

Digital environments as third spaces: analyses of simple artefacts in the rooms of the MOdE

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Abstract

With the spread of digital environments that allow the user to design and produce contents, we have asked ourselves whether digital museums can be considered as ‘third spaces’ in which it is possible to exhibit, research, aggregate and re-elaborate, in a shared narrative, materials and experiences coming from different contexts. Conceiving the digital museum as a third space of contamination between formal and informal, presence and distance, real and digital presupposes the rethinking of the functions of the museum itself, capable of connecting both the demands for safeguards and those of accessibility to the cultural heritage, for an access to knowledge that is increasingly open. Starting from these premises, this contribution references the digital museum Museo Officina dell’Educazione (MOdE) as a third space by specifically analysing the digital settings produced by students of the upper secondary schools and by university students.

Keywords: *third space; digital museums; digital learning environments; artefacts; knowledge process*

Introduction

In an increasingly evident intertwining between media and environments, where the boundary between real and virtual is no longer easily identifiable, experience and relations change and evolve in a network of knowledge (Wenger, 2011). In regard to such a context, the focus of this research is addressed to analysing whether the digital museums can be characterised as third spaces of learning in which knowledge and practices can be narrated and reinterpreted, so that they can acquire new and renewed meanings. We refer specifically to those digital environments that offer the user the chance to analyse, design, conceptualise and re-elaborate knowledge in an expressive and original way (Panciroli & Macaudo, 2019a; Panciroli, 2019).

Conceiving of the digital museum as a third space of contamination between formal and informal, presence and distance, real and digital (Flessner, 2014) first of all presupposes the rethinking of the functions of the museum itself, capable of connecting both the demand for safeguards and the access to the cultural heritage for an increasingly open access to knowledge. This has become even more evident during the Covid-19 pandemic during which time the digital has proven to be a necessary instrument for providing cultural contents that, until now, had been accessed by users only once the visual experience had been completed. What has emerged is a different use of the digital museum environments that from being communication instruments have become full-fledged dispensers of contents. Starting from these premises, the specific reference is to the digital museum Museo Officina dell’Educazione (MOdE), proposed as third spaces via the analysis of some digital settings produced by upper secondary school students and by university students.

1. Theoretical framework

Ever since its earliest theorisations derived from urban planning studies, geography studies, cultural studies and critical literacy studies (Bhabha, 1994; Routledge, 1996; Soja, 1996; Gutiérrez, 2008), the third space has been defined as a hybrid space, physical and/or ideological, that, via a conversation, allows for the construction of new and uncharted territories. Bhabha (1994) identifies the third space as a cultural space in which the meanings and symbols of culture,

produced through and in language, are not dominated by units and fixities, but have become the subject of reappropriation and opening to new interpretations, diverging but at the same time valid. As Bhabha (Rutherford, 1990) again points out, 'the process of cultural hybridity gives rise to something different, something new and unrecognizable, a new area of negotiation of meaning and representation' (p.211). The third space thus becomes a generator of new knowledge and new forms of literacy (Soja, 1996), a space in which the ideologies can be questioned and challenged, a disruptive space that can turn out to be uncomfortable because it attempts to move beyond the possible (Bertin, 1968), creating new repertoires of reading and analysis of the real (Bhabha, 1994). The term *third space* can thus be considered a 'flexible term that attempts to capture what is a constantly shifting milieu of ideas, events, appearances and meanings' (Soja, 1996, p.2).

The third space is also defined as a space of critical engagement (Routledge, 1996), in which the boundary between real and unreal becomes fleeting, 'a place of invention and transformational encounters, a dynamic in-between space that is imbued with the traces, relays, ambivalences, ambiguities and contradictions, with the feelings and practices of both sites, to fashion something different, unexpected' (p.406). Routledge (1996) returns to this concept by citing the lithography of the Dutch artist Esher entitled *Reptiles* (1943). This image shows the transformative process for the realisation of third spaces understood as ongoing projects and in which the visual ambiguity, at first perceived, becomes ambiguity of meaning to then ultimately disappear and reconstitute itself in a new form.

Starting from these premises on the concept of third space, we can thus single out the meanings and implications, also in the pedagogic milieu, with specific reference to the digital environments. The digital and multimodal environments can be considered third spaces when they act as a bridge between different environments: formal contexts, real and digital spaces, spaces of experience and of practices in working contexts, spaces for reflection and training. In that sense, the digital environments can become connective and powerful third spaces of active involvement and co-construction of new cognitive repertoires. This presupposes not only adding/uploading materials coming from different outputs and sharing them – as often happens in Web environments, for example, on social media – but also aggregating them and re-reading them to make new meanings, reflections and meaning networks emerge. The digital environment thus becomes a hybrid third space of 'integration of competing knowledges and discourses; to the texts one reads and writes; to the spaces, contexts, and relationships one encounters' (Moje et al., 2004, p.42); a space in which the people meet, interact and make experience, in turn collectively co-creating the space itself.

In these terms, therefore, the third space becomes a place in which the availability of forms of mediation and resources and the reorganisation of activities are translated into new opportunities for learning and participation to support the development of new trajectories (Gutiérrez et al., 1999). In this regard, the view of the third space as a zone of proximal development is interesting (Vygotsky, 1980), in which the space becomes a bridge, a scaffold by means of which experiences and practices can produce new knowledge through the reorganisation and shifting of concepts (Gutiérrez, 2008).

The digital environment can also be considered a third space of expansive learning (Tuomi-Gröhn & Engeström, 2003; Engeström, 1999, 2001, 2009, 2020) when people, ideas and practices of different communities meet and come to terms with one another. What emerges, then, is a conception of digital environment as a socially produced third space, a place in which all the items, narratives and stories can be welcomed and where the overlapping of boundaries in which people, instruments and practices travel through different and even contradictory contexts and activities becomes significant (Gutiérrez, 2008).

The digital as a third space can thus foster forms of transformative learning (Mezirow, 1991) calling upon the participants to cross their own boundaries within systems of living (Von Bertalanffy, 1968) and interacting activities (Tuomi-Gröhn & Engeström, 2003) in which the activities themselves are reorganised and the languages, contexts, experiences and practices intersect, creating the potential for an authentic interaction and a change in the way of conceiving learning (Gutiérrez et al., 1995).

The digital environments are made from data or fragments that are part of our culture (Rossi et al., 2019). The fragments are the knowledge which the individuals are bearers of; on the one hand, they must preserve their autonomy and identity because they are self-consistent and non-classifiable and on the other hand, they are conceived of as boundary objects, that is, 'boundary objects that move from one world to the other; each world examines some of their facets, producing its own interpretation, modifying some aspects, before sharing it again with others' (Rossi et al., 2010, p.111). In that sense, the digital environments become connective third spaces between knowledges, in which the fragments harnessed in a single digital space (an e-portfolio, a digital museum, ¼) are connected in a structure, a layout, which allows one to construct meanings inside a shared system. This fosters the reflection and search for an internal coherence in a continuous process of mediation.

The digital environments can thus offer several ways for manipulating fragments, also favouring the construction of aggregations like creating outlines and maps, assigning key words and tags, linking various objects and constructing complex patchworks (Rossi & Panciroli, 2018). In these environments, the users can enhance their knowledge according to their own experiences, designing and constructing the cognitive and graphic-visual artefacts (Panciroli et al., 2020a; Panciroli & Macaudo, 2019a). In the digital environments, it is thus possible to recompose these fragments within a narrative through different languages: linguistic, visual, auditory, gestural or spatial (New London Group, 1996). The fragment can thus be defined as multimodal for the network of meanings it conveys (Rossi et al., 2019; Adami, 2017). In fact, multimodality does not just depend on the presence of different languages, but on the creation of diversified meanings,

and it implies the capacity to integrate resources, each one of which is ‘a socially shaped and culturally given resource for making meaning’ (Kress, 2010, p.79)

In that sense, multimodality in a digital environment summons interdisciplinary and cooperative actions (Bateman et al., 2017) inside a space of aggregation where the attention is focused both on the product to be created and on the cognitive process that has led to elaborating that product, with strong ties to experience and the connection between cognitive, senso-motorial and affective-emotional perspectives (Rossi & Panciroli, 2018). A third space on the digital level can thus be encouraged to become a space of knowledge, study, creative and original production, a relational and reflexive space (Gannon, 2010), ‘a place of reflection, renewal, and change [...] to re-imagine a new space in which innovative ideas can emerge’ (Flessner, 2014, pp.2,3).

2. Digital museum as a third space: research into fragments in the MOdE museum exhibitions

2.1 Context

The research that is presented here has enabled work on digital environments at a high level of personalisation (Panciroli & Macaudo, 2019a) according to an approach of distributed knowledge, active and experiential (Panciroli, 2019). Considering the question posed at the start of this contribution specifically, that is, whether the digital museums can represent third spaces in which it is possible to annotate and compose new works, connect fragments of knowledge, providing instruments for personalising and constructing original artefacts (Rossi, 2019; Rossi et al., 2010), we have carried out qualitative–quantitative research within the MOdE, the digital museum of education of the Department of Education Sciences of the University of Bologna¹. The MOdE is characterised as a multimodal digital museum (Panciroli & Macaudo, 2019b) in that its design is distinguished by the interconnection of fragments: galleries of images, page layouts, video, audio and further textual analyses. In particular, the blank rooms of the MOdE are technological spaces that offer the user/visitor the chance to create their own set-up inside the ‘empty’ rooms to be animated and enriched (Panciroli et al., 2020b). In this environment, the user, as a designer, is on a quest for new meanings and interpretations of the museum assets; what they are carrying out is a research path that starts from their experience in formal and informal contexts, real and digital, to arrive at the construction of original creations.

2.2 Stages of development

The research conducted in the MOdE aimed to analyse the types of fragments used to design/build digital installations. The installations were produced by the university students of the Department of Education of the University of Bologna and by the secondary school students involved in different training experiences: courses, laboratories, seminars, internships, school-work alternation courses, visits on the territory.

Before arriving at the analysis of the fragments, this paragraph will retrace the path of creation of a blank room. It begins with the visual conceptualisation of the theme/topic of the path (phase 1), moves on to the schematisation and search for information (phase 2) and then to the actual design (phase 3) that will lead the user to the creation of artefacts and to the construction/installation of the room (phase 4).

In the first phase, that is, visual conceptualisation, the students, to arrive at the choice of the theme/topic of the room, started from their experience specifically using two approaches, one of which was thematic: they proposed a theme in relation to their interests and/or experiences of pathways realised in other museums and places of cultural interest, digital and/or physical; the other one was objectual: they started from the exploration of tangible and/or intangible works, inside the rooms of the MOdE and/or of other museums and places of cultural interest, digital and/or physical.

In the second phase, that is, schematisation and search for information, the students identified the objects/concepts, placing them in a given sociocultural context and putting them in relation with other cognitive objects.

In the third phase, that is, design, the students developed the room by availing themselves of a design chart that allowed them to take into account several elements: definition of the theme/topic (what to communicate?) and the objectives (why communicate?), choice of the languages/instruments (how to communicate?), definition of the target/addressees (communicate to whom?), description of the room, identification of key words and sources (bibliography and sitography) and lastly choice of the title. In this phase, the students not only chose the objects, but also produced some simple cognitive artefacts (Panciroli, 2019). These responded to different objectives: summarising a concept (image/text), providing information (image/text/follow-up video) and broadening knowledge (re-elaboration). With reference to the last dimension, the students personally created some contents/artefacts: autonomous productions, photographs with the use of photo editing and/or photomontage apps, overproductions, external filming, soundtracks. By way of example, we can take the fragment ‘Vase of Sunflowers. From Nature to Reality’ (Fig. 1) made by the students starting from the re-elaboration of two images, a photograph and the famous work by Van Gogh.

¹ <http://www.doc.mode.unibo.it/>



Fig. 1 Vase of Sunflowers: From Nature to Reality.

Source: Elaboration by the students of the Department of Education Sciences of the University of Bologna.

In the fourth and last phase, that is, construction/installation, the students created the room starting from what had been planned, implementing it with visual and/or audio contents that had been aggregated within a single structure. The blank room has thus become a complex cognitive artefact (Panciroli, 2019), configuring itself as a set of objects (images, audios, videos, documents, ¼) related to a theme, tied between them by a complex mesh of meanings and capable of proposing some new narratives. An example of this is the room ‘The reflection of art and reality’ (Fig. 2) created by the students starting from the simplest artefacts (videos, images, texts), also including among these Vase of Sunflowers: From Nature to Reality.

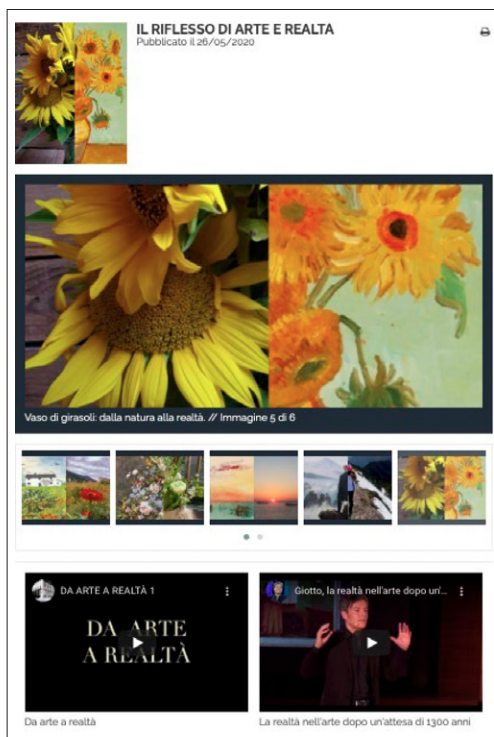


Fig. 2 Reflection between art and reality.

Source: Elaboration by the students of the Department of Education Sciences of the University of Bologna.

2.3 Simple artefacts analysis in the MOdE blank rooms

Seventy-five rooms were analysed and 468 users were involved. The research started from the quantitative analysis of simple artefacts that were implemented and/or created by the students in the rooms of the MOdE.

Specifically, the research started from the quantitative analysis of simple artefacts that were implemented and/or created by students. Data collection was carried out through a qualitative–quantitative checklist that made it possible to extract the following categories of analysis: media fragments uploaded; media fragments by room; presence or absence of fragments on the total of rooms and by typology; typology of images out of the total of fragments, presence or absence of images by room and typology, presence or absence of videos by room and typology (videos linked from YouTube, self-produced videos). To this was also added a qualitative analysis that in the ‘description of the set-up’ field made it possible to manifest the design intentions implemented to create the installations.

The fragments uploaded to the platform and used to construct the visual pathway in the blank room numbered 1,427. From the analysis of the total of the fragments by typology (Fig. 3), it can be inferred that the students have mostly created digital images (46.5%). These are followed by citations of Web sources (sitography; 17.1%), videos and sources in the bibliography (9.8%), uploading of documents (5.3%), links (4.4%) and, lastly, audio contents (1%).

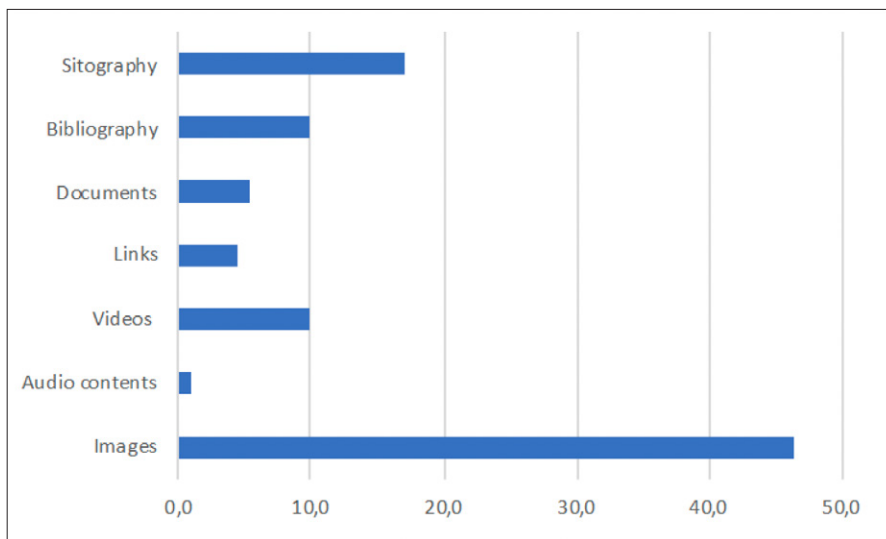


Fig. 3 Media fragments uploaded to the MOdE.

Also considering the fragments by room (Fig. 4), it is calculated that on average, nine digital images, three sitographic references, two bibliographical sources and one document are uploaded for each room, while the audio contents are seldom added.

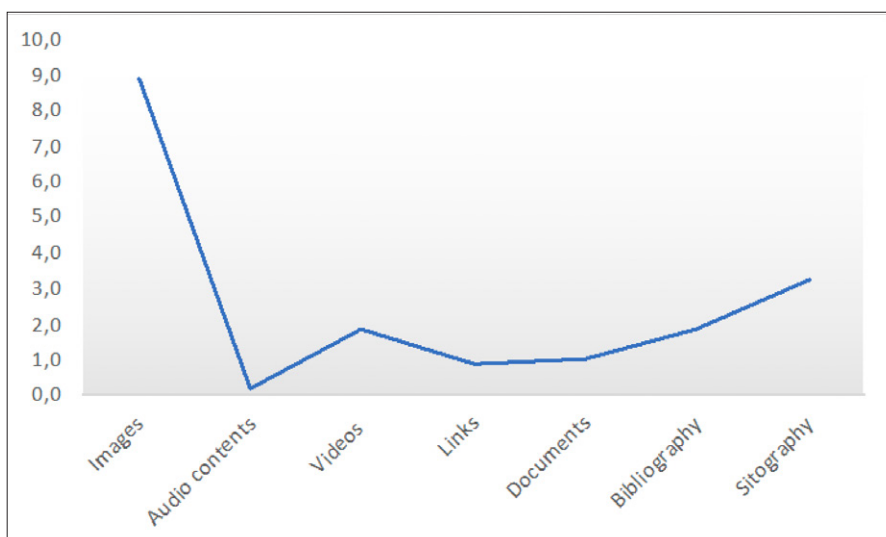


Fig. 4 Media fragments by room.

As regards the presence or absence of fragments out of the total of the rooms and by typology (Fig. 5), we can observe how most of the rooms are constituted by at least one digital image (97%) and at least one video (84%). The sitography also occupies an important place: at least one reference to Internet websites is present in 80% of the cases. Also, in 67% of the rooms, at least one bibliographic reference is present and in 51% of the rooms, there is at least one document for further study (51%). To a lesser degree (32%), there is at least one hypertextual link cited in the description of the room and referring to other external sources.

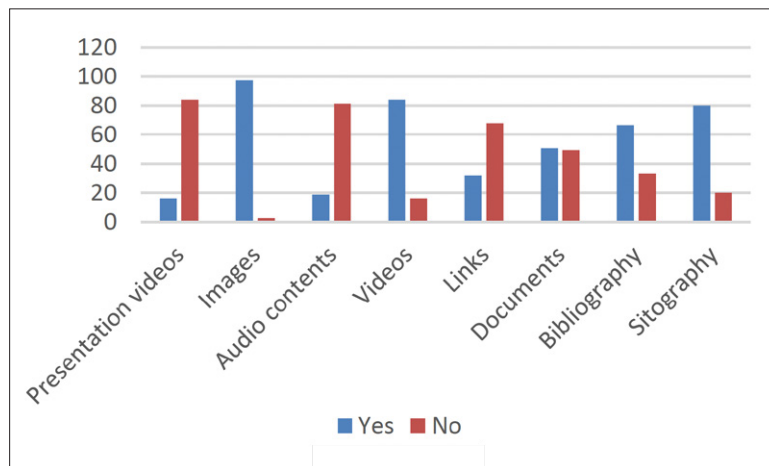


Fig. 5 Presence or absence out of the total of rooms and by typology.

We have analysed the total number of images uploaded to the rooms of the museum identifying three typologies: (i) images taken from the Web, (ii) photographs and (iii) photomontages and graphic re-elaborations. In that regard, as emerges from the analysis, most of the students set up the room starting from the photographs that they made themselves (51%), 37% chose images from the Web and 12% graphically re-elaborated the images or created some photomontages (Fig. 6).

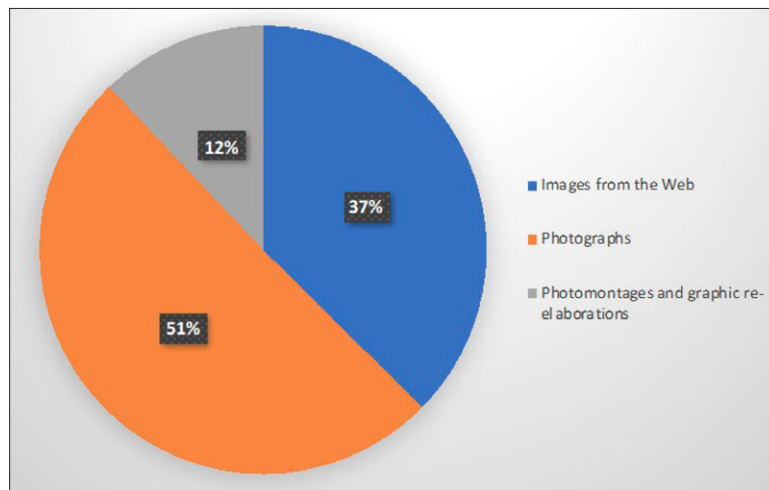


Fig. 6 Typology of images out of the total of fragments.

If the analysis of the total of the fragments indicates that the use of photographs is the modality most chosen by the students for installation of the rooms, the analysis on the total of the rooms shows that the number of rooms with images taken from the Web (52%) and/or with photographs (50%) is equivalent. There are, instead, fewer rooms with graphic re-elaborations and photomontages (25%) (Fig. 7).

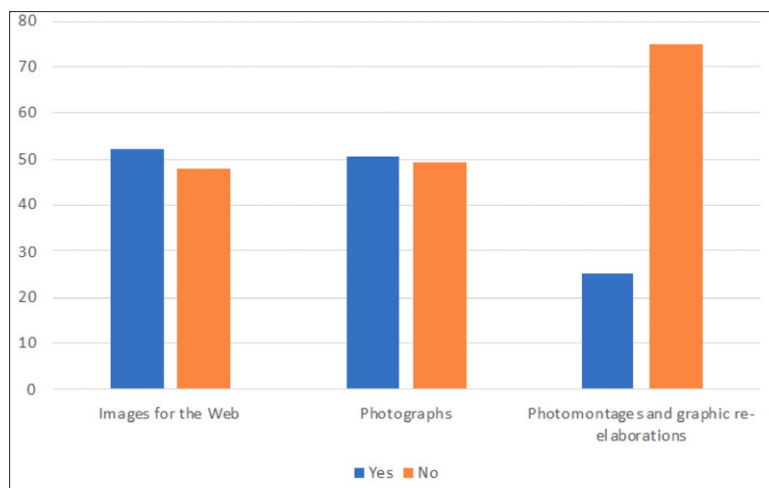


Fig. 7 Presence or absence of images by room and typology.

We have done the same analysis also on the total of the videos, considering two categories specifically: (i) videos linked from YouTube and (ii) self-produced videos. Most of the students chose to link other videos, reproducing them from YouTube (74%), while 26% self-produced them, adding them either to inside the room or as presentation videos (Fig. 8).

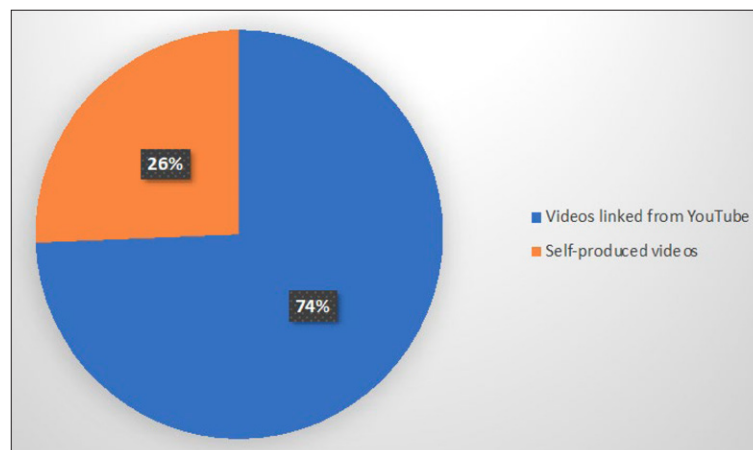


Fig. 8 Typology of video out of the total of the fragments.

The analysis of the presence or absence of videos by room and by typology confirms the previous data, that is, that the videos linked from YouTube are added to a greater degree (61%) as compared with the self-produced ones (25%) (Fig. 9).

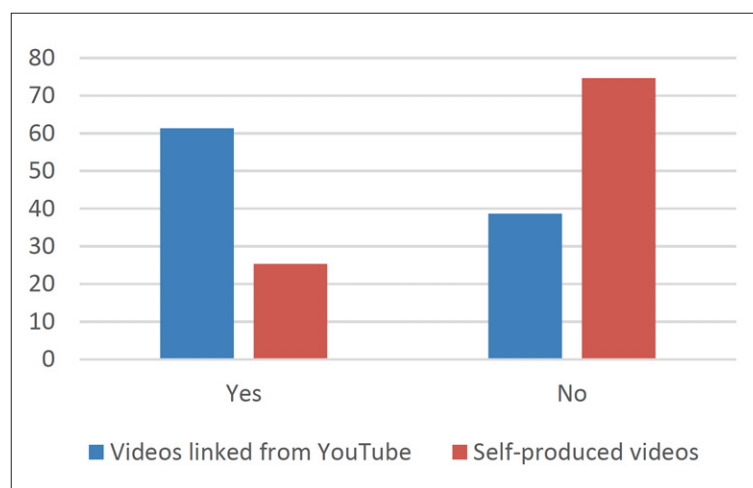


Fig. 9 Presence or absence of videos by room and typology.

Continuing, then, with the reflection on the fragments present in the blank rooms, we analysed the field 'description' in which the student/user concisely tells a potential visitor about the path they have created.

From the analysis of the writings, we have thus been able to analyse the intentions/aims underlying the creation of the room. In this way, it was possible to analyse the intentions/aims underlying the creation of the room. From the analysis of the writings, the following categories/labels emerged: to make known, propose a path/project and/or document a path/project, raise awareness on relevant issues, deepen/create connections.

From the analysis, it therefore emerged that most of the rooms (28%) were set up to document a project/pathway that the students had realised on the territory with the intention of valorising the experience realised within different contexts (formal, informal, real, digital). The rooms were also set up with the aim of making known and allowing to be rediscovered different assets (22%) to the potential users (themes, characters, objects, practices), valorising at the same time the conservative dimension of safeguarding and that of communication and dissemination. Twenty per cent of the installations have been realised to display, in a graphic-visual guise, proposals of pathways or projects to be realised in different contexts. In that sense, the students found in the blank room a purposeful place of visual display; we could also talk of 'design in design' in which the ideation has been built at the product level (the room design) and of process (the creation of the project to be realised in the contexts). The rooms have also pursued the aim of sensitising people about the relevant social themes (15%) such as, for example, urban regeneration, social inclusion, protecting the heritage and environment, and so on; these aspects have been looked into by the students also by means of the key words (tags) inserted in the rooms. Lastly, a further 15% of the installations are present, whose aim is the enlargement/analysis of themes or events, by way of example, a temporary exhibition that on the digital was able to endure, thanks to the narrations of the creators of the pathway (Fig. 10).

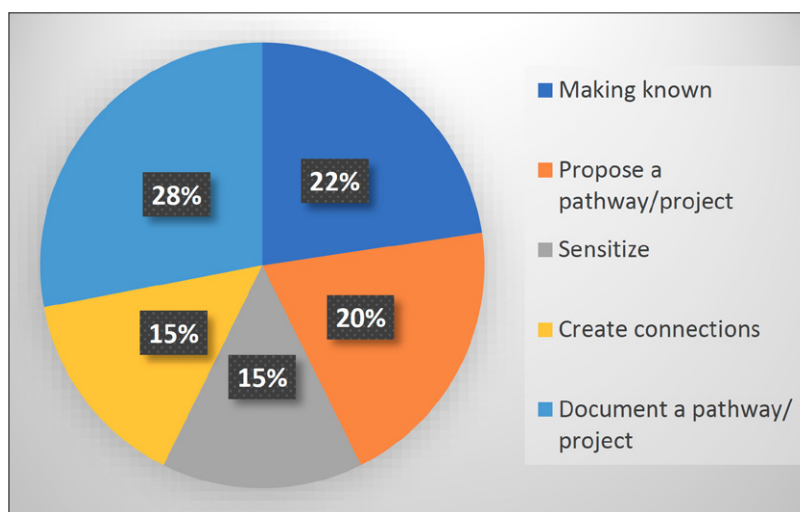


Fig. 10 Analysis of design intentions in the description of the installations.

2.4 Results

The analysis that we have conducted inside the blank rooms of the MOdE have allowed us to identify three typologies of fragments as varieties of resources that the student uses to design and construct the installation on the digital platform. In particular, from the analysis, what has emerged is a significant use of the digital image: an image that is uploaded from the Web, but that is also realised personally (with photographs or re-elaborations). Added to this is an important use of the video both linked from other platforms and self-produced. The capacity to remix the contents meaningfully, according to a skill that Jenkins et al. (2009) call appropriation, thus emerged both from the re-elaboration of the students' products and from the description of the rooms. Specifically, the dimension of the user's intentionality, in the choice of a pathway strictly correlated to his/her own experience, takes on a central role; added to this is also the search for new meanings. Indeed, the latter has become evident due to the important presence of sources that the students have added to the bibliography and sitography and that they consulted to design and set up the pathway. The citation of the sources indeed shows a work of evaluation that the students undertake in regard to the reliability and credibility of the information reported on the Web and used to set up the pathways, a skill that again Jenkins et al. (2009) call judgement. A final consideration refers to the meanings underlying the conceptualisation of the pathways that can be remodulated (Manovich, 2001) in relation to the addition and/or modification of simple objects/artefacts in a process similar to what happens in a physical museum when new acquisitions arrive. This means that every object and every room are never defined rigidly, but can be continuously transformed and modified. The research work is thus continuous and, at the same time, challenging and open to new perspectives of study on the modalities of application on the digital platform of the principles of design for all, accessibility and personalisation to offer the user increasingly challenging and involving learning pathways.

3. Conclusions

In this contribution, we have tried to understand whether the digital environments, such as museums, can be considered as third spaces in which the user's experience is transformed into a movement of transition between various conceptual, informative and expressive-creative elements (Pancioli & Macaуда, 2019a). The research conducted inside the rooms of the MOdE has led to the emergence of a heterogeneous presence of fragments, giving the users the chance to aggregate them (Rossi, 2019) to create new cognitive pathways amid the assets, generate further openings to new knowledge and produce new cultural and media products. Specifically, we have shown how the design and realisation of simple or complex artefacts has enabled the students to converse with the world of experience and with the knowledge, thereby allowing them to build bridges between different spaces. We have also shown that the artefacts are closely connected to the elements that come from the daily experience of the subjects and that need a significant point of view and experiences to acquire meaning. In that sense, the activity of mediation between personal experiences, objects and knowledge has been concentrated in the blank rooms of the MOdE with the design and production of artefacts; the student, starting from his/her own experience, has had the chance to conceptualise the single fragments in a shared narrative, and this has made the abstract contents more easily comprehensible. The student has also been stimulated to edit the contents him/herself in a creative way, thereby re-elaborating the knowledge itself. Digital storytelling has helped the students to make sense of the complex world of experience by creating some story plots (Bruner, 1990; Van Gils, 2005), thus becoming a medium between the existing knowledge and the newly created material (McLellan, 2007). The student has thus had the chance to aggregate the objects in a participative process of culture building (Jenkins et al., 2009), becoming not only the beneficiary, but also the designer and producer of culture. The development of participative practices in the digital museums,

capable of connecting the experiences lived in different contexts, is rekindling renewed awareness in a period of Covid-19 pandemic, a time when the museums sector and, more in general, the culture are having a major impact not only on the educational, but also on the social, economic and political levels.

Author Contributions:

Chiara Panciroli (paragraphs 1 and 2); Veronica Russo (paragraph 3); Chiara Panciroli and Veronica Russo (paragraph 4)

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