

## Pedagogies for Unknown Futures: COVID-19 as Motif and Theme for Project-based Learning

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### Abstract

COVID-19 has manifested itself as a social, cultural, and economic disrupter in many regions of the world. Among the fields that were seriously impacted was education, which had to move to Emergency Remote Teaching, often with minimal resources and support. This paper describes how COVID-19 was used as a motif and a theme to reconceptualise a project-based Master's course in Media Studies at Maastricht University in The Netherlands. By outlining the pedagogic philosophy of this approach and the premises of the redesigned curriculum, as well as drawing from student feedback, the authors argue that a project-based course that revolved around the experience of the pandemic, not only provided students with well-sought lifelong and transferable skills, but also enabled them to cope with social isolation, providing them with an opportunity to contribute to a broader conversation about the experiences of the COVID-19 pandemic, providing them with an opportunity to both draw on and acknowledge the societal relevance of their studies.

### Introduction

Even before the COVID-19 pandemic upended our physical lives into what seemed to be wholly in, through, and via digital spaces, it was becoming clear that educators, no matter what the subject taught, needed to provide students, not only with discipline-specific skills, but competencies for what we might term, *unknown futures*. These competencies, often referred to as lifelong, soft, or transferable skills can be subtly or even profoundly different from disciplinary skill sets (Wilson et al., 2017). Many of these forward-looking skills are less

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about learning a specific software package or method to conduct interviews, but competencies to empower students to adapt to the ever-changing digital environments in which they will spend the rest of their leisure and working lives. This becomes particularly pressing in the Cultural and Creative Industries (CCI), which is one of the “most entrepreneurial sectors, developing transferable skills, such as creative thinking, problem-solving, teamwork and resourcefulness” (European Parliament, 2016, para. W). At the same time, the increasing utilisation of digital technology that provides opportunities for new ways of accessing, presenting, and distributing cultural content, poses challenges to the more traditional sectors of CCI (European Parliament, 2016, para. V). Therefore, to bridge the gap between the two, curricula in culture and arts disciplines should foster a combination of digital and entrepreneurial skills. We believe that the digital divide may no longer hinge on access to technology but about the ways that technology-based approaches are utilised, and by extension, how they are implemented in forward-facing teaching and learning. It is our premise that if technology continues to assume an increasing central role in teaching arts and humanities, efforts should concentrate on providing students with inter-sectoral and transferable skills that will equip them with the capacity to respond to a globalised creative and digital economy.

The authors of this article, who both work in the field of Digital Humanities (DH), have been embedding transferable skills into their teaching through praxis-based courses as a way to enact or perform theory via authentic assessments, both at Maastricht University (UM), where they currently teach, as well as in previous institutions. The course in which this approach is most embodied is *Creating Digital Collections* (CDC); a Masters-level course taught in a one-year MA in Media Studies with a focus on Digital Cultures (MADC) over a three-month period (January to March) and divided into two sub-courses (due to university timetabling). The goal of the course, which is the context of this paper, is to provide students with the skills and competencies, as well as a solid theoretical grounding, to build a digital collection. We define digital collections widely for this course as *an assemblage of digital objects – whether digitised from an analogue source or born digital – brought together through an overarching organisational principle or rationale, be it thematic, historical, temporal, and/or contextual*.

CDC is designed as a capstone course for students to embark on a jointly built creative project, and to have them confront the digital turn in which they upskill, not only digitally, but via a plethora of transferable skills that we believe will assist them in virtually any career they pursue. Students are encouraged to be experimental, take risks, get comfortable with ideation and revision, while enjoying the creative process (Nørgård, 2017). Students also learn to be self-disciplined but also flexible with the ambiguity that is often the result of the creative process (Amabile, 2013, p. 136-37). Although the development of the collection is part of a higher education programme with all the requirements, constraints, and evaluation procedures that come with it, the course itself motivates and challenges the students through the subject-matter, the group work, and the fast pace of the project to develop their own interests, enjoy the process, and get a sense of accomplishment and satisfaction when the work has been completed, all crucial factors to enable students' creativity (Amabile, 2013, p. 136-37).

CDC also strives to bring together many of the skills and competencies, as well as theories and methods, taught in the previous courses of the MA, not only to reinforce them but also to make the workload that such a project entails lighter. In addition to reinforcing and reusing many of the theories and methods taught previously, students are provided with new

competencies to not only design a digital collection but also to problematise issues around curation, digitisation, representation, and (re)construction. CDC deploys a Project-Based Learning (PjBL) approach wherein students work collaboratively to develop a digital collection. Although the tutors guide the students and provide advice throughout the process, it is ultimately the students' responsibility to manage and execute the project. This is in line with UM's Problem-based Learning (PBL) philosophy, which revolves around four learning principles: constructive, self-directed, collaborative, and contextual (Dolmans et al., 2005).

This paper discusses how COVID-19, despite being a social and cultural disrupter, was used as an opportunity to reconceptualise CDC. Firstly, we will situate our work within recent literature on the impact of COVID-19 in education. Then, we will outline the pedagogic philosophy of our approach, followed by the curriculum design. Student feedback and evaluations will provide a basis to discuss the challenges we faced and the lessons learnt from this approach, while reflecting on how COVID-19 enabled us to design a curriculum that prepares students for the competitive digital and creative economy. Most importantly, it is argued that the course design enabled them to cope with social isolation and provided them with an opportunity to contribute to a broader conversation about the experiences of the COVID-19 pandemic, thus acknowledging the societal relevance of their studies.

## COVID-19 Education

The education sector as all other sectors both in the Netherlands and in most other parts of the world were affected by the COVID-19 pandemic. Teaching at Maastricht University was not an exception; from socially distanced on-campus teaching to hybrid education, and periods of great uncertainty and constant shifts where physical and remote education were alternating depending on class infections and government regulations. Emergency Remote Teaching, i.e., providing "temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis" (Hodges et al. 2000, para. 13) was the *modus operandi* for both the academic year 2020-21 and parts of 2021-22. Especially during the first year, instructors had to learn by doing and largely improvise with educational methods in which they were not familiar with (Rapanta et al., 2020) and that were not adequately designed or tested to be deployed in such variable and unpredictable circumstances, and with digital infrastructure that in most cases was inadequate to support students' and instructors' needs (Nuere and de Miguel, 2020; Marinoni et al., 2020; Rapanta et al., 2020). Research that focuses on the situation in the Netherlands, highlights that the urgency to teach remotely, with individuals and their organisations having only a few days to prepare, has increased teachers' awareness of how the adoption of digital tools and practices can benefit education, while sparking their creativity and increasing their potential for innovation both to enhance student learning but also to teach more efficiently (van der Spoel et. al., 2020; also see Wong et al., 2021). Devlin and Samarawickrema (2022), reflecting on their 2010 article 'The criteria of effective teaching in a changing higher education context', argue that in a post-COVID higher education many of these criteria need to be adjusted and reconsidered: digital transformation; evolving assessment philosophy and practice; work-integrated learning; students as partners; the trend away from solo teaching; and, new pedagogies for an unknown future; all being particularly relevant for our philosophical approach to teaching.

Recent studies that explored the impact of COVID-19 on education (typically institution and country-based) highlight that students' initial emotions of stress and anxiety gradually gave place to more positive feelings, including relief, pleasure, and even enthusiasm, not only because education could continue – despite the struggles that technology posed – but also due to the comfort and flexibility that online learning provided, e.g., by not commuting and thus reducing costs, as well as providing new competences and a whole new repertoire of skills that could prove useful for the future (Karalis and Raikou, 2020). On the other hand, the lack of socialisation and interaction with both fellow students and teachers (Fúzi, 2022), and the resulted problematic, unstable, and often inadequate communication platforms were the most negative components of this transition that soon became the new normal. Furthermore, the higher workload resulted from the additional effort required to master a lack of computer skills, technology access, and the inappropriateness of the learning environment (e.g., in cases of house/room sharing), posed an additional stress factor (Aristovnik, 2020, p. 9; Fúzi, 2022).

## **Our Pedagogic Philosophy**

Higher education literature has thoroughly discussed and debated the usefulness, need for, and often lack of the so-called soft and transferable which are geared to equip students with competencies that will increase their employability and help them respond to challenging situations in diverse, real-life contexts (Clarke, 2017; Succi and Canovi, 2020). Transferable skills go beyond the preparation needed for a particular field, career or profession. Some scholars define them as basic skills, e.g., literacy and numeracy. Davies et al. (2011) emphasise the increasing importance of the digital in a “computational world” (p.7) with new media literacy and computational thinking (p.10) playing a critical role. Critical thinking and problem solving are also crucial for “navigating complexity and uncertainty” (Wilson et al., 2017); interpersonal skills, teamwork, management, and leadership; communication and time management; as well as work ethic dispositions and emotional labour skills are necessary for increasing students' employability and preparing them for unpredictable futures (Nägele and Stalder, 2017: 740; Rosenberg et al., 2012: 8; Teo et al., 2012; Keneley and Jackling, 2011). Wilson et al. (2017) highlight that many of these skill sets fall under the concept of creativity, and thus any reforms should focus on creativity at a personal, disciplinary, professional, and social level. At the same time, however, they also highlight that creativity is a difficult to define and fluid term and thus its value and meaning should always be interpreted in relation to the context in which it is examined, e.g., in this case, creativity and technology.

One pedagogic philosophy that seeks to foster creative approaches to problem solving are active learning pedagogies, such as problem-based, inquiry-based, case-based, discovery-based, and project-based learning (Hood Cattaneo, 2017). These approaches provide learners with the means to embark on a dynamic learning process in which knowledge is gained ‘as you go’ through the natural interactions developed within the learning environments, including the team, the tutors, and the learning resources. In such fluid learning conditions in which the learning processes are not always prescribed, learners develop skills and competencies that can be adapted, transferred to, and applied to different environments and situations. These competencies are especially relevant to the CCI, which have in recent years not only transitioned to integrating new technologies into what are considered core institutional activities, but in responding to recent societal impacts, such as conversations

around repatriation of artefacts, social justice, and the role of cultural heritage institutions as less than neutral arbiters of the past.

PBL, which is UM's flagship pedagogy, is not a recent pedagogic approach. It can be traced back to the 1960s in Canada, where it was utilised to enable medical students to develop problem-solving and critical thinking skills through real-world cases contrary to the more sterile instruction methods that privileged memorisation and rote learning (Servant-Miklos, 2019a, 2019b; Savery, 2006; Barrows, 1994). By developing knowledge through an active learning process (constructive) in which students are responsible for their learning paths (self-directed), and by learning from and building on each other's knowledge and ideas (collaborative) based on real-life cases (contextual), "knowledge is acquired, synthesised, and appraised out of working through and reflecting upon...a progressive and stimulating framework..." (Maudsley, 1999: 182). PjBL, as another active learning pedagogy, is characterised by the same learner-centred principles. However, what differentiates it from PBL is that a) it typically involves the response to a problem by developing a product that is outward facing (Blumenfield et al., 1991; Krajcik and Shin, 2014), e.g., for a public audience and/or an institutional partner; and, b) the product is not something that happens at the end of the process, e.g., in cases of summative assessments, but the whole course curriculum is designed and structured in such a way that will provide students with the necessary theoretical and methodological grounding to approach the intellectual challenge posed (Thomas, 2000) while developing different elements of the product throughout the course. However, contrary to other learning pedagogies, including PBL, PjBL is not prescribed, thus allowing learners to fully develop both their learning path and outcome; and, although the tutors provide guidance and support, their role is not to dictate but rather to mentor students in positive directions and processes. The flexibility of the approach means that both the process and the results can be unpredictable (Wurdinger 2005, 69), thus requiring management and leadership skills for both instructors and learners. Our pedagogic approach thus combines the active learning pedagogies of both Problem and Project-based Learning, while being underpinned by the ethos of Critical Making combined with Design Thinking processes (see below) in which the students work collaboratively towards an authentic assessment; hence mirroring, as far as possible within a learning environment, the process of working in a team towards a certain or a less certain goal, e.g., creating an exhibition on X, the process by which to get there is not laid out in a tightly-scripted series of steps.

The design of such authentic learning environments (often referred to in literature as authentic assessments or authentic achievements [for a recent discussion on the value of authentic assessments, see McArthur, 2022]) enables students to apply and extend their knowledge by completing open-ended tasks in a real-world context (Wiggins, 1990). In other words, they replicate the conditions and intellectual challenges that students are likely to face in the competitive CCI; challenges that experts and professionals also face (Koh, 2017). According to Newmann and Archbald (1992, 72-74), such authenticity results in the production of new knowledge; disciplined inquiry (consisting of the utilisation of prior knowledge, in-depth understanding, and integration of information critically and in complex ways); and the "aesthetic, utilitarian, or personal value" generated for the student.

It is worth noting that such project-based approaches, learning by doing, and the creation of public-facing products (both in research and teaching) are prevalent in DH (Clement, 2012; Augst and Engel, 2022). Although the programme under discussion is not a DH programme *per se*, the curriculum is designed to integrate information and computer literacy not only as

a means to gain complementary and transferable skills but as a way to meaningfully engage with and critically analyse technology. The latter not only encourages experimentation, but also enables a multimodal approach to research and teaching. Also, it helps with issues of diversity and the empowerment of women typically underrepresented in technology-related subjects or stereotyped when it comes to their relationship with technology (Kennedy, 2017).

As mentioned above, our PjBL philosophy is underpinned by the ethos of critical making, according to which materially-engaged activities foreground the “socio-technical environment” of the object’s making, thus providing students with the means to consider and problematise the product or service being created and their relationship with users’ and society’s needs (Ratto, 2015: 40; Ratto and Hockema, 2009). Critical making, therefore, extends the PjBL philosophy since it places equal emphasis on both the process and the product, and the learners’ ability to critically reflect, theorise (Klein, 2017), and interpret (Staley, 2017) through the acts of physical and/or digital making. Together with critical making, we also emphasise the value of Design Thinking as a user-centred approach to problem-solving (Burdick and Willis, 2011; McKilliga et al., 2017) that not only provides a structured and socially responsible way for dealing with challenges but also cultivates skills and mindsets, such as empathy and humility, which are necessary to transform higher education and bring change to society as a whole (Vaugh et al., 2020).

Despite the benefits of PjBL as stated above, designing a course in which PjBL is delivered entirely online can be challenging, especially for courses driven by a maker culture pedagogy. Although research highlights that online tools for collaboration, such as GoogleDocs, are helpful in facilitating activities in PjBL (Çakiroğlu and Erdemir, 2019), cases in which online tools are not supported by physical and social interaction, not by design but out of an emergency situation, e.g., in the case of COVID-19, are far more challenging and cannot be compared to regular e-learning. Recent research, however, which focuses on Emergency Remote Teaching during the pandemic, argues that despite the challenges and setbacks that online PBL and PjBL can pose, students working together for an end goal had a more positive experience and were also more motivated to create and collaborate, in comparison to problem-based activities that required individual effort and less interaction with their peers (Haslam et al., 2021). Hira and Anderson (2021) also argue – based on qualitative interviews with high school teachers in the United States at the beginning of the pandemic – that PjBL is feasible online as long as the designed activities: a) cater for students’ interests and their relevance to their present and/or future lives is obvious; b) provide students with autonomy and enable them to take ownership of their learning; c) require interaction with their peers and tutors; and, d) are supported by technological solutions that enable learning aspects that are missing due to the remote nature of education. In our PjBL curriculum we strived to achieve all four.

## **The PjBL Curriculum**

### **Before the Pandemic**

Higher Education teaching in the Netherlands, as in most parts of the world affected by the COVID-19 pandemic, were forced to migrate to Emergency Remote Teaching (Hodges et al., 2000). As a result, courses had to be adapted or redesigned so that they could be delivered



online or in hybrid format and with students dispersed across the world. CDC was one of the courses that had to be completely redesigned.

Before the pandemic, in the academic year 2019-20, when the CDC course was offered for the first time, we partnered with the Nederlands Mijnmuseum, a small museum in the Province of Limburg dedicated to the mining history of the region. As part of the course, our students created a contextualised and multimodal narrative space (<https://mining3d-umfasos.nl/>) divided into eight thematic sections, each one delivered by a group consisting of four students. A ninth group was responsible for the web design and the coordination of the tasks. The collection included not only the 3D models of the mining objects that the students produced,<sup>3</sup> but also interviews with ex-miners, as well as interactive content geared towards diverse audiences. Students not only created the site for adult audiences, but also designed a bespoke section for children for the age group that typically visits the museum (10–12-year-olds).

Our partnership with the institution was not only a valuable experience for our students but it also brought our skills and expertise to it; expertise that many institutions, particularly smaller ones, do not have. Ultimately, the project provided new digital vistas, showcasing the value of digitisation and the opening up of their collections to a broader audience. The museum also took advantage of the success of the project and of cultural institutions being shuttered due to the lockdown to translate the entire site into Dutch.<sup>4</sup>

### **During the Pandemic: Covid as a Theme and Motif**

During the period in which we taught the course in the academic year 2020-21 (January to March), we were not able to access a physical museum-based collection due to government-mandated closures of cultural institutions, but also because many of our students attended the programme remotely. In redesigning the course to be taught wholly online with objects that could be easily accessed by the students for digitisation, we felt an imperative to not teach the course as if our world had not been upended. We wanted to provide an opportunity for our students to have a creative and positive outlet to record their experiences of the pandemic, to be part of an international, online conversation to document, explore, explain, and reflect on their lives during COVID-19, and to use the skills, theories, and methods they learnt during the MA programme to create a collection of lasting value.

The collection we envisioned would speak to the students' experience through material culture more generally, and through an individual object, modelled in 3D, more specifically (Gosden and Marshall, 1999). Students were free to select an object that provided an occasion for them to narrate their lives in and experience of the pandemic (Harding, 2016; Haigney and Arkle, 2020). By giving students the opportunity of choosing any object they had personal connection to, they experienced an extra burden than what would be the case when choosing objects that are part of a museum collection. Objects in heritage institutions have been vetted

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<sup>3</sup> These are also hosted on a dedicated channel on Sketchfab <https://sketchfab.com/3dnederlandsminmuseum>

<sup>4</sup> You can read more about the project at: <https://sketchfab.com/blogs/community/maastricht-university-students-digitize-mining-artifacts-for-nederlands-mijnmuseum/>; see also the video released for the project: <https://youtu.be/oG49KChQoE8>

for authenticity and value. Taking our clue from TS Eliot's dictum, "it is only in the world of objects that we have time and place and selves" we encouraged the students to think of the object that they would choose as providing an occasion for a wider narrative to tell stories both of and through, personally, historically, culturally, and politically. In effect, providing a space for motifs and themes to emerge organically through the objects chosen, which later in the process were used to contextualise and frame the collection.

On the other hand, cultural heritage is often conceived very narrowly, as for example, a monument, an artefact, or a work of art. However, Smith (2006) highlights that people, especially those excluded from the Authorised Heritage Discourse, give a much broader definition to it, as for example, a memory or a family history. All heritage is, therefore, intangible (Smith, 2006, p.3), not only because it takes the meaning and value we assign to it but also because of how it shapes society. COVID-19 has already left, and still generates, many tangible and intangible remains that should be captured as our heritage, and the same is the case with peoples' experiences during the pandemic; experiences that may be connected to objects, people, and stories that obtained new meaning and value during this time. Of the class of 37, a great variety of objects were selected: from a Peruvian Mate cup to a meditation pillow, to headphones, to hand-painted game pieces, to an analogue camera, to a banana bread, and board games. The objects represented all aspects of the students' lives: how they spent their free time, how they studied, how they mitigated their anxieties, and how they coped with the physical and social isolation.



Figure 1: The Homepage of the project *The Covid Collection: Coping with Quarantine* (Available at: <https://covid3d-umfasos.nl/>)

The objects that the students selected formed the basis of this collection (<https://covid3d-umfasos.nl/>; also see figure 1). However, they were encouraged to think beyond the personal into how these objects could be representative of larger societal concerns (Hoskins, 2006; Roberts, 2014) and signify a wider cultural and social context. To make them reflect, for example, on what is the value of cooking; cooking for ourselves as a form of creativity, performance, and stress relief but also cooking for and/or with others as a social experience (Easterbrook-Smith, 2020). Or why do we use a camera to immortalise moments? And, what do these moments tell us about ourselves or the sociocultural context of our existence? This was a key learning goal: to create a space that would not just speak to their personal experience of the pandemic but would also speak to others experiencing the same lockdowns



and anxieties, epiphanies, and gratitudes. Thus, we urged them to think of the collection as a testament to look back on once our pre-pandemic lives resume.<sup>5</sup>

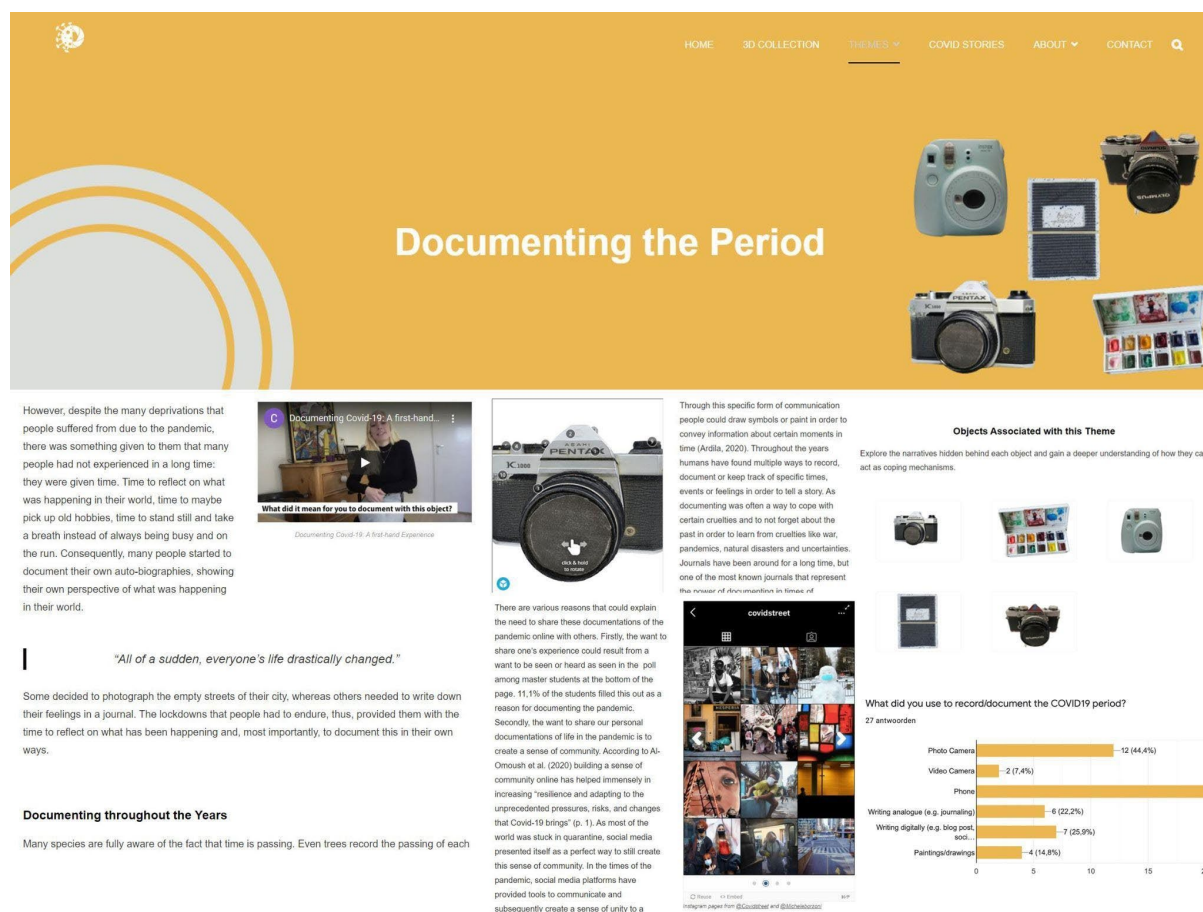


Figure 2: 'Documenting the Period' one of the themes of the Collection made use of different modalities, including a video that the group created in which they discuss what means they used to document their pandemic experiences; an interactive 3D model; a survey; and, other embedded media, such as an image carousel with Twitter accounts related to the documentation of COVID-19 experiences.

Since this collection was designed much as an (online) museum exhibition would be, the disparate objects needed to be held together via motifs or themes that would bring harmony and relevance to the collection. To do this we partnered with a local heritage institution, the Marres House for Contemporary Culture (<https://marres.org/>), who helped students conceptualise and categorise their objects into topics of social relevance, especially during the initial lockdown. After two online sessions with the curators from Marres, all the objects were placed into at least one of five themes, with many being relevant to two or more: Health, Nostalgia, (Re)Constructing Reality, Documenting the Period, and Escapism (figure 2).

<sup>5</sup> Several similar projects that documented different aspects of the legacy of COVID-19, though not as part of a higher education curriculum, were created during the pandemic: Momentos (PBS): <https://www.pbs.org/newshour/features/mementos/>; Corona in the City (Amsterdam Museum): <https://www.coronaindestad.nl/>; #CollectingCOVID (Museum of London): <https://www.museumoflondon.org.uk/collections/about-our-collections/enhancing-our-collections/collecting-covid/>; Collecting COVID-19 (Science Museum Group): <https://www.sciencemuseumgroup.org.uk/project/collecting-covid-19/>

## Curriculum Design

As mentioned previously, CDC is designed as a praxis-based course which requires students to meld theory and practice. The theories centre on the ethical, methodological, theoretical, and practical issues regarding (digital) collection and curation, representation, (re)construction, and reproduction. Students are also introduced to multimodality and multivariant narratives (Ryan, 2004) which provide the scaffolding for three tiers of storytelling: the stories about, around, and through their individual objects; the thematic narrative in which the objects are embedded; and, the story about the collection as a whole: its creation, purpose, and creators. Moreover, we explore how writing a multimodal narrative differs from traditional text-based narratives by weaving different modalities together to enhance meaning and further the narrative (Skains, 2017).

The methods and skills we embed into the course design range from technical skills including 3D modelling, blog design, wireframing, and aesthetics, to transferable skills including teamwork, critical thinking, problem solving, communication, and time and project management. This requires excellent communication and project management skills, which is key for successful PjBL instruction (Hussien, 2021). For us as instructors, supervising such a large group with individual, sub-group, and class deliverables, is not dissimilar to managing a project in a medium-sized company, with many moving parts, with individual and group deadlines that need to harmonise with project-level deadlines: all within a 12-week period.

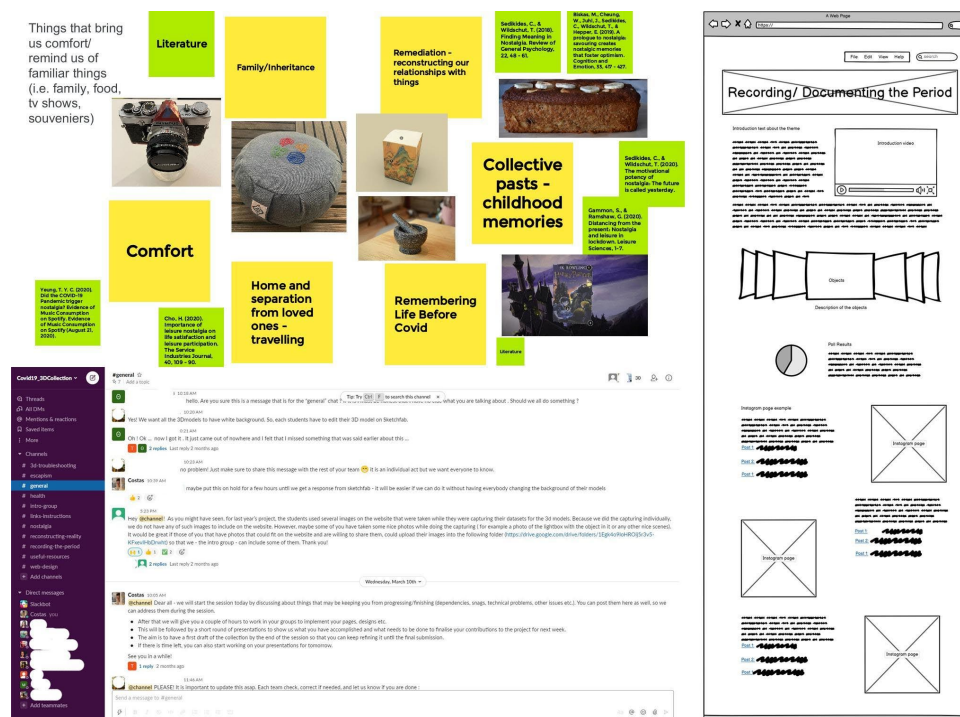


Figure 3: Jamboards, Wireframes, and Slack were some of the online collaborative tools used in the process of designing The Covid Collection. Student identifying information has been redacted.

To facilitate the production process, we introduce students to project management skills, tools, and software. For example, we use [Trello](#), a software for project and time management that has a short learning curve and allows individuals and groups to keep track of tasks, deadlines, and deliverables. We also use [Slack](#), an industry standard platform for group communications (figure 3). Although the addition of Slack risked virtual communication

overload (see Valente and MacMahon, 2020) and took a bit of getting used to, it was necessary to mirror key face-to-face communication lost during the pandemic. Other online tools such as [Google Jamboards](#) and [Balsamiq](#) were used for brainstorming and wireframing, respectively (figure 3). These essentially mirrored how we used Design Thinking tools and activities in the physical classroom to brainstorm and to organise ideas.

The last, but by no means the least important aspect of curriculum design is that of #dariahTeach (2021), an Open Educational Resource (OER) which hosts a suite of courses for the digital arts and humanities. Content from #dariahTeach was embedded into the course design as engaging online learning material (Martin et al., 2019) developed specifically for university-level students. Elsewhere (see Papadopoulos et al., 2022), we call #dariahTeach a third pedagogic pillar which is utilised alongside classroom time, be it online or virtual (the first pillar) and more traditional secondary sources (articles, monographs, websites, videos etc.), the second pillar. As an OER, #dariahTeach is an openly available, free resource for both instructors and students with no economic barriers to use (Butcher, 2015, p. 5). OERs are used in higher education to support not only distance (Cheung, 2017) and blended (Sandanayake, 2019) learning but also in flipped classrooms (Bishop and Verleger, 2013; Li et al., 2017), which was the way we employed #dariahTeach. For CDC we used the course 'Remaking Culture in 3D' (Papadopoulos, 2020) which provides the know-how for the 3D digitisation of cultural heritage, while also problematising the politics of (re)construction (for a detailed discussion of how OERs have been used in our PjBL curriculum see Papadopoulos et al., 2022).

## Student Feedback

This section will reflect on student feedback regarding their experience working on the COVID-19 class project. To do this, it will draw from: 1) students' responses to the formal evaluation questionnaires (completed anonymously at the end of the course); 2) instructors' observations and informal discussions with students in feedback sessions that were held at the end of the teaching period; and, 3) a focus group (FG) conducted with nine students a few weeks after the completion of the course. These three different sources of feedback provided a holistic understanding of the course's merits and shortcomings. It is worth highlighting that certain themes, such as the anxiety and stress that the course's fluidity induced to the students were only externalised in the anonymous responses to the formal evaluation questionnaires, contrary for example, to issues around the societal relevance and the value of such projects, that were externalised more vocally in the FG.

Since we had to conduct the FG online, we decided to avoid the typical semi-structured question-answer session and organise four Design Thinking-inspired activities that would keep our students more engaged and could solicit more nuanced feedback than what we would get from more conventional feedback sessions that we typically conduct at the end of each course. More specifically, we organised four activities: a 'Screen Walk' in which students had to lean right or left depending on their response (agree or disagree) to a series of statements; a 'Break-up/Love Letter' for which students had to write a brief letter to the course depending on how they felt about it; a 'Plus/Delta' for which we used Google Jamboard so that students could collaborate in groups and come up with both positive observations and aspects of the course that could be improved; and, a 'Pains/Gains' scenario for which they had to provide future students with some advice by indicating what their struggles were, but also

the ultimate benefits for them. Such playful feedback activities have the power to elicit a greater variety of responses and provide a more reflexive space for students than is offered by regular evaluation forms. These work particularly well for students who are less confident to verbally express their thoughts. Also, by doing or making things (e.g., sketching), they provide a relatively harmless way for both students and tutors to give and receive negative feedback; most importantly, they lessen the power relationship between the teacher and the students.<sup>6</sup> The authors have been conducting such interactive focus groups also for their Digital Humanities projects with diverse demographics (see for example, Papadopoulos and Schreibman, 2022).

The student feedback and our reflections will be presented below under four main themes: a) societal relevance; b) the fear of the unknown; c) pride; and, d) transferable skills.

## Societal Relevance

One of our key aims for this course was to emphasise the societal relevance of this collection and to make our students aware that what they produce is part of a larger, global dialogue on the COVID-19 experience. Ultimately, it was critical for this course not to develop an informational website or one that includes only metadata and descriptions of their selected objects, but a narrative space that could capture the stories of the pandemic. As one student highlighted:

I feel that the course made me realise the power of storytelling. I was always interested in telling stories, but I never really did it consciously and for the purpose of producing something that other people (a lot of them potentially) would read.

Students' feedback also highlighted that the project gave them the opportunity to connect with different audiences but also to connect with each other: *"Working together with people, especially during this pandemic that forces us to stay inside, was great."* They seemed to appreciate that the project will leave some legacy to the students of this MA but also that it has a *"personal and emotional touch"*, *"something that goes beyond what we learnt in class"*. As students also indicated, they appreciated developing a project that had an element of personal fulfilment, especially because *"you talk about something that is close to you"* but at the same time you are motivated because of *"the higher purpose you have to achieve"*: to *"connect with the outside world"*. In such a way, other people can see how others felt, reflect on the anxieties, difficulties, and losses induced by the pandemic. This project is also a means to demonstrate to those who may suffer because of the pandemic or any other future struggles that *"they will be ok [...] that they can get through this"*. Since UM is an international university and our programme typically has over 15 nationalities at a given year, students also appreciated that the project captured diverse personal perspectives and cultural backgrounds so that *"people from everywhere can see themselves here"*.

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<sup>6</sup> For a template for conducting such focus groups see Appendix B: Design Thinking Focus Group in Papadopoulos et al. (2022), Available at: <https://kula.uvic.ca/index.php/kula/article/view/205/348>

## The Fear of the Unknown

One of the most challenging aspects of running such a course is the stress and anxiety induced by the uncertainty regarding the final product. Although students seemed to appreciate *“the freedom to be creative and create content in a variety of different mediums”* the fact that we cannot provide them with a concrete picture about how the collection will ultimately look is always the trickiest aspect of the course, especially given the many variables and dependencies, including software, hardware, skills, and time, that influence both the process and the result:

“Though we had some issues in the technical stage as many risks were taken and I didn’t know what was gonna be the outcome of the 3d model, I learned that being patient and re-doing tasks worth it (sic).”

Although this fear of the unknown is somewhat ameliorated by showing them the achievements of previous classes, e.g., The Mining Project, it is undoubtedly daunting to go from highly formalised assessments, such as essays, blog posts, and quizzes, as well as very prescriptive learning processes with pre-determined learning goals and readings to one in which they have greater autonomy and responsibility. This is also amplified by the fact that most of our students come from very traditional undergraduate studies, and therefore they are less comfortable with the creative process:

“You seemed like a new world which I was about to discover from scratch.”

One way we try to ameliorate this discomfort is by introducing Design Thinking and PjBL earlier in the academic year. We also emphasise in every possible instance that working that way, e.g., agile development, learning on the fly, working in teams and dealing with group dynamics, and adapting to change, is how they will probably work during their entire careers (Zafirov, 2013). It should be noted, however, that even though such reminders are useful, the fact that this project is part of an assessed course, does not help in eliminating student anxieties.

Working through the process as a team makes the experience less daunting than undertaking it alone, however, confusion and stress are easily spread through private communication channels, e.g., WhatsApp, for which we do not have control over the messages and information communicated. This is also one of the reasons why we asked our students to use Slack (see Tuhkala and Kärkkäinen, 2018; Menzies and Zarb, 2020) for project communications so that we can intervene by helping them and clarifying matters. Students also thought that following a more formal meeting structure, e.g., with an agenda and minutes, could help with the decision-making process. Similarly, they would have liked some more hierarchy in the groups, e.g., with the election of leaders that will take decisions on behalf of each team.

Lastly, it should be noted that the same elements of surprise, uncertainty, and often confusion, also apply to us. Since we prefer taking the role of mentors rather than of managers that dictate the process, we never know in advance either how the final product will look and function or what issues and impediments will arise.



## Pride in What They Created

The majority of students highlighted in all forms of feedback the sense of fulfilment that the completion of the project created. It is characteristic that although they found certain elements of the project particularly stressful, there was consensus that it is a “very rewarding feeling to have achieved something that difficult”. The pride that students felt when completing the project was vividly described with the ‘Love/Break up Letter’ activity:

“It had been a difficult journey, full of failures and moments of exhaustion, but the outcome really made me feel proud that I achieved what you [i.e., the project] had asked from me.”

“In the end, this actually felt kind of rewarding, especially upon seeing my final 3D model, the final group page, and my own blog post

“I feel that the creation process was very fulfilling, and I would take you one more time as a course”

“I am happy I got to know you [i.e., the course]; although it was indeed a hard period, together with my classmates, teachers, classes, and videos, I managed to have pretty interesting results and skills to show!”

This sense of pride and fulfilment that such projects create is also something that the authors have noticed in similar projects they have designed in the past. Students often compare these public products with the more conventional academic outputs they typically create, arguing that the former make it easier for them to show their academic work to their parents, and consequently becomes easier for their family and friends to understand what they are studying and how their studies are relevant to society.

## Transferable Skills

The students seemed to appreciate the opportunity to develop further their existing skills as well as to gain competencies that will prepare them for their future careers and the “*real world*” (figure 4).

“Spending time building something online and not only learning, but really practising a variety of digital skills (3D modelling, designing digital narratives, and web design) was important...*these are all skills for our CV*”

Among the competencies that they particularly highlighted in their feedback was the creative approach to solving problems, “*dealing with different kinds of people and gaining tolerance*” and “*being patient*”, developing time and project management skills, learning to work with new technologies and platforms, and working in groups. Many of the students also recognised that the skills they developed as part of this project, are “*skills that are applicable to several contexts*”. Peer-feedback was also one aspect of the project that they found particularly useful.

Regarding group work, students thought that it is important to work with people who have different skills and knowledge, since you “*build on each other’s skills, discuss ideas, and improve*



[y]our work". Working together also provides them with more chances to not only understand something better but also gives them "different perspectives, while working towards a common goal". As they argued, it is critical to know when to express your opinion or step back and reflect since "it is rare to find a job where you don't have to collaborate with somebody". The only negative aspect of the group work that was highlighted on a few occasions was the dependency on other teams or on peers within the same team.

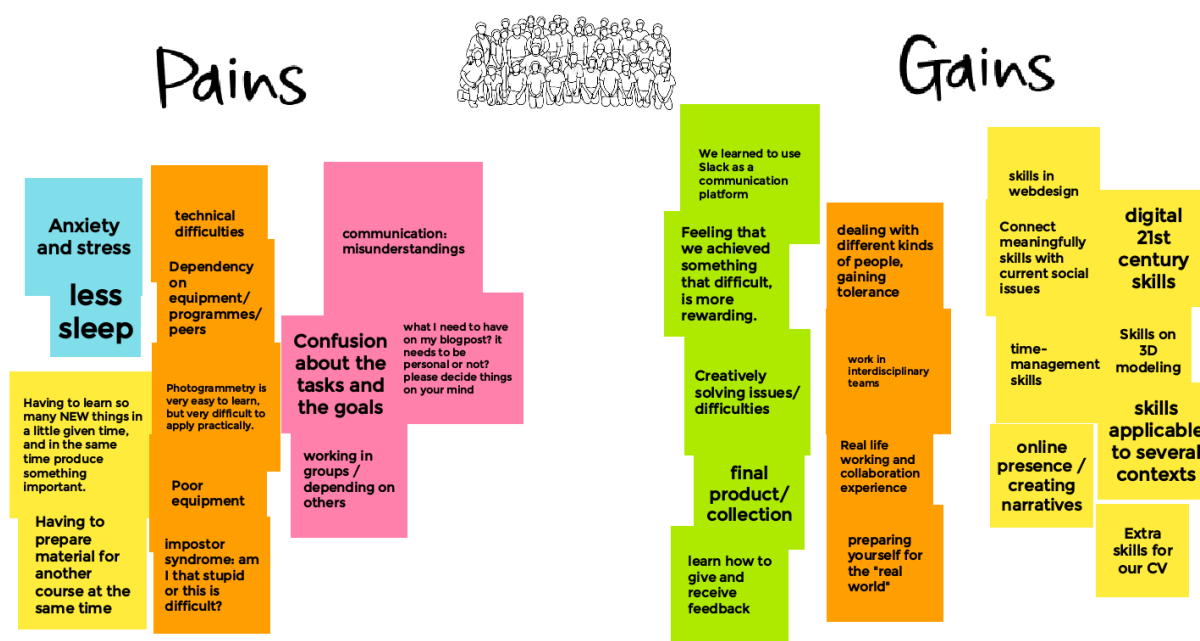


Figure 4: Focus Group Activity: Pains and Gains. For this activity, students were given the following scenario: You are going to provide some advice to next year's students. They have seen the COVID project website linked through the Master's blog and they would like to know more about this. Some are worried about the skills, time, and effort required, while others are excited about the new skills they will learn and the competencies they will gain. Based on your own personal experience working on the project for the digital collections course, including your process for learning the 3D skills, working with others, managing your time etc., you are going to provide them with some advice by indicating what were your pains/struggles in working on this project and what were, despite the pains, the ultimate gains/benefits for you.

## The Challenges of PjBL during COVID-19: Lessons Learnt

Project-based approaches to learning are rather challenging, especially in teaching and learning environments that are not always flexible to allow changes as the course develops (see Aksela and Haatainen, 2019). Student numbers are a crucial factor. With relatively small classes, it is easier to organise and run such projects. However, in much bigger classes, such as in the case of the MADC, where student numbers range from 30-40, project management becomes more challenging. Thus, we have adopted a course design in which the learning goals stay the same, but the project undertaken changes from year to year. While the concepts and theories around digitisation, curation, and collection building remain largely the same, each year new themes and concepts are introduced based on the subject matter of the objects digitised.

In previous years, our projects were dependent on institutions allowing access to their collections, which presupposes time for the curator and other staff members to provide access to the students and oversee the digitisation process. With the COVID-19 collection this was not an issue as the museums were closed; however, we did not want the students to miss out on the possibilities of professional connections with heritage professionals. Thus, we reached out to the local cultural institution, Marres, that specialises in sensory education, to collaborate in this project.

Another critical factor in this project is technology. For example, not all objects are amenable to the 3D modelling method we are using, i.e., Structure-from-Motion (photogrammetry): highly reflective, and objects made of glass are difficult or even impossible to be digitised. In previous years we vetted objects in advance. But this year, object digitisation took place at students' homes, frequently with substandard equipment, unstable internet connection, and perhaps most importantly without the help and support of team members (although some students gathered together to do the digitisation). As a result, many students experienced more frustrations in the digitisation process.

Assigning grades can also be challenging for group projects (see Lewis, 2019). Ideally there is an individual mark and a group mark. Over the years we have found that high-functioning teams tend to defeat our goal of assigning individual grades. In many cases students step in to help their peers. Although this is rewarding to see as a teacher, it makes it hard to distinguish and grade individual contributions. For the COVID-19 project we made more of a distinction between individual and group marks. There is one mark for each team (contribution to the final project – 30%), while individuals write a blog post in which they contextualise their chosen (3D) object personally, historically, politically, and or/ socially (40%). One third of the final grade was also given to the 3D model itself accompanied by a short blog post that reflected on the process and the product.

As highlighted above, student insecurity of the process is one of the largest challenges. This insecurity was heightened not only due to remote education, but also because of the isolation it caused in every aspect of their lives. Surprises and uncertainties of the project lifecycle were exasperated due to the impact of COVID-19, and although students did not disclose the pandemic as a factor that influenced their work, the impact that it had on them was exemplified by some of their object narratives: they often described the loss of employment; inability to be with family; sickness and death; fear of leaving their apartments, which were often cramped and sparsely furnished; and, social isolation. We believe that the design of the PjBL curriculum with ample opportunities for interaction and collaboration at both group and class level – similarly to what we would have done in an on-campus setting – provided students with an outlet for expression and for developing their social and emotional skills:

“It was very nice to be able to combine your experiences of lockdown with those of your peers, and create this collection”.

“Working together with people, especially during this pandemic that forces us to stay inside, was great”

In previous years, we organised day-long sessions during which each team could work on their theme but also teams could collaborate with each other. Such sessions often included Design Thinking activities and bodily interaction and socialisation, and we were also present

to give advice and support. Unfortunately, the equivalent of this online is imperfect and Zoom fatigue frequently sets in (Peper et al., 2021). As one of the students highlighted in their feedback: *“the ... four-hour workshops just left me with the worst zoom fatigue I’ve ever experienced.”* We believe, however, that although some online sessions were too long and created unnecessary fatigue, they allowed students to see and be with others, share their news, thoughts, and struggles – often also those not related to the course – thus allowing them to escape from the reality and the imposed isolation.

On the other hand, students who were shy and less vocal tended to be more hesitant to express their opinion via teleconferencing. To mitigate this and re-introduce a more active dynamic to online teaching, we started changing the students’ learning and participation modalities from class to class (see Toney, 2021) by making classes interactive, engaging, and creative. By assigning #dariahTeach content in a flipped classroom environment, we were also able to provide them with multimodal learning materials, including text, videos, interactive assignments, and quizzes, to learn the method they needed to digitise their objects. Having these materials online allowed students to review them as much (or little) as they needed and use it to structure their day, especially at times when they were too exhausted to read academic sources (Papadopoulos et al., 2022).

## Conclusion

A project-based course that revolved around the experience of the pandemic, not only provided students with well-sought lifelong and transferable skills, but also enabled them to cope with social isolation and provided them with an opportunity to contribute to a broader conversation about the experiences of the COVID-19 pandemic, reinforcing the societal relevance of their studies, as well as the importance of their individual experience. Although all our students experienced the sociocultural effects of the pandemic, they rarely had the chance to communicate their experiences and feelings in a positive way. As they said, this project had first and foremost an impact on their micro-society since it gave them the opportunity to connect with each other through and despite the anxieties and difficulties that they all shared.

We also believe that the collaborative nature of the course and the outlet that the curriculum provided to externalise the stresses and strains of the pandemic, connect and share with others, and reflect on both personal and societal level, might have been a factor in alleviating the mental health consequences of the pandemic. Although, we have gathered no empirical evidence to support the latter, our argument derives from our experience teaching the same course on campus this year – with students that have spent last year in isolation (either as undergraduate students, unemployed, or remote workers) – and our observation that students present much greater levels of lack of motivation, are more anxious, and easily bored. Future empirical research could explore if there is a connection between PjBL and mental health and if and how PjBL could have alleviated the psychological impact that the pandemic had on students.

While the lockdown in the heritage sector and the move to *ERT* forced us to drastically rethink our course, the redesign, ultimately, better met the needs of the students enrolled in our MA programme. One of the few negative comments received in student feedback from the

previous year was that students did not feel that researching mining history and heritage contributed to their learning goals. By reframing how objects are contextualised, from artefacts that gather their importance from their historicity, as well as present-day situatedness institutionally, to objects which gather their importance as material/digital objects situated in time and space, this project better met our students' interests. It demonstrated how it was possible to embed meaning into the most ordinary of objects, and that these objects can represent larger societal, economic, cultural, and political concerns as profoundly as those collected by heritage institutions. It demonstrated to them how meaning-making is situational, and how even the greatest of challenges can be turned into a positive experience.

Education, especially in arts and culture disciplines, often does not provide students with the necessary digital and entrepreneurial skills that will prepare them for a competitive digital and creative economy. Although the transferability of skills from specific contexts to wider areas of application has been questioned (see for example, Fine, 1957) and a degree of transformation may be needed to adapt those acquired in a certain context for a new work setting, we believe – supported by our students' feedback both for our courses and post-graduation – that PjBL and the CDC course specifically, provide them with key subject, methodological, social, and personal skills and competencies (Rychen and Salganik, 2003). As argued by Nägele and Stalder (2017), such skills are necessary “for almost any situation or occupation” (p.742) since they equip them with the means to deal with individuals, groups, and the wider community, while being able to problem-solve and be entrepreneurial. Although the CDC curriculum does not explicitly focus on such employability skills, student work in an authentic and socially situated environment in which they deal with tasks that engage both the head and the heart (Reynolds, 2012), provides them with the potential for the future transfer of skills. We believe that PjBL and our approach to teaching speaks to Devlin and Samarawickrema's (2022) call for effective university teaching in COVID-19 and beyond, and the need to develop new pedagogies for unknown futures.

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