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Introduction

There are no “natural” ways to educate. In the same way, we can no longer have recourse to the old distinction “natural vs. artificial” as to describe the different forms of contemporary communication. Making a phone call or participating in a video conference are not operations so-to-say “artificial” or “less authentic” than writing or reading a book. It is of common knowledge that when using the adjective “technological” we generally indicate only the latest technologies or those with whom we have less familiarity, and this is understandable. Less understandable is the fact there are educators and scholars making the same mistake. Indeed, a class is “technological” provided that it is equipped with blackboards and books, or, at the same time, when both teachers and students use computers, tablets and smart-phones. (Pireddu, 2016)

In fact, teachers are “technological” either when using social media, or when they are simply using a textbook. These are different technologies, yet they are always “technologies” or, more correctly, “media”. (Ranieri & Manca, 2013)

Communication is always mediation, and in fact teaching and learning issues are intimately intertwined with those raised by communication. Media – those of the past as well as the newest ones – affect the quantity and quality of our experiences, and contribute to the reconfiguration of their storage modality in our memory, to their playback as well as to the endless creation of our knowledge. Thought production and its cognition are not independent from technology or from the machines we use: communication and education are complex processes whose forms are historically and socially constructed, and have to deal with different media ecosystems. They cannot be the only educational sciences to address the challenges and problems associated with these processes, nor only media alone are self-sufficient for this scope. It has become increasingly essential to integrate either the points of view or instruments of pedagogy with those of communication sciences: in fact, the only way contemporary people may understand the real changes related to the pervasiveness of the new knowledge infrastructure constituted by the new technologies is the “network”. (Rivolta, 2013)
If, then, media are incubators and experience environments, education cannot be considered extraneous or exempt from forms of communication associated with them, especially now that internet spreading is making the inadequacy of traditional training systems more visible and apparent. Such approaches, trying to come to terms with the changes we are experiencing, do not seem to be entirely appropriate as, on one hand, they are meant to “educate” the relationship with the media (such as media education) and, on the other hand, they have their own limitation as to recognise the social role media are playing in today’s society (such as communication sociology). (Pireddu, 2016)

Education is often confused with training or pedagogy, or with teaching and communication, just as if the terms were interchangeable. They are not, and either education or communication remain distinct terms. What is becoming increasingly clear is the fact there is no educational experience that may take place with no communication exchange, just like when a particular medium gives a particular relational configuration to the knowledge it conveys. Pedagogy, as a learning experience, lives in the media, because through the use and familiarity with the media, a part of its experience and knowledge receives the form of the same media. Developments and communication practices have always affected and are still affecting training activities as well as the ways of conceiving and experiencing them. (Morin, 2010)

In today’s society, governed by a fast pace, assumption has it people are exposed to a continuous learning process and also education can benefit from the acceleration offered by fast contemporary means of communication, e.g. internet. Nowadays, more than ever, there is a need for a model in which to identify oneself, and use it as a reference, or, simply, just as a means as to appear successful. In this context, social learning (Bandura) has used the term “modeling” (model) to identify a learning process activated when the behaviour of an observing individual is modified according to the change of behaviour of another individual functioning as a model. Hence the behaviour is the end-result of a process of acquiring information from other individuals. (Pireddu, 2016)
In his theoretical pattern, Bandura conducted studies on imitation of aggressive behaviour by children who watched a model. Along this assumption, the Bobo doll is a famous experimental research on aggression conducted in 1961, showing that the aggressive behaviour of children can be moulded, and much learnt by imitation. Bandura’s research has often been used to support the view, still current, according to which scenes of violence shown on TV and other media may (re)produce herd behaviour in young people too. (Beard & Wilson, 2015)

What is, then, the relationship (if any) between secular educational models as the one theorised by Bandura and “implicit” pedagogies more and more extraneous to traditional training methods and processes? Why information technology and networks, which may lead to herd behaviour in young people too, just like the Bobo doll – long regarded as mere artificial instruments to be relegated in special classrooms or laboratories – continue to be poorly used, underpowered or even ignored by institutional educational systems?

Here is, in conclusion, the sense of an innovative work that explores emerging forms of learning without forgetting the essence of the liaise between communication (media) and education. As we know there has been a difficult relationship between contemporary technology applied to education systems in vogue in the twentieth century. In fact, teachers, professors and, more in general, educators, still show some kind of reluctance towards these instruments still perceived as alien. However, it is evident there are forms of modern communication strictly linked to the implicit pedagogical logics in either programmers or hackers’ activities along with the recovery of traditional training models of production and craft education. From here, the relational nature of learning processes based on the “network” is undeniable. Hence the necessity to abandon the traditional logic of e-learning in order to adequately address the changes associated with the development of the existing forms of communication. (Briscoe & Mulligan, 2004)

Based on this assumption, I, hereby, investigate, in an empirical manner, the specifics of the relationship between media and education, focusing on how network and media may
contribute to digital environments in re-shaping production and dissemination processes in today’s education.

More specifically, the focus of the present work shall be placed on the relationship between the media, considered as a valid pedagogical instrument, and education where the former is considered by anyone having a strong modeling impact upon the latter. It will explore the characteristics of digital environments and the network influence, and will describe one particular experimental activity conducted at a higher education institute in Italy with a focus on contemporary learning methods, i.e. hackathons.

This work will help us to understand how technology contributes in shaping education and its communication: it acts as an educational resource/tool, formal or informal, so there is ultimately an element of pedagogy implied in any communicative practice too.

1. Activity background

The motivating idea of using a hackathon was to help and support participants through an activity-based learning approach. Given the scope of this work, I highlight the concept of hackathons and its application in the school system. I delve into the challenges associated with trans-disciplinary methodology. I will, then, deal with some of the most recent hackathon activities including their findings.

1.1 The hackathon concept

People often consider hackathons are somehow related to the term “hacking”. Most students when first approached to participate in the hackathon academic initiative, were not fully familiar with it, and, upon hearing the term hackathon reacted as follows: “who or what are you guys gonna’ hack, is this legal?” (University of Urbino, 2016)

This is not really what the word means. As a matter of fact, hackathon, also known as hack-fest or day, is a neologism of contemporary society originated from the combination of the words “hack” and “marathon”. Hack is used with the meaning of its
researcher programming while marathon is referred to its timelines. (Briscoe & Mulligan, 2004) Hackathon, as defined by Calco and Veeck:

“...is an event where computer programmers, developers and others involved in software and hardware development, including graphic-interface designers and project managers, collaborate intensively in teams with the ultimate aim of solving software-related problems.”

(Calco & Veeck, 2015)

The term hackathon is characterised by its innovativeness and creativity upon which a problem is tackled.

When organising hackathons, events venues and timelines are key elements. Usually, timelines are close. This is deemed as most relevant as it helps to evaluate how a hackathon is organised in line vis-à-vis its scopes.

It was back to late 90s when the hackathon concept was first utilised as we now know it, although it is reasonable to believe it had existed even before. Since then, innovative ideas were used including variations depending on the subject in which they are employed. For instance, also marketing has benefited from the hackathon concept, for which the name “Markathon” was even invented. (Calco & Veeck, 2015) As Briscoe and Mulligan observed: “…the greatest value of hackathons is to provide opportunity for people from diverse background, as well as a platform for long-term links through collaborations.” (Briscoe & Mulligan, 2016)

Hackathon role has seen a fast development and spread in contemporary society also as a valid means to assess critical thinking with short deadlines on the part of “candidates” either in education or professional settings. (Nandi & Mandernach, 2016) This paradigm was also supported by Selingo who believes employers are most interested in hiring people or potential workforce to “come up with novel solutions to problems and better sort through information to filter out the most critical pieces”. (Selingo, 2016)

In this very context, hackathons are considered as brand-new recruitment strategies employed by recruiters or even universities to select the best candidates, among a vast
number, suitable to be part of a project so that they positively respond to highest criteria. (Rosen, 2010)

### 1.2 Hacking education: training between openness and technology

Internet and web evolution show an original approach to knowledge exchange, learning, and creativity promotion. Even with its limitations and obvious problems, the horizontal co-operation and open communication are the basis of the hacker culture, which was fertile ground for some of the most important technological and cultural innovations of recent decades. (Zheng, 2016)

The philosophy and the hacker ethics have to do with open sources but more generally with the concept of “openness”. Terms such as open data, open access, open government, open education, open educational resources are now beyond the rhetoric of common use and have to do with political choices and investments that can have a profound effect on the future of contemporary learning. (Stock & Burton, 2001)

John Willinsky from the Stanford University and Professor at the Open Education Conference in Vancouver in 2012 said that the real “killer” for education exists when we apply and limit our lessons only to our communities and territories. It is for this very reason that new education methods should be extensively applied for all so as to keep them “open”. (Willinsky, 2012)

In recent years, always with regard to open education, there has been a constant spreading of MOOCs (Massive Open Online Courses) like Coursera, EDX, Udacity, Canvas Network, Futurelearn, etc... This type of courses are also referred to as “open textbooks” and more generally as Open Educational Resources (OER). (Ranieri & Manca, 2013)

Therefore, data are considered “open” if anyone can use, re-use and redistribute them, as the data formats are open, along with the service access to same data: they share the same logic as of the culture and hacker ethic principles.
So what are the implications on the educational plan? Open data, transparency and hackers’ methods develop not only concern on modern education as they are dissimilar with the tradition, yet they also have a kind of “attraction”. Notwithstanding this assumption, textbooks and more modern appliances are considering the growing role and influence of digital education practices in higher education institutions, and more often, new instruments as the “hackathons” are being organised in various parts of the world to recover the spirit of the “fun to build something together.” (Pohl & Hadorn, 2007)

Hackathon, as empirical, contemporary learning method, is aimed at fostering creativity through hands-on practical activities. (Nandi & Mandernach, 2016) Hackathons have existed for over a decade but so far it has played a minor role vis-à-vis determining new educational methods. Though the concept has been employed by business organisations and other related sectors to tackle complex problems, its relevance in education should not be overlooked. Hackathon, if thoroughly explored in digital education, undeniably provide practical-oriented methods in such an abstract field of teaching and learning. (Nicolescu, 1999)

1.3 Hackathons: a challenge in trans-disciplinary education

Trans-disciplinary education, being an integrated field, tackles real-life issues with a holistic approach. Trans-disciplinary research, though integrated, cuts across other disciplines transcending boundaries research within disciplines by addressing complex world problems. This paradigm differentiates it from the inter-disciplinary one, where various methodologies and disciplines are jointly deployed. (Giri, 2002)

Another main factor characterising trans-disciplinary research education is the aim to tackle or solve complex world problems holistically. Conversely, complexities of a perceived world problem tend to be a setback in the execution of successful trans-disciplinary research project in legal education.
Based on this assumption, the approach used in hackathon experiences relies to a great extent on trans-disciplinary educational research. Consequently, it considers the inclusion of stakeholders and scientists as a key element. (McLuhan, 1964)

In the present work, the hackathon experience has benefited a lot from the contribution of either scholars or scientists coming from various fields of activities with different views and ways of perceiving a problem. By the same token, perceived problems may be looked at and analysed from different angles by different disciplines in line with the elements constituting the problem. As we shall see, every one may want own ideas or perspectives be listened to. In so doing the level of disagreements is intensified. (Levy, 1984)

When hackathon was first considered as an option, this was a serious challenge, which might have affected the timelines of trans-disciplinary research projects or approaches. Although the impasse of diversity in perceiving a problem could be resolved through a mutual clarification and exchanges of feelings, this kind of research is somehow conceived as an obstacle, and, as such, it makes difficult to implement trans-disciplinary research in innovative projects to its fullest extent. (Linnell, et al. 2014)

Promoting *shared interest* is one of the key elements at the basis of trans-disciplinary research in higher education studies. Nonetheless, to come out with a *shared* common denominator for all people involved underscores its challenges. The ultimate aim in trans-disciplinary research should be fostering common interest or gratification among different disciplines by considering its key factors constituting the very issue at stake. Partners from different disciplines, in trying to find a solution to an existing world problem, tend to tackle it individually and in solitude only based on an element of knowledge acquired throughout own respective careers, and on which they are respectively well secured. Meanwhile, the perceived solution to a problem should be rooted in the mutual understanding among these partners. This is how they eventually promote *shared interest*. Hence, researchers and higher education students perceive its promotion, in legal disciplines, as an innovative challenge. This is particularly true if adopting a trans-disciplinary approach. (Lang, et al. 2012)
1.4 Research approach, methods, and findings

Since the turn of the millennium to 2012, over 400 hackathons are reported to have taken place worldwide, spanning across several topics, including business and legal disciplines. However, due to lack of evidence, no literature was found to bolster the growth of hackathons from 2012 onwards. As we have seen, they have easily been accepted as a valid instrument in business organisations in hiring personnel. Therefore, we may well assume a constant growth in hackathons after that date. We have reason to believe most important hackathon organisers at a high-scale are Twitter, Google, and Facebook thanks to their spreading practically in any field of education, science and anywhere else. Hackathons are often organised with the intent of tackling more challenging software-related tasks. (Sousa, 2013)

Although quite a few hackathons are reported to have taken place world-wide, just a limited number have disclosed their results. Table 1 hereinafter summarises some hackathons along with their findings, as new ways to educate.

1: the hackathon experience

<table>
<thead>
<tr>
<th>Topic</th>
<th>Objective(s)</th>
<th>Participants and duration</th>
<th>Data collection and method</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Crimathon: exploring the evolution of criminal law and international jurisprudence</td>
<td>To help students learn the history of Courts, the ruling, and the social contract between citizen and govt. Court systems at the federal, state, and local levels.</td>
<td>120 students worked in 10 teams. UK and US Universities, Faculties of Law. <strong>Duration:</strong> organised in three consecutive class periods with each taking 2 hours</td>
<td>Anonymous paper and pencil survey (Questionnaire)</td>
<td>- Through the event, students had a good time of understanding how a case progresses through the Court system. It also encouraged students’ participation in the course. - The Crimathon contributed to students’ attainment of the skills spelled out in the learning objective for this project. Examples of innovation ideas include an app to provide support for students.</td>
</tr>
<tr>
<td>Hackathon as an innovative, web 2.0 learning asset</td>
<td>To raise awareness of technical talents at the higher educational level, by giving participants a concrete chance to showcase own’s talents.</td>
<td>77 students worked in 10 teams. - All levels of students from the course were involved. - Representatives from law-firms. - Participants came from</td>
<td>Observation, Questionnaire</td>
<td>- Students used the event to collaborate with their colleagues from different disciplines and also networked with re-</td>
</tr>
</tbody>
</table>
2. Designing a hackathon

This section takes a look at the subject activity and the course involved, along with the research questions, the approach and the method on which the questionnaire was designed, and organised. The context and the mode by which data were collected are also elaborated in this section.

### 2.1 A hackathon with us

The present paper describes an activity performed on the occasion of a hackathon carried out at the University of Urbino Carlo Bo, Faculty of Law. It addresses the work
group done by either teachers, students or other experts attending an experimental course of Digital Comparative Criminal Law (the “DCCL”).

So, first thing first, what is a hackathon? Hackathon is an event where programmers and subject field specialists, in this very experimental academic activity, all intensively collaborate in 3 teams, with the ultimate aim to create and design fresh ICT-based solutions to a given task in a limited time. (Nandi & Mandernach, 2016)

I re-elaborated previously gathered material and data concerning students’ perceptions and experiences during an unpublished hackathon activity where they were to design an application aimed at allowing lawyers and other experts and professionals to have access and understand how a case progresses through the Court system.

As above-noted, the hackathon was part of an experimental DCCL course. Twenty-four students participated in, and were divided into 3 groups of 8 students each, where an assignment (case) was presented to each of the groups to brainstorm, and create a mock-up artefact suitable to tackle the challenge. (Sousa, 2013)

At the end of the experiment participants declared their satisfaction as the scope of learning new things with motivation and through practice was fully attained. Also, students agreed that the event helped them to think collaboratively for a refined idea. The overwhelming satisfaction expressed by students confirms that hackathons bring out the best creative skills from people through problem-solving approach. (Pireddu, 2016)

Given the nature of the course involved, i.e. Comparative Criminal Law (hereinafter referred to as “CCL”), a considerable number of teaching and learning methods have been developed to induce students to innovatively cope with an activity, such as a hackathon. However, there is still ongoing research largely focused on optimising existing traditional teaching and learning methods, rather than developing new ones to qualitatively improve this field of study. Consequently, satisfactory results proving to be
successful to an average user, are usually coupled with and limited to computer science education researchers. (University of Urbino, 2016)

The field of CCL along with its digital practice is recognised as an area where new theories and methods are being explored, underlying the secular development of contemporary societies based on an acquired democracy degree, and adequate representation level through general elections. This field is deemed by most students and teachers as “difficult”, especially from a comparative point of view. However, it highlights and underpins the need for effective teaching and learning methods in pedagogy. (McLuhan, 1964)

### 2.2 Digital Comparative Criminal Law

The course offers a comparative and critical investigation into criminal law and justice the way they are conceptualised and also how they operate within the legal tradition of 3 countries: Italy, France, and the US. The course explores the relationship between law, justice, crime and punishment and how they are implemented in contemporary legal systems. The course uses comparative methodology to highlight similarities and differences between and within legal traditions. It assesses the different criminal law processes and their outcomes and how these can inform criminal law in a global context. (Giri, 2002)

DCCL provides students with an overview of criminal law in different legal traditions of the world. Based on this assumption, students should gain insight into the criminal justice system of the country surveyed through a comparative analysis methodology. The course is divided into four parts of which part one focuses on concepts and principles in comparative criminal law. There will also be discussion on how to measure and compare crime across nations and hazards in cross-cultural research including ad hoc seminars for manufacturing artefacts. Part two focuses on the main tradition of law and the parameters each accords to criminal law and the underpinning values. In part three the focus is on substantive criminal laws and conceptions of criminal responsibility. Eventually, in part four the focus is on international law and its role in a comparative criminal law context. (Sousa, 2013)
In this very activity, students were expected to explore the current, stringent need in modern societies in order to develop rapid, digital instruments to allow prompt search of legal cases (either in civil or criminal law). In this regard the following research questions were considered in order to meet activity objectives:

1. How can a questionnaire be organised to help students design an App or digital artefact, considering the criminology fundamentals already acquired at a Faculty of Law?

2. What are the personal feelings and prior experiences of participants in making recourse to hackathons in criminology for the purpose of manufacturing such an App? (Briscoe & Mulligan, 2004)

2.3 Context and participants

DCCL is only recently part of the University study offer as an independent new course for international students for both BAs or MAs holders at the Law Faculty. The questionnaire was organised for registered students as a supplementary activity of the course, with the aim of helping them to learn fundamentals of criminology with a key focus on digital devices in use at legal firms and for all-related business. The course was part of the European Erasmus project and initially included 87 students from 10 countries across the globe, although their majority was from EU countries. In line with the university's accepted practice some students freely discontinued while 24 students remained to continue with the course through the end. At the beginning of the initiative launch, there was need for preparation in order to meet the conditions for organising the questionnaires for the 24 participating students. At the end, participants represented 5 countries or 2 continents: i.e., Belgium, France, Germany, Italy, and the United States. Initially, they were sceptical about the event since most of them had no previous experience. Nine of the students were female and the rest male. (Lang, 2012)

In order to meet one of the core conditions of organising an effective questionnaire, other (external) experts were also invited, among them a lawyer, and an apprentice judge. Questionnaires were drafted in Urbino, the main University site. The reason to organise the event at the university was to give room to the participants and experience
such a new thing right at the studying place and, at the same time, guarantee the highest possible participation. (University of Urbino, 2016)

The event began with an opening presentation by the course professor and afterwards the case (challenge) was presented to the course participants.

**Case:** students were to design an application for people or companies interested in having access to legal proceedings in a given country.

The aim was to find a fruitful means to have a unique way to interrogate the system and search for updated information where concerned legal proceedings were at. In addition to that, appeals, impugn means were also sought. External experts (those not strictly related to the academic institution) invited to the event were introduced to the participants with their roles clearly defined. (Lang, 2012)

The 24 participants were divided into three groups of 8 each and an assignment, i.e., a challenge was presented to them. The challenge was a case for the students to brainstorm for ideas and design a case with the scope to implement the artefact after the hackathon. However, only seriously committed students to the event would pursue through the very end of the activity with possible professional satisfaction. (Pohl & Hadorn, 2008)

Students were also assured their commitment to the activity would be highly appreciated, and possibly be useful to get a substantial reward. The main purpose of the event, as seen hereinbefore, was to help students learn to create a legal digitally-oriented database application through a hackathon. Each of the three (3) groups was occupying different rooms, but always at the same central building. In this way, they could work independently and experts would be facilitated to assist them all going short distances. At the end of the day, all groups were to defend their results. Fig. 1 shows participants working as a group during the event. (Pireddu, 2016)
2.4 Data collection

Data was acquired via two sources: the first one was direct and acquired while the event was ongoing. Students were asked some questions regarding the event. Questions were in the form of an unstructured interview. In this context, either the course professor or the experts (invitees) engaged in discussion with the students. The discussion was mainly focused on making it clear what challenges students were facing as well as supporting them to overcome possible bottlenecks. (Ranieri & Manca, 2013)

The second source of data was acquired via questionnaires consisting of open- and close-ended questions. The open-ended questions aimed at giving opportunity to the students to answer some of the questions more subjectively while close-ended questions were designed to use a 7-point Likert scale define as: 1- completely disagree, 2- moderately disagree, 3- somewhat disagree, 4- neutral, 5- somewhat agree, 6- moderately agree, 7- completely agree. In either case, the key purpose of the questionnaire was to determine what perceptions students were having vis-à-vis hackathons. (Kolog, et al., 2014)

By collecting data through interviews and questionnaires with the students, I applied descriptive statistics rather than making recourse to inferential statistics to analyse the
data due to their limited number. At the end of the activity, results demonstrate use of the hackathon supported learning goals of DCCL. (Sousa, 2013)

3. Implementing a “case” for the hackathon experience

All the group participants were given the same challenge (case). The students’ case was to design an artefact or an application aimed at allowing lawyers and other professionals to have access and understand how a case progresses through the Court system. Before presenting the case, the teacher stressed the fact that most participants, in previous hackathon experiences, had participated without having the opportunity to reflect upon the content and the task given, especially those who were at the beginning of their University career and would no longer attend the same Faculty or would decide to study something else or attend other courses. Actually, one of the invitees was given an opportunity to share his own experience with the participants. (Nandi & Mandernach, 2016)

The other experts went round supporting the groups during the brainstorming session. The experts were well selected for the task since the design challenge was connected to them in one way or the other. For instance, the lawyer assisted the participants on strictly technical issues while the artist assisted them with aesthetics in designing the artefact; and the secretary assisted them on administrative issues. Fig. 2 shows the participants working in groups as the invitees interacted with them. (Giri, 2002)
The students presented their results and a mock-up for the intended purpose. The presentation time was 30 minutes for each group. Students were asked to pay attention to each of the member’s contribution as this was an evaluation parameter for their final mark. The course professor and his assistant outlined the score criteria for each participant. The groups presented their ideas and mock-ups with regard to the design case. Fig.3 shows the participants looking on as the design case was presented to them. (Stock & Burton, 2001)

The sections below present the name and the ideas upon which each group presented their case during the hackathon activity.

Fig. 3: students observing as the artefact (case) was presented

3.1 Group 1 – Italy: Easy Justice

That was the name given to the artefact by group 1: Italy. The group presenting their case explained that Easy Justice aims at helping people have access to a platform enabling users to view, in an anonymous format, all proceedings in Italian Courts. In the services section a consultation of the state of the proceeding along with the data contained in the registry records is made available. Access to the service is public, without the need for registration. The information is returned and displayed anonymously. In order to carry out the consultation users need to locate the judicial office – through a guided choice per geographic area – and, thereafter, indicate the type of procedure (register) one has interest in: civil litigation; labour law; voluntary
jurisdiction; insolvency procedures; securities executions; real estate executions; or civil proceedings at small claim courts. (University of Urbino, 2016)

The system proposes a search procedure as a function of the selected log type. A simple toolbar is displayed on the main menu, and all the interactions are done through clicking or swapping. Typing is not necessary as explained by students. The App is to be launched on a mobile platform, notably an Android and later on other platforms as well. (Selingo, 2016)

By analysing the artefact design, the group created a mock-up enabling users to interact with the application by playing key features and to interact with other people online. This fits well with the design case. However, there was an expectation the group would find a way to also incorporate a feature that would allow users' choices for further options, such as downloading papers and other material. Nevertheless, their input was appreciated. Based on their participation and contribution the group scored from 28 to 33% depending on individual performances. Figs. 4 and 5 are screenshots of the mock-up design from the group. (University of Urbino, 2016)

Fig. 4: screenshot of Easy Justice showing the main functionalities (left)
Fig. 5: Easy Justice homepage providing access to data (right)
3.2 Group 2 – *France: Justice for all*

That was the name group 2 gave to their artefact design. Their artefact would rather focus on how to obtain copies of judgements in either civil or penal litigations other than of on-going proceedings. In such cases all relevant information is provided. Students also focused on phrasing. As a way of example, on the App homepage, 10 pilot questions are found of pertinent interest for an average user and summarise the key concepts of the App itself: *why and how to best use it!* Particular emphasis is put on the “user”. In fact one of the prime scopes of the service is an extensive overview of the users’ activities. (Zheng, 2016)

With their technique, after logging in, one is expected to see the interface containing three buttons, with the inscription “commercial user”, “private user”, “government user”. According to the group, the three parts are intertwined and contribute to its enrichment. The group intended to initially implement the platform as a mobile application. (Willinsky, 2012)

The artefact designed by group 2 was in line with the design case. The group created a distinct feature in their design to cater for different terminal user: business, private, and institutional. Although the aesthetic view to facilitate user handling was not so good, this did not undermine the final consideration as a valid artefact. The application was well appreciated, and the final mark the group was given was ranging between 24-28% depending on individual performance. Fig. 6 represents the snapshot of the mock-up design from the group. (Linnell et al., 2014)
3.3 Group 3 – United States: An Easy Court

Students named their case An Easy Court. In so doing, they stressed the principle lying behind its name and meant that whether the user is a local merchant, a consumer, a debtor, or a creditor, the App is dedicated to providing all of them with access to fair and efficient justice online services. They also stress the fact that all the information needed is to be found just there, and they strive to ensure their device is a virtual Court meant to all. (University of Urbino, 2016)

The group described their idea as follows: “The first thing an user strives to find on a site, whether he is in a car, on a bus, in a subway, or in a mall, is an easy, immediate access to primary, basic services”. Therefore, students assigned to group 3 designed their web application platform to comfort users’ minds and help them save their time in today’s hectic society. (Stock & Burton, 2001)

The group in their presentation made provision for the data that would be stored in a database for all users without specifying their nature. The intent is for a common user: either a defendant/respondent or a plaintiff or, also, all other interested professionals. (Rivolta, 2001)

The artefact was well-designed and fitted into the design case. Given their presentation, I observed that the group also aimed at helping other people in the future by providing support services. According to the group, this would be achieved through the analysis of feedback received from whoever had logged on, using close-ended questions, such as “yes or no”.

That was an innovative and brand-new idea, and secured them the highest score. However, it was also noted the group underestimated the bi-lingual aspect of California (search for federal cases): the American-English population and the Spanish-speaking minority. They justified they would tackle the issue separately. Group 3 scored from 30 to 34% based on individual performances. (Pireddu, 2016)
4. Results and analysis

Results of the subject activity are discussed in the following subsections along with data analysis collected during this exercise. Analysis is from a learning point of view, perceptions of hackathon arrangements, challenges and limitations of the hackathon, along with the validity of the methodology applied to the subject activity and possible utilisation of hackathons for other courses.

The data analysis was carried out in two ways. First, the open-ended part of the questionnaire was analysed using content analyses, whereas the close part of the questionnaire was quantitatively analysed by computing the descriptive statistics (measures of central tendencies). (Rosen, 2010)

4.1 Learning by hackathons

From the activity, I first aimed at gaining an insight into students’ point of view regarding the use of hackathons in learning Comparative Criminology. In line with the regular studying hours, the hackathon was organised from the Thursday afternoon to the Friday afternoon. Yet not all the students agreed with the scheduled date. As shown in Table 2, the majority of the students agreed (Mean= 7) that the date slated for the event was good and helped them to focus fully on the subject project. From the qualitative part of the collected data, most students justified that they would not be able to concentrate fully on the hackathon since there were regular school classes for other courses. (University of Urbino, 2016)

The students, according to the survey, enjoyed any single aspect of the brainstorming throughout the event (Mean = 8). This may be attributed to the fact each group was composed of students coming from many European countries with diversified academic backgrounds. One of the participants wrote that “working with other students from diverse cultural background and languages was amazing”. The qualitative responses of the students proved that the nature of the activity prompted them to further contribute to its success. By comparing the activity with the regular University classes, students agreed that hackathon did meet its prime scope: eliciting their best and sense of being more effective during the artefact creation. (Calco & Weeck, 2015) One of the participants of Group 2 – France wrote that:
“I usually have difficulties in accepting new mates to work with, yet this time I found at ease to cooperate with all of them. At first, I was scared we were doing something wrong as we were hacking. Because of this I felt excited, and have had positive remarks throughout the process!” (University of Urbino, 2016)

From Table 2, the majority of the students agreed (Mean = 8) that the activity performed was intuitive and provided smart ideas for new projects. This was probably due to the fact it helped them to think collaboratively (Mean = 6.5), since the hackathon focused on the teamwork rather than on the individual. (Selingo, 2016)

Based on the subjective answers, some of the students claimed that they could not have done better if the task were given out to them individually. Also, students confirmed they found digital criminology as a difficult field since the initial stages of the course. This was because the course is an emerging field of science with limited literature available. Hence the organisation of the hackathon coupled with the presence of the other experts supported their understanding. (Lang, 2012)

Not surprisingly, but with a sense of self-satisfaction, all students agreed on the fact the event was successfully organised and complimentary. They confirmed contentment as it provided them with a reason to learn through practice and as well afforded them the liberty to brainstorm for new concepts. (Selingo, 2016) One of the participants wrote that: “It was hard to expect because I didn’t know what to do. However I learnt much, I was able to generate an idea in our group and this made me happy.” (University of Urbino, 2016)

After reading the material most students agreed that they had gained new insight into the subject since the activity was entirely new to them. During the interview session, attention was paid to students’ perception about the contribution to the learning outcome from the external experts invited to attend the design case. Students were thrilled about the idea of inviting other professionals to be part of the event. This was because the participants confirmed their positive feedback on how certain issues could have been clarified to them. According to students’ reactions, they learned a lot from
them. Since criminology was new to most of them, they could understand what the task was all about given their interaction with the invitees. It is not often the case to invite non-academic people to be part of such events. In our case, the intended idea was not just to craft an artefact but to learn criminology alongside. (Ranieri & Manca, 2013)

The participants also confirmed their positive feedback that being involved in a hackathon far from their native places was a good thing, and such a practice needs to be further pursued (Mean = 6.5). They were satisfied that the ambiance in which the event was held met all their basic requirements, and that made them comfortable to tackle the challenge they had been called to. (Rosen, 2010)

Overall, students agreed that the activity did meet its scope (Mean = 6) and expressed a strong willingness to take part in the future. The general appreciation expressed by the students confirms, where need be, that hackathon elicits the best creative skills from people through problem-solving. (Willinsky, 2012)

Table 2: students’ perception of hackathon vis-à-vis their learning goals

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doing hackathon far from home motivated my level of thinking</td>
<td>7</td>
<td>1.4</td>
</tr>
<tr>
<td>The event has improved my level of thinking with other peers</td>
<td>7</td>
<td>1.8</td>
</tr>
<tr>
<td>I learned many new ideas from the activity</td>
<td>6</td>
<td>1.3</td>
</tr>
<tr>
<td>I think the hackathon was useful to my studies</td>
<td>7</td>
<td>1.7</td>
</tr>
<tr>
<td>I enjoyed sharing and brainstorming of new ideas</td>
<td>8</td>
<td>1.3</td>
</tr>
<tr>
<td>Given my schedule, the date slated for the event was good and it helped a lot</td>
<td>7</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: University of Urbino. NB: SD means Standard Deviation

4.2 Hackathon arrangements

Through the survey, it was made clear the majority (84%) of the students had no knowledge of and previous experience in organising/taking part in hackathon events, so it became a necessity to tell them what to expect. Based on this assumption a student wrote: “My most immediate need was to have an idea about hackathon and participate actively which I was able to do it with my team.” (University of Urbino, 2016)
The timeline and the artefact case were presented to the students during the event opening. They had expressed apprehension about how the case could be fulfilled within the given deadline but in the end it was agreed that all groups could complete their cases within the time set. Providing students with a pre-determined challenge in lieu of letting them independently struggle to find their own design case, urged one of the students to write: “The idea of setting a topic in the hackathon should continue as it helps people to think quickly in gathering the requirement. Also it helps to create a unique idea.” (Stock & Burton, 2001)

The event venue administration made provisions for and well-planned all necessary arrangements students would later need. This was meant to enable them to work effectively with no distractions. In fact, a kitchenette was made available with food, drinks and recreation facilities such as a billiards, a television set, and even a nearby spa. Students said in an interview they were satisfied with all of the amenities provided for. A student wrote that: “A remote and quiet place up the Italian Apennines, with plenty of rooms for group work, made us feel really very comfortable and focus on our discussion better.” (University of Urbino, 2016)

From Table 3, students appreciated the venue and the environment in which the event took place (Mean = 6.5). They also expressed satisfaction for the overall positive impact the ambiance had on the concept generation and that fostered the creation of the artefact designs. Therefore, the majority of them had the opinion a project-based approach such as a hackathon was interesting with regard to achieving the learning outcomes. (Selingo, 2016)

Students agreed (Mean =5.5) that such events should be repeated in the future, where they also proposed they should be organised in most courses and not just limited to criminology. However, some students also felt that the duration given them to work on the design case was not enough, so some of the students blamed in the interview. (Ranieri & Manca, 2013)
From the descriptive statistical analysis of the data from the questionnaires, students mildly (somewhat) disagreed (Mean = 3.4) that time allocated to the event and for the purpose of the design case was not sufficient. In either case, students suggested that for future hackathons the duration of such events should be extended to allow eliciting more creativity and innovativeness. (McLuhan, 1964)

Some students even suggested the upcoming activity to take place from a Thursday afternoon through the Sunday afternoon, or for a 3-day period. This provision would let students benefit the most at little detriment from their class schedule. In fact, in so doing they would only miss a 1-day class schedule. However, that did not prevent them to consider the event was felt as “gratifying”, since students pledged to suggest their colleagues to take part in such events also in the months to come (mean = 5.5). Being in the same group with people from diverse cultural and linguistic background was enriching and a key to the idea generation (Mean = 6.5). This afforded them the opportunity to think collaboratively for ideas that were more refined. Students and external experts also collaborated well as the hackathon rolled on. It was pleasant to hear students would continue with the network, even after the hackathon as it would be healthy for their own academic development and further career. (Lang, 2012)

Table 3: students' experience and perception during the artefact crafting

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will advise my colleagues or anyone to join such an event in the future</td>
<td>5.5</td>
<td>1.9</td>
</tr>
<tr>
<td>The duration of the event was not enough for the project</td>
<td>3.5</td>
<td>2.7</td>
</tr>
<tr>
<td>The hackathon was well-organised</td>
<td>7.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Being in the same group with people from diverse background helped me to know the extent to which other people think and brainstorm</td>
<td>6.5</td>
<td>1.9</td>
</tr>
<tr>
<td>The venue of the event was conducive for such a project</td>
<td>6.5</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Source: University of Urbino

4.3 Hackathon organisation: dares and constraints

Comparative criminology as a digital course is a novelty at the University of Urbino, Carlo Bo, Faculty of Law. Given this situation, there is the need to explore challenges and limitations in organising an activity of this type. The purpose is to use the feedback
gathered to improve any future organisation of hackathons at the higher education level. (Giri, 2002)

The timing arrangement follows the same timing structures for all legal courses independently of their particular character and requirements. Normally the maximum time allotted for any individual lecture in the department is two hours, but given the design nature of the comparative criminology course, it was evident that only two hours were not enough to design an assignment requiring collaboration and creativity from different parties. This prompted the idea of holding a hackathon that required arrangement during a weekend because of other courses during the week. (Kolog et al., 2014)

As I outlined earlier in this paper, some of the students participating in the activity proposed an alternative date during which to hold the hackathon. Hence they had to drop out of the course. Given this situation it was observed that students were not given prior notice about the hackathon before the course had already been scheduled. Also, as external experts went interacting with the groups during the hackathon, it was noted that the time allotted to the groups was not sufficient for the challenge to be completed. The students nonetheless tried their best to produce something worth considering. (Maragliano & Pireddu, 2012)

It also emerged, although students appreciated the efforts of the administration to provide them with a kitchenette, that inadequate measures had been taken concerning the food as special needs of people with diseases or allergies (diabetic or celiac) were not taken into due consideration. This caused malcontent. In addition, based on the survey, students also felt fatigued due to insufficient time to sleep (rest), though hackathons are characterised by their tight timelines. Some of these observations would be taken into consideration when organising a future event. But overall, in spite of these challenges students said the event was well organised (Mean = 7). (Linnell et al., 2014)
4.4 Discussion

In this subsection I focus on the methodology approach applied to the subject activity, i.e. trans-disciplinary, and its relevance in higher education institutions. Additionally, results of the subject activity performed are herewith summarised with prospective application for future courses.

In recent years, students involved in comparative criminology education keep growing. When adopting innovative methods in teaching, we tend to go beyond the already explored interdisciplinary and multidisciplinary to trans-disciplinary approaches of solving problems. Trans-disciplinary education, using a holistic approach in dealing with world issues, normally puts an emphasis, in our contemporary society, as to pursue innovative ways of teaching comparative criminology in higher education institutions, including universities. This helps fade away any challenge somehow “impairing” trans-disciplinary education. Though several efforts have been taken to modify or develop new ways of teaching and learning, there is the need to rethink about how a trans-disciplinary approach to comparative criminology education could improve its learning, even with regard to manufacturing empirical artefacts. (Pohl & Hadorn, 2008)

In comparative criminology, innovations ranging from traditional learning methods through visualisation with digital devices to virtual learning environments, e.g. “online trials” have been introduced world-wide also as a means to save time, and being environmental-friendly. In fact, we avoid printing long files as the information we need is right there, ready and available. These new forms of access to public records have been developed ever since. Yet hackathons, which have existed for more than a decade, have seldom been used to support students in learning comparative criminology, nor were they instrumental for further career development. (Willinsky, 2012)

Comparative criminology, a new course of the university portfolio, is deemed as trans-disciplinary, hence the need to employ a new educational tool, as the hackathon to help students learn the course contents. This is because hackathon was thought to be the best collaborative teaching method to help students to learn the most out of it. Also, it is
known students have all diversified learning abilities. As a result it is a good strategy to look for a healthy balance among students when setting up groups to work together. This is an inclusive method and supports whomever may be in the need to catch up. (Levy, 1984)

As it has been highlighted in this work, the activity concluded successfully and participants were positive and enthusiastic about the purpose for which the event was organised. Its key objective was to bring students onboard to brainstorm, appreciate each other’s views and present an artefact of their intended ideas for implementing them also in the future. This could be attributed to the fact that students learnt new ways of thinking (collaborative) and brainstorming while working to get to practicable yet convincing ideas for their artefact design. (University of Urbino, 2016)

Succeeding to put together in a group to agree on, is an idea filled with challenges, especially when people had not met before and have diverse cultural backgrounds. Given the course nature, each group consisted of participants from different cultural and religious backgrounds. This motivated their level of collaborative thinking which assumes that students agreed to disagree in order to set free the most creative ideas. In this way, cultural heterogeneity of the students supported their ideas to get to the crafted designs. Given the cultural backgrounds of each of the participating students, they justified their views and ideas based on their personal cultural and academic objectives. This ensured a more refined outcome as the study had revealed in the qualitative responses to the questionnaires using descriptive statistics versus inferential statistics. (Morin, 2000)

Most of the participants had no previous practice in hackathons and the activity provided them with one. Their interest in the initiative was such that they did not merely participate in it, they took a pro-active role throughout the whole organisational process. In so doing, one ought to keep in mind that whenever coming to organising hackathons to solve a problem requires that instructions are well drafted to provoke imagination rather than confusing participants, as Calco and Veeck observed: “The event motivated
students’ participation. Students participated well in all the various stages of the event. Therefore, we could state hackathon enhances students’ participation in learning”. (Calco & Veeck, 2015)

The delineated results inclusive of successes and restraints were recorded and would be taken into consideration for upcoming hackathons. The overall conclusion from the activity is that participants showed interest in the use of hackathons when coming to learning. This clearly illustrates that the utilisation of hackathon for the criminology department was well chosen and provisions ought to be made also for future activities. The artefacts crafted by the groups were highly valued. This is because the crafted designs, in accordance with the given task, seem to address the design case in full. This goes to validate the impact the hackathon had on the students’ level of thinking thereby meeting the scope the event was organised for. (Maragliano & Pireddu, 2012) Indeed, one commented that: “I enjoyed taking part in this event.” (University of Urbino, 2016)

It may be the case hackathon is only a recent “innovation” in educational methodology and a tool to teach and learn comparative criminology courses. However, its importance in supporting students to learn cannot be neglected. Based on the experience from the activity, I would like to once again stress that hackathons should be further explored in criminology education in order to motivate comparative criminology pedagogy. I recommend that when organising activities such as hackathons, also other invitees from the field activities, should take part in the event. The added value of such a provision is not only didactic. In fact, it increments everybody’s participation, and gives the best possibilities to collaborate among peers, and possibly use it as a “come-on” for a professional career. (Rosen, 2010)

**Conclusion**

As above-outlined, hackathons are an innovative method in contemporary learning and their force also comes from the social learning practice since each member involved in a working group is, at the same time, benefiting from and contributing to the realisation
of the end-result and, as such, functions as a model either per se or for the others. (Maragliano & Pireddu, 2012)

In this work, I used the hackathon event to support participants learning and improving their knowledge of comparative criminal law fundamentals. The activity was carried out with the use of questionnaires in order to gather feedback from the students, in addition to an unstructured interview. The aim of the study was to assess whether the purpose of the activity was achieved.

The students participating in the event were divided into three groups representing same number of countries. Each of the groups brainstormed to craft the concept of a design case (artefact). After the event has come to an end, I analysed the gathered data to find out that the hackathon was flattering and refined the way students would think collaboratively and competitively when working in groups where different personal, cultural, and not least, social backgrounds meet.

The activity was the very first of its kind to most of the participants, for which they proved their wish to be part of such event in the future. Students shared the common opinion that the hackathon fully reached its scope. In conclusion, it was found out that participants effectively joined the event which brought about networking and peer contribution among themselves and the external experts: they all learnt something from this activity.

In the future, the mock-up design would be developed and shown to the industry for the benefit of either trade or communication fairs for prospective large-scale implementation.
Bibliography


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