Collaborative Pedagogy and Digital Scholarship: A Case Study of 'Media Culture 2020'

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Abstract

This paper presents an educational case study of 'Media Culture 2020', an EU Erasmus Intensive Programme that utilised a range social media platforms and computer software to create open, virtual spaces where students from different countries and fields could explore and learn together. The multi-disciplinary project featured five universities from across Europe and was designed to develop new pedagogical frameworks to encourage collaborative approaches to teaching and learning in the arts. The main objective of the project was to break down classroom and campus walls by creating digital learning environments that facilitated new forms of production, transmission and representation of knowledge. Media Culture 2020 was designed to pilot a novel mode of 'blended learning', demonstrating a number of ways in which 'Web 2.0' networked technologies might be adopted by academics to encourage open and collaborative modes of practice. The project utilised a number of social media platforms (including Facebook, Twitter, Google+, Google Hangout, Google Docs and Blogger) to enhance the learning experiences of a diverse set of students from different cultural and international contexts. In doing so, Media Culture 2020 enabled participants with a diverse range skills and cultural experiences to develop new working practices that respond to the convergence of digital media and art, as well as the internationalisation of media production and business, through the use of open, interactive software.

Introduction

> The world communications net, the all-involving linkage of electric circuitry, will grow and become more sensitive. It will also develop new modes of feedback so that communication can become dialogue instead of monologue. It will breach the

> wall between 'in' and 'out' of school. It will join all people everywhere. (McLuhan & Leonard, 1967)

This paper presents an educational case study of 'Media Culture 2020' (MC2020 hereafter), an EU Erasmus Intensive Programme designed to explore what a decentralised, pan-European model of teaching and learning might look like. Intensive and accelerated forms of teaching have been shown to provide a 'flexible and advantageous' alternative pedagogical approach (Wlodkowski & Ginsberg, 2010: 1). The multi-disciplinary project featured five universities from across Europe, utilising a range of social media platforms and computer software to create open, virtual spaces where students from different countries and fields could collaborate and learn together. In doing so, MC2020 sought to build on existing theories of learning — detailed below in more depth — in order to develop a new pedagogical framework that traversed cultural and geographic boundaries, combining a range of skills and experiences to form collaborative, multinational creative partnerships. The main objective of the project was to break down classroom and campus walls by creating an open learning environment that could facilitate the production, transmission and representation of new knowledge. The aim, then, was to explore how educational practices might respond to the convergence of digital media and art, as well as the internationalisation of media production and business.

The project featured two intensive workshops, with mixed student groups from each of the five partner universities collaborating on a creative, transmedia design brief. These workshops were accompanied by a range of online pre- and post-workshop activities. This mode of 'blended learning' (see Bonk & Graham, 2006; Garrison & Kanuka, 2004) was designed to enhance the learning experiences of a diverse set of students from different cultural and international contexts. To enable collaboration between each of the partner institutions, MC2020 made use of a number of social media platforms and networked 'cloud' technologies (including Facebook, Twitter, Google+, Google Hangout, Google Docs and Blogger). The interactive and decentralised nature of these digital tools enabled staff and students to communicate and strengthen social ties, alongside participation in the production of new knowledge and media content. This article presents an overview of the framework developed throughout the project, suggesting the piloted methodology was beneficial in fostering increased multicultural student engagement, whilst simultaneously establishing more synergetic modes of research, learning and creative practice.

Project overview

Media Culture 2020 was an ambitious, multicultural project, featuring staff and students

from five universities from across Europe: the University of Vic (Spain), Tampere University of Applied Sciences (Finland), Liepaja University (Latvia), the University of Lincoln (United Kingdom) and HKU Hilversum (Netherlands). The partnership was underpinned by affiliations between some of the staff made during previous international academic events, although collaboration between students of these institutions had yet to be explored. Whilst each of the universities ran similar courses in multimedia design and creative practice, there was motivation to encourage a more open transfer of knowledge and skills. A successful application for EU funding under the Erasmus Intensive Programme (project number 2012-1-FI1-ERA10-09673) enabled the partnership to undertake a three-year project to develop joint, multidisciplinary courses. Each partner university contributed different skills and knowledge to the project: Tampere offered expertise in interactive design and educational use of social media; HKU in applied narrative design and software and hardware development; University of Vic in entrepreneurship, business, audio-visual media production and blended learning; Liepaja University in combining virtual and physical worlds through immersive media; University of Lincoln in games design, mobile phone gateway development, convergent media practice, emergent media technologies and participative project development. As such, MC2020 can be considered a pedagogical experiment, designed to facilitate collaboration between the partner institutions by providing an opportunity for students and lecturers from different countries and cultural backgrounds to work together and learn from each other. The aim was to create new kinds of learning outcomes by blending divergent practice skills in a context where the connected devices and new opportunities of contemporary digital culture are yet to be defined.

In addition to the two workshops (hosted by Tampere University and Liepaja University in 2013), MC2020 featured a number of activities initiated online, consisting of virtual team meetings, interactive 'webinars' hosted by each partner university, as well as modes of social networking and collaborative practice. The implementation of ICT and social media tools was designed to extend the methods of teaching and learning within an open, virtual learning environment. The main activities during the pre-workshop phase were team building, project planning and researching online. The learning outcomes include skills in art and media production for twenty-first-century platforms, market research, business planning, pitching, working in international multidisciplinary teams and the application of social media services. The project outcomes included the production of a wiki (created using Google Docs and Google Drive) and a blog (mediaculture2020.blogspot.com), which would act as a public-facing channel for exhibiting the new ideas and content created during the workshops. The blog and social media platforms also enabled staff and students

to collectively document and evaluate the whole process. The focus of the brief was to interrogate the convergence of computer technology, media reception and art practice by exploring the potential of interactive media in the context of an increasingly multicultural European terrain.

Online learning: Developing a more collaborative framework

Study programmes delivered online are becoming increasingly popular in higher education, especially within postgraduate, open-access courses. According to a recent Babson College study (Reiss, 2014), more than 7.1 million students took at least one online class in 2013, a 6 per cent increase from the previous year. Compared to traditional distance learning, online forms of 'e-learning' can often result in increased social interaction and a choice of engaging teaching methods (Sendall *et al*, 2008). Online lectures, tutorials, asynchronous forum discussions and MOOCs (Massively Open Online Courses) are just some examples of the rich variety of tools supported by modern online learning platforms. Whilst the methods at hand are often well suited to support individual learning, we still experience shortcomings when it comes to collaborative, project-based learning. Linear forms of e-learning are often a replica of traditional teaching in classrooms, whereby instructions are broadcast fairly homogeneously to students (most commonly via pre-recorded lecture-style videos). The teaching methods adopted are usually situated within one academic discipline, whilst learning is fairly dislocated from collaboration with other staff and students. Moreover, it has recently been suggested that 'one size fits all' models of remote learning embodied by MOOCs can often produce an isolated and unsupervised experience, one with limited chances to receive 'personalised guidance' or to engage in critical discussions with teaching staff (Laudrillard, 2014). This is a rather problematic situation which needs to be addressed if we are to continue to engage students online. When designing academic courses it is important to consider *how* prospective students learn. A wealth of research (see Dunn & Griggs, 2010; Sims & Sims, 1995) has shown that not everyone learns the same way; individuals often have vastly different academic requirements and learning styles. It is therefore important to provide flexible methods of engagement and delivery to support a plurality of learners.

Despite the apparent drawbacks discussed above, what these emerging models of open education and distance learning represent is a renewed urgency amongst academics to leverage the capabilities of networked technologies to support teaching and learning. What is more, digital scholarship is set to become a pressing issue within future E.U policy. Speaking at a recent EurActiv (2013) round-table event on open and connected learning, Ana Pereira (Head of Skills and Qualifications Strategies, EU Directorate General for

Education and Culture) stated:

> The use of technology for the benefits of education can be an essential, or important, contribution to modernise our schools and universities, and the challenges we now face are so big that we cannot ignore this potential that exists.

What we must strive for, then, is a model that utilises digital tools and networked infrastructures to support not only the delivery of teaching, but also to provide a personal and engaging learning experience. MC2020 provided a test bed to develop a new kind of pan-European, educational mobility, using a range of online practices to develop joint virtual classrooms, labs and studios to bring together staff and students from different educational and cultural contexts. The key objective was to engage students in a more flexible and participatory mode of multidisciplinary learning by facilitating a culture of collaboration between the partner institutions.

Subsequently, the MC2020 framework represents a novel form of 'blended learning', which Curtis Bonk and Charles Graham (2006: 5) define as a hybrid learning system that combines face-to-face instruction with computer mediated activities. Christopher McMorran (2013) suggests that if used in an educational setting, collaborative technology can enhance active participation (through content creation), increase student engagement, and enrich the learning process. Similarly, Mike Bertland (2013), an educator of over 10 years, has claimed that 'making use of technology to allow students the freedom to discover solutions to problems both independently and collaboratively is a force for good'. The development of online learning environments alongside established classroom forms that require the physical co-presence of both teacher and student must therefore be considered a useful pedagogical approach, since it can serve to facilitate a simultaneous independent and collaborative learning experience (see Garrison & Kanuka, 2004). Indeed, collaborative technologies were central to much of the work undertaken throughout MC2020, thus providing an opportunity to evaluate the educational merits of some of these tools.

Methodology

MC2020 implemented a range of blended teaching methods, which sought to combine divergent skills and expertise in order to develop an engaging model of multidisciplinary, collaborative learning. The project was designed to explore intensive methods of teaching, whereby delivery of taught content and completion of tasks are completed within an accelerated timeframe. According to Wlodkowski and Ginsberg (2010), accelerated

and intensive programmes can offer a flexible and advantageous means of education, especially to those individuals whose social commitments make it hard to engage in more traditional forms of education. While it has been suggested that this approach could result in the delivery of content being overly compressed, with little time for reflection, breadth and depth (Wolfe, 1998), a longitudinal study undertaken by Raymond Wlodkowski and Theresa Westover (1999) suggests this does not necessarily hold true. The results of the study illustrated that accelerated courses satisfy adult students' needs and provide levels of learning indistinguishable from those demonstrated by students in traditional courses.

MC2020 consisted of two, two-week intensive workshops; the first of which featured 10 lecturers and 40 students, with the second phase featuring contributions from additional staff members and another set of 49 students. The students involved were third and fourth year BA students of fine arts, interactive media, business, film and television, whilst the participating lecturers came from different practice and theory backgrounds. The selection process took into account student competency in English, in addition to production skills and experience of collaborative work. Wlodkowski and Ginsberg (2010: 25) posit a number of motivational measures that they see as central to 'enhance learning in intensives'. One of the central aspects is 'inclusion', whereby students become motivated to develop positive learning attitudes when they feel connected with other learners. To achieve this we utilised a range of online activities that preceded the workshop program, with a series of interactive seminars, group tasks and social networking practices extending and enhancing the teaching and learning experience. The first phase of pre-workshop activities took place in the six weeks leading up to the first workshop held in Tampere (April 15-28, 2013), while the Liepaja workshop (Oct 26-Nov 8, 2013) was accompanied by four weeks pre-workshop activities. The established teacher/student divide was avoided wherever possible, with optional seminars, interactive workshops, student lead-presentations, group discussions and plenaries taking the place of the traditional, rigid lecture/seminar module structure.

The whole process (aside for the initial administrative setup) implemented 'student-directed learning' (see Checkley, 1995; Green, 1995), whereby student groups were left to organise themselves, decide and delegate roles within the teams, and to format these presentations together. Lecturers were available for advice if required but by removing that sense of authority from the process the students were able to work without fear of academic judgement or control. This continued once each group presented their initial findings and ideas where peer evaluation took precedent over academic assessment. It was the students who discussed the work, providing feedback and critique of each other that led to decisions on how projects would proceed once the workshop began.

The project brief itself was designed to be fairly open and flexible so students were free to develop their concepts in whatever direction they felt most appropriate. Students were asked to imagine what digital media technology in the year 2020 might be like, with the aim to design and develop a concept for a technological innovation that might impact on or improve a shared European culture. The focus of the course content included interface design, 'smart' technologies, 'open data' and future developments in ICT, with groups having to explore these ideas by collaborating on mock-ups, workflow models, animations and concept designs. While many of the students had little prior knowledge of these subjects, the multi-faceted learning environment was shown to encourage creative and open approaches to research, conceptual development and content creation.

Recent research (Berger & Trexler, 2010; McMorran, 2013) indicates that when students work collaboratively in small groups they learn more and retain more, leading to a more satisfying and rewarding experience. We were keen to explore this method by engaging students in collaborative group work. During the first pre-workshop phase participants were split into five student teams, comprised of members from each university. This approach was chosen as a way of combining the various skills of students from a range of disciplines and cultural backgrounds. Whilst the initial barrier of working with students from different countries was challenging for some, student feedback from the project has indicated that this method was indeed beneficial for the development of innovative concepts, in addition to fostering a more engaged approach to research. Teams were required to work collaboratively on three assignments. First, teams were asked to design a logo for MC2020 and discuss issues of branding and visual style. The teams then had to choose two or three topics related to the project brief, researching these together and presenting a summary of their findings in Tampere. The final task set during this first pre-workshop phase was to make proposals to improve the draft programme of the actual workshop. These proposals were then voted upon, thus embodying the democratic approach we strived for throughout the project.

The second phase of pre-workshop activities included five online sessions, with lecturers from each of the partner universities delivering an online seminar relevant to the project. Again, participating students were split into mixed-nation groups and worked on team projects during this pre-workshop stage. Using a range of collaborative digital tools, the groups were asked to analyse one of the concepts developed during the Tampere workshop for further processing in Liepaja, with the results presented by the groups during the first working day in Latvia. The pre-workshop phase was advantageous since it served to engage students in both their local and international groups in order to build team bonds before the groups met 'in person' during the workshops. This success might suggest

a model of remote, collaborative working could be pursued in other educational settings based on the approach taken.

Implementing digital tools to enhance teaching and learning

A number of interactive 'Web 2.0' technologies were utilised to encourage a dynamic and democratic culture of collaborative learning (see Berger & Trexler, 2010; Sendall *et al*, 2008). Google+ and associated applications (Google Docs, Google Drive and Google Hangout) were used as the core tools for this process. In a white paper on teaching with technology, Ashley Deal (2009: 2) of Carnegie Mellon University suggests that digital tools are becoming particularly useful for supporting 'project-based, collaborative learning'. The paper outlines a number of areas which can be enhanced through 'a landscape of educational technologies' (Deal, 2009: 1). One of the most immediate benefits of online tools is the facilitation of real-time and asynchronous text, voice, and video communication. This can support co-creation by enabling group discussions, allowing each participant to develop ideas on a shared platform, whilst simultaneously modifying project outputs. There are also a number of tools which can facilitate consensus building through group discussions and polling (see Cavalier, 2007; 2008). This can foster a democratic and engaging learning environment whereby individual ideas and opinions can be inputted and quantified. In the lead up to MC2020 lecturers from across the five countries spanning three time zones we able to use Google Hangout as a tool to meet up virtually, in real time, to discuss and plan the event.

Deal (2009) also suggests that digital tools can be used to assist in basic project management and workflow planning, whereby all information can be created and shared as a collaborative effort. Cloud-based systems simplify and streamline resource management in terms of basic file sharing in addition to more advanced features like search, tagging and version tracking. Within Google Docs the 'revision history' feature enables users to see how documents have evolved overtime, and who has contributed, which acts as a rapid way to be brought up to speed. This same feature also allows teachers to monitor student activity within these collaboratively constructed documents, which could potentially aid forms of assessment if required.

Google Docs was chosen as a central application for collaborative working due to the range of integrated software needs it fulfils (word processing, spreadsheets, presentations, etc.). This platform enabled all participants to easily create and share documents from within the web browser, and can be accessed by a range of networked devices. A key advantage here is that when collaborative documents are prepared on Google Docs there is only one version, which is always up to date and documents all revisions. Subsequently,

everybody has access to the same information, with each group member able to discuss the project in 'real-time' via the various 'comment' and 'chat' features integrated to Google Docs. This was shown to result in a more accurate and cohesive understanding of the projects from all involved.

The associated 'cloud' storage service, Google Drive, allowed these documents to be shared to all participants instantaneously, whilst also facilitating a separate space for admin purposes. Throughout the project student groups each had their own folders for sharing work in progress, which the lecturers could also see and comment on if required. During the pre-workshop phase, Google Hangouts was also used to facilitate online lecture delivery and video link-ups between the partner universities. The ability to integrate Google Docs, screen-sharing and a streamlined 'invitation to join' process made Google Hangouts particularly appropriate for this task. Additionally, a 'hangout' can be saved to YouTube for future referencing and even broadcast live. Admittedly, this did sometimes result in logistical problems in regards to arranging a suitable time for all participants to be available. Nonetheless, the blend of both synchronous and asynchronous teaching methods fostered an open, digital learning environment, one that extended the traditional boundaries of the classroom in time and space.

Alongside the use of these Google platforms, MC2020 utilised a number of social media services as a way of disseminating information and enhancing the relationships between students and staff from diverse cultural backgrounds. Given the widespread popularity of Facebook, with all of the students (and all bar one of the participating lecturers) already having an active account, it was decided that this service be used as a virtual 'coffee room' throughout the project, with a closed group page functioning as an informal hub for communications and cultural exchange. It worked extremely well as a platform for networking and interaction, and had the added value of allowing staff and students to quickly share information and pool relevant research sources. Not only did this yield a positive engagement of students in research processes, it also resulted in new and unexpected transformations to the course content itself.

Within the traditional teaching environment most course content is presented like a set menu in a restaurant, where a balanced meal is prescribed in a specific order created by the head chef (lecturer/unit coordinator), with very little room to break out of this fairly fixed teaching structure. The MC2020 model could be seen as more of an educational buffet, a smorgasbord of optional pieces of information, skills and debates. Everyone can provide a dish for the table, no one is head chef, but lecturers are there to advise on complementary serving suggestions. Although a number of lecture/seminar activities were planned, the workshop programme itself (including running order, start times, etc.) was

not restricted by any formal structure, but instead open to negotiation via a principle of democratic voting. Everybody was involved in the decision-making process, with the blog and social media platforms used to confirm and communicate these decisions on a 'live' basis. During the pre-workshop period potential lecture titles and running times would be posted on the Facebook group page. Everyone was then encouraged to 'like' the posts that they were interested in and were able to attend; if the lecture received less than 10 likes it didn't go ahead.

Given that MC2020 was funded by an external body it was important for us to be able to publicise the project and make the content and new ideas generated throughout the workshops available for our EU stakeholders to engage with. As Deal (2009) suggests, one of the key advantages of digital tools is that they enable both local and remote presentation of group work and archiving of completed projects. One of the central outputs of the project was the generation of a dedicated blog/website, which was used as a public-facing platform to present the content produced throughout MC2020. Each of the lecturers were able to publish without the need for specialist computing knowledge, whilst students were encouraged to use the 'comment' feature as a way of offering support in the development of concepts and evaluating group work. One feature of the blog that was particularly useful was the inclusion of a Twitter plugin, which aggregated any information posted by staff and students to their own personal Twitter feeds via the hashtag '#MC2020'. Not only did this serve the purpose of publicising the project to a larger online audience, it also encouraged a more diverse documentation of the whole process, leading to a vast collection of associated tweets and images from the event. In the case of MC2020, then, microblogging services like Twitter and Facebook represented an excellent example of crowdsourcing, simultaneously fostering more personal and dynamic relationships between staff and students. Whilst many of these features might now be considered common knowledge, they were particularly significant for this project since they enabled 'real time' collaborative action between staff and students, regardless of geographic location.

Evaluation of the MC2020 Framework

In comparison to courses that already existed in the partner institutions, MC2020 utilised a more flexible and empowering educational framework for both students and lecturers. For the student, this approach generally led to an improvement of self-management; the implementation of collaborative work in multidisciplinary teams; improvement of the quality of mentoring; and a diversification of activities and professional abilities. For the lecturer, MC2020 represented an opportunity to partake in a new pedagogic relationship

with students, which took the form of responsive, two-way dialogue; the implementation of a flexible monitoring and evaluation process where the two are blended together as one and the same; and through the diversification of tools for organizing activities related to content. Together, both staff and students could develop innovative practices related to digital collaborative work, engaging in diverse ICT and social media learning methods.

In terms of collaborative working and the implementation of interactive, web-based technologies, MC2020 can be considered a success because the barriers of remote working during the pre-workshop phase were overcome, whilst a more cohesive approach to sharing new knowledge was developed throughout. The various online communication platforms utilised provided an appropriate toolset for documenting progress and experiences, in addition to facilitating a more open channel for the dissemination of information and feedback. Student evaluations of the project suggest this model of working provided more than just a set of tools to foster collaborative practice, it became a catalyst to change perceptions of trust and for enhancing bonds between staff and students.

Nevertheless, the multiplicity of tools, platforms and channels used to exchange information and communications sometimes over-complicated the process. If you discount for a moment that sharing everything on Facebook allows for certain bridges between content and ideas, the biggest difficulty was locating where everything was, especially when there was a structural change to how the documentation was organised. Working in this way was new to most of the participants and the amount of work being produced quickly outgrew the original structure for organising documents. When the inevitable reshuffle happened, links to documents posted on Facebook often became broken. The same would have been true even if we opted to use Google+ as the social networking tool. Whilst this did cause minor problems during the first part of the project, improvements to the archiving of information could be discussed and implemented during the second phase.

For non-real-time group work the provisions of Google Docs/Drive worked as intended. It is evident these tools enabled all involved to have a consistent and seamless experience of contributing to tasks, fostering a strong culture of collaboration. However, as with the organisation of this project, activities that did require real-time collaboration proved difficult. This can somewhat be attributed to the fact that it is very difficult to assemble groups from multiple locations, time zones and schedules to be together and online at the same time. Despite how well the tools were used they still did not solve the real-world issues of remote collaborative working. That being said, the use of digital tools and blended teaching methods certainly helped to improve the sharing of information

and conceptual development throughout the project. This approach was also successful in providing a platform to promote and encourage contributions from all participants.

Although the experience of using these digital tools within this project were incredibly positive there are a number of drawbacks to using Google Apps that need to be highlighted. The fact that they are not integrated with official University Virtual Learning Environments results in their use feeling like a detached experience both in regards to administration and the student experience. There is no real assurance of privacy when using these applications and the possibility that Google could crash resulting in all information potentially being lost. Google at any point could change their terms and conditions, begin charging, or implement restrictions on the use of their tools. Students must be online to not only access, but also to contribute to material via these methods. Most of these issues could be associated with a number of digital platforms, not just Google, so an ideal future would see the development of a purely academic technological infrastructure that would permit much of the same modes of practice utilised during this project but within a local and controlled infrastructure.

We see a number of developments that have made the use of online collaborative tools more plausible in an educational context. The technical reasons include faster web connectivity, a wider range of interactive, 'cloud' software, and the widespread dispersal of networked devices that allow users to create and access content online. Whilst IT literacy can sometimes serve as a significant barrier in the online delivery of content (making the availability of technical support paramount to digital scholarship), the use of popular, 'user-friendly' web services to support collaborative learning (i.e. Google, Facebook, Twitter) might serve to reduce such problems in the future.

Conclusion

For the students and lecturers from the five partner institutions taking part in Media Culture 2020, the implementation of social media and 'cloud' platforms offered an innovative solution to both teaching and learning in a collaborative manner. By leveraging the interactive and decentralised capabilities of a range of technologies in an educational context, this model of digital scholarship was shown to facilitate an open and dynamic working environment. The blended teaching methods piloted throughout MC2020 allowed for expansive, multi-cultural collaboration, whereby information and knowledge could be accessed and disseminated across a number of networked devices. This had particular value in the pre-workshop phase by enabling students from different countries to forge working partnerships and learn from each other. Students were able to contribute to a wide range of intellectual discussions, made accessible to all participants through the various

software utilised. This can be seen as a more open process of learning since students were able to observe alternative ideas and work contributed by other participants, in addition to the collective feedback of staff. Participants were also engaged in active research activities throughout the conceptual development, presentation and delivery of projects. A collaborative approach to the documentation of research was encouraged: a 'library' of useful research sources was set up on the Google Drive, with contributions from both staff and students. This played out as a constantly evolving archive, connecting and pooling the research activities from both workshops.

Implementing various modes of computer-mediated communication alongside more scholarly practices was certainly successful in terms of enhancing team networking and interactions. The Facebook group in particular was a useful tool in this respect, with the connections formed as part of MC2020 continuing far beyond the conclusion of the workshops. In fact, we still witness students posting and discussing research relevant to the project, whilst it has also been used as a way to support collaborations on other projects. These platforms offered excellent opportunities and models of working for non-real-time collaborations, although there were issues with real-time logistics for arranging different groups of people to present simultaneously. Nonetheless, it is clear that this model of collaborative pedagogy could be appropriated to facilitate a wider pan-European, educational mobility, extending the traditional boundaries of the classroom and encouraging a more participatory mode of learning.

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