating the visual subcultures and their intertwining.

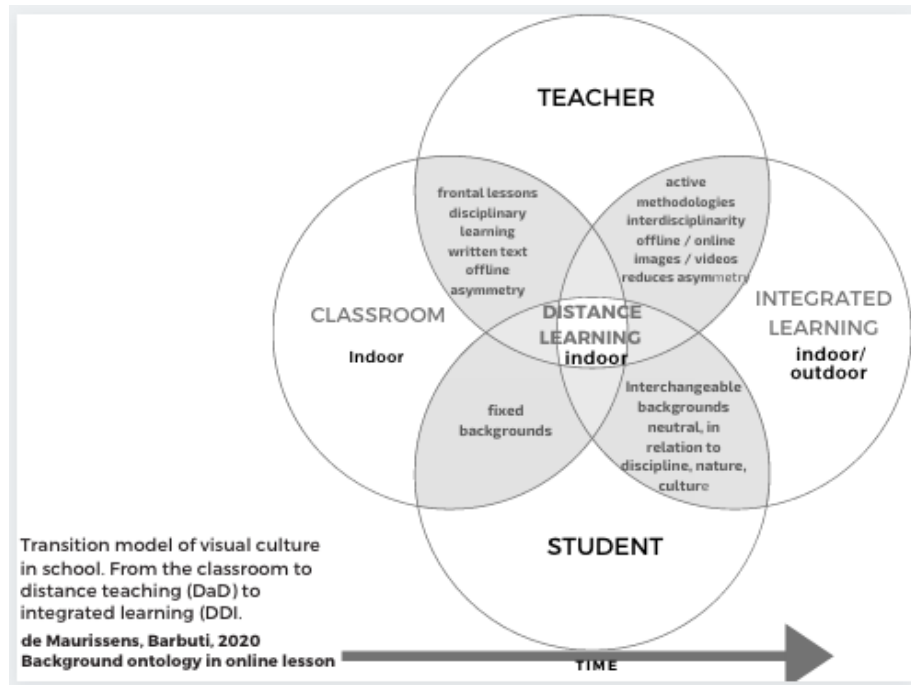


Figure 9. Visual Culture in Distance and Integrated Learning

The scheme illustrates visual culture in a diachronic way showing the elements it has influenced in the past, and the elements that will influence the visual culture in the future. The concept of the diagram starts from the diachronic assumption that Distance Learning has constituted a hinge between past and future, due to the impact of Digital Learning on a global level, for the radical change in the way lessons are given (with pros and cons) and for the massive use of digital methodologies and technologies. But also, as revealed by this research, of a nascent epiphany of visual culture in teaching. In this sense, the Distance Learning is a transition that will also have consequences in the visual culture of the school.

8. Conclusions

Many national research and surveys were done during the Distance Learning due to COVID-19 pandemic, which revealed a high level of concern with respect to educational poverty, inclusion/exclusion, connections and, in general, the difficulty of adapting to a means that prevents the educational relationship rather than favouring it.

The present research investigated several various aspects arisen during the Distance Learning, with the help of structured survey about digital backgrounds behind the teachers and students during online lessons and the answers of 1,283 and 1,018 participants whom we thank. We aimed to analyse and highlight some unexpected relapses of Distance Learning, including the improvement of visual culture by the teachers and students. Virtual backgrounds positively impacted especially the teachers, changing their perception of the visual and exploiting this communication method in online lessons.

We carried out the analysis from a diachronic point of view, considering the Distance Learning as a real epochal hinge between a before and an after that will lead to a change in awareness of the importance of the use of images and of the visual, not only in terms relational but in terms of attention, motivation and involvement that have a great impact on teaching.

Some teachers have found that they can have an influence on attention and class involvement through their backgrounds. They can use them for teaching and as visible allies to support discipline or motivate their students. They can also involve them emotionally or support urgent social questions (e.g., climate change).

Why not take advantage of these allies in the classroom from an Integrated Learning perspective? The data inferred by the survey clearly shows that the background used by the teacher in the online

educational relationship with their students can be an important additional way to speak a common language through images.

Furthermore, the visual data related to images we asked participants to upload give us a lot of other useful information. First of all, regarding knowledge of the students' vision and gaze: for example, 12% of them uploaded images of books or libraries as background they prefer to see behind the teacher in face-to-face learning, against 8% of teachers who find it useful to have a library behind them.

Secondly, as educational strategies. The teacher reveals himself by showing his own face and expects the same thing from the students, who instead sometimes turn off the camera resulting in decreased attention. Attention is «the recognition of the Mastery of the Other» [18] and eye contact helps effective communication: the backgrounds reinforce it, and the attention to online learning is «the main concern of parents, who for 45% see it as the central problem of Distance Learning» [6].

Another important point uncovered from the research is related to visual culture in face-to-face-learning: this culture does not consist of a single granite block but is composed of many different subcultures. This has emerged from the images we asked to upload. The quantitative difference between students (100% uploads) and teachers (7,2% uploads) perhaps demonstrates that, for students, images are “conversational” forms, term used by Jurgenson [22] speaking of selfie but which can also be extended to images of backgrounds uploaded by young.

The qualitative data also shows that the relationship with the screen is different between teachers and students: if on the one hand the modification of the backgrounds was at the service of the educational relationship for the teacher, the same modification on the part of the students was first of all to feel more comfortable in front of the screen (70.6% of the students).

In our opinion, it would be wrong here to read only a narcissistic trait, its rather a conversational way of communicating by students who are perpetually immersed in visual landscapes. For example, the most popular social network “Instagram” (nearly 1 billion monthly active users, January 2020) use images as a way of communicating. As we know, Instagram is used by 69.8% of young people between 13 and 34 years⁹.

The diachronic evolution in the use of images between students and teachers influences and will influence the way they will communicate in teaching, but even if it were just a form of more empathic dialogue with students it would already be useful.

Despite everything, most teachers chose a neutral background as the ideal, many of them considering it opposite to the good performance of the educational relationship. It seems that the neutralization of places, the so-called “lean-office”, has been a strategy constantly pursued in the various eras, even in face-to-face learning, probably in the belief that the educational effectiveness of teaching is inherent exclusively to the teacher, and that everything that goes beyond his person can compromise him, especially if the context in which the teachers is involved is not neutral.

Whilst many teachers affirm the uselessness of virtual background, in reverse, a young student (10-14 years old) uploaded the image of the Italian flag stating: “It is a background that represents this difficult moment we are experiencing. Italy is united, and I would like to see this background in the classroom”. In other words, it seems that many teachers do not perceive visual elements as possible “allies” in the educational relationship, and, on the other hand, in some cases the visual seed that has been planted affects students' awareness of its potential role.

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