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Who designs the classroom's images? Study of visual culture diversity at three Valencian schools

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The research reported on here elaborated on the effects that images displayed on the walls have in schools as a variable in evaluating the educational quality. Mixed methods were used to analyse the images displayed on the walls of 27 classrooms to determine their provenance and authorship. The results show quantitative, qualitative and aesthetical values of the school visual culture, thanks to the numerous photographic series (resembling in graphs) which are a testimony of each classroom. After the typologies of the displayed images at the schools had been documented, it was demonstrated that images mostly come from the school products industry and from faculty members.¹ The kind of analysis and the conclusions that were obtained could be considered in other contexts of schools with cultural diversity. Four alternatives are proposed in order to improve schools' visual culture diversity: 1) consensus between the entire educative community – both adults and children selecting which images should adorn the classroom walls; 2) an increasing of external images, but generated by students and teachers about their personal experiences to increase the sense of belonging in the classroom; 3) a greater presence of internal images created by specialised agents, that enrich the learning processes, diversity, iconography and style of the images; 4) the emphasis of elementary teachers' visual education to integrate images pedagogically.

Keywords: educational quality; images; mixed methods; school; visual culture

Introduction

This research formed part of a project entitled “A study of the aesthetic quality of three Valencian schools” (Spain). Throughout one year we observed three principal aspects of the schools' environment: the architectural conditions; its users' sensorial perceptions; its visual culture. All of those aesthetic aspects are involved in the process of teaching and learning, thereby influencing the quality of education. The focal point of this article is visual culture. Visual culture is a broad concept, and in this article it is limited to the way that Pauwels (2006) describes it, i.e., in the sense of visual productions exhibited in schools, for example pedagogical representations such as wall charts for classrooms. This article elaborates on the educative effects of images displayed on the walls such as classroom wallcharts, pictures, drawings, photographs, maps, diagrams, graphs, illustrations, etc. School visual culture is considered as a variable in evaluating the educational quality. The emphasis is on who designs or produces them, e.g. faculty, students,ⁱⁱ families, governments, advertising companies, book publishers.

The variables affecting quality in the education environment are diverse, depending on the field of knowledge used in handling this subject. In this article we concentrate our focus of interest on improving the quality of education in visuals aspects, especially the improvement of the visual culture diversity. This research was focused on objective visual features of classroom's images, such as their visual structure or visual construction. These characteristics determine who produced an image (authorship) and where it was produced (provenance).

The images on the walls, which were analysed in this research, make up a “global visual structure.” In said structure, these school images, combined with numerous factors are possibly both the institute's participants' mood sources, as well as concept transmitters of what and how the school environment may be perceived.

Three schools, very similar in architectural structure but very different in the cultural characteristics of their population, were selected to determine whether the visual culture displayed on the walls showed this diversity. All over the world, schools are using pictures on their walls. In other countries and continents like Africa with such a diverse cultural reality, it is interesting to make visible the cultural values of the different tribes, the ethnic minorities against a normalisation that could even impose a Western aesthetic coming from the great publishers. These posters can be distributed to schools by the provincial districts of education, but the walls in the classroom can also be adorned with projects and posters of different learning areas (Vandeyar, 2010). Teachers need to be aware of the fact that the determination of cultural and didactic values of the images can be forced by the intentions of those who produced them and by their cultural context. Images can also be understood as “productions conceived like tactics of power by certain social groups, with the purpose of legitimizing values, cultural beliefs and behaviours” (Huerta, 2019:86). Therefore, it is important to know whether those images were produced and created by individuals, groups of people, organisations, institutions or entities, since their intentions and the quality of their creations may be different. Teachers should consciously decide who should design those pictures. In this research, we focussed exclusively on the provenance and authorship of the images as that which “states a relation or relationship with the institution(s) or person(s) that

produce said images, and therefore provides records to reveal who – directly or indirectly – influences and/or ‘edits’ the visual content exhibited on the walls” (Errázuriz & Portales, 2014:139).

The source of the images (depending on who designed it) sets constraints on the nature of the images, and with it the consequences in the school. From this perspective, we distinguish between the external, internal or combined origin. We say that an external image is one that is produced or composed outside of the schools. Internal images are those produced inside the educational institution. An image is combined if its production is initiated outside of the school and finished inside, or vice versa. Like Errázuriz and Portales (2014), we distinguish between external, internal or mixed origin, but for the discussion of the results we also considered another aspect: what kind of agent (school staff and students, or external persons) produced the external images.

The images classroom walls were initially made manually by teachers and students (internal origin). From the mid-nineteenth century, classroom wall charts (diagrams, graphs, or classroom wall illustrations) were introduced as a form of educational technology in primary schools across Europe (Dane, Earle & Van Ruiten, 2011). According to Evertsson (2014), in Europe technologies convert wall illustrations (imported initially from Germany) into an important teaching object and a means to introduce new pedagogical ideas; extended to most local schools at the end of the 19th century. According to Bucchi (1998), during the period before the First World War, the use of visual diagrams (wandtafeln or wall charts) produced with lithographic techniques (external origin) was generalised in classes in Germany. Since that time authorship was situated inside or outside the educative community and the images could have an external, internal or combined origin. Sets of charts that combined clarity, size and precision became some of the most important means for teaching and learning at different levels of education and in different fields during the 20th century. The origin of the success of wall charts as a means of visual communication and diffusion in education, resulted from technical advances in printing technologies and educational reforms (Pauwels, 2006). Nowadays, other reasons can be considered in finding different types of sources in school images, such as a lack of artistic skills, a lack of artistic techniques, and the abuse of information and communication technologies.

Conceptual Framework

External images

External images are created outside of the school. They may have their origin in people from the educational community itself, or in external agents

unaware of the school reality, or even from other cultures. The determinant factor is where they were created, but it is also important to distinguish who produces them in each case, due to their influences on educational quality.

External images from external agents

Among the external agents that provide images to the school, we distinguish the child product industry, which mainly produces children’s books, music, toys, clothing, processed food and accessories; school publishing companies, which produce school materials; the local, regional, and central governments, which promote all types of health, sports, and environmental campaigns; the mass media, which generate audio-visuals, movies, short films, press, cartoons; and lastly the advertising industry, which advertises images from any of the above materials and are converted into marketable products.

External agents’ interests are monetary, and this brings with it the intent to manipulate potential consumers’ free will, whether or not they are teachers or students. The external images, originating from external agents, end up quietly imposing an ideology, through strategies of “symbolic violence” as: “naturalisation, invisibilization, authentication and trivialisation” (Zafra, 2011:62).

External images from internal agents

Nevertheless, external images created by internal agents operate in a different manner. They are created when individuals deliberately produce images for school use, but the images are not related to the academic programmes; they are produced in informal settings, such as visits to museums, field trips, after school activities, extracurricular classes, or at home. However, this type of visual flow finds fewer gaps to penetrate into schools; its interfering power is therefore minimal. Subsequently, the students’ and staff’s aesthetic interests, tastes and preferences with regard to their own life experiences (Dewey, 1949) remain ostracised.

Internal images

Internal images may also come from the schools’ external agents, as well as from internal or mixed agents. Once again, the determinant factor is where the images have been created, but it is also important to distinguish who created them in each case, since they affect the educational and cultural qualities.

Internal images from internal agents

Even though internal agents (implying teachers and students, jointly or individually) create most internal images, we need to analyse the role that external agents play in the academic projects, once

having gained access to the schools.

Internal images from external agents

Usually, in order for external agents to be allowed onto the school premises, their motives must be educational; when in reality, sometimes their goal is for commercial gain. In some cases, these external agents develop awareness.

In other instances, the schools receive visits from people unaffiliated with any institution, company or producer; they are just specialists who have been invited due to their level of expertise in school-related subjects, such as artists, doctors, athletes, musicians, poets or researchers.

Hypothesis

The images displayed on the walls of the schools (subject to its source and authorship), are a variable in evaluating the visual culture diversity for educational quality. Related to the images' provenance, the following is important: 1) diversity of image iconography, its style and its origin, 2) an accurate quantity of certain images, 3) image variety, and 4) appropriate planning from an aesthetical-educational perspective. The deficiencies, weaknesses or lack of these factors, result in the deterioration of the quality of the school environment, and consequently of the education (Errázuriz & Portales, 2015b). But people who are involved in the provenance of the images are also relevant for the visual culture diversity, depending on whether they are external or internal school agents.

The reasons why some schools have fewer or more images on their walls could be due to the faculty's identity, attitude and profile (age, gender, beliefs and education); the level of the teachers' involvement during their teaching careers (Huberman, 1989; Sikes, Measor & Woods, 1985); the policy and philosophy of the academic project of each school or the pedagogy trend; the relationships between the teachers; or the faculty's contractual conditions.

The objective of this article was to choose and record patterns of the visual school culture in an aesthetic manner. Based on the images' origins, we illustrate the visual culture diversity profile in order to gain a better understanding of the educational quality.

Methodology

Epistemology

In this investigation, the study population was chosen based on the ethnological epistemology of the observation. According to Augé (2000), it is necessary to circumscribe the limits of the groups in a way that they will be realised based on four parameters, which we tried to follow: 1) the guarantee of the effective contact with the interlocutors, in our case, with teachers and students from three schools; 2) the chosen groups are the representatives of a qualitative level – what is valid for one ethnic group can also be valid for similar ones; 3) a close observation is possible so that researchers have the ability to generalise; 4) individual representations can be considered as social constructions.

Population

The researched classroom images were from three different educational establishments (pre-school and elementary schools): CF, JCA and MLS (abbreviated acronyms were used to refer to the schools in order to adhere to ethical considerations and keeping the schools' identities private). The group was characterised by its social diversification (see Table 1). In each school we studied three pre-school classrooms (between the ages of 3 and 6 years old), and six elementary classrooms (from 6 to 12 years old) – images from 27 classrooms in total.

The teacher's ethos was obtained by means of participant observation in each school. At CF, most teachers were younger permanent teachers with about 10 years' experience, with good and friendly relationships among themselves. They enjoyed teaching using standardised textbooks while implementing project-based learning. The teachers at JCA were older, closer to the end of their professional careers, and had worked at the same school for years. They maintained cordial relationships among themselves, but balkanisation among them was clear (they only collaborated with selected teachers) (Fullan & Hargreaves, 1992), and they were more likely to teach using only textbooks. The teachers at MLS varied in age; most of them were temporary workers, which lead to unstable staff relationships and support, and to the excessive use of predesigned and standardised pedagogical materials.

Table 1 Characteristics of the schools where the research was carried out

School	CF	JCA	MLS
Year built	1970	1976	1974
Number of classes for each school grade	1 (previously a single school)	1	1
Location	Rural area near an urban city	Urban city	Ghetto. Special Needs Centre
Student body profile	Most students come from domestic and transient families	Most students come from immigrant families	Roma ethnic

Method

We chose to use plural or mixed methods due to the increasing interest in this type of research (Creswell & Garrett, 2008). Therefore, the methodology used in the different phases included mixed methods. Firstly, art-based research (Marín-Viadel & Roldán, 2016; Roldán & Marín Viadel, 2012) was used to collect data through photographic methods. Secondly, data analysis was done from a qualitative perspective – content analysis of the images was used to categorise them. For a better interpretation of the results obtained, some quantitative statistical analyses were included. Finally, the presentation of the results was based on visual research methods (Karlsson, 2001; Lipponen, Rajala, Hilppö & Paananen, 2016; Mitchell, 2008; Nguyen & Mitchell, 2012). Initially, data were collected from photographs of the images that were present in the classroom surroundings. The documented images came from walls, windows, bulletin boards – all constituting the schools' visual culture. The diversification in the images was widely documented.

During classroom visits we used an observation criteria framework answering the following preliminary question: What are the images' provenance and authorship?

The images recorded in the classrooms were classified according to groups of analytical meta-codes classified from the question raised above: "this project falls into qualitative interpretation research perspectives; said method supported by the characteristics of the researched theme and the stated questions raised" (Augustowsky, 2003:42).

No images were deleted or discarded for analysis, except in instances where several students had repeated the same artwork. In said situations, an on-going progressive selection process was conducted with the goal to identify patterns in the researched matter and create an inventory of images.

The statistical analyses obtained via the Statistical Package for the Social Sciences (SPSS) 22.0 program were descriptive statistics, verifying compliance of the normal distribution for the selection of the statistical hypothesis test. The Kruskal-Wallis H^{iii} test was used for the contrasts, given that the distributions were not normal.

Later on, we constructed a visual presentation, based on photographic series, laid out similar to graphs. This presentation shows the school's visual cultural diversity. The series were laid out in such a

way that qualitative, quantitative and aesthetic values could be visualised (see Figures 4, 5 and 6).

Data Analysis

The three researchers in this project (two doctors in the teaching of visual arts, and one doctor in archaeology) develop validation models of findings by means of analytical triangulation. The process began with the researchers viewing the images together while discussing corresponding emergent topics and their classification. Once a structure for analysis based on the theoretical revision was reached (see Table 2), the process of categorising the images began. Each researcher was responsible for analysing and classifying the images from one of the three schools. However, we realised that a revision of the structure was necessary, which was subsequently discussed among us (see Table 3). Once the images of each school were coded by the responsible researcher, the other two researchers reviewed the coding. In some cases it was necessary to change the codes for certain images to more aptly describe the image. Said critical cases were discussed jointly by all the researchers. Subsequently, periodic meetings were necessary during the analysis process.

The agreed-upon criteria used to carry out the data analysis were the same for all researchers, which constituted the triangulation process. These criteria were the following:

- Utilising the theme classified as "image origin", developed by Errázuriz and Portales (2014).
- Upon analysing the images displayed on the classroom walls, we identified emerging themes that helped complete and redesign Errázuriz and Portales's diagram (2015a), which was used in similar research in Chile. The images were classified according to meta-codes and codes. Codes are the smallest unit with meaning and meta-codes are groups of codes that share similar qualities. These meta-codes and codes were related to the images' content; they referred to concepts and meanings related to what one could observe in them.
- When the displayed classroom images were analysed quantitatively, we analysed the number of images by typology. Therefore, if there were several images repeated with the same meaning, technique, intention or dimension, they were regarded as a single unit. In addition, when there were several images related to the same subject and with the same academic usage, they were also regarded as one image.

According to our framework, the outline that we envisaged is displayed in Table 2. However, this framework was not used for the analysis process; it was only used for the discussion of the results.

Table 2 The outline envisaged from our theoretical point of view

External images Produced outside the school premises	Internal agents External agents	Teachers Students Mixed – teachers/students Child industry Advertising Government Media
Internal images Produced inside the school premises	Internal agents External agents	Faculty Students Mixed – faculty/students Independent specialists Museum personnel Public institution educators Others without financial gain objectives
Mixed images External-internal	Any agent	Others – students/faculty

The image origin (authorship and provenance) was closely related to who produced the images, and not only to where they were produced.

Theoretically, internal and external images could originate from either the school system’s external or internal agents, in every instance. Nevertheless, when the images were analysed, the information about where they were produced was not provided. Therefore, we agreed that, when external agents produced images, they were coded within the external meta-code, and whenever

internal agents prepared the images, they were classified as internal ones. This method was not entirely realistic. We acknowledge this analytical error, which is considered in the discussion that follows.

Based on the categorisation of Errázuriz and Portales (2015a:65), the outline for analysis was configured as indicated in Table 3. Some codes of which no examples were found (e.g. Catholic Church), were eliminated.

Table 3 Findings in the outline of the topic category: Image origin

Category	Meta-code	Code	Explanation	Findings	
Images’ origin (producing agents) 1,013	External Created outside the schools 417 41.1%	4.1 child industry	Child or school industry/ industrial object	353	34.8%
		4.2 advertising	Advertising industry	39	3.8%
		4.3 government	Government – national, regional, or local	18	1.8%
		4.4 media	Media	7	0.7%
Internal Created inside the schools 504 49.8%	Internal Created inside the schools 504 49.8%	5.1 faculty	Created by faculty	252	24.9%
		5.2 students	Created by students	140	13.8%
		5.3 mixed – faculty/ student	Images were initially created internally (by faculty) and the students finished them, or initially created internally (by students) and the teacher finished them	112	11.1%
Mixed external/ internal 92 9.1%	Mixed external/ internal 92 9.1%	6.1 other – student/ faculty	Images were initially created externally by students (assignments or projects) and the teacher finished them	92	9.1%

Results and Discussion

Using the categorisation system showed in Table 3, all the images displayed on the classroom walls were analysed. We intend to show the following results: the quantitative, qualitative, as well as aesthetical values of this visual patrimony. This was possible thanks to a series of photographs (see examples of the analysis results of one classroom of each school in Figures 3, 4 and 5) laid out in a way that resembles graphs, creating a visual expression of each classroom.

Of the 1,013 images analysed, the overwhelming majority were coded as internal

images. Nevertheless, considering that internal agents could have created some of those outside of the school premises, the quantity of internal images (504) would be fewer, thereby increasing the number of external images. Thus, the proportion of external images to internal images was evenly balanced.

The number of images produced by the teachers was lower (24.9%) than the ones produced by the pre-school products industry, followed by those created by the students, and those which were mixed, prepared by teachers and students.

However, few images originated from the government or media.

Given that most of the school images originated from the pre-school product industry and from faculty, we can affirm that the images used in classrooms were illustrative of the aesthetics designed, chosen, and preferred by the adults. According to Errázuriz and Portales (2015a:82),

this “implies an imposition of images on the students”, that transmits the adults’ tastes. Huerta (2015:139) adds: “... it is evident that the reality of the children’s world has transformed radically in recent years. Therefore, there is a clear discrepancy between what the classroom walls project and what is happening outside them.”

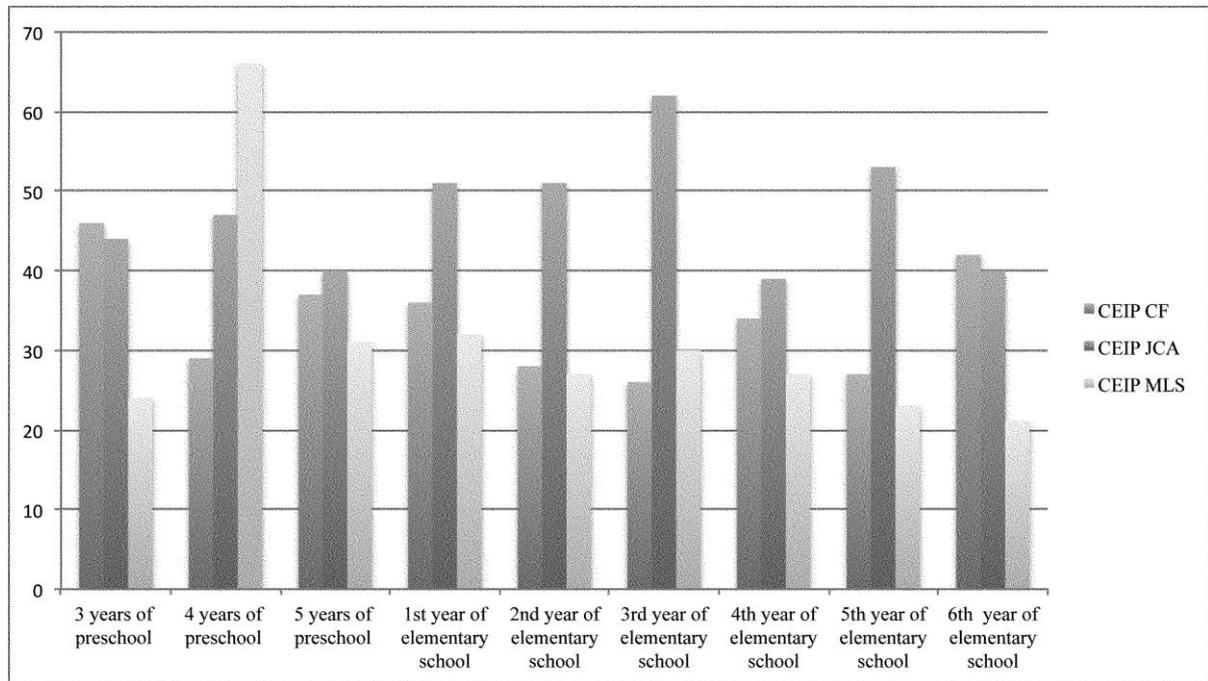


Figure 1 Number of images analysed in CF, JCA and MLS

In spite of the fact that certain characteristics are common to every classroom in each school, in some of them we found that a specific type of image prevailed, while in others, other types stood out. The number of images analysed in relation to the class grade in which they were exhibited, varied in each of the three participating schools (see Figure 1). This indicates to us that there was a lack of school norm or consensus among the entire faculty regarding which images should occupy the

classroom walls. Therefore, we interpreted it as each class member’s attitude, and in particular the class teacher’s disposition, as the determining factor for having a greater or lesser number of images in their rooms. Therefore, the teacher made the decision regarding the exhibits. Thus, the teachers’ personal attitudes, tastes, training, thoughts and ideas regarding the value of the images in education were significant.

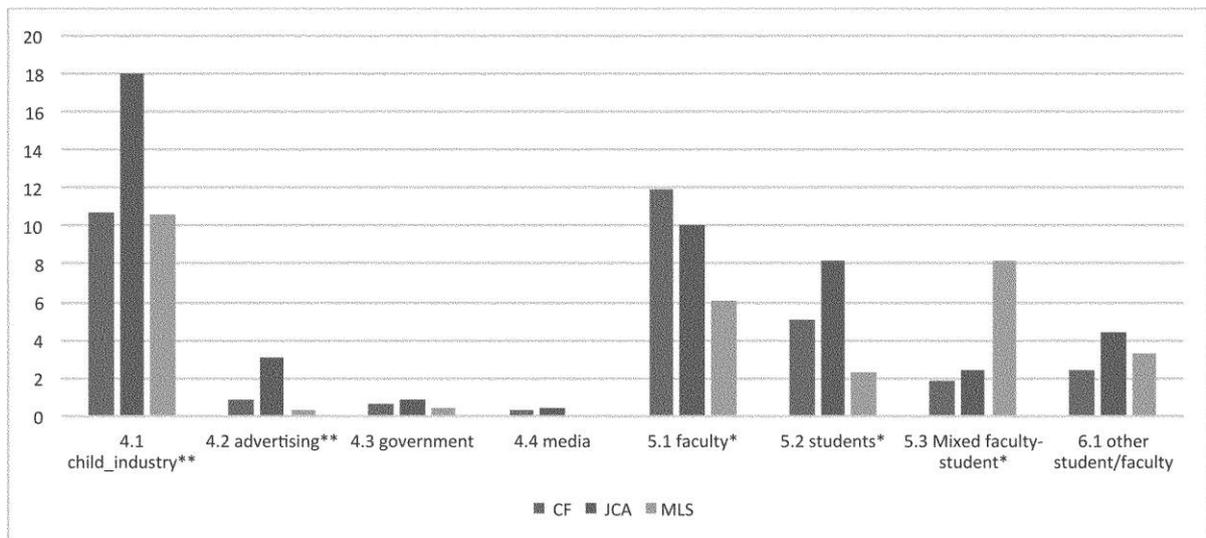


Figure 2 The average mean for each displayed image, based on the analysed categories regarding each school
Note. * $p < 0.05$; ** $p < 0.01$.

Important statistical differences were found in the external images produced by the publishing companies ($p < 0.01$) in the three schools. These differences were larger in JCA (see Figure 2). Furthermore, important differences in the external images related to advertising were prominent as well ($p < 0.01$). For the remainder of the external images, major discrepancies between the three schools were not found. On the other hand, there were significant differences ($p < 0.05$) regarding the internal images in all of the variables in the three schools. Finally, no relevant differences were found in the combined images among the three schools.

Three hundred and five images were coded in CF, versus the 427 in JCA, and 281 in MLS; these numbers were quite different, despite the fact that

each of the schools had the same number of classrooms. We perceived the walls in CF as being completely saturated with images, and we also perceived a high level of educational activity there, corresponding to this large number of images. Nevertheless, the number of images in that school was less than in JCA, as the classrooms of CF were tiny prefabricated trailers. MLS had fewer images compared to the other two (see Figure 2), especially in the elementary school. One possible explanation could be that the teachers were substitute teachers, who changed every school year. They did not amass images from one year to the next, and they did not concern themselves with the aesthetics of the schools as permanent teachers would.

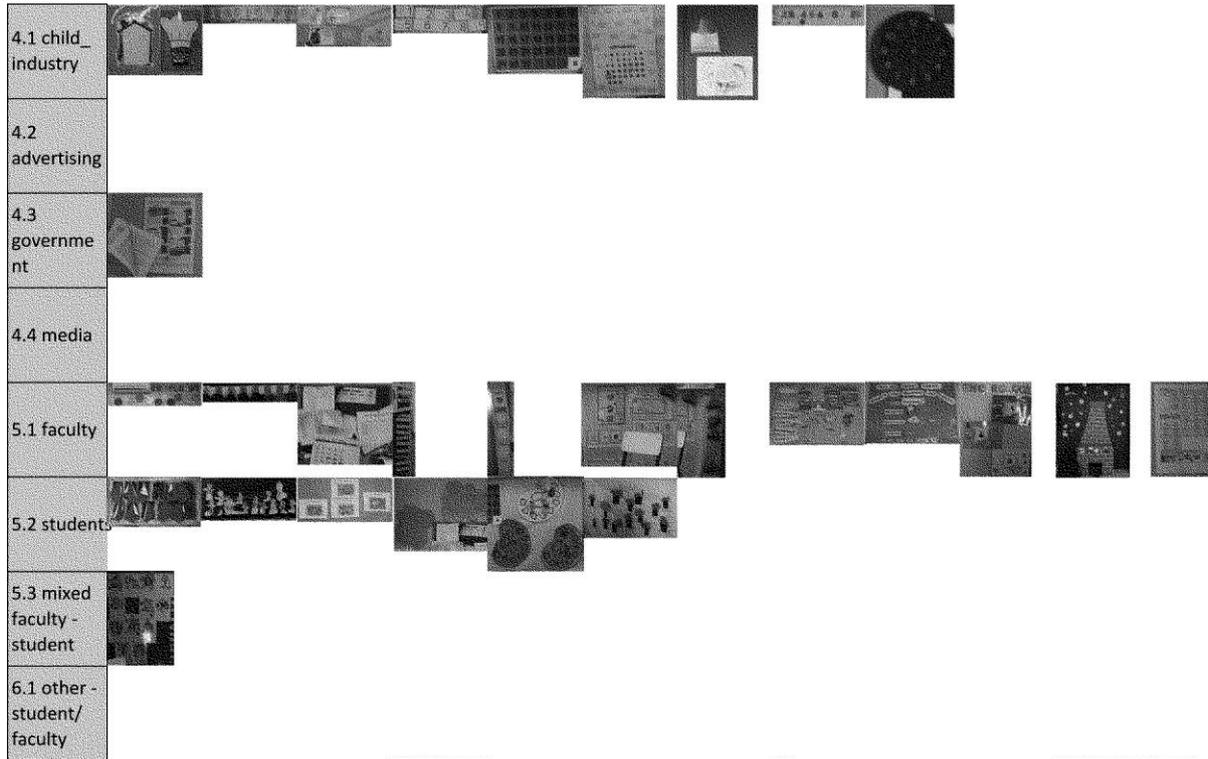


Figure 3 Examples of analysed images in the class of 4-year-olds in the pre-school of CF



Figure 4 Examples of analysed images in the class of 4-year-olds in the pre-school of JCA

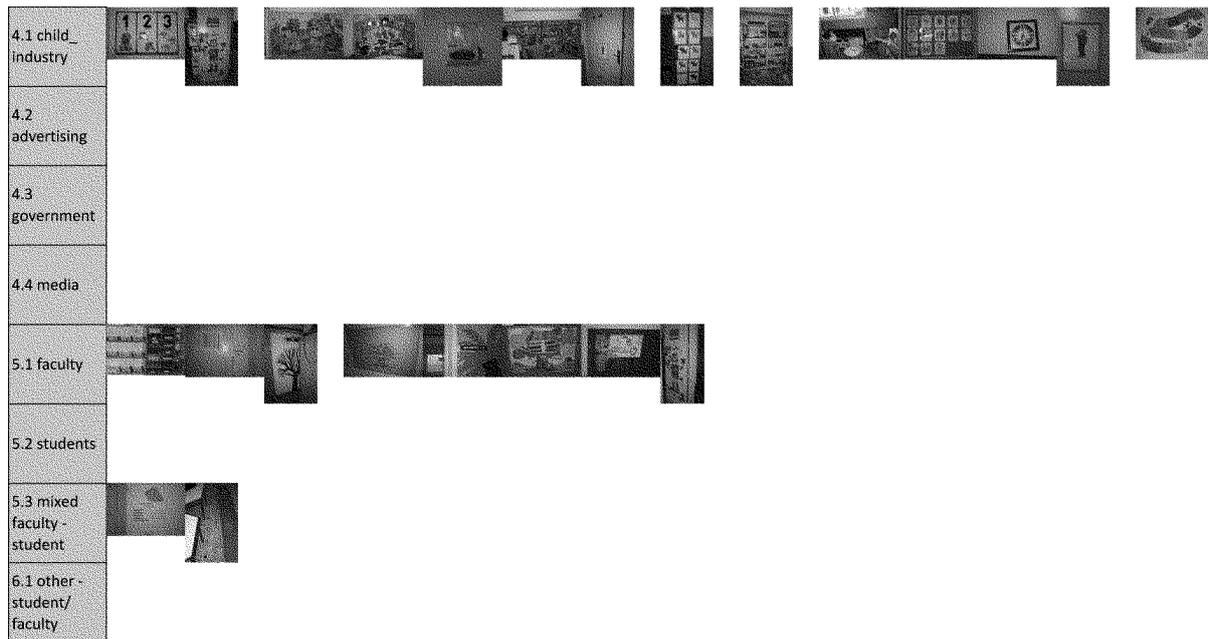


Figure 5 Examples of analysed images in the class of 3-year-old in the pre-school of MLS

Codes with the Highest Occurrences

Regarding the quantitative results for each code, images from the child and school products industry stand out as the most significant, with 353 “minimum units of significance” or different images. In other words, there is a clear dominance of images produced by the child and school products industry (the latter referring to posters, signs, calendars and all types of images created by textbook publishing companies). Particularly (see Figure 2), this high instance of images from the child and school products industry is significant (4.1 child industry**) at JCA, as are advertising images (4.2 advertising**).

All the collected images under the code for the child and school products industry shared a style that we identified as typically childish. These are simplified drawings with round forms, disproportionate figures, saturated colours, simple colours, overly defined outlines, etc.

Based on our research, (see Table 2), we suggest a need for a greater presence of internal images created by external independent and specialised agents, thereby enriching the learning processes and improving the quality of the images in schools. We also suggest the possibility of collaborations with external agents who are specialists in other fields (scientists, athletes, philosophers, poets, actors, journalists, doctors, etc.). Said participation in the schools is more than likely to leave a physical trail via images (drawings, specialised prints, maps, posters, x-rays, paintings, photographs, and so forth). In these cases, the diversity of the image’s iconography, of its style, and of its origin may increase. These professionals have the ability to alter the school

images and steer them towards rigour and up-to-date knowledge. Artist educators, for example, “can act intentionally to create art experiences that counter the sterilising nature of the corporate school environment” (Wild, 2013:288).

The second largest code group included 252 internal origin images created by teachers (5.1 teachers*), particularly at JCA and CF where teacher turnover was low (see Figure 2). Having a closer look at the images under this code, we noticed that the images produced by the teachers included a large number of written documentation (student name lists, calendars, schedules, etc.). This was particularly true in elementary school classrooms. Pre-school classrooms contained a larger number of drawings, stickers, signs, collages, and posters prepared by the teachers. Teachers, both in their roles as creators and selectors of images to be used in classrooms, in many cases quickly submit to the orthodoxy of “school art” instead of aspiring to the transformation of the schools (Wild, 2011:424). Therefore, we feel that an improved teachers’ visual education is required. This entails education where teachers could assess the importance of the images and integrate them as a tool to create classroom theme discussions, and shape identities from a post-modern point of view.

The third largest code group consisted of 140 images, which were produced internally by the students (5.2 students). Generally speaking, few images made by student were displayed in the classrooms. As certain classrooms were exceptions in this regard, it raised the overall percentage for this code. Examples would be: third year elementary at CF; 4-year-old pre-school (see Figure 5), third and fifth year elementary at JCA; and fifth

year elementary at MLS. In all these cases, the number of images produced by students increased due to school assignments, or one particular assignment, created by groups or by individuals, displayed in the classroom. For example, those class works and decorations related to Christmas, Easter holidays, Carnival, day of the Peace. MLS had fewer images produced by the students (5.2 students*) (see Figure 2) compared to the other two schools. This was the result of low student participation in the learning process. All children at that school come from a Roma ethnic background. This is a culture where community identity and artistic expression is very relevant, especially in Spain. Liégeois (1987) considers that Roma art is an art for everything and from everything, inseparable from its social, economic and cultural condition; it is present daily when tracing, driving, listening to music or dancing, by talking, on social relationships and in the party. Nevertheless, this important legacy is not expressed in the school images. The display of images crafted by students “is important not only because students participate in the construction of the visual environment, but also so they project and identify themselves within the classroom and they get a sense of belonging” (Errázuriz & Portales, 2015b:97). On the other hand, students were less motivated to participate in class and to study in that type of school, since they were not encouraged to create their own images. The teachers at MLS seemed to manage this problem by using mixed images, where students were required to finish pre-printed images. This strategy increased the number of mixed pictures

considerably (5.3 Mixed faculty-student*), compared to the other two schools (see Figure 2). For example, lot of Walt Disney pre-printed images were found. The teachers explained that these images were given to students to be painted as a reward for good behaviour.

Most of the images made by students were spontaneous drawings exhibited on the classroom walls and windows by faculty. Examples were portraits of the teacher presented as gifts, drawings of television cartoons or about trips undertaken. We did not have enough information to know whether these images were created within the school surroundings, or were brought from home or elsewhere outside the school premises. In the latter case, these images would be considered to have had external origins elaborated on by internal agents. The low presence of this type of image was one of the most disturbing deficiencies that we have found in our analysis. The images created by students outside the school (such as drawings, personal or family photographs, etc.) were mainly the result of a personal initiative, and not from school assignments. They expressed the tastes, interests or personal experiences of the persons who created them. Additionally, they were indispensable in order for the children to gain a sense of belonging in the classroom, and subsequently in the development of a coherent class unit. Thus, based on our research, we emphasise the need to increase the images generated by internal agents (particularly by the students and by faculty) outside of the school.

Table 4 Comparison of the codes with the greatest percentages of presence in each grade from each of the participating schools

	CF	JCA	MLS
Pre-school 3 years (yrs) old	Internal (Int.) 5.1. faculty	Ext. 4.1. child industry	Ext. 4.1. child industry
Pre-school 4 yrs old	Int. 5.1. faculty	Ext. 4.1. child industry	Ext. 4.1. child industry
Pre-school 5 yrs old	External (Ext) 4.1. child industry	Ext. 4.1. child industry	Int. 5.3. mixed faculty-student
1st elementary (elem.)	Ext. 4.1. child industry	Ext. 4.1. child industry	Ext. 4.1. child industry
2nd elem.	Ext. 4.1. child industry	Ext. 4.1. child industry	Int. 5.3. mixed faculty-student
3rd elem.	Ext. 4.1. child industry	Int. 5.2. students	Ext. 4.1. child industry
4th elem.	Int. 5.2. students	Ext. 4.1. child industry	Ext. 4.1. child industry
5th elem.	Int. 5.1. faculty	Int. 5.2. students	Int. 5.2. students
6th elem.	Int. 5.1. faculty	Ext. 4.1. child industry	Mixed. 6.1. other student/faculty

The large number of images from the child and school products industry (see Table 4), as well as from advertising, was due overall to the large display of those images at JCA (see Figure 2), classified under codes (4.1 child industry** and 4.2 advertising**). The reason behind the fact that the faculty at this school tended to use industrially produced images could be that, on average, the teachers were older than the ones at the other two schools. Since faculty at JCA had tenure, they influenced other teachers and may have passed

along bad habits. We note that the newly arriving younger teachers followed the more experienced teachers regarding the usage of industrial images.

CF had the same number of classrooms with images created by the faculty, as they did with those containing industrial images. Their staff followed an agreed-to process, which incorporated learning methods based on projects. This entailed an increase in the number of the images made by faculty (5.1 faculty*), versus a reduction in the number of materials externally prefabricated by

publishing companies (4.2 advertising**) (see Figure 2).

At MLS, the number of classrooms with industrial images was smaller, and the image source was more diverse. Since this school was categorised as a “Special Needs Centre”, and all the school material was free for students, the industry pressure on the school was less than at other schools (see Figure 2, code 4.1 child industry**). Additionally, its faculty was composed of substitute teachers, and thus very diverse; therefore, teachers’ personal styles were evident in the types of images displayed in each of their classrooms. Lastly, this school received a fair number of visits from external agents that were specialists in theatre, character education, etc., thus resulting in a larger presence of mixed origin images.

Three common characteristics were observed at the three schools. Firstly, the lack of analysis, of clear consensus, and of school policy with regard to the images displayed in classrooms (Vandeyar, 2010). This could be due to the absence of visual arts specialists that could contribute to this matter. Secondly, the lack of external images originating from internal agents. One of the causes of this shortfall could be the lack of the families’ and education communities’ collaboration and presence inside the classrooms. Thirdly, an imbalance of images regarding origin, since a deficient approach of visual arts as a field of study (during pre-school) and as a subject (during elementary school), reduced the awareness of the importance of visual culture diversity at school for the transmission of values.

Conclusion

The graphics in this research, designed with a plural method combining qualitative, quantitative and artistic characteristics, visualised and recorded patterns of the visual school culture, contributing to a better understanding of educational quality.

There was a significant imbalance among the origins of the images used in schools; it was monopolised by images created by adults, especially by the child school products and advertising industries, and by faculty. This confirms that there was limited diversification and/or variety in the image sources, an absence of certain images, and insufficient planning from an aesthetical-educational perspective. This resulted in a deterioration of the quality of the school environment and consequently of the overall education.

It was possible to improve the quality of the classroom visual culture, regarding the diversity of image iconography, of its style, and of its origin, by guiding ourselves to a more balanced model with mixed origin images. The recommended alternative would be to increase the number of images from external provenances, created by internal agents

who are better qualified, as well as increasing the number of internal images made by independent external specialists. First of all, balancing the different origins of the external images, while opting for an increase in the internal agents’ creations, is compatible with the external agents’ financial objective. However, faculty and the students should be the ones who shape their own cultural identity. It is necessary to visually educate the schools’ internal agents through initial and continuous professional development. They should be able to select, modify, design and create images for the school environment. Therefore, in this manner, both internal and external agents could create external images as a mixed form. In order to make the second suggestion a reality, it would be necessary to schedule a minimum number of regular school visits by external agents, who are independent specialists. They would need to be properly financed, and available to each school, in order to generate visual testimonies of the children’s learning processes inside the school. It is also essential to educate teachers in order to promote quality aesthetic images in the classroom from mixed sources and to pass this idea on to the students.

It is unacceptable that no school consensus or school policies with regard to the sources of images exists, but that the decisions depend on the teachers. The variables that influence the selection of image based on their provenance and authorship are the following: the faculty’s characteristics, such as age, labour contract and work environment stability; teaching conditions, such as the school’s politics and philosophy, and the teaching techniques and styles. It has been demonstrated that only the teaching faculty’s ethos influences the images that are shown in the schools.

Policy and philosophy of the academic project should be agreed in every school to establish a school norm or consensus among the entire educative community regarding the images that should adorn classroom walls. The images that are placed in the school should be illustrative of the aesthetics designed, chosen, and preferred not only by the adults (normally from school products industry and from the faculty) but also by children.

There should be an increase in the number of images generated by the students and faculty outside the school, to express their interests or personal experiences. Imagery of each group and culture represented in the school, although some may be a minority (e.g. Roma culture), should be introduced in the school in order to make it visible and to develop a sense of belonging in the classroom and to include multiculturalism.

The cultural diversity in the school context should be made visible on the schools’ walls, to value different tribes and ethnic minorities, against

a normalisation that could even impose a Western aesthetic from great publishers.

A greater presence of internal images created by external independent and specialised agents is needed to enrich the learning processes and improve the quality (diversity, iconography and style) of the images in schools. Improved elementary teachers' visual education is required to integrate images as a tool to create classroom theme discussions, and rethink identities.

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Authors' Contributions

AAS led the project as principal investigator and collected data at three schools. All authors wrote the manuscript, conducted all statistical, qualitative and aesthetic analyses, and reviewed the final manuscript.

Notes

- i. See note 2.
- ii. The word "students" always refers to children between the ages of 3 and 12 years, with whose involvement the studies have been done; "faculty" always refers to the teachers who are working with these same children e.g. from the beginning of pre-school until the end of primary school.
- iii. The Kruskal-Wallis H test is a non-parametric method for testing whether samples originated from the same distribution. It was used for comparing two or more independent samples of equal or different sample sizes.
- iv. Published under a Creative Commons Attribution Licence.
- v. DATES: Received: 6 February 2019; Revised: 31 January 2020; Accepted: 10 March 2020; Published: 28 February 2021.

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