

Back to (con)textuality: using chat services to teach legal reasoning

Nicholas J. Gervassis and Panagia Voyatzis [\[1\]](#)

Cite as Gervassis, NJ. & Voyatzis, P., "Back to (con)textuality: using chat services to teach legal reasoning", in European Journal of Law and Technology, Vol 8, No 1, 2017.

ABSTRACT

This paper discusses the technology-enhanced learning (TEL) environment named indicatively the 'Virtual Court', a text-based learning platform designed to introduce law students to the general dynamics of legal reasoning, particularly the argumentative character and open texture of the law. In the first two parts of the paper we reflect on the theoretical background behind the TEL, its earlier implementation and the lessons for the future drawn from that experience. In the third part, we propose developing the Virtual Court TEL environment into a cross-platform software application (app) that could be utilised within any programme and course for teaching law.

Keywords: Simulation; legal reasoning; technology; mootings; legal education

1. INTRODUCTION

In this paper, we discuss several of the challenges involved in teaching legal reasoning to undergraduate students with the use of real-time online chat platforms. We elaborate on the technology-enhanced learning (TEL) environment named indicatively the 'Virtual Court'.

The Virtual Court was originally aimed at students whose major subject was not law; it was created to introduce a disciplinary diverse cohort enrolled in an Introduction to Law module to the general dynamics of legal reasoning, particularly the argumentative character and open texture of the law. With a view to empowering students and to help develop their hands-on knowledge, this TEL environment was designed to allow its users to work towards resolving controversial legal cases, both individually and in groups. Drawing from the use of mooting and its reported success in enhancing the development of practical knowledge and in activating student participation, the Virtual Court incorporated role-play and experiential learning, by using a commercial chat service to recreate the discussions happening between lawyers working for the defence, for the prosecution and between judges.

This paper reflects on the educational approach, the technological medium, the benefits and limitations of the learning environment and the experience of learners and educators over the three years that the Virtual Court has been running. Additionally, it elaborates on the realisation that despite the emergence of increasingly sophisticated educational virtual environments to emulate real life experiences, there is still room for a meaningful educational use of less advanced technologies. Consequently, we are ultimately bringing forward a proposal for developing the Virtual Courtroom into a cross-platform software application (app) that could be utilised within any programme and course for teaching law.

The first part of the paper explains the background and pedagogical needs that originally informed the development of the TEL environment in question. The second part reviews the initial three-year run of the Virtual Court and assesses the involved educational process. The third and final part analyses the prospects for transforming the Virtual Court TEL environment into a stand-alone technological solution, up to providing a basic design layout for building an app intended to run on personal mobile devices.

2. BACKGROUND, LEGAL REASONING AND THE NEEDS OF THE LAW CLASSROOM

The Virtual Court is an educational environment designed for providing more opportunities for students' engagement and active learning in the law classroom.

This technologically-enhanced learning (TEL) environment was initially created to respond to the immediate practical needs of the year one Legal Studies (LS) module, which aimed to introduce some basic legal understandings regarding the English legal system to students with major subjects different to law (i.e. international relations, criminal justice studies, politics and economics).

There are some limitations when teaching law in this kind of combined undergraduate programmes, as legal subjects are unequally positioned within the curriculum, in comparison to the students' major subjects. In this respect, while within dedicated law degrees chances for gaining functioning knowledge are certain to re-emerge, (because either the exclusive study focus instructs consistent exposure to legal problem-based learning or because student

participation in relevant non-compulsory extracurricular activities - such as mooting and debating - is systematically organised and pursued at Law School level), interdisciplinary students are arguably at a disadvantage.

Moreover, combined degrees pose additional challenges to legal education as it is particularly difficult to map and address the potential law-related interests of an interdisciplinary cohort. Nevertheless, it is important to be aware that some law minors eventually decide to join the traditional pathways of the legal profession, such as the Graduate Diploma in Law (GDL), for which the mastery of the set of argumentative and decision-making competencies, usually known as *legal reasoning* (or colloquially expressed as 'thinking like a lawyer'), [2] represents an important advantage. And, in addition, law minors benefit more immediately from a strong understanding of legal reasoning, as their future law modules mix them with students majoring in law and impose on them equal requirements regarding legal skills.

2.1 DEFINING LEGAL REASONING IN LEGAL EDUCATION

As noted by MacCormick (1978, p. ix), legal reasoning is a branch of practical reasoning concerned with making right decisions in situations where some choice can be exercised; in the legal profession this set of reasoning operations often derive from a central legal activity: applying rules. Legal rules are regularly expressed textually - i.e. by using written language - which has for long justified the emphasis on text analysis in law schools. Nevertheless, behind the application of textual legal rules resides a series of reasoning operations that legal education needs to make clear and evident to students. Therefore, it is necessary for us to first have a close look to some theoretical reconstructions on legal reasoning.

Legal theory has for a long time talked about the divide between easy cases and hard cases, the former being those in which the application of legal rules is unproblematic and the latter those 'in which the result is not clearly dictated by statute or precedent' (Dworkin 1975, p. 1057). The particular complexity of hard cases has made them a popular resource in the law classroom, where they are often used as an educational tool to develop particular legal reasoning skills. Therefore, even if in legal practice easy cases are definitely more frequent (Priest and Klain 1984), hard cases are more prominent in legal education, as it is expected that like in the maxim *qui potest plus, potest minus*, students are ready to face less problematic easy cases through mastering complex hard cases.

MacCormick (1978) distinguishes between the following problems that might arise when reasoning with hard cases: problems of relevancy, problems of interpretation and problems of classification. The problem of relevancy refers to retrieving the adequate legal rule. The problem of interpretation is connected to clarifying any ambiguities in the way of understanding the legal rule when there are different possibilities. Finally, the problem of classification arises when there is doubt if the facts can be classified within the scope of the rule.

To solve these problems MacComick argues that it is necessary to provide second-order justifications, such as consequentialist arguments and arguments of coherence and consistency. The first type or arguments tries to answer if a particular way of solving a problem 'makes sense in the world', while the second focuses on stating if the solution 'makes sense in the context of the [legal] system' (1978, p. 103). Consequentialist arguments are therefore more subjective and open-ended, allowing discussions such as (i) the logical implications of the ruling; and (ii) the results of practical outcomes (MacCormick 1979). Consequentialist argumentation introduces aspects related to 'justice' and of 'common sense',

without necessarily limiting them to the previous responses of the legal system (as arguments of coherence and consistency do).

2.2 EMBEDDING LEGAL REASONING IN A TEL ENVIRONMENT

Our educational approach looked precisely into addressing problems of interpretation and classification through the use of, mainly, consequentialist reasoning. The main aim in this is to prepare students to face situations where the legal rule is ill-structured or requires further definition in the light of e.g. new facts.

We had inherited teaching of the LS module at short notice, having to work with a set of already determined intended learning outcomes (ILOs). The module's general ILOs were directed towards the accumulation of basic declarative knowledge (such as legal concepts, institutional organisation, and so on), but arguably they did not explicitly aim to develop functioning knowledge (Biggs 1996). We considered that there was still room for opening deep learning opportunities (Entwistle 2000; Biggs & Tang 2007), through which students could develop relevant skills and enhance their understanding of legal reasoning. [3]

In order to achieve the module's pedagogical objectives and to address the particular practical needs mentioned above, we aimed to create an educational environment that empowered students and where they could develop their 'hands-on' knowledge. We thus strove to create a setting that went beyond the interaction opportunities provided by the classroom, in order to open new channels for students to think and engage in legal reasoning, while receiving timely formative feedback.

Because of their flexibility and capacity to support asynchronous interactions beyond the physical classroom environment (McKendree et al.1998), educational technologies emerged as a suitable candidate for setting up the necessary conditions. The TEL environment which we named the 'Virtual Court' was designed as part of the LS module's activities, in order to target the above mentioned objectives. As legal reasoning operations regularly happen in an adversarial setting (or anticipation of likely disputes, like when e.g. advising or drafting documents), our expectations from a TEL environment involved immersing the legal reasoning exercise in a context of legal contention, an aspect that enhances other aspects of legal practice. [4]

2.3 ARGUABILITY, LAW AND MOOTING

One of the most salient features of the law, especially within adversarial common law systems, is its arguable character (MacCormick 2005, p.14). This means that the solutions proposed to particular legal problems (i.e. relevancy, interpretation and classification) will be tested against counter-arguments of certain strength. The arguable character of the law becomes particularly relevant in hard cases, where the system does not provide a clear answer and the potential novel options have to undergo a process of adversarial examination.

Therefore, to understand the nature of law, students must engage with hard and contested scenarios, like those regularly decided by courts of law. Students of law are usually expected to develop their skills to follow different argumentative lines, to generate strong and well supported arguments, as well as to adapt their arguments to different real and hypothetical situations (Ashley 1990).

These skills typically result from the various educational experiences happening within the law classroom. There is a variety of approaches in legal education to help law students develop argumentative skills, but, throughout the history of law education, 'mooting' [5] has been particularly useful in attaining this purpose (Lynch 1996). Mooting is a form of simulation [6] in which students take the role of the judge, the plaintiff, the defendant or even the jury and discuss an imaginary legal case (Snape & Watt 2005). Additionally, the use of mootings as legal pedagogy is generally justified by several reported benefits. For example, it has been argued that mootings bring active participation in the classroom (Cruz & Kearnes 2006) and allow students to develop first-hand experiences that contribute to their overall legal knowledge and reasoning and argumentative skills (Higgins & Daly 2010). Moreover, mootings have reportedly been a successful educational method due to the high level of engagement, motivation and spontaneity that they introduce into the classroom (Barton & McKellar 2011). [7]

The advantages generally associated with mootings matched well the learning outcomes we were aiming to achieve. Nevertheless, there was a concern whether these overall benefits would be equally relevant for our multidisciplinary group of year one (level four) students, who, as mentioned previously, were not necessarily aiming to join the traditional legal profession. Mooting, however, has been successfully transplanted from the legal setting to different disciplines as a tool for developing general transferable skills such as argumentation and communication (Chisholm 2011).

In this respect, even if not all of the LS class students were studying to become lawyers, we concluded that a moot court activity would help them enhance their theoretical and practical understanding of the law (which the particular module aimed to develop). Furthermore, the mootings experience would benefit the development of their general discussion and critical thinking skills, which would eventually be transferable to their respective disciplines.

2.4 TECHNOLOGICALLY-ENHANCED MOOTING

Mooting, as it regularly takes place in law schools, usually follows a face-to-face format and is not often enhanced by technology. Generally, law schools around the world are considered to have been slow in introducing technological innovations (Goodenough 2013). Nevertheless, in recent years, legal education has featured some really sophisticated forms of technology-enhanced simulations (de Freitas & Maharg 2011).

Such technologically-enhanced simulations may, however, range from complete immersive scenarios to more modest role-playing aids. Therefore, legal simulations may involve rich and immersive 'virtual worlds', where students can develop different aspects of legal practice, such as the 'Civil Court Action' project (Barton & McKellar 2007). [8] Most frequently, technologically-enhanced legal simulations usually focus on a single (or a narrower array of) legal tasks - e.g. performing client interviews or facilitating dispute mediation- supported by means such as video to provide realism (see e.g. Strevens & Welch 2014). Nevertheless, there are some text-based legal simulations, such as the CATO programme, which has the particular aim of supporting pedagogical dialogues and guiding legal reasoning (Ashley 2000).

In appreciation of the benefits that TEL settings generally seem to offer, we were persuaded to develop a (rather modest) virtual mootings environment, instead of a face-to-face exercise. Virtual environments are reported to serve as good aids in mootings exercises: they are highly effective means to recreate real life situations, where students are able to immerse themselves and learn in a joyful and engaging way (Yule et al. 2009). Role-playing is additionally

considered to have a decisive impact on student immersion in such simulation settings as well as to increase motivation (Barton & McKellar 2007; De Freitas & Maharg 2011). In this sense, our aim was to create an environment where learners could expand their experiences beyond those of being students of the LS class and live the law as prosecutors, defendants and judges. Also, a TEL environment would enable the possibility to take the work outside of the classroom and allow students to enhance their capacity for independent learning, while encouraging active participation across the whole cohort (Richards 2003). Most importantly, a virtual setting would disclose the students' process of reasoning and deliberation to the lecturer, unlike other types of assignments that report results, but obscure the processes of knowledge construction. This particular feature would help providing timely formative feedback throughout the activity and without exposing students publicly in front of their peers. In fact, as some students of that particular group had pointed out that they felt uncomfortable when openly expressing their views in front of their peers (through the online module discussion forum), it became a core concern to find a platform that allowed anonymous participation (Gygar & Cassimatis 1997).

3. THE VIRTUAL COURT 1.0

The TEL environment we aimed to design was to re-enact the adversarial and argumentative structure of the law in trial. In this form, we wanted to recreate: (i) the discussions taking place between lawyers working for the defence, for the prosecution and between judges; (ii) the private and highly confidential development of those discussions happening between the lawyers working for each of the parties; and (iii) those discussions occurring between the judges before the public announcement of their decision. Additionally, we wanted to simulate the delivery of the parties' statements in a public courtroom. We also wanted to remove the burden of having all students meeting simultaneously, by offering a platform that retained a record of the discussions of each group. Such records had to be available at any time for the students to catch up when they logged back in.

3.1 TECHNOLOGICAL PLATFORM

While looking for an immediate response to these practical needs, we had to seek a software or online platform that would support the learning activity according to these specifications. After an extensive search, we found that the *www.chatzy.com* website allowed separate discussion rooms, a general meeting room and keeping the history of contributions for a small charge. Therefore, we went ahead with the design of the Virtual Court using this online facility. Chatzy is a text-based application, which does not feature sophisticated graphics. Even if the lack of advanced 3D virtual technology works against the realism of the exercise (Schofield 2014) this was deemed irrelevant in the present case, given that the humble objective of the exercise was to enable a general grasp of legal reasoning for students of disciplines other than law and not to professionally train lawyers. Moreover, the rudimentary text-based user interface of Chatzy did not require particular familiarisation with extensive and complicated software menus and commands. For example, the virtual world of Second Life has been used to enhance courtroom simulations in legal education (e.g. Crellin et al. 2011), yet we found its interface comparatively demanding for the inexperienced new user. We considered that, particularly where within the curriculum intended engagement with the TLE was to be concluded within no more than two weeks, a one-off interaction experience with a novelty virtual setting, such as Second Life, would distract students from the actual legal simulation and its focus on the analysis and articulation of arguments. Plausibly, one of the advantages of the Chatzy site was that it was easy to use (Davis 1998; Lederer et al. 2000).

Therefore, despite its visual shortcomings, the selected online service, did accomplish its primary purpose.

It should be noted here that the original decision to revert to the use of an external service like Chatzy resulted from the resident e-learning environment (VLE) not offering basic chatting facilities at the time. This remained an issue in later years, even when the respective education institution switched to more dynamic Moodle environments, as we will discuss later on in more detail.

3.2 GENERAL ACTIVITY, ROLES AND PARTICIPATION

For the first incarnation of the Virtual Court, the activity involved a legal case taking inspiration from the famous English case *R v Dudley and Stephens* decided in 1884. We basically followed many of the facts that took place in the historical case, but adjusted them to generate a scenario situated in the future. The original case (featuring a group of castaways that killed one in their company in order to feed themselves and survive) is one full in details and argumentative potential, which usually attracts interest due to the legal and moral dilemmas it involves. Hard cases, as the one mentioned above, are important for legal pedagogy because they help developing students' critical thinking skills (Reingold 1996).

The students were asked to analyse the case according to the general principles of English Law already reviewed in class. They were explicitly told that the exercise did not require accurately citing statutes and precedents, as these would involve more advanced legal skills and knowledge of specific laws; that was one of the reasons we used a fictional future setting. We also wanted students to focus on the process of reasoning, and not to be preoccupied with the probabilities created by a vast universe of statutes and case law that was completely unknown to them. Nevertheless, they were asked to construct arguments as if they were prosecutors, defendants or judges, allowing them to engage in the activity with a particular purpose and focus.

We divided the cohort into three groups: 'prosecution', 'defence' and 'judges'. The students were assigned alternative virtual identities, only disclosed to the module teaching team. They were given names of popular culture characters in order to make the activity more appealing (e.g. characters from the popular board-game Cluedo, or judges from well-known movies and television series).

To a minimum extent, this activity would also serve as indirect teaching of general insights on court proceedings. Participants would generally have to behave according to their assigned roles in real court practice, use particular language and terminology, and judges were granted the power to reorganise at will and guide the process at hand - although no strict simulation was envisaged. Students were thus encouraged to autonomously research and learn proceedings elements that they were not taught in the classroom, in order to recreate them within the activity.

The activity consisted of four main stages: (1) Opening statements; (2) Arguments; (3) Closing Statements; and (4) Resolution. In the first stage the prosecution team would convene in their private chat room to discuss what would be the argumentative line to pursue during the course of the trial and then they would make their position (charges) public at the common courtroom ('the Arena'). Thereafter, the defence would hold a private meeting to deliberate about the general position and make their first statements in the court. The first half of the second stage featured closed meetings between the parties to develop further the reasons

behind their statements. On a third stage the prosecutors and defendants presented their closing statements, i.e. a summary of what was argued in court and why the judges should decide in favour of their position. The fourth and final stage required each of the judges to construct in private a reasoned opinion, deliberating and deciding the case.

During the activity (which lasted for a week, more or less), the role of the teaching team was that of an e-moderator in accordance to Salmon's (2007) '20:80' plan, encouraging and supporting students when needed and intervening when the discussion was moving away from the objectives.

3.3 PRELIMINARY RESULTS

Much to our delight, the Virtual Court proved to be a successful environment overall. Most of the LS students logged into the online site and contributed to the court discussion, reaching even beyond what was expected from them. For example, during the second stage of the exercise an actual debate was randomly set up and inserted into the course of proceedings by the judges, who took the initiative despite having been only silent spectators up to that point. The judges moderated the debate and developed it on the basis of clarifications they required from the prosecution and defence parties.

The level of participation was variable, ranging from a minimum contribution to frequent substantive interventions. Overall, the majority of students seemed immersed in the Virtual Court environment, displaying a more proactive and creative behaviour than that which is normally observed in the classroom. The ILO was definitely accomplished and the students developed a good grasp of what is involved in thinking and arguing like a lawyer.

The one major downside during the Virtual Court's first run was that it proved less successful in attracting the attention of those students that normally do not attend classes, even though emails were sent individually to inform them about the activity. In this sense, the problems of participation in the Virtual Court seemed concurrent with general student engagement problems; a topic that greatly surpasses the scope of this contribution.

3.4 VIRTUAL COURT RERUNS

In the second year that we ran the Virtual Court, the exercise became more integrated within the syllabus. Module assessment involved the gradual submission of side-assignments that, via 'feed-forward' comments given by the teaching team, would culminate with the Virtual Court activity. One of these assignments required to draft a Bill on assisted dying. The final case scenario, incorporating issues of consent from *R v Brown* [1994] 1 AC 212, had a group of cultists taking advantage of the will of a terminally ill patient to end his life. From those law drafts, which the students had previously submitted, we picked the most solid in its attempt to codify into statutory law a fictional state policy on assisted dying; this was reintroduced as a hypothetical Act of Parliament that would inform legislatively the fictional scenario's parameters. Student engagement with legal reasoning expanded on examining the logical correlation between arguments and statutory language. At the same time, the challenge of interpreting, construing and applying the law offered students with the opportunity to develop deeper grasp of how legal contexts generate hard cases, as well as to review critically through practice the strengths and weaknesses of their own previous law-drafting.

The third year coincided with fundamental, University-wide structural changes in the organisation of the academic year, which radically condensed the LS module's delivery time,

and forced us to push back most of those enrichments to the activity we had adopted during the previous run. Therefore, we removed the 'feed-forward' link with other module assessment elements, we tightened the exercise's various stages in view of limiting the allowed timeframe, and we resurrected the case scenario we had used for the first Virtual Court, i.e. the futuristic adaptation of *R v Dudley and Stephens*.

As for student participation, it is interesting to note that this time several students who had little class attendance (and one, in particular, no attendance at all) contributed to the activity with considerable enthusiasm and commitment. As no relevant changes were made regarding the scope and format of the activity or its assessment, the question of why student engagement in the Virtual Court has contradicted, in some cases, general class participation trends, is one that looks beyond the scope of this paper and we hope to address in future research.

3.5 TEL EVALUATION AND LESSONS FOR THE FUTURE

3.5.1 FEEDBACK

Student feedback has been positive from the beginning. In response to the standard University practice of evaluating the entire module at the end of the teaching term, students distinguished the Virtual Court as an 'exciting and engaging' experience that gave them 'the opportunity to discuss and debate than just learn the law.' [9] Following the Virtual Court's second run, the respective cohort also stated being interested in the exercise, as well as being impressed with assessment styles that would incorporate such activities, including the combination with bill drafting that led to the virtual trial. At the same time, the students thought that the Court would improve if they were not to spend so much time on the computer screen, the process demanding them to check frequently with their group discussions and developments in the Arena, becoming too time consuming. They also raised issues with the website's capacity to store and retrieve preceding discussions, especially whereas the defence and the prosecution would regularly engage in successive long rewritings of the statements they were to present in the Arena. [10]

At the same time the Virtual Court was highly praised by the panel of external examiners for the Law Programme during the School's Assessment Board meeting. The use of the TEL platform as an online means for multiuser participation and the representations of the trial process and internal dynamics that this facilitated attracted their attention. They were eager to make further suggestions, based on the potential the Virtual Court showed for improving learning and assessment and with the prospect of adopting it for their own law programmes.

The combined feedback allowed us to see further possibilities and opened doors to new developments. In order to carry on with more ambitious plans, it is important to keep on empirically assessing the current development and understand better three core aspects: (1) how students learn; (2) the best use of educational technologies; and (3) the effectiveness of pedagogies. For this reason we actively explore ways to perfect our means to empirically evaluate the effectiveness of the platform in attaining the ILOs. Additionally, we consider that, despite the limited immersion capacity into the real legal practice, the Virtual Court could also perform as a useful tool to refine legal reasoning and argument building skills in law students. Therefore the obvious expectation would be to open up use of the TEL also for students majoring in law.

3.5.2 THE VIRTUAL COURT WITHIN THE WIDER LEGAL EDUCATION AGENDA

As previously mentioned, the initial implementation of the Virtual Court exercise aimed at assisting first year law students in understanding the process of thinking like a lawyer. We consider that the tool can also be adapted for law students across the board, but it will, however, require answering new questions about the objectives of the activity, as law students are expected to develop more refined legal skills than students majoring in other disciplines. This is particularly relevant in the current context of the legal profession, where there have been widespread concerns about the weak writing and legal reasoning skills of new graduates, as well as poor technological literacy of legal professionals in England (The Future of Legal Services Education and Training Regulation in England and Wales Report 2013). The above mentioned study by the Legal Education and Training Review (LETR), however, does elaborate on the (ir)relevance of legal theoretical understandings (such as the ones informing this platform) in the development of the desired practical skills.

In the contemporary legal education setting, both legal practice and academic scholarship seem to have taken some distance from the value and utility of legal theoretical teaching (Hon Tan 2009). It is important that a push in legal education towards practical learning and employability skills should not end up overlooking the teaching of legal concepts and the comprehension of the reasoning mechanics that lie at the heart of arguing in (and with) law. The platform we propose is a theoretically informed tool that defies the irrelevance of theoretical understandings in developing practical skills.

In this sense, the Virtual Court aims to engage students in active learning by stimulating a practical understanding of legal reasoning, which the language of court decisions accurately represents. Within the TEL environment, construction of meanings should be made possible through active participation in the education process, the same way it has been considered that '[a] successful course in skills training not only demonstrates the method of performing a particular application of a skill (drafting a contract) but also imparts the theory behind a successful application (drafting of contracts)' (DiMatteo & Anenson 2007, p. 24). In other words, the value that the Virtual Court's educational design should materialise is broader and actually independent of the study area of law, in conjunction with which it might be utilised: to incorporate legal reasoning processes and make students clearly aware of these.

3.5.3 VIRTUAL COURT FOR LAW STUDENTS: TECHNOLOGICAL EXPANSION

Additionally, a Virtual Court for law students might require more sophistication and, therefore, a more elaborated learning technology tool. Creating a technologically advanced learning environment will require resources and additional technical support. When we introduced the Virtual Court, the education institution's resident e-learning environment (VLE) had limited capability for Web 2.0 features and thus did not offer chatting facilities. The fact affected our initial decision to look for an external online provider like chatzy.com, as described above. However, even though the following year the VLE services were updated by switching to a Moodle platform, the embedded chatting features would not provide for the kind of extensive and dynamic flows of chat entries that the Virtual Court activity demanded, and, importantly, neither for participants' anonymity. While, therefore, prolonging our continuing use of chatzy.com for said purposes, we also turned our attention to exploring the future development of the TEL platform towards making it independent from its initial hosting site.

Thus the future we envisage for the Virtual Court is to transform it into a pedagogically and technologically more sophisticated tool to teach students basic legal reasoning skills, such as argument construction and identification within an adversarial context. The Virtual Court should be considered as a distinctive learning tool precisely upon its emphasis on reasoning skills within mooted technology; or, in other words, upon its integration of legal reasoning modes within educational mooted interfaces. The innovative take that the TEL platform suggests is firmly tied to the strengths of the pedagogical design; otherwise, there would be substantially no difference to adopting simply any of the existing Online Dispute Resolution (ODR) setups in legal education. As previously stated, the main idea is to offer a flexible tool that addresses core legal skills and that, thus, has the potential to be used across legal subjects. This future must, however, consider the development of its pedagogical design and technology by taking into account the three core aspects mentioned above - i.e. how students learn; the best use of educational technologies; and the effectiveness of pedagogies.

4. THE VIRTUAL COURT 2.0: A MODEST PROPOSAL FOR A TECHNOLOGY-ENHANCED LEARNING ENVIRONMENT

With the above considerations in mind, we proceed to outline an advanced, more engaging and interoperable version of our teaching and learning environment (TLE) setup. Our primary ambition is to develop further the Virtual Court platform as an independent learning tool that may be easily deployed by higher education institutions and organisations within any programme for teaching law. We should clarify here that, while sounding similar in name, our TEL environment is far different from other well-documented professional and educational 'Virtual Courtroom' initiatives in the US and the UK (Lederer 1999; Barnett, 2003; Bartlett 2010; Pappas 2008) which have aimed primarily to increase the use of technology within trial (and trial simulation) procedures. It should also be differentiated from the Virtual Court Action project (and its future development: the Civil Court Action), which has focussed more on simulating as many as possible elements of the civil dispute process (Barton & McKellar 2007).

While our Virtual Court proposal also operates within the field of legal simulation, its learning horizons are specifically fixed to developing a legal reasoning toolbox, in the sense we defined the nature and practice of legal reasoning at the beginning of this paper. Such focus entails that our TLE could potentially function as a legal reasoning learning component which may also be integrated within any other legal educational project that involves dialogic processes (e.g. court argumentation, negotiations etc.).

4.1 LINKS WITH ODR AND TEXTUALITY INSIGHTS

While traces of inspiration from previous engagement with ODR environments were easily visible in the first incarnation of the Virtual Court, our proposal returns to such experiences even more directly, as there are important lessons to be learned from tried exercises of integrating legal reasoning within ICTs.

Much like in ODR, technology in the legal simulation component of our TLE proposal plays the role of the 'fourth party' (Katsch & Rifkin, 2001), in the sense that, on many different levels, it outperforms its function of a tool and can affect the participating users' decisions. Practically, participants interact with the technology when trying to reach each other, which

not only functions therefore as a discussion proxy, but also intervenes between users, becoming either a positive facilitator in the interaction process or, if not carefully designed, an obstacle and negatively interceding factor.

Furthermore, ODR designs are always useful to compare with, when trying to identify key guiding principles towards 'digitising' dispute resolution modes. They have shown inventiveness and versatility in providing convenience and 'individually tailored processes' (Pappas, 2008), yet they also proved to accommodate insufficiently certain modes of human conduct and communication that were crucial in the original offline context (a comprehensive review of ODR in Mania 2015).

Most importantly, we consider that useful conceptual and operational elements could be extracted from earlier ODR schemes (e.g. Hornle 2002), when ICTs of lower capabilities would reflect the offline practices of law rather schematically, yet more directly down to their bare layout as processes. Following this logic, our proposed legal simulation and the technology supporting it should not be self-serving, by investing more in the innovation for the sake of it or by creating exotically impressive but equally distracting onscreen settings. It ought to concentrate its focus on sketching out the essence of the law, in close relation to the learning outcomes that engagement with legal reasoning dictates. In this respect, a renewed attention to textuality emerges instantly from the onscreen simplicity of these models.

Opposite to these perspectives, we are at the same time well aware that the proposed technology and its user interface have also to be somehow engaging and attractive to the next generation of students.

4.2 VIRTUAL COURT: THE APP

The main development we are looking into is to adapt the TLE into a cross-platform application (app) with particular interest in its implementation on mobile devices such as tablets and smartphones.

4.2.1 MOBILITY & PORTABILITY

Aside from the generally considered benefits that a transition in higher education to m-learning has to offer (Traxler & Wishart 2011; Traxler 2012; Sevillano-García & Vázquez-Cano 2015), as well as the dynamics this may promise regarding legal education in particular (Kirchberger & Storr, 2012; Bainbridge et al. 2013), developing our TEL environment into an app would respond directly to several of the needs and problems, which our so far experience with the Virtual Court exercise has highlighted. For example, mobility will help with relaxing the intensity and demands of onscreen presence that student feedback has raised as a problem, while reshaping, at the same time, the distance learning terms of student participation. Furthermore, our idea of an app aims at overcoming such technical constraints as those we initially faced with the resident University VLEs. Universities invest in generic application packages that, because of their dual administrative and educational function, or due to the centralised educational assumptions they incorporate, prevent educators from experimenting with alternative teaching and learning approaches on the offered digital environments (Barton & McKellar 2007; Maharg & Owen 2007). The app is intended to compensate for the noted lack of flexibility, by performing as a standalone software platform that will enable teachers to add and remove features ('widgets') at will.

4.2.2 OPEN SOURCE FUNCTIONALITY

An open-source software (OSS) model would more suitably support such open-ended functionality expectations, giving software developers scope to create new features towards enriching and thus expanding the app in the future. It does not only condition collaborative programming as the basis for collectively tackling technical problems and working on continuous platform building (Lakhani & von Hippel 2003; Paulson et al. 2004; Open Source Initiative): the use of OSS in education entails further the proliferation of dynamic project-based learning communities that can help the supported educational design to evolve, through ongoing processes of idea-sharing and peer-production (Lakhan & Jhunjhunwala 2008; Bodie 2012); community involvement with the Moodle open source VLE forms a very good example in this respect (Dougiamas & Taylor 2003; Lakhan & Jhunjhunwala 2008). It is thus important that the proposed app can quickly respond to and absorb parallel developments in legal education as they happen, and to provide for an adaptable educational tool that responds easily to the needs of any given programmes and cohorts. Arguably, OSS applications may serve better the required degree of interoperability as well as the experimental spirit with legal pedagogies that the Virtual Court embraces.

4.2.3 SIMPLICITY

Looking next at the design of the app's interface, this has to underline the textual characteristics at the heart of the legal reasoning exercise and to enhance the various levels of interaction, which combined frame participation in the TEL environment for learners, while attending to relative simplicity overall. Simplicity refers first to minimising effectively the processing demands of app software, which, if burdened with too many features (particularly excessive visuals), could affect negatively with technical performance on individual devices. Not all mobile devices have the same processing capacities, and learners without access to more advanced hardware could be left behind within the educational process and, essentially, excluded from it. Likewise, the notion of interface simplicity takes on board concerns about the digital literacy of learners, with a digital divide in higher education referring to substantive technological inequalities in computer skills (Peña-López 2010a; Peña-López 2010b). Students generally seem to be tech-savvy nowadays, yet this is conditioned by particular cultural contexts and does not always translate into confidence with using technology in education (Johnson et al. 2016; Waycott et al. 2010). Empirical evidence frequently shows 'digitally native' students not taking the initiative to learn new interfaces (Jones et al. 2010; Ng 2010; Simpson 2011; Thompson 2013). Moreover, socio-economic backgrounds play a crucial role in influencing the levels and quality of technology use by students (Hargittai 2010; Margaryana et al. 2011), even when all students, advantaged and disadvantaged alike, have equal access to ICTs (OECD 2016). A simple interface should assist in overcoming many of these issues.

4.2.4 IMMERSION

This notion of simplicity should be then carefully coupled with the degree of immersion that the legal simulation component of our TLE proposal pursues to advance to. [\[11\]](#) For the purposes of enabling engaging and constructive learning, a dedicated immersive (simulation) environment will seek to replicate in depth the simulated context's defining interaction experience (Stevens & Welch 2014). Whereas mootng as such constitutes a simulation form, the parameters for immersing learners will rely on maximising the mootng process experience. Pursuant of this aim, and considering our achievements with the Virtual Court's previous incarnation, what we could further do with a dedicated cross-platform app is to

introduce TLE participants to additional interaction modalities for engaging with the virtual environment and with each other; that is, to attach to the court simulation's basic arrangement of allocating learners into role-based groups and discussion modes other individualised and collaborative side-tasks. Some examples are suggested at the end of this part of the paper. Nevertheless, no matter the importance of enhancing the immersion factor of the legal simulation, introduction of added features will have to abide by the above general requirement for simplicity.

4.2.5 CHATTING

Balanced against such concerns over digital inclusion and software / hardware performance, the scope for delivering the legal simulation will more likely need to adjust to onscreen representations and technical configurations of perhaps even lower standard than state of art commercial applications, constraining also as a consequence the design potential of the app's user interface. However, we do not consider that concessions of this nature will interfere with the TLE's substance, which we fundamentally still see being better served through the textual operation of chat room setups. Chat rooms are considered basic examples of collaborative virtual environments where multiple individuals may interact with each other (Bailenson 2006). Whereas more advanced virtual environments, such as video games and virtual worlds, enhance immersion by enriching the interacting participants' social presence through virtual representations, including highly interactive three-dimensional graphics or user avatar gestures (examples in Salmon 2009; de Freitas & Maharg 2011; Berger et al. 2016), chat rooms depend primarily on the use and manipulation of language. Since its inception our initial TLE invested in the dominant role of language within the legal simulation, due to the nature of our principal pedagogical objective. For the proposed app, for maximising immersion we therefore rely on the same textual premises that chat rooms simulate sophisticated social interaction experiences by utilising language and other creative elements (e.g., roleplaying, as previously indicated), and on a format also capable of communicating directly to learners the legal reasoning ILOs.

4.2.6 ELEMENTS OF INCLUSIVITY

Returning to the discussion on limited digital literacies and learners being excluded, we realise that one could similarly argue against the use of chat rooms and written expression, the way we suggest these becoming key in the submitted TEL process. Indeed, some issues of inclusivity, and particularly in relation to learning difficulties, might point towards relaxing attendance to language and texts; however, it is also important to prioritise that students are fit for practice in the legal context. Law teaching can occasionally deploy other elements of visualisation (Jolly-Ryan 2005; Markus 2006), yet it is still highly based on text, as arguably law is primarily a text-based discipline. This does not, however, mean that the app, in both senses of a TEL environment and technology, cannot be used as innovative support for students with learning difficulties. An example on the visualisation of arguments coming up next, demonstrates the app's potential for facilitating alternative methods for teaching legal arguments.

4.3 TEACHING LEGAL REASONING: THE 'BLOCK LOGIC'

Learning how to reason with and within the law involves mainly learning from the actual process of reasoning actively. We were presented before with the challenge of how the TEL environment would actually promote practical arguing embedded with clear legal reasoning learning. As discussed previously, textuality in context, that is, active engagement with the

language in a legal setting of the sort we initially introduced during the trial model, has aimed precisely at realising this. Implementing textuality in learning through the use of online chatting was only a first step, since the legal reasoning part needs to be further emphasised to learners as they engage into legal arguing. The modes of logic, language structure and argument construction should be visible to learners, especially to early students of law.

4.3.1 ARGUMENT VISUALISATION

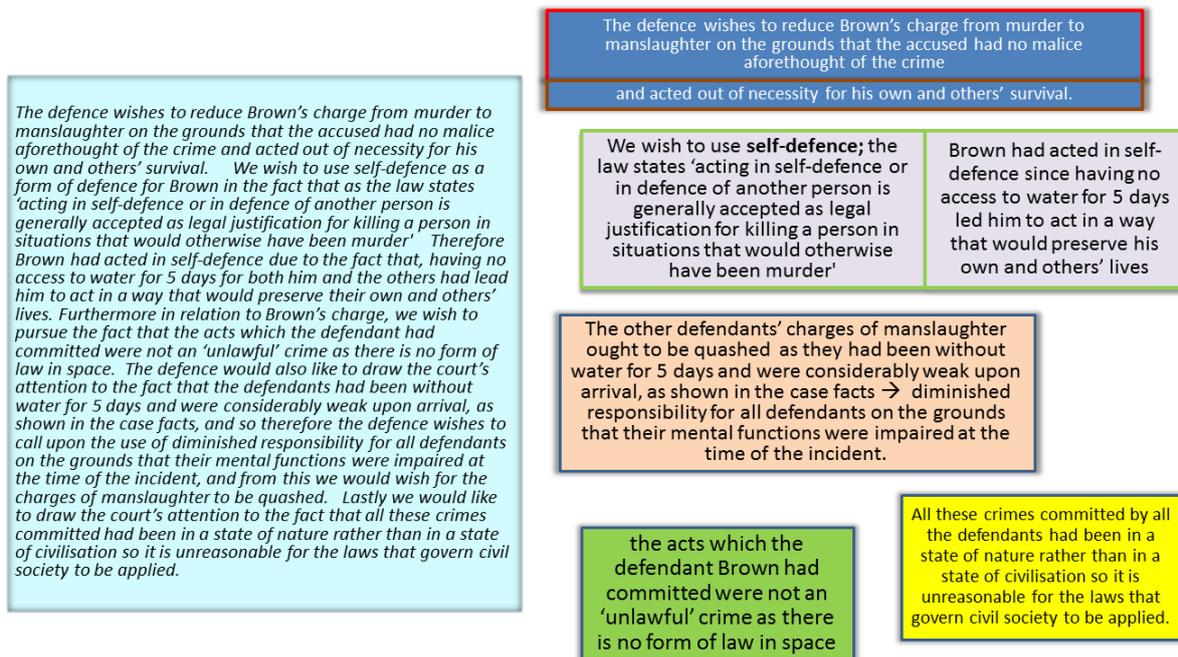
Graphical representation of arguments can help students with 'visualising' more clearly the structure of reasoning (i.e. conclusions and supportive justifications), in order to assess the strength of their own arguments and identify potential bases for unfolding counterarguments. [12] The app implements some elements of argument visualisation with the idea of facilitating reasoning about texts and materialising ambiguous relationships between arguments (Pinkwart et al. 2007). With the proposed app we are taking the above on board to move from one legal educational perspective, more concerned with having students *visually reconstructing settled arguments*, towards a practical educational approach that gives weight to the *students' argument input*.

Generally, tools for argument visualisation, either technologically-enhanced or not, have regularly relied on the production of 'boxes and arrows' diagrams that show the connections between different conclusions and warrants (Toulmin 1958). Nevertheless, drawing from previous work and in order to secure a good user interaction, the app aims to present argument diagrams following a natural design - e.g. vertical argumentative statements as opposed to complex horizontal argument trees (Verheij 2007). Much like we use in daily life familiar patterns of language to frame our thoughts into expression, the app suggests a method for students to organise their structure of arguments, which we call 'block logic'. Despite displaying in its deployment distant similarities with the classical argument boxes, this method tries to give users a more natural vertical argumentative narrative to fill.

4.3.2 ARGUING IN BLOCKS

The block logic method helps the inexperienced user of legal language to recognise whether the argument onscreen is complete or not. Students, as allocated in defence and prosecution groups, discuss their ideas in their designated chat rooms and they put them down in writing. When drafting their arguments, just before submitting to the common virtual room (e.g. the 'Arena' in previous Virtual Court incarnations), students place individual arguments into separate blocks. Figure 1 demonstrates an example of how this can work in action. The example is taken from the students' submissions for the futuristic adaptation of the *R v Dudley and Stephens* case.

Figure 1



Here the arguments are grouped in blocks, in an attempt to frame the outcome of the students' original discussions in the defence room. Several of the points were actually put together in a random manner, while others demonstrated more structured reasoning when introduced. Largely, the submission draft can be attributed to the one or two students from the defence group who were more active in the process, and cannot in fact corroborate equal levels of comprehension amongst all involved in the discussions in the chat room. In respect of this, we believe that by creating visual representations of arguments in blocks we may also help weaker students to become more aware of and gradually learn how to read clearly basic structures of legal reasoning and arguments behind the exuberances of language.

Moreover, the argument visualisation allows us to see that some arguments have been more extensively developed than others. In this manner, the app makes it easier to identify the weakness and strength of arguments and, thus, the need to further develop them to be able to provide solid legal reasons. In the example we see how the argument on the 'state of nature' is more comprehensive than that on the 'absence of law in space'.

Additionally, the tool helps visualising incompatible arguments. For example, the student's arguments on applying the laws of manslaughter instead of murder clash with the request not to apply the law at all because there is no law in space. In this case it is important that the student acknowledges and addresses this kind of logical problem and, at least, advises that some of the arguments are subsidiary and, therefore, applicable only in the case the previous arguments are dismissed.

There are several ways in which the app's interface could adapt the implementation of block logic. Certainly, learners should be able to discuss their ideas in normal chat flow and organise these into blocks within a separate, dedicated virtual environment, before forwarding them to the main Virtual Court forum. An example of such space we discuss below, under 'real-time collaboration'. The interface could also allow students to indicate distinctions between arguments and sub-arguments, as well as to identify a constituent point within a longer line

of reasoning as a separate block. Use of blocks could even expand to denote 'if-then' logical statements (as in the structure of legal rules) or syllogisms, i.e. drawing logical conclusions from two or more propositions. Some relevant examples are illustrated via divided blocks in Figure 1.

Importantly, within the learning process it will be for students to decide how to organise their arguments in blocks. It might be, as we saw in Figure 1, that their perception and organising are flawed. The educator would not intervene yet, since the negotiation of legal meaning and reasoning continues. This is the second aspect of the block logic's implementation, where argument blocks undergo peer scrutiny, and which we will illustrate here in more detail. What happens in the long run is that through successive inputs, visualisations and comparisons, the students are exposed to a gradual process of legal reasoning learning.

4.3.3 TALKING BLOCKS

Let us assume that the cohort in our example participates in the trial simulation, as we used it in previous versions of the Virtual Court. The prosecution convene in their designated chat room (Figure 2) to discuss their first argument (Argument A). Once they have decided on its content, they transfer the argument block into a representation 'depository' (Figure 3). In the same way, they prepare two more argument blocks (B and C) to add to the previous one (Figure 4) and then they submit their deposit of arguments to the main courtroom (Figure 5).

Figure 2

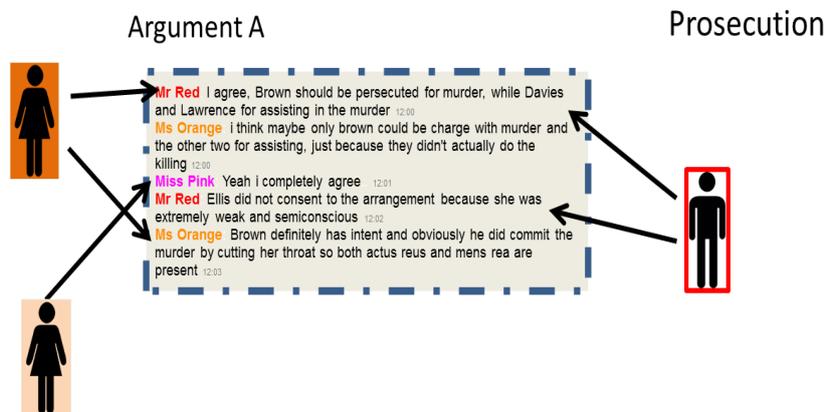


Figure 3

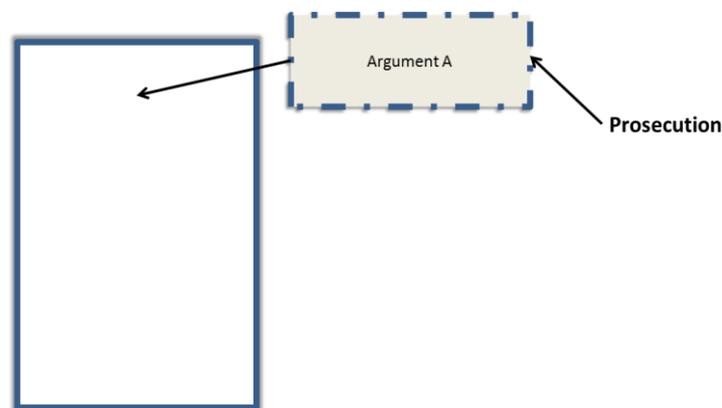


Figure 4

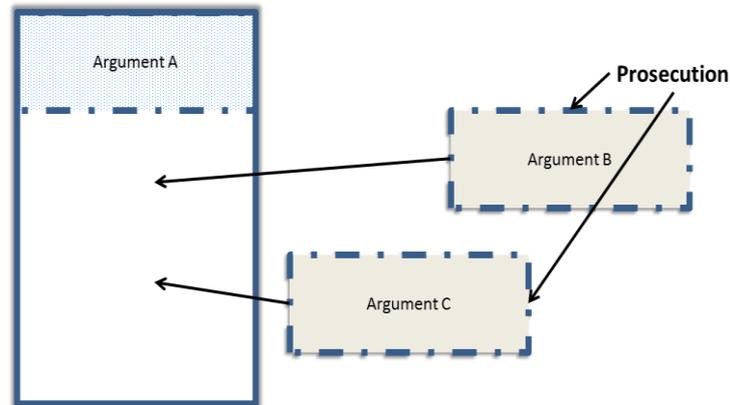
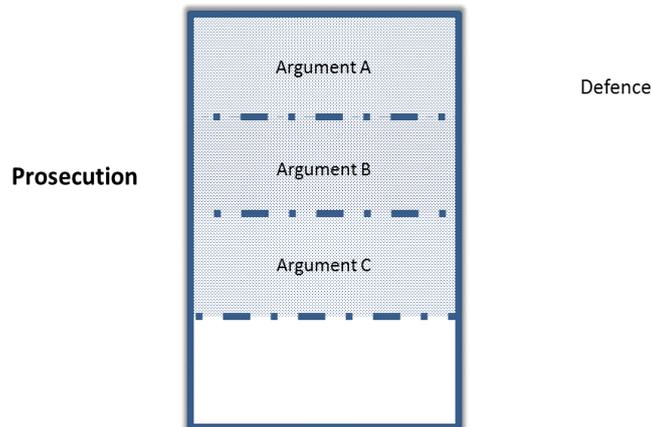


Figure 5



Following a similar procedure, the defence prepare their respective argument blocks to counter Arguments A & C, plus an independent Argument D (Figure 6). In the present example we assume that either the defence did not address Argument B or that they thought they did so by deploying Argument D, which however does not respond to the former. In either case, Figure 7 represents the arrangement of argument blocks in terms of content. We see that arguments B and D are not matched by any defence or prosecution, respectively, counterarguments.

Figure 6

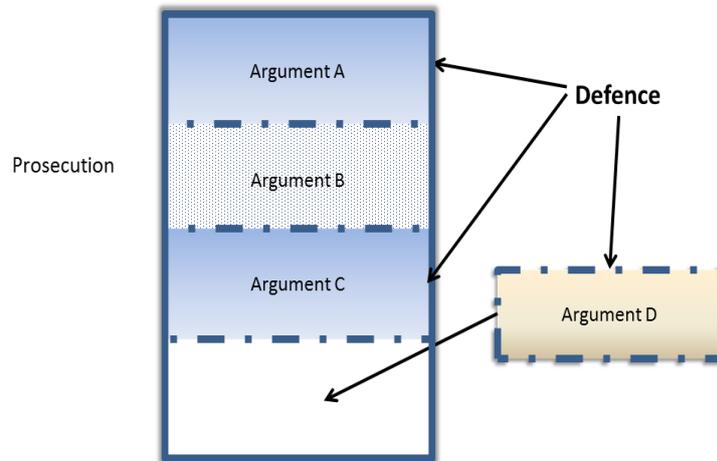
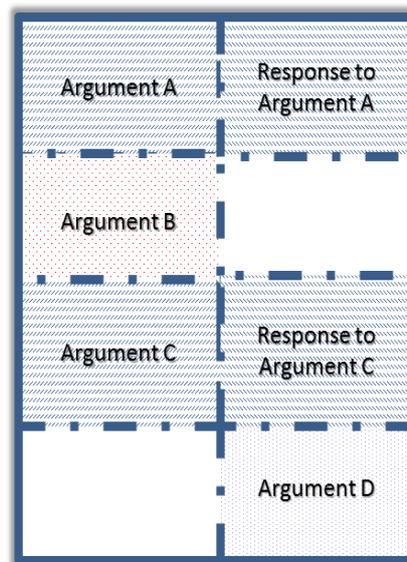
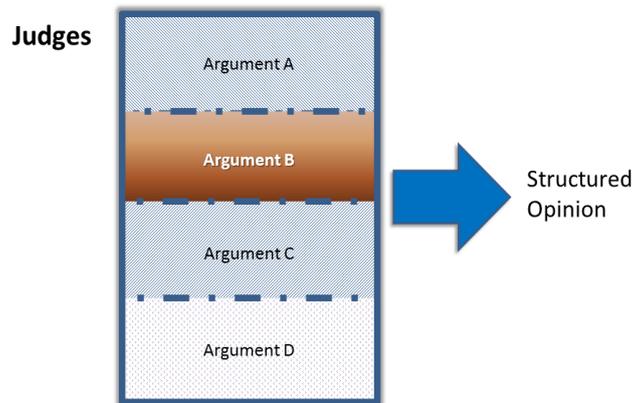


Figure 7



Finally, the conflicting arguments are assessed by the judges. The judges decide over the opposing lines of reasoning and proceed with giving their final opinion. In terms of app interface, the judges have practically to fill a block in response to each of the points raised and debated over by the parties. Therefore, in our example, the judges will engage with the countering positions regarding Arguments A and C; they should ideally interpret the defence's silence over Argument B, while also reasoning with the latter; and they will evaluate Argument D and its possible weight on the trial process (Figure 8).

Figure 8

4.3.4 'BLOCKING' THE LAW

The app's facilities for both synchronous and asynchronous multiuser interaction offer a valuable functional component that could be applicable to the teaching of most areas of law. The legal simulation may provide an accommodating environment for developing outside the classroom learning of substantive law, court proceedings and practical skills (including dispute resolution), while its collaborative aspects can support learning of, for example, document drafting. At the same time, central to the broad range of potential uses is the integration of the argument enhancing setup in the app's interface. The TEL environment comes with a set of ILOs already incorporated in its performance, supporting the development of legal reasoning through active engagement with law in general. The Virtual Court encompasses interactive group tasks for learning the law by 'creating' it, with limited intervention of the teacher, as the students are actively involved with relevant activities in a constructive manner (as in Biggs' constructive alignment model, 2003).

Furthermore, the app as a tool can perform at various stages within the education process and serve different educational approaches across law curricula. For example, we have used the original Virtual Court TLE for assessment purposes and as testing ground for students' accumulated knowledge. The app could also function as a facilitator for problem based learning (PBL) approaches, providing an engaging environment within which the students, through the presentation of an open ended legal problem as the 'catalyst for learning' (Batty 2013, p. 251), may embark upon working together on discovering legal solutions.

Generally, the proposed TEL environment promises great potential for becoming an important pedagogical asset within law teaching courses and programmes.

4.4 USER INTERFACE

As this is a generic proposal regarding the more technical aspects of the envisaged application, we may only provide a general framework for what the user interface may look like and on what premises it may operate. Certainly, we have already indicated a set of basic principles to guide this development in the future and we may conceptualise its look and feel more or less on current state of art digital technologies.

4.4.1 KEY ELEMENTS

The teacher's user interface comprises basic opt in / opt out and drag-and-drop builder features to allow for easy customisation of the various learners' tasks on the app, including preferences for organising the learning process and platform participation (e.g. registering users, nickname and group allocations, granting permissions). Accordingly, the user interface should allow for setting up a broad range of law-based dispute and collaborative virtual spaces, to suit accordingly the teaching needs at hand. The app's cross-platform operation would be most useful for purposes of moderating and monitoring, both activities that, due to the complexity of real-time organising of multi-user participation, some educators might feel more comfortable to deal with on a computer screen, rather than on a smartphone or even a tablet.

The user interface for students, on the other hand, is far less complicated and primarily supporting navigation through the available chat rooms for the task at hand - as created and allocated by the teacher. Discussion in the virtual rooms is free-flowing and could be supplemented by messaging facilities and alerts for new messages or specific activities (e.g. alert when there are new developments in the main court room). Importantly, participation remains pseudonymous, through the use of nicknames chosen either by the teacher or the students.

4.4.2 FUTURE POTENTIALS

The prospects for further development are open, both in terms of how we may enrich the education process itself and regarding technological features which - albeit simple, as previously explained - would intensify positively the students' learning experience. The following are suggestions that we have already considered as working with the proposal at hand, indicating possible directions for future improvements and ideas:

(I) REAL-TIME COLLABORATION

During previous runs of the Virtual Court on the chatzy.com web-platform, one of the practical problems that emerged was the collaborative preparation drafting of Arena responses by the defence and prosecution groups. Even though the chat room kept records of preceding discussions, reading previous posts within the flow of the discussion was difficult, up to becoming almost deterring with successive long updates of drafts. A way to get around such problems would be a widget enabling real-time collaborative editing (RCE). This would provide each group with a space separate to their main discussion room, where group participants can interact simultaneously with a document, while discussing ideas about changes in their main chat flow (generally on decentralised mobile RCE technologies, see Mechaoui et al. 2010).

Following the block logic, the RCE interface could integrate the utilisation of automated text-highlighting in different colours for students to separate arguments on screen while writing and editing, and to mark when arguments start and end. From there, once the draft is finished, the students may drag-and-drop arguments into blocks and send them to the main room.

(II) STUDENT FEEDBACK AND REFLECTION

The app format offers opportunities for incorporating feedback collection on various aspects of the TEL activity and its hosting technology. The form in which such input could be retrieved from learners may as well follow the familiar data collection styles that are broadly

utilised in online surveys (e.g. the dedicated survey software/service SurveyMonkey.com), and which include input receiving methods such as multiple choice questionnaires and rating scale questionnaires. The app should enable teachers to customise such survey-like feedback templates through easy to use preference menus and it may additionally facilitate data analysis processes for organising collected data in simple statistical onscreen representations.

In this respect, we may also consider the benefits that reportedly online peer reviewing and peer assessment reserve for teaching and learning processes (Yu & Law 2012; Boase-Jelinek et al. 2013; Mostert & Snowball 2013), to then experiment with interface design. The focus of both individual and group input collection could respond to various needs of the learners and of the teaching process, while the resulting data may be used accordingly to amplify the user interaction experience. For example peer reviewing could utilise polls and 'star ratings' for students to assess each other's performance, their own and/or other teams, the quality of arguments used in the Virtual Court, and so on; especially where self-assessment comes into play, learners could compare their individual results against class statistics scores.

Moreover, students could evaluate the activity and the learning process, as well as the quality of the app itself. A more ambitious take on these operations could draw on the principles of meta-cognition (Kaplan et al 2013) to set up a final reflective activity in order to reinforce the lessons learned from the main exercise task.

(III) JURIES

Aside from disputing parties and judges, the exercise's participatory scope could extend to including juries. While at first glance the fact-finding function of juries does not fit in the legal reasoning focus of this TEL environment, the idea of a group of jurors being present opens doors for rethinking creatively participation in the exercise, especially in cases that teachers need or want to add more students to an individual 'dispute'. For example, the jury could be a separate group of non-participant assessors; or we could refer to the mock trial techniques used in the long-running web-based ODR platform iCourthouse.com, where a 'jury of peers' replaces the individual arbitrator/mediator (Hornle 2002), in a process reminiscent of the civil trial and involving 'typically small claims and internet-related' matters (i-Courthouse.com). These ideas generally suggest possibilities for reframing the structure and not the essence of the exercise.

5. CONCLUSIONS

Unlike real trial proceedings, the aim of the learning process that the Virtual Court exercise unfolds is not to decide a winner, but for participants to work together towards constructing a common ground for agreement: essentially the lawyers for the 'defence' and the 'prosecution' negotiate the meaning and the reasoning of law; the 'judges' examine carefully the arguments of the participants and give a measured analytical opinion. Despite the presence of a competitive element as necessary towards intensifying immersion in the TEL environment, the learners know well that they are not being assessed on emerging as victors or not. A resolution of reasoning is being pursued: a solution to the reasoning dispute about what the meaning of law is and - considering the process - what can be the most reasonable meaning of law that the learners can take with them after leaving the process.

The Virtual Court attends to its core aim of perfecting legal reasoning by offering a useful tool for argument construction and visualisation, while still offering a dynamic collaborative work component. In that sense it is not about students framing and visualising given arguments,

but their own arguments within an ongoing discussion with their peers. Also the app attends two peripheral general ILOs responding to wider professional needs - i.e. technological and language literacies. In that sense the return to textuality and the use of a less sophisticated simulation, despite their arguably limited capacity to fully immerse students in the reality of legal practice, have still a strong pedagogical value. Our proposal aspires to build upon this ground of basic ideas, looking into follow-up research in the near future and inviting a broader initiative of collaborations towards implementation in Higher Education, but also in other areas where learning and thinking about the law may take place.

REFERENCES

- Ashley, K (1990), *Modelling Legal Argument: Reasoning with Cases and Hypotheticals* (Cambridge, Massachusetts: MIT Press).
- Ashley, K (2000) 'Designing electronic casebooks that talk back: The CATO program' *Jurimetrics* 40:3, pp. 275-319.
- Bailenson, J, Blascovich, J, Beall, A, and Noveck, B (2006) 'Courtroom Applications of Virtual Environments, Immersive Virtual Environments, and Collaborative Virtual Environments' *Law and Policy* 28:2.
- Bainbridge, J, Counsell, K, Greal, F, Maharg, P, Mills, J, O'Boyle, R (2013) 'iPads in Legal Learning (iLEGALL): Mobile Devices in Professional Legal Learning' *European Journal of Law and Technology* 4:1.
- Barnett, J (2003) 'The Virtual Courtroom and Online Dispute Resolution' *Proceedings of the UNECE Forum on ODR 2003*. Available at:
[http://www.mediate.com/Integrating/docs/Barnett\(1\).pdf](http://www.mediate.com/Integrating/docs/Barnett(1).pdf)
- Bartlett, L (2010) 'From the Virtual Courtroom to the Virtual Courthouse: Fundamental Considerations for the Modern Lawyer' *For the Defense* 52:1.
- Barton, K & McKellar, P (2007) 'Transactional learning: Ardcalloch sheriff court is open for business' *Journal of Information, Law and Technology* 2007:1.
- Barton, K and McKellar P (2011) 'From Master to Games-master: Managing Disequilibrium and Scaffolding in Simulation based Learning' in de Freitas, S and Maharg P (eds) *Digital Games and Learning* (London & New York: Continuum).
- Batty, R (2013) 'Well there's your problem - the case for using PBL to teach law to business students' *The Law Teacher* 47:2.
- Berger, M, Jucker, A and Locher, M (2016) 'Interaction and space in the virtual world of Second Life' *Journal of Pragmatics* 101, pp. 83-100.
- Biggs, J (1996) 'Enhancing teaching through constructive alignment', *Higher Education* 32, pp. 347-364.
- Biggs, J and Tang, C (2007) *Teaching for Quality Learning* (Maidenhead: Open University Press and Mc Graw-Hill Education).
- Biggs, J (2003) 'Aligning teaching for constructing learning'. Available at
https://www.heacademy.ac.uk/sites/default/files/resources/id477_aligning_teaching_for_constructing_learning.pdf
- Boase-Jelinek, D, Parker, J and Herrington, J (2013) 'Student reflection and learning through peer reviews' *Issues in Educational Research* 23: 2, pp. 119-131.

- Bodie, M (2012) 'Open Source and the Reinvention of Legal Education' in Rubin, E (ed.) *Legal Education in the Digital Age* (Cambridge University Press).
- Chisholm, J (2011) 'A Moot Point: Encouraging discussion and debate in the Arts and Humanities classroom' in *Teaching Innovation Projects* 1: 2.
- Crellin, J, Adda, M, Duke-Williams, E and Chandler, J (2011) 'Simulation in computer forensics teaching: the student experience' *Researching Learning in Immersive Virtual Environments*. Available at: <http://eprints.port.ac.uk/5519/1/crellin.pdf>
- Davis, F (1998) 'Perceived Usefulness, perceived ease of use, and user acceptance of information technology' *MIS Quarterly* 13: 3.
- de Freitas, S and Maharg, P (eds) *Digital Games and Learning* (London: Continuum International Publishing Group).
- DiMatteo, L and Anenson, T (2007) 'Teaching Law and Theory Through Context: Contract Clauses in Legal Studies Education' *Journal of Legal Studies Education* 24: 1
- Dougiamas, M and Taylor, P (2003) 'Moodle: Using Learning Communities to Create an Open Source Course Management System' *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA) 2003*. Available at: <http://research.moodle.net/33/1/Moodle%20Using%20Learning%20Communities%20to%20Create.pdf>
- Dworkin, R (1975) 'Hard cases' *Harvard Law Review* 88: 6, pp. 1057-1109.
- Entwistle, N (1988), *Styles of Learning and Teaching* (London: David Fulton).
- Gygar, T and Cassimatis, A (1997), *Mooting Manual* (Sydney: Butterworths).
- Hargittai, E (2010) 'Digital Na(t)ives? Variation in Internet Skills and Uses among Members of the 'Net Generation'' *Sociological Inquiry* 80: 1, pp. 92-113.
- Higgins, N and Daly, Y (2010) 'Incorporating Experiential Learning Techniques into Modern Law Curricula: The Case for Moot Courts and Mock Trials' *Research in Education* 84:79.
- Hon Tan, S (2009) 'Teaching legal ideals through jurisprudence' *The Law Teacher* 43:1.
- Hornle, J (2002) 'Online Dispute Resolution in Business to Consumer E-commerce Transactions' *The Journal of Information, Law and Technology (JILT)* 2.
- Johnson, L, Adams Becker, S, Cummins, M, Estrada, V, Freeman, A, and Hall, C (2016) *NMC Horizon Report: 2016 Higher Education Edition* (Austin, Texas: The New Media).
- Jolly-Ryan, J (2005) 'Disabilities to Exceptional Abilities: Law Students with Disabilities, Nontraditional Learners, and the Law Teacher as a Learner' *Nevada Law Journal* 2005:6, pp. 116-155.
- Jones, C, Ramanau, R, Cross, S and Healing, G (2010) 'Net generation or Digital Natives: Is there a distinct new generation' *Computers & Education* 54:3, pp. 722-732.

Jones, L and Field, S (2014) 'Mooting within the curriculum as a vehicle for learning: student perceptions' *Practice and Evidence of Scholarship of Teaching and Learning in Higher Education* 9:1, pp. 33-45.

Kaplan, M, Silver, N, LaVaque-Manty, D, Meizlish, D and Rhem, J (2013) *Using reflection and metacognition to improve student learning: across the disciplines, across the academy* (Sterling, Virginia: Stylus Publishing).

Katsh, E and Rifkin, J (2001), *Online Dispute Resolution: Resolving Conflicts in Cyberspace* (San Francisco: Jossey-Bass).

Kearnes, J and da Cruz, B (2006) 'Mooting as Pedagogy' Annual Meeting of the APSA Teaching and Learning Conference, February 2006.

Kirchberger, C and Storr, P (2012) 'Law as an App - Technology in Legal Education' *VoxPopuLII*. Available at: <https://blog.law.cornell.edu/voxpath/2012/09/05/law-as-an-app-technology-in-legal-education/>

Lakhan, S and Jhunhunwala, K (2008) 'Open Source in Education' *Educause Quarterly* 31:2 pp. 32-40.

Lakhani, K and von Hippel, E (2003) 'How open source software works: 'free' user-to-user assistance' *Research Policy* 32: 6, pp. 923-943.

Lederer, F (1999) 'The Road to the Virtual Courtroom? A Consideration of Today's -- and Tomorrow's -- High Technology Courtrooms' *William & Mary Law School Faculty Publications*, Paper 212.

Lederer, A, Maupin, D, Sena, M and Zhuang, Y (2000) 'The technology acceptance model and the World Wide Web', *Decision Support Systems* 29.

Legal Education and Training Review (2013) 'Setting standards: The future of legal services education and training regulation in England and Wales'. Available at: <http://www.lettr.org.uk/the-report/>

Lu, J and Law, N (2012) 'Online peer assessment: effects of cognitive and affective feedback' *Instructional Science* 40:2, pp. 257 -275.

Lynch, A (1996) 'Why Do We Moot - Exploring the Role of Mooting in Legal Education' *Legal Education Review* 7:1, pp. 67-96.

MacCormick N (1978), *Legal Reasoning and Legal Theory* (Oxford University Press).

MacCormick N (1979), *The Artificial Reason and Judgment of Law (Rechtstheorie)*.

MacCormick, N (2005), *Rhetoric and the rule of law: A theory of legal reasoning* (Oxford: OUP).

Maharg, P and Owen, M (2007) 'Simulations, learning and the metaverse: changing cultures in legal education' *Journal of Information, Law and Technology* 2007:1.

- Mania, K (2015) 'Online dispute resolution: The future of justice' *International Comparative Jurisprudence* 1, pp. 76-86.
- Markus, K (2006) 'Putting Yourself in the Shoes of a Law Student with Dyslexia' *Perspectives: Teaching Legal Research and Writing* 15:1, pp. 19-24.
- Margaryana, A, Littlejohn, A and Vojtb, G (2011) 'Are digital natives a myth or reality? University students' use of digital technologies' *Computers & Education* 56:2, pp. 429-440.
- McKendree, J, Stenning, K, Mayes, T, Lee, J and Cox, R (1998) 'Why observing a dialogue may benefit learning' *Journal of Computer Assisted Learning* 14: 2.
- Mechaoui, M, Cherif, A, Imine, A and Bendella, F (2010) 'Log garbage collector-based real time collaborative editor for mobile devices.' 6th International Conference on Collaborative Computing: Networking, Applications and Worksharing, Oct. 2010.
- Mostert, M and Snowball, J (2013) 'Where angels fear to tread: online peer-assessment in a large first-year class' *Assessment & Evaluation in Higher Education* 38: 6, pp. 674-686.
- Ng, W (2010) 'Can we teach digital natives digital literacy?' *Computers & Education* 54: 3 pp. 1065-1078.
- OECD (2016) 'Are there differences in how advantaged and disadvantaged students use the Internet?' *PISA in Focus*, No. 64, OECD Publishing, Paris. Available online at: <http://dx.doi.org/10.1787/5jlv8zq6hw43-en>
- Open Source Initiative. Available at: <https://opensource.org/>
- Pappas, B (2008) 'Online Court: Online Dispute Resolution And The Future Of Small Claims', *UCLA Journal of Law and Technology* 12: 2.
- Paulson, J, Succi, G and Eberlein, A (2004) 'An empirical study of open-source and closed-source software products' *IEEE Transactions on Software Engineering* 30:4, pp. 246-256.
- Peña-López, I (2010a) 'Framing the Digital Divide in Higher Education' *RUSC Universities and Knowledge Society Journal* 7:1.
- Peña-López, I (2010b) 'From Laptops to Competences: Bridging the Digital Divide in Education' *RUSC Universities and Knowledge Society Journal* 7:1.
- Pinkwart, N, Alven, V, Ashley, K and Lynch, C (2007) 'Evaluating Legal Argument Instruction with Graphical Representations using LARGO' in *Proceedings of the 2007 conference on Artificial Intelligence in Education: Building Technology Rich Learning Contexts That Work*, pp. 101-108.
- Priest, G and Klein, B (1984) 'The Selection of Disputes for Litigation' *The Journal of Legal Studies* 13:1, pp. 1-55.
- Reingold, P (1996) 'Why Hard Cases Make Good (Clinical) Law' *Clinical Law Review* 2: 2.
- Richards, B (2003) 'Alice comes to Law School: The Internet as a teaching tool' *Legal Education Review* 14:1.

- Ringel, L (2004) 'Designing a Moot Court: What to Do, What Not to Do, and Suggestions for How to Do It' *PS: Political Science and Politics* 37: 3, pp. 459-465.
- Sahdra, B and Thagard, P (2003) 'Procedural Knowledge in Molecular Biology' *Philosophical Psychology* 16:4, pp. 477-498.
- Salmon, G (2009) 'The future for (second) life and learning' *British Journal of Educational Technology* 40: 3, pp. 526-538.
- Salmon, G (2007) '80:20 for E-moderators' *CMS-Journal* 29.
- Schauer, F (2009), *Thinking Like a Lawyer: A New Introduction to Legal Reasoning* (Harvard University Press).
- Schofield, D (2014) 'A virtual education: Guidelines for using games technology' *Journal of Information Technology Education: Innovations in Practice* 13, pp. 25-43.
- Sevillano-García, M and Vázquez-Cano, E. (2015) 'The Impact of Digital Mobile Devices in Higher Education' *Educational Technology & Society* 18:1, pp. 106-118.
- Simpson, M (2011) 'Online or Onsite? Teaching Mediation and Conflict Resolution' Available online at: <http://www.mediate.com/articles/SimpsonM5.cfm>
- Snape, J and Watt, G (2005), *How to Moot: A Student Guide to Mooting* (New York: Oxford University Press).
- Stevens, C and Welch, R (2014) 'Simulation and the Learning of the Law: Constructing and Using an Online Transactional Assessment in Employment Law' in Stevens C, Grimes, R, Phillips, E (eds) *Legal Education: Simulation in Theory and Practice* (Oxon & New York: Ashgate).
- Thompson, P (2013) 'The digital natives as learners: Technology use patterns and approaches to learning' *Computers & Education* 65: 1, pp. 12-33.
- Toulmin, S (1958), *The Uses of Argument* (Cambridge: Cambridge University Press).
- Traxler, J and Wishart, J (2011) 'Making Mobile Learning Work: Case Studies of Practice' *ESCalate*, HEA Subject Centre for Education. Available at: <http://escalate.ac.uk/downloads/8250.pdf>
- Traxler, J (2012) 'Mobile learning - The future already behind Us', *Proceedings of 2012 International Conference on Interactive Mobile and Computer Aided Learning*, November 2012, pp. 7-9.
- Prakken, H, van den Braak, S, van Oostendorp, H and Vreeswijk, G (2006) 'A Critical Review of Argument Visualization Tools: Do Users Become Better Reasoners?' in Reed, C and Grasso, F (ed.), *Workshop Notes of the ECAI-06 Workshop on Computational Models of Natural Argument (CMNA-06) ECCAI, Trento, Italie*, pp. 67-75.
- Verheij, B (2007) 'Argumentation support software: boxes-and-arrows and beyond' *Law, Probability and Risk* 6, pp. 187-208.

Waycott, J, Bennett, S, Kennedy, G, Dalgarno, B and Gray, K (2010) 'Digital divides? Student and staff perceptions of information and communication technologies' *Computers & Education* 54:4, pp. 120-1211.

Yule, J, McNamara, J and Thomas, M (2009) 'Virtual mootings: using technology to enhance the mootings experience' *Journal of the Australasian Law Teachers Association* 2:1&2.

[1] Nicholas J. Gervassis, Lecturer, Plymouth Law School (Corresponding author); Panagia Voyatzis, Associate Lecturer, Plymouth Law School.

[2] On the importance of legal reasoning in educating legal practitioners, as opposed to the teaching of substantive legal rules, see Schauer 2009.

[3] Student engagement is of particular importance for legal reasoning, as it mainly involves developing procedural knowledge; that is a 'know how' or knowledge of skills. This sort of knowledge faces some limitations when communicated, thus is better learned by doing rather than by acquiring declarative understandings (e.g. Sahdra & Thagard 2003).

[4] Such a TEL environment is understandably limited to particular legal reasoning operations, its purpose being mainly to develop novel consequentialist arguments. In this sense, it does not address matters of coherence and consistency in the legal system (see MacCormick 2005). In our view, posing too much emphasis on the constraints of already existent case law would result in a convoluted exercise that could easily exceed the skills of first year students, making them miss the point: the fact that there are hard cases in law. Additionally, there are indeed some situations in which the legal system does not provide any answer and in which matters have to be thought afresh. Our aim is to use the fresh minds of first year students to explore the most creative side of legal decision making with this exercise.

[5] In law there are two typical forms of trial-based simulation: mootings and mock trials. Mootings regularly involves discussing matters of law, while mock trials are more concerned with questions of fact. See, for example, Ringel (2004).

[6] Simulation can be understood as a set of 'tasks, exercises and assignments in which students are presented with real or realistic scenarios' (Stevens et al. 2014, p.1).

[7] Mootings is regularly either included within the law curriculum as compulsory mode or voluntarily organised by students as extra-curricular activity. Nevertheless, as noted by Jones and Field (2014), the educational effects of mootings are not affected by it being mandatory or voluntary.

[8] The 'Civil Court Action' project, which was implemented by a small group of developers at the Glasgow Graduate School of Law, featured a virtual town called 'Ardcalloch' in which different virtual characters lived. Its particular design contemplated the existence of law

firms (to which the students were assigned) functioning within the town and dealing with various legal transactions, including the preparation of motions for hearings at the court. Nevertheless, the 'Civil Court Action' had very broad pedagogical objectives (fit for the more senior Legal Practice Course (LPC) cohort to which it was addressed) and a high degree of technological sophistication.

[9] Excerpts of students' views on the activity, stated on the end of term institutional feedback form.

[10] Previously noted difficulties, resulting from University-wide changes with the structure of semesters, prevented us from timely receiving feedback on the Virtual Court from the respective cohort, following the activity's third consecutive run.

[11] It is important to clarify some aspects regarding the simulation component of the app and its immersion potential. While the app does not aim to replicate reality to a high degree of precision (e.g. recreating an actual court setting with the required number of judges) it still tries to simulate (on a metalevel) the social interaction experience of a legal adversarial context (and the legal reasoning activity that happens within it). The expected immersion capacity of the app comes partly from the simulation created by role-playing, although the element of social interaction introduced by peer discussion is expected to help the app's immersion.

[12] It is important to mention that the research on argument visualisation tools has been unable to provide definitive and empirically verified conclusions on their effectiveness in delivering higher quality arguments, critical discussion, or coherent arguments. Nevertheless, as most of such studies reflect pedagogical benefits, it has been considered reasonable to assume that these tools do have benefits regarding the acquisition and development of argumentation skills (Prakken et al. 2006).