CEPLER Report

The impact of the development and implementation of technologies in the legal sector on the education standards and training requirements for lawyers regulated by CILEx Regulation

Report Prepared for CILEx Regulation by Dr. Lisa Webley

Chair in Legal Education and Research

Oct 2018

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For more information on CEPLER visit: http://www.birmingham.ac.uk/cepler

For more information on CEPLER Research please contact:

Prof. Lisa Webley, CEPLER Director of Research: L.C.Webley@bham.ac.uk; or

Linden Thomas, CEPLER Manager: l.thomas@bham.ac.uk

Executive Summary

This study considers the foreseeable impact of the development and implementation of new technologies on CILEx lawyers and CILEx's training pathway. It has focused on the use and ongoing development of Artificial Intelligence (AI) systems that are being adopted or likely to be adopted by legal service firms and related organisations. And the likely foreseeable impact that these may have on CILEx lawyers. It has then explored how legal education and training for the profession may need to change in light of what innovators and more traditional lawyers indicate that they will require from new entrants to the profession. Finally, it has set out some things that CILEx Regulation may wish to consider as regards legal education.

AI is currently being used by lawyers to: review and analyse documents, including to review contracts and to undertake discovery; to provide greater insight into the likely effects of particular case strategies or approaches on the outcomes of cases; to undertake legal research to answer particular questions of law and/or fact. Lawyers are using AI to make efficiency gains by automating routine work, speeding up laborious document review and compliance processes and allowing lawyers to develop for their clients a more evidenced litigation or settlement strategy. Lawyers working in AI assisted fields will increasingly need to know how to make the best use of these systems, and how to interrogate the results that they provide so as to spot erroneous or undesirable 'results'. We shall also need some expert lawyers to work alongside data scientists to train AI systems on an ongoing basis, given that law and policy are continuously changing.

AI systems are also being used by others, including members of the public, to write their own wills and non-disclosure agreements, to challenge parking tickets, to complete certain court documents that they then file themselves, to buy and sell real property that is registered on the blockchain. Lawyers will likely find themselves squeezed out of these markets or will need to adapt to provide either extra added value services or low cost services that provide sufficient benefit for clients to be willing to pay to access legal help. Complex areas of law and disputes will continue to attract clients, as will contexts that require strong interpersonal and relational skills too.

Given likely changes to the legal practice model, there will need to be additional education and training opportunities for existing CILEx lawyers including:

- Retraining for those working in areas affected by automation.
- Marketing and Business Entrepreneurship training to allow them to develop their businesses during technological change.
- Development in reflective practice and resilience for those who wish to have it.
- Training in the ethics of AI use and the challenges it poses, for all.

The initial model of training will likely need to:

- Recognise that an ability to adapt and change (and thus to be able to reflect and take action following reflection) is going to be essential. Reflection and reflexivity can be taught but rarely form a major component of current skills training in law.
- Legal diagnosis is likely to be computer assisted, if not computer determined, and the teaching of law may need to reorientate to teaching law through decision trees (an effective means to teach law, in itself, but it also effectively maps on to the way in which expert systems make sense of law).

- Legal research will be largely undertaken by machine, but it will become important to have the ability to judge the completeness of the research, and any angles that have been missed.
- That substantive knowledge of the law will remain important so as to allow lawyers to understand and use expert systems, interrogate the results and formulate strategy and execute it. But the ability to memorise and replay law and procedure will become largely redundant; AI systems are already capable of doing this more effectively than human lawyers. This will have an impact on assessment regimes and also on teaching practices.
- The application of law to facts will also remain important for the same reasons, but AI systems will likely also do much of this work too.
- Lawyers will need to be trained on the main AI systems (just as they are currently as regards Lexis and/or Westlaw or related systems) and tasks set for assessment could be undertaken via these systems.
- The ability to come up with novel and creative solutions will likely become highly prized and have a greater impact on legal practice (disrupting pre-existing rule based reasoning systems) than it does currently. This has implications for both teaching and assessment.
- It will also remain critically important to have the ability to spot ethical dilemmas in this context and to seek help (if needed), to reach ethical conclusions and act accordingly.
- Relational, or soft skills, will gain increased importance with clients, and should be given added prominence in education and training too.

1. Introduction, Background and Context

This study considers the foreseeable impact of the development and implementation of new technologies on CILEx lawyers and the dedicated CILEx training pathway. It has focused on the use and ongoing development of Artificial Intelligence (AI) systems that are being adopted or likely to be adopted by legal service firms and related organisations. AI systems have been defined in different ways, however, broadly speaking they are a family of systems through which machines make decisions autonomously from human beings. A number of technologies fall within this family including:

- natural language processing systems that permit machines to analyse and make use of human language rather than requiring language to be translated into computing languages;
- neural networks containing algorithms that are modelled on the human brain and nervous system so as to mimic the way in which the human brain works when making decisions;
- complex machine learning systems that use sophisticated statistical techniques to allow computer systems to 'learn' over time and thus to make better and more nuanced decisions; and
- artificial social intelligence systems that learn from human interactions to make their interactions more tailored to us over time.

In short, AI allows for automation of problem diagnosis, of certain decision-making tasks and permits analysis and prediction of risk and likely outcomes in some contexts. These will be considered in legal professional contexts in the next section.

Artificial Intelligence has been in development, in one form or another, since the 1950s. It has been heralded for its transformative potential to provide quicker, cheaper and more efficient access to legal services (Susskind, 1998), and also criticised for its potential to erode our current understandings of the rule of law including our ability to know the reasons for decisions reached and to be able to challenge the reasoning behind them (BIICL, 2017). Concerns have also been raised about how the norms that underpin the development of law will be contested and integrated into the algorithms used to reach decisions, if disputes are not brought before the courts to develop case law, and lawyers do not engage in a dialogic debate about how the law is to be interpreted in difficult fact scenarios.

There have also been predictions of its likely disruptive impact on traditional models or legal practice and organisational structures through commodification and unbundling of legal and accountancy services (CGMA, 2018); some of these predictions are now over twenty years old (Susskind, 1998) and have yet to come to fruition while others are now starting to been seen in particular legal service sectors (Bennet *et al*, 2018). The pace of change is speeding up considerably, and viable artificial intelligence systems are now being deployed by some organisations, as set out in the next section. When coupled with encryption and distributed ledger systems (blockchain[1], where transactions are logged and added to a chain and ownership can be verified definitively and for all time thus reducing or eradicating the need

[1] Reuters has a very clear graphic that explains blockchain: http://graphics.reuters.com/TECHNOLOGY-BLOCKCHAIN/010070P11GN/index.html

for certain types of current transaction related compliance and due diligence procedures) there is the opportunity for them to be utterly transformative. Some commentators argue that we are now in the early stages of the fourth industrial age and at a tipping point for technological change leading on to organisational and professional changes (Brynjolfsson and McAfee 2016, Schwab 2017, Susskind and Susskind 2017). Professional, regulatory and educational frameworks have yet to grapple with these challenges (Bennett *et al*, 2018).

The increased use of AI in the legal services sectors raises important questions about the nature of legal services, what it is to be a professional lawyer, whether traditional disciplinary boundaries and role profiles remain relevant to modern legal practice, and whether law firms or other legal businesses partner with technology firms or others to capitalise on technological advances (see City-REDI et al, 2018). Flowing from that, consideration needs to be given to how legal professionals should be educated in this light: the skills, knowledge and attributes they need to be effective, the continuing professional development needs and opportunities that are presented by these changes and the career pathways that may emerge from shifts in professional practice and how clients wish to engage with law and legal services. There are wider questions for legal professionals to engage with too, including the ethical challenges and risks that this technology may pose, consumer protection and education, access to justice issues and rule of law issues. The Law Society noted five AI related concerns: transparency, ethics, liability; electronic personhood; public acceptance (Law Society, 2018).There are also foundational questions to be addressed about how artificial intelligence may change the nature of the workforce, and increase or decrease social inequality.

In short, AI is already starting to change the tools that lawyers have at their disposal, and also the tools and choices that clients have too. These tools may provide some efficiencies in terms of cost, speed and accuracy in some areas of law and as against some levels of lawyer (Mills, 2018). For example, AI has been shown to be better than human lawyers on speed, and on average, to be better that (real life) lawyers in spotting irregularities in contracts (Kohn 2017). Having said that, the highest performing lawyers still outperform AI on certain types of accuracy (Bindman 2018), and even sophisticated social intelligence systems are not yet, and may never be, capable of counselling and supporting clients or providing them with pastoral and other traditionally human forms of support. AI technologies are task focused; human lawyers do much more than perform tasks. And thus there is no reason, as yet, to suspect that the increased sophistication of AI in a legal context will necessarily do away with the need for legal professionals. However, the types of work that lawyers will do and how they will harness the benefits of AI remain moot. And the size and shape of the profession, and levels of training and expertise remain similarly unclear. It is likely that lawyering will become increasingly relational rather than a product of a lawyer's individual knowledge base and predictive abilities, which has implications for how we should train lawyers in this evolving AI context. Recent legal education reviews in England and Wales and in other jurisdictions have largely shied away from interrogating the role that technological change may have on the curriculum that the next generation of lawyers will need.

This short study has sought to:

- examine the use of technology in legal services, both current and in development and to consider the current and likely impact it is having on legal practice.

- explore how legal education may need to change in this light, and in light of what innovators and more traditional lawyers indicate that they want from new entrants to the profession.

And finally, assess of the things that CILEx Regulation may wish to consider as regards legal education, flowing from the above.

This has been a relatively short piece of research and so has been necessarily constrained. However, it has drawn upon international academic and grey literature on the emerging use of technology in the legal and allied professional service contexts, as well as a range of interviews and other more informal conversations with legal professional and technological innovators and current professionals operating in the legal and allied professional sectors. There have also been a series of informal interviews with practising lawyers, including CILEx Fellows, solicitors and barristers, discussions with academic lawyers and data scientists too. All interviews and discussions took place from January to August 2018.

2. Technological Innovations in Legal Practice

Many areas of legal practice remain relatively untouched by AI as yet, or that is the experience expressed by many lawyers working in small to medium sized law firms. In contrast a number of global law firms and legal service providers, including the big four accountancy firms and some niche practice area firms, are investing heavily in AI and related systems, often via their own legal tech start-up hubs[2]. They are testing or making regular use of some of these technologies. Some legal publishers and database providers (such as LexisNexis) are developing decision-trees for a variety of legal practice areas with a view to providing them as expert systems. Further, there are other entrants to the legal services market (sometimes referred to as *New Law)* that are basing their new business models on technological innovation. Some are Alternative Business Structures, others are closer to pure technology start-ups. Some of these new entrants are either partnering or taking over more traditional law firms (for example Legal Zoom with Beaumont Legal[3]) or have been bought by large legal service providers (Riverview Law by EY[4]). Other innovative platforms are being developed in the not-for-profit context such as DoNotPay[5] and LISA the robot lawyer[6], supporting members of the public to challenge parking tickets or develop non-disclosure agreements, for example, or through a DIY-law plus partnership model whereby the client is facilitated to do much of the work themselves with a view to reducing the cost of the legal service to the client. This section sets out the types of AI systems (broadly defined) that are currently in use in England and Wales, systems that are being used in other jurisdictions that may migrate to the UK, and those systems that are in late stage development. It also considers, where relevant, other technological developments such as blockchain and smart contracts.

Broadly speaking technological developments in law firms have been described as falling within the following categories:

- Bennett *et al* (2018): (1) Contract analysis; (2) Expertise Automation; (3) Analysis and Prediction; (4) Legal Research
- Yeung (2018): (1) Document review; (2) Case preparation, advice, and strategy; (3) Legal research; (4) Case administration and management.

Others have used similar means of categorisation, and thus there is a high degree of overlap in the grey literature (non-traditional academic literature) as regards the nature of the systems that are being used or being developed to support lawyers in their work. I have organised developments under (1) Document review (including contract review and analysis); (2) Expertise, analysis, prediction and strategy; (3) Legal Research and (4) Other, for those systems that do not easily fit within the other categories. Many of tools or platforms use a

[2] See, for example, Allen and Overy's Fuse, http://www.allenovery.com/advanceddelivery/fuse/Pages/default.aspx; and Herbert Smith Freehills: https://www.herbertsmithfreehills.com/latest-thinking/hubs/disruptive-technology-and-innovation

[3] J. Hyde, LegalZoom to Make First UK Acquisition, Law Society Gazette 7 December 2015 https://www.lawgazette.co.uk/news/legalzoom-to-make-first-uk-acquisition/5052608.article

[4] EY Law, 'EY expands global legal managed services offering with acquisition of Riverview Law' 8 August 2018, https://eylaw.ey.com/2018/08/08/ey-expands-global-legal-managed-services-offering-with-acquisition-of-riverview-law/

[5] https://www.donotpay.com/

[6] http://robotlawyerlisa.com/

range of AI methods (machine learning, natural language processing systems etc) in order to produce their results. They do not, necessarily, employ only one form of AI.

2.1 Document Review and Analysis

There are a number of document review and electronic discovery products that make use of natural language processing to automate the scanning, 'reading' and comparison of large quantities of documents, systematically and at speed. Detail within a single document can be similarly scanned and analysed too. Matching can be on the basis of keywords and phrases, or fact patterns and legal issues. These tools can be used for the purposes of discovery, or for contract analysis and may be used to supplement the work of lawyers and to reduce the low level time consuming work that historically would have been given to paralegals, assistants and trainees. Consequently, these tools are sometimes referred to as Technology Assisted Review (TAR) to indicate that results will still need to be checked and then used by a lawyer in pursuit of a further goal. They are, thus, useful in both contentious and non-contentious work. More sophisticated tools that contain machine learning capabilities may also be trained to answer procedural and substantive law questions that are susceptible to resolution with reference to a decision-tree (which operates on a binary decision point rather like a flowchart that can be rendered to yes/no decision pathways). There are already pilots in place to render British statutes into a form that permit them to be converted into decision trees for machine learning purposes, such as the National Archives Big Data for Law project.[7]

Major products and tools currently available and being used extensively include, but are not limited to:

- RAVN, which scans, 'reads', analyses and then extracts information from documents into a spreadsheet. It is used by law firms such as Linklaters and Reed Smith.[8]
- Luminance, which scans, 'reads' and, then uses a form of probability theory (Bayesian theory), to make sense of the content of those documents in a sophisticated way. It is used in many jurisdictions, including by Slaughter and May.[9]
- Leverton, which is able to 'read' documents, such as real estate and financial documents, in a variety of languages, and to extract defined information for lawyers to review. It is used by a number of global law firms including Baker & McKenzie and Freshfields Bruckaus Deringer.[10]
- Kira, which is a contract analysis tool used by a large number of global law firms including Allen and Overy, Ashurst, Clifford Chance, DLA Piper, and Freshfields Bruckhaus Deringer.[11]

[7] https://www.nationalarchives.gov.uk/documents/digital-projects-at-the-national-archives.pdf
[8] For details see https://imanage.com/product/ravn/, see further for use: https://www.legalpracticeintelligence.com.au/reed-smith-experience-with-ravn-and-imanage/
[9] For details see https://www.luminance.com/, see further: https://www.slaughterandmay.com/news-and-recent-work/news/luminance-launches-with-backing-of-invoke-capital-and-in-collaboration-with-slaughter-and-may/
[10] For details see: https://www.leverton.ai/; see further https://www.artificiallawyer.com/2017/03/29/baker-mckenzie-signs-global-ai-deal-with-leverton/)
[11] For details see: https://kirasystems.com/how-it-works/contract-analysis/

There are others including contract management and analysis tools such as ContractProd[12] (a US system), and eDiscovery, risk and forensic analysis and evidence presentation tools such as Relativity (US)[13] and Law In Order (in Australia and across the Asia Pacific)[14], among others.

2.2 Expertise, Analysis, Prediction and Strategy Development

There are a range of sophisticated tools that allow for contextualised review and prediction of the likelihood of a range of outcomes with the help of Bayesian analysis (a statistical analysis of probability) and large quantities of data (referred to as 'big data'). These tools are trained to recognise and take account of context, and that training needs to be undertaken in conjunction with expert lawyers who assist the AI system to be developed over time. This is known as machine learning. Neural networks, once fully operational in this context, will be self-learning and will not need the same human input in order for them to continue to learn; they also will not be as easy to interrogate as regards the way in which decisions are reached, although this practical and ethical problem is being worked on by computer scientists.

Prediction tools are useful to predict likely risk, and are used extensively in the financial services including the insurance sector. They may also be used to predict success in litigation, and have been used in mediation contexts too, although only in limited fields given the constraints on available data. They make use of large quantities of data (for example judgments), analysing them in such a way that fact patterns, legislative patters, parties' characteristics and judicial decision-making patterns can be analysed in an integrated way to provide a prediction of likely chances of success or likely outcome. Given the way in which these systems appear to offer expert predictions, they are sometimes termed expertise automation systems, used to guide lawyers to develop the most effective litigation or risk reducing strategies and to provide more nuanced advice to clients. Consequently, they are systems designed more usually for use by experts, although less sophisticated systems could be made available for lay people to guide them through certain types of decision-making (although whether that is desirable, is open to debate).

Current tools in use include:

- Legal Analytics for Lex Machina[15], which is a US system that analyses federal legislation, case law and court files against a client's case information so as to provide lawyers with predictions about how cases in certain areas of practice may settle and/or be concluded. It provides professionals with additional material that can assist them better to develop their case strategies. They are able to model the likely outcomes of different strategies and advise accordingly (Koebler, 2017).
- Judge Analytics by Ravel Law[16], similarly analyses judgments but in a wider range of courts (federal and certain state courts) to allow an assessment of how particular judges decide particular types of case and using what kinds of language in doing so (in case this provides greater understanding of why the decision was reached as it was).

[12] For details see: http://www.contractpod.com/
[13] https://www.relativity.com/
[14] https://www.lawinorder.com.au/
[15] https://lexmachina.com/
[16] https://www.ravellaw.com/judges

- Others such as DocketAlarm[17] in the US provides analytics to assist the development of litigation strategy as does Lexis Nexis Legal Analytics Australia (High Court judgments)[18].

It has been more difficult to develop similar systems in UK jurisdictions given the way in which court documents and judgments are stored (not centrally and not in an easily accessible and searchable format). But there have been some developments in this context, including by VizLegal[19], and these will likely continue apace.

2.3 Legal Research

This is perhaps the area of legal practice that is most easily susceptible to automation, and many practitioners will be extremely used to using semi-intelligent legal research and other research systems to assist them in their work, whether through Lexis, Westlaw or similar databases or simply as a result of familiarity with systems such as Google. Some systems provide search facilities through particular categories of legal material (cases, legislation etc) others go beyond this to search for commentary, academic and other articles that are related to the points of law or to the cases under discussion. Others go further still, and include all relevant publicly available documents relating to a particular dispute or case that has been filed with a court (for example, in the USA Casetext's CARA AI[20] can locate all filed documents, see Mills, 2018 and Koebler, 2017). And there are now legal research tools that can also provide specific application of the law on the basis of particular facts. Ravel Law[21] provides access to contextual legal research results for federal and state law in the US, providing an answer to how relevant cases address a specific research question using natural language processing and machine learning, It also provides a visual map of how the cases overlap and intersect in the context of the legal research question. ROSS[22], IBM's legal research tools that builds on the IBM Watson technology, provides highly sophisticated legal research tools and can not only deliver research results but also an indication of how law is applied in a given context within certain defined legal areas (Mills, 2018 and Koebler, 2017). A recent challenge has been set for ROSS against 100 lawyers in the UK, to test the reliability.[23]

2.4 Other

There are a range of other products and systems available that are augmented versions of the law firm case management systems that will be familiar to most lawyers in practice. These organise administrative tasks, documents, key dates, etc., the presentation of documentation in the correct format for court filing, the filing of court documents and evidence etc. Some plug-in to other systems, such as e-discovery and legal research systems, others are stand

[17] https://www.docketalarm.com/
[18] https://www.lexisnexis.com.au/en/insights-and-analysis/practice-intelligence/2018/Lawyer-vs-AI-A-legal-revolution
[19] 'Litigation analytics: Vizlegal grows UK caselaw', 11 May 2018 Legal Insider repositoryhttps://www.legaltechnology.com/latest-news/litigation-analytics-vizlegal-grows-uk-caselaw-repository/
[20] See https://casetext.com/
[21] https://ravellaw.com/search
[22] See https://rossintelligence.com/ . Ross notes that "ROSS is an artificial intelligence (AI) system designed to improve the efficiency, accuracy, and profitability of legal research. Firms using ROSS have reported a 30% reduction in research time and found 40% more relevant authorities, translating to an ROI of 177% to 545% off of core search alone."
[23] Ava Chisling, '100+ lawyers are competing against AI software', https://rossintelligence.com/100-lawyers-competing-ai-software/

alone. They aim to reduce lawyer and administrative time through automation, where they can. They are not necessarily AI enabled.

That is true, too, for smart contracts, which are automated systems that allow elements of contracts to be self-executed when certain conditions are met. Those conditions are usually set by lawyers, and so they are not truly autonomous in a real sense, but they can be present in standardised contract settings such as the sale and purchase of property, for example. Smart contracts are enabled through blockchain technology, which seeks to verify and validate that conditions have been met, which when embedded into a smart contract can trigger the next stage of the contract, for example the title to be transferred from seller to buyer on payment of the purchase price.[24] Smart contracts underpinned by blockchain will likely revolutionise transactions such as conveyancing. In some jurisdictions land registries are beginning to be entered onto the blockchain (Dubai, for example) and people have successfully conveyed property in the UK (using Clicktopurchase.com) without the need for conveyancing lawyers[25]. Companies such as Ethereum are at the forefront of smart contract technology.[26]

There are other ways in which AI may be used in a legal context, such as in setting criminal sentences following conviction (COMPAS, US), taking into account statutory factors that guide sentencing (Stobbs et al, 2017). In the US, these systems also claim to analyse recidivism risk, but have been criticised for inbuilt racial and other forms of bias (Dressell and Farid, 2018). Real concerns have been expressed about their use, not just on this basis but also on breach of natural justice grounds including the right to reasons for a decision and the right to be able to challenge decisions (Hamilton, 2017; Kehl et al, 2017). AI enabled systems may also be used in a civil dispute setting to guide parties through certain types of matters such as family matters (for example, The Family Court of Australia's Split Up initiative: Carneiro et al., 2014 and the Canada, BC's, Solution Explorer for small claims and residential tenancy disputes going through the Civil Resolution Tribunal[27]). There is some exploration of AI use in this context in England and Wales, but it not yet fully developed.

[24] For one view of how Blockchain may impact on lawyers' roles see: 'Smart Contracts: The Blockchain Technology That Will Replace Lawyers; A beginner's guide' https://blockgeeks.com/guides/smart-contracts/
[25] M.Cross, 'Blockchain deal bodes ill for conveyancers' 16 October 2017, Law Society Gazette https://www.lawgazette.co.uk/news/blockchain-deal-bodes-ill-for-conveyancers/5063242.article
[26] S. Peyrott, 'An Introduction to Ethereum and Smart Contracts: a Programmable Blockchain', 28 March 2017, https://auth0.com/blog/an-introduction-to-ethereum-and-smart-contracts-part-2/
[27] https://www2.gov.bc.ca/gov/content/housing-tenancy/residential-tenancies/solution-explorer

3. Likely Impacts on Current Legal Practice Models

As indicated above, there are many ways in which AI is already being used by lawyers in England and Wales. Many of those applications are within global law firms and niche legal entities and are relatively hidden from clients. They are used as expert systems to make efficiency gains by automating routine work, speeding up laborious document review and compliance processes and allowing lawyers to develop for their clients a more evidenced litigation or settlement strategy. Lawyers working in AI assisted fields will increasingly need to know how to make the best use of these systems, and how to interrogate the results that they provide so as to spot erroneous or undesirable 'results'. It is relatively easy to train lawyers in how to use computer systems with lawyer-friendly interfaces and this could be built into education and training curricula just as use of Lexis and Westlaw has been in many law schools. But it is less easy to give lawyers the technical knowledge that they need so as to be wary of 'results' that may relatively robust at first glance, but have been derived from faulty algorithms, or need to be treated with caution given the reliability of the system in a particular context. High level critical analytical skills will become increasingly important, and these skills go beyond those taught in traditional models of vocational learning. They are more usually taught through humanities and social science approaches to law, although there is no reason why they could not be integrated within vocational training models. Alternatively a cadre of highly knowledgeable expert-systems lawyers may develop to examine the results that flow from these systems, and they may seek out a specialised educational pathway to prepare them for this.

We shall also need some expert lawyers to work alongside computer programmers and other data scientists so as to train systems on a continuous basis as the law and related policy contexts change and adjustments need to be made to AI algorithms. There may be scope for a legal technology pathway for those interested in this specialised role. Further, some data scientists may wish to undertake some legal training so as to feel more adept in their role too. This may lead to a new form of hybrid lawyer-data scientist role for those we develop or interrogate the reliability of AI assisted systems in law. There are already an increasing number of AI and law conferences that bring together these two communities (for example, the British Legal Technology Forum[28]; the Alterative Legal IT Conference[29]; the Legal Futures Annual Innovation Conference[30]the Legal Geek Conference[31] etc). This will likely increase, and if law is to be at the heart of AI innovations for law firms, there will be a need for legally knowledgeable professionals to be involved in early stage design and not simply in the user interface stages.

The increased use of expert systems and automated processing systems will also change the type and range of work available for lawyers in training. One of the bigger challenges may be how to make an apprenticeship model of learning development work in this new context, as the current model has been reliant on junior colleagues being given relatively simple matters to work on under supervision until they reach a level of proficiency that warrants their involvement in more complex matters through to a level of mastery. It is possible for the

[28] https://britishlegalitforum.com/
[29] http://www.alternativelegalit.com/
[30] https://www.legalfutures.co.uk/events
[31] https://www.legalgeek.co/conference/

model to be adapted so that junior colleagues are trained alongside senior colleagues. Junior colleagues could be talked through why expert systems are prompting lawyers with certain questions or requests for data points, and how the expert systems have reached particular outcomes. This may also provide a means by which junior lawyers may be sensitised to the fallibility of expert system results and when to be wary of apparently sensible results. Junior colleagues will have to be taught how to become expert, rather than being left to learn to become expert, but that is not so dissimilar to the good quality hands-on training that many will have at present. But one of the clear consequences to greater automation of routine tasks is that there will be fewer entry level or low level jobs of the kinds available now. We shall not, likely, need as many paralegal and related staff to undertake routine work, however, and thus this will close as a gateway into the profession.

In other firms, the impact of AI systems will likely be felt in three ways. Firstly, some firms may wish to partner with more technologically advanced firms or other forms of business so as to be able to build their own AI systems or purchase white-label generic versions of tools developed for large law firms. CILEx lawyers may need information about ways in which they may partner with others to do this, as well as the benefits of doing so. It will be much easier for large firms to do this, some of which already have chief technology officers and large innovation budgets than it will for small practices that find it difficult to invest in IT infrastructure for reasons of cost and lack of expertise.

Secondly, lawyers operating in some sectors may find that technology overtakes their roles entirely, and they may need to retrain for other areas of law and have support for that retraining. The fields most likely to be hollowed out by new technologies are non-contentious conveyancing and wills and probate matters: these areas are ripe for automation and are already being automated by some organisations and in some jurisdictions some clients are now using DIY-law or DIY-law plus models to write their wills[32], for example.

Further, blockchain will likely automate real property transactions within the next decade[33] (it is already happening in some states in some jurisdictions). HM Land Registry is exploring the use of blockchain for the Registry and also for conveyancing properties on the Registry.[34] It will not be necessary to prove title or report on title if the Registry is put on the blockchain. And the mortgage process may be similarly integrated into the digital ledger process. This may move more conveyancing work away from admitted lawyers, although some aspects of conveyancing remain reserved at present. Compliance and due diligence work may well suffer the same fate, if blockchain can be used as a means to record and verify all transactions and other AI systems can analyse all documents that cannot otherwise be verified by blockchain.

There are, however, possible real benefits, if lawyers are able to harness AI technologies to make efficiency gains, speed up case processing times and reduce costs for clients. It is estimated that there is far more unmet legal need than the legal matters that are currently being addressed by lawyers, and that the main stumbling block to gaining access to that market is cost. Automation, may well provide a chance to increase the paid legal work that lawyers can do, assuming it can be done at the right speed, cost and quality for clients. And DIY-law plus services may be a way to capture some of that currently untapped market. There

[32] See Rocket Lawyer in the context of wills, probate, divorce for example: https://www.rocketlawyer.co.uk/
[33] https://www.todaysconveyancer.co.uk/main-news/blockchain-future-conveyancing/. See further: https://www.psinvestors.co.uk/blog/2017/11/how-blockchain-could-transform-property/
[34] https://iot.ng/digital-street-hm-land-registry-exploring-blockchain-for-property-conveyancing/

are, therefore, opportunities that may be developed and a means by which a greater share of current legal need may be met. Some of the most innovative yet relatively easy to adopt legal advice and assistance solutions are being developed by those with a law background who eschewed traditional legal practice and now run their own legal businesses.[35] Other solutions may be bought as white labelled products rather than as an idea in need of a technical development team. CILEx lawyers of the future may need help with identifying existing technology that they may be able to harness in their practice. They may also benefit from entrepreneurship training, including marketing training to help them to exploit these ideas.

[35] See, for example, the Robot Lawyer http://entrepreneurlawyer.co.uk/RobotLawyerLISA.

4. Legal Education for Legal Practice

Law teaching and legal education sit at the intersection between the academy and professional practice as do many vocationally orientated disciplines. Some legal programmes are more academically focused, with the intention of providing a liberal legal education, alongside high level critical analysis and other skills and attributes that may be useful in themselves or made relevant to a range of careers within and outside law. Others are avowedly vocationally orientated, focusing on practice ready skills and knowledge. This differential focus highlights the longstanding tensions between law's position within the humanities, the social-sciences and its vocational setting (Boon et al., 2005; Bradney, 1999; Johnstone, 1999; MacFarlane, 1987; Duncan, 1987). And these tensions pervade our discussions about the purpose of legal education and training, how we construct the curriculum, what we assess, how and why. Some argue that education with an academic focus is more likely to yield the critical analysis, vocational training is more likely to yield practice ready knowledge and skills. It is possible to integrate both within a well-developed educational pathway, but more difficult to do this if there is a clear focus on being taught purely in an academic context or in a practise based one.

To add to these tensions, the statutory legal professional regulators have voiced concern that the life-cycle of legal education and training was and/or is not fit for purpose as preparation for a career in the regulated legal service sector as a solicitor, a barrister or a chartered legal executive leading to an extensive review (see Legal Education and Training Review 'LETR' 2013: chapter two). This has led to much debate about how legal educators should respond to meet differing conceptions of the primary purpose of legal education as distinct from training (see for example: Sommerlad et al, 2015: Twining, 2015; Twining, 2014; Guth and Ashford, 2014; Hardee, 2014; Leighton, 2014; Abel, 2015; Smith, 2015; Ching et al., 2015). The CILEx model has been able to avoid many of these controversies given that it is a centrally set curricula and assessment regime, with opportunities for students to self-study, study via the CILEx Law School or to seek tuition at another legal education provider. And CILEx students are invariably already working in a legal setting and intend to pursue a long-term career in the legal profession.

But that does not mean the CILEx legal education and training model is entirely immune to the influence of curriculum, assessment and teaching debates that exist within other contexts. Many, if not all, CILEx tutors will have been taught by those who have received legal education in college or university settings that employ traditional teaching and assessment techniques. And experience from practice today may not necessarily fit future lawyers for practice in light of technological change. This section considers some of the tensions within legal education models. It examines the pedagogic literature that may provide a basis from which to evaluate what may need to change.

4.1 The Tensions in Legal Education Models

The discussion about purpose, curriculum design and ways to respond to the future legal services market was already a lively one prior to the LETR in light of major changes wrought on the legal profession/legal services market as a result of the Legal Services Act 2007 (see Maharg, 2007; Edmonds, 2011; Strevens, Welch and Welch, 2011; Nollent and Ching, 2011; Mayson, 2011; Neuberger, 2013). Law student career aspirations, legal employer preferences and

changing career patterns of lawyers in the newly de(re)regulated legal services market[36] within a period of technological change are likely to have an impact on the way in which we need to construct and assess the curriculum. So do student learning preferences and their reasons for choosing law and this method of legal education over others.

Assessment drives students' engagement with learning and thus what we assess and how we assess it has a substantial impact on what students learn on their programmes (Webley, 2011). Compulsory modules have particular potency given that they make up the majority of their syllabus and students' exposure to law, legal skills and attributes. Plus they are often front loaded into the earlier stages of their legal education experience and thus socialise students into ways of doing law or being a lawyer. Assessment and feedback are considered to be one of the least satisfactory components of students' educational experience, at least within an undergraduate legal setting (National Student Survey). And we transmit hidden messages about what it means to be a lawyer and a professional via the way in which we engage students via their assessment and feedback (the hidden curriculum: Gofton, 2006). Consequently, good curriculum design includes consideration not just of content, and teaching and learning activities but also of assessment and feedback too.

Usher, Bryant and Johnston's chapter on Reconceptualising Theory and Practice (1997) is particularly instructive when trying to make sense of the academic-practice tensions within the legal curriculum. They identify a theory-practice 'problem' particularly in the context of professionally 'relevant' education, and this problem feeds in to curriculum and assessment design. They argue that the modernist doctrine of technical-rationality leads us to privilege and teach context-independent knowledge (formal theory), over context-specific practice and relegate practitioner expertise (informal theory on how to get this done successfully, ethically and effectively) to the margins as *'common sense'* (122- 4). In a law school arena formal theory, better understood as 'the rules', can be privileged over the socially constructed realities of law in the real world. And skills taught separately again, from the practice. This disjunction may lead to learning that is too focused on what is the law, (rigour over relevance to use Schon's analogy, 1983) and thus not fitting for professional practice. In a CILEx context, this appears as substantive law first, followed by practice second and skills third. In an academic law school context, this disjunction is often even more stark as practice and practice based skills development is left to the vocational stage of training following completion of the academic stage of training.

This may lead the practitioner wing of the law teaching community to claim that their practice based approach to learning and assessment is more appropriate given Usher et al.'s contention that formal theory does not, in itself, fit people for professional life. However Usher et al. caution against a steer too far in the direction of practice too. They indicate that an absence of theory risks professional stagnation and may even place the profession at risk:

> "Professional 'autonomy' is, in practice, largely based on experience and craft knowledge rather than appeals to a base of scientifically validated knowledge. Keeping the nasty world of theory 'out' is a means by which practitioners keep their own world of practice 'in', immune to questioning and change – until, of course,

[36] For insight into what this means in practice see L. Webley (2015) 'Legal Professional De(Re)Regulation, Equality, And Inclusion, And The Contested Space Of Professionalism Within The Legal Market In England And Wales' 83 (5) *Fordham Law Review* 2349-2367.

> theory is forced upon them and they find that they have no means of justifying their practice and hence no means of resistance to attaches on their professional 'autonomy'." (at 125)

And so they suggest that the curriculum should not be too focused on craft knowledge (or informal theory) relating to how to apply the rules in specific, particularised contexts. An over-dependence on informal theory would lead to practice developed through deduction rather than induction, reflection but not reflexivity (reflection plus the ability to act on that reflection to bring about change, which is the key to learning). There needs to be a balance between the rules, how to use them as a professional with the skills that one develops as a lawyer. And finding this balance is challenging.

It is possible to bring these three elements; the rules, or formal theory, professional expertise and craft knowledge (informal theory) and skills together relatively easily in some contexts and this may be a useful place to start. Baron and Corbin (2012) suggest that by harnessing students' aspirations to become professional lawyers, by introducing them to moral and ethical dilemmas that arise in practice, it is possible to use professionalism as a means by which we can construct a shared endeavour (everyone wants to be professional, even if they do not all wish to become a lawyer), introduce critical thinking, team working, and a sense of belonging to a professional community. This reorientation from 'thinking like a lawyer' to education to develop them to 'act like a professional' (108) does not *necessarily* require a complete rethink of the whole structure of the curriculum but it does require engagement between practice and academic actors (identified as important by the American LETR equivalent, the Carnegie Report) so that the purpose and the attitudes within the educational experience reflect the values that the professional community considers to be core to their identity and role.

4.2 The Importance of Reflexivity within Learning

The need for active reflection (reflexivity: reflection, the identification of what one needs to change, action consistent with that desire to change, improve or develop) was well made by Baron and Corbin, above: one needs to reflect on one's practice and then act on that reflection to effect change in order to be considered a professional rather than a technician. Usher et al. suggest that one way through the theory-practice impasse is to harness reflective practice, drawing upon Schon's 'reflection in action' (1983) and Elliott's 'practical wisdom' (1991) to overcome the rigour versus relevance dialectic. Others, such as Mann et al (2009) and Maudsley and Strivens (2000) have noted the importance of reflection in health education, in this regard. Usher et al. posit the use of a postmodern approach that allows for a co-mingling of theory and practice through reflection and reflexivity (praxis; see Usher and Bryant, 1989) to strengthen the work of theorists and practitioners. The development of theory is seen as a practice itself, and practice as the means to develop informal theory. They note that knowledge *of* practice and knowledge *for* practice are two distinct forms of knowledge, contending that knowledge of practice is propositional and practitioner knowledge is performative and grounded in context (126). Thus, practitioner knowledge is demonstrated in action and that action is modified by context and the practitioner's experience of using knowledge in different contexts. And this needs to be reflected in the curriculum, the teaching methods and the assessment regime.

By introducing diversity and complexity into the curriculum educators may be able to develop students' propositional and performative knowledge and promote reflection. These 'knowledges' need to be particularised, contextualised and modified given the situation. This would require us to take the learning process far beyond demonstrable knowledge of the legal principles or skills. It requires students to be positioned so as to use knowledge within different and situated contexts so as to develop practical knowledge that will fit them for situations well beyond those currently examined in most legal contexts. Clinical legal assessment does attempt to do this but is highly resource intensive. Further, Usher et al. argue that practical knowledge requires that the 'means' and the 'ends' of education be identified but not entirely pre-determined. There is a need to make assessment truly synchronous with a context driven 'end'. The more changeable and uncertain the practice context, the more emphasis needs to be placed on the development of reflexivity and resilience over traditional formal and even informal theory. The rules and practices will change, as will the tools that lawyers use to navigate them. And professionals will need to be psychologically equipped to adapt without much external input.

4.3 Assessment as a Learning Event

It is widely recognised that assessment has become a key site of and mechanism for student learning and it has been argued that the quality of learning will be greatly influenced by the nature of assessment (Ramsden, 1997; Crooks, 1998; Gibbs, 1999; MacLellan, 2010). Student experiences of assessment occur within a context, and in many instances educators shape this context via the messages they transmit covertly and overtly through assessment regimes, instruments, criteria, marks and feedback. Where assessments follow standardised patterns and assess competence in repeated and similar ways these cues will be reinforced (Newmann and Archbald, 1992; MacLellan, 2010). But there is little opportunity for reflexivity to break patterns of behaviour and mindsets.

MacLellan's study[37] is interesting in that it revealed not just a disjunction between staff and student perceptions of assessment but also staff perceptions of their assessment practice compared with what their answers revealed them to be doing with it. Staff responses indicated that they considered their assessment practice was developmental and designed to capture holistically the extent of students' learning development. Whereas their assessment method (essays and short answer tests), point of assessment (in time) and the lack of a staff-student developmental dialogue about learning in the context of assessment indicated a reliance on a measurement model (decontextualized standardised assessment tasks that measure performance). Student perceptions were much closer to the reality of assessment practice than were those of the staff who set the assessments. They were particularly critical about feedback (something that they have in common with our undergraduate law students) on the basis that they found it generalised, backward facing and not a vehicle for them to engage in a learning dialogue with staff. And it could be argued that it did not provide them with a means actively to reflect nor to develop within a community of practice. While assessment may drive learning towards assessment, is does not necessarily drive learning development post assessment unless the learner is engaged in a learning dialogue.

[37] It sought the perceptions of assessment from staff and students on a BEd(Hons) programme through use of a 40-item questionnaire designed using a standard Likert scale to indicate agreement with propositions. At p. 309.

Crook et al.'s (2006) study adds further weight to this evidence base given its focus on the move towards New Public Management in the teaching and assessment process and the need to produce assessment and feedback artefacts that are capable of audit so as to ensure transparency in the assessment process. They argue that the shift in emphasis from the *'human activity of assessment'* (98) to compliance with the assessment procedures has done much to increase accountability in the process but little to increase transparency of what lies beneath it. They drew upon Brown and Duguid (2000) in uncovering nine stages in the process of assessment through interviews with staff and psychology undergraduates.[38] The student interviews focused on their perceptions of assessment on what Crook et al. describe as *'a past-present-future structure'* (100) which positions assessment within a learning continuum from pre to post-assessment stages. They uncovered evidence that the students' lived experience of assessment was thoroughly distanced from the learning process, conducted at arms' length and mediated through third parties and text.[39] Crook et al. suggest that the procedures need to be rebalanced so as to place more emphasis on practice and reflective activities.

Authentic assessment has been suggested as a way to integrate theory and practice in vocationally weighted programmes and further as a means by which to develop assessment instruments that more closely match 'real' tasks that resonate with students and which power their learning. Authentic assessment has been defined as:

> "engaging and worthy problems or questions of importance, in which students must use knowledge to fashion performances effectively and creatively. The tasks are either replicas of or analogous to the kinds of problems faced by adult citizens and consumers or professionals in the field." (Wiggins, 1993: 229).

It provides opportunities for students to learn given that they are undertaking a task that has real meaning in their disciplinary context (Swaffield, 2011: 434). Gulikers et al.'s (2004) study allowed for the construction and testing of a typology of authentic assessment that revealed five components that were implicated in student perceptions of authentic assessment (noting the limitations of a qualitative study in one institution with one discipline represented: nursing). The typology included: the nature of the assessment task; the physical context within which the task takes place; the social context of the tasks (e.g. individual, group etc.); assessment result or form (other such as Crook et. al refer to this an assessment 'product'); assessment criteria and standards against which the assessment form or product is to be judged. These components were further tested in the context of the vocational education of social workers in the Netherlands (Gulikers et al.'s, 2006) and the findings were suggestive of three of these five factors being strongly influential in student perceptions of authenticity of assessment. Students performed more strongly and were more satisfied with assessment when they perceived the task, the physical context within which the task was performed and the form of the assessment to be similar to those encountered in the real world. Interestingly, however, the social context of the task appeared to be less influential on student perceptions as were the criteria used to assess students.[40] Rennert-Ariev (2005, 8) has added three new

[38] They first identified assessment forms, procedures and practices via a mapping exercise of a fifth of institutions offering Psychology degrees through telephone interviews with institutional contacts in the psychology department of each institution

[39] The stages were: assign assessment; compose assessment; submit assessment; accept assessment; read assessment; comment on assessment; return assessment; retrieve assessment; reflect on assessment. At p. 102.

[40] This may appear counterintuitive, however, Gulikers et al. suggest that the social context is often group work based and students have a clear preference for control over their assessment performance which is less possible when working in

features to authentic assessment considerations. Firstly, the need to provide critical reflection where the student reflects on the social and political context of their work. Secondly, that assessments enable those assessing the work to reflect on their own practice and the structures within which they work. And, thirdly, that the relationship between student and teacher is dialogic to allow for enriched learning by both. Taken together these two sets of features provide a basis for meaningful assessment that may integrate theory and practice and positively influence learning.

In short, as learning appears to be driven by assessment, and assessment sets the parameters for how lawyers will view their role, and the important knowledge, competencies, skills and attributes, it suggests that curricula and learning and teaching need to start from there. The basis for assessment and learning is performative knowledge (law used in context) used in an authentic way, rather than from proportional knowledge (the principles) that will later be tested via more traditional written exam based means. Further, reflexivity is also the key to learning, and it is something that we can develop through active use within our teaching methods.

4.4 Relevance to the CILEx Legal Education Model

Often as legal educators we could be steered towards thinking that if we are using examples from practice, providing anecdotes of our experience, and setting problem questions or drafting exercises for students to complete then we are mimicking legal practice and providing a practice orientated education. Yet, the pedagogic literature would suggest that we develop professionals by integrating law, practice and skills within contexts in which students are set more open ended challenges. Open ended challenges take them through the life cycle of a point of contact with a client, and the decisions and actions that flow from it. It is possible to construct curricula, teaching methods and assessments around this, but in order to do so we may need to start somewhere different from where we often do: the rules, followed by the practice knowledge and the skills.

One such starting point may be to teach from the client's point of entry, as in clinical legal education (whether real or simulated) or problem based learning (PBL rather than using problem questions to test students' abilities to apply the knowledge that we have taught them). Were one to start with the client one would construct modules, or parts of modules around 'common incidents. Examples may include learning structured around a client seeking advice on becoming a couple (post-nuptial agreements/cohabitation agreements/ property being held together or separately/ wills etc); or seeking to separate from being in a couple (divorce and separation, issues relating to children, property, finance etc); parents with child related issues (with another parent or family member, with a school, with a local authority); the setting up a new business (all elements from formation of a company to hiring staff, setting up business accounts, buying and selling, liability etc); company mergers and acquisitions. A curriculum constructed that way would be quite different from one organised around property law, contract law, criminal law, which tend to focus on propositional knowledge (the rules) before moving into more performative knowledge.

groups. Further the assessment criteria may have been perceived to be too rigid and provided too late in the day so as to allow students to learn with reference to the criteria. They thus treat these criteria with caution.

Further, given likely changes in legal practice, it may become essential to teach through the lens of technology rather than teaching students how to use technology. In other words, to see the technology as integral to being a lawyer rather than a skill or facility that one needs to learn. Recent legal education reviews, including recently in Hong Kong, have given considerable thought to skills and competencies and how these should be evidenced.[41] As has CILEx Regulation previously. But there has still been relatively little engagement with the likely technological changes to the current practice model, in part because legal regulators and professional bodies are not yet seeing genuine shifts in the legal practice models in their jurisdictions. England and Wales is relatively ahead of many others in that its regulatory model of limited unauthorised legal practice rules, and the deregulatory agenda introduced by the Legal Services Act 2007 provide a context within which innovation may thrive. Legal technology firms, alternative business models and legal start-ups are all able to provide information and advice to the public. They m ay also develop and test platforms and other technological infrastructure with large legal businesses, such as the Big Four accountancy firms, that may benefit from major investment whether from outside sources or due to their scale and size. This has real benefits for innovators who may work without fear of being charged with the unauthorised practice of law, unlike in the United States and, to an extent too, in Australia. But that also means that regulators in England and Wales are less likely to be able to follow the lead of their counterparts overseas, and thus will need to develop regulatory and educational approaches ahead of others.

That is not to say that professional bodies, task forces and education committees are not giving some thought to these issues. For example, the Law Society's Public Policy Commission on Algorithms and Justice is working on this in earnest. But there is little extant material on what skills, knowledge and attributes are likely to be desirable for these new practice conditions. Given that, I talked to or interviewed a number of innovators working in legal practice or developing AI legal tools for lawyers and/or clients to ask them for their views on what major changes they consider likely to occur in the next five years and what that means of those who wish to be involved in legal practice, as well as those designing their curricula. The challenge for these innovators is that it is less than clear which of the innovations will "stick" and which fail, sometimes referred to as the Betamax vs VHS problem (both video recorder formats, the former being considered to be the better quality but more expensive format, the latter being the one that became the mass market format that ultimately prevailed). But all, in one way of another, noted that to remain still in this rapidly changing context risked the fate of Kodak: to be a company persisting with a popular if analogue product at a point when consumers suddenly switched to a digital one that they could produce themselves. Kodak retained a small market amongst enthusiasts and those willing to pay for a niche product, but was all but overcome by events that it did not have on its horizon.

There is also evidence that a small number of law schools are considering or offering either an option module on 21st century law practice or extra curricula workshops on this. They are partnering with legal innovators to make students aware of the changes that are bubbling

[41] See, for example, the Standing Committee On Legal Education And Training, *Comprehensive Review Of Legal Education And Training In Hong Kong Final Report of the Consultants* (April, 2018) at https://www.sclet.gov.hk/eng/pdf/final2018.pdf

under. And one, University of Swansea, is offering a LLM in Legal Tech.[42] But these remain niche opportunities for a small number of interested students. They are not currently mainstream but anecdotal evidence suggests that they are gathering pace. There is agreement from legal innovators of the need for:

Knowledge of the law in a way that helps those developing software to be able to design systems, aka of processes and decision-points rather than abstract law. Further, this would go some way to help lawyers to understand when they should be wary of expert system outcomes too. This may lead to greater use of decision tree architecture within teaching materials i.e. learning law in a way that can be rendered into decision trees (yes/no binaries) rather than as a corpus of rules.

Entrepreneurship coupled with technological literacy. In a fast moving and volatile environment, one needs to be able to spot and then exploit opportunities. Not all opportunities will require technological knowledge, but technological knowledge may be needed to spot and harness opportunities.

A psychological profile in keeping with a 'growth mindset', which is correlated with reflexivity. This was mentioned in different ways, but repeatedly. Some referred to it as resilience, drive and action, others, albeit fewer, referenced Dweck's growth mindset model (Dweck, 2006). It may be useful to make use of some of the learning materials on developing a growth mindset in the early stages of CILEx lawyers' legal education and training and to provide opportunities to develop these skills and attributes within subsequent stages of the curriculum. Introducing reflection plus action (reflexivity) tasks is one means by which this can be done, but there are more developed ways to ground this more firmly within the learning and teaching cycle and to foster professional development right from the inception of education and training.

Soft skills including people skills. These are regularly referenced as important for lawyers but soft skills development tends to be relegated until the later stages of a vocational programme at present rather than being a pervasive component. This may need further thought and also in the light of the ways in which clients and other professionals may wish to communicate not just now but in the near future.

An ability to self-manage and in time to manage others. Project planning and project management were often mentioned in the interviews and informal discussions as was the ability to be an independent worker who could manage one's work, work alone and seek help in appropriate circumstances. Often curricula are constructed around individuals as atomised learners, or around teams of the same level. It may be useful to consider whether there are ways to help nascent CILEx lawyers to develop their abilities to self-manage and seek help sparingly but when needed. However, the ability to manage others usually comes with a degree of seniority and so there may be a continuing professional development aspect too.

Critical analysis such that computer assisted decision-making can be interrogated and nuanced. This has been mentioned earlier in the report in the context of expert systems. Lawyers will need to be able to identify when there are able to rely on AI assisted research or decisions or predictions, and when they should use them with real caution and depart from apparently 'correct' computer generated outcomes.

[42] For details see: http://www.swansea.ac.uk/postgraduate/taught/law/llmlegaltech/

These are addressed in more detail in this next section.

5. Legal Education in Light of Technological Change

It is a period of intense change and the likely outcome will be even greater fragmentation across the legal sector, with some types of legal business using expert systems, others using technology with clients in a partnering relationship (for example Co-Op Law's divorce service). Others will likely give way to DIY systems or self-service systems that clients may use without reference to a lawyer except in the context of an unusual or complex set of circumstances. This makes it particularly difficult to develop an education curriculum and assessment regime that is fit for all purposes. However, it would appear that there are a number of more obvious contingencies that could be developed and some points of principle that should be considered too, as follows:

CILEx Regulation may wish to consider whether it wishes to adopt an integrated learning, teaching and assessment approach that allows for competencies to be developed, tested, reflected upon and the assessed in the context of new models of legal practice making use of AI systems for diagnosis, research, document review and assembly, compliance and due diligence, advice and strategy development and execution.

Further, does it wish to introduce entrepreneurship and business skills, reflexivity and resilience, and a different approach or an augmented approach to ethical dilemmas that also seeks to develop higher legal critical analysis?

And finally, does CILEx Regulation wish to introduce a specialist legal technology route for CILEx lawyers or for data scientists working in a legal setting?

As a starting point, within current structures and provision for existing CILEx lawyers, there may be a need for continuing professional development and retraining opportunities as follows:

- Retraining opportunities for CILEx lawyers working in areas affected by automation (conveyancing, wills and non-contentious probate, basic agreements such as NDAs, tenancy agreements etc).
- Technology training on the AI systems that become mainstream in legal practice.
- Marketing and Business Entrepreneurship training to allow lawyers to develop their businesses during technological change.
- Training in how to develop more junior colleagues in a context where automation has removed some of the more routine 'training' work that they would historically have been given.
- Development in reflective practice and resilience for those who wish to have it. And in the ethics of AI use and the challenges it poses, for all.

The initial model of training will likely need to:

- Recognise that an ability to adapt and change (and thus to be able to reflect and take action following reflection) is going to be essential. Reflection and reflexivity can be taught but rarely form a major component of current skills training in law.
- Legal diagnosis is likely to be computer assisted, if not computer determined, and the teaching of law may need to reorientate to teaching law through decision trees (an

effective means to teach law, in itself, but it also maps effectively on to the way in which expert systems make sense of law).

- Legal research will be largely undertaken by machine, but it will become important to have the ability to judge the completeness of the research, and any angles that have been missed.
- That substantive knowledge of the law will remain important so as to allow lawyers to understand and use expert systems, interrogate the results and formulate strategy and execute it. But the ability to memorise and replay law and procedure will become largely redundant; AI systems are already capable of doing this more effectively than human lawyers. We shall need to focus less on a precursor propositional phase (the rules) and more on performative knowledge – its application. This will have an impact on assessment regimes and also on teaching practices.
- The application of law to facts will also remain important for the same reasons, but AI systems will likely also do much of this work too. But diagnosis is only as good as the data that is used as the basis for the decision, and lawyers may need to become even more deft as thinking about situations creatively and eliciting a wider body of information from clients, including client needs, in order to distinguish the lawyer from the machine.
- Lawyers will need to be trained on the main AI systems (just as they are currently as regards Lexis and/or Westlaw or related systems) and tasks set for assessment could be undertaken via these systems.
- The ability to come up with novel and creative solutions will likely become highly prized and have a greater impact on legal practice (disrupting pre-existing rule based reasoning systems) than it does currently. Successful lawyers will be able to make dextrous, creative use of law language in a way that a natural language programme will not. This has implications for both teaching and assessment.
- There will be a continuing need and an ability to spot ethical dilemmas in this context and to seek help (if needed), reach ethical conclusions and act accordingly. The ethical dilemmas may change over time and so education in ethical values rather than ethical rules may be needed.
- Relational, or soft skills, will gain increased importance with clients, and should be given added prominence.

It is likely that the education and training of lawyers will need to develop quite significantly over the next twenty years, but not all changes are needed imminently. CILEx Regulation may wish to consider whether it wishes to make incremental changes to respond to current technological innovations, or whether it wishes to shape CILEx lawyers' engagement with technology by integrating it into the curriculum at an early stage. It may wish to examine the balance of compulsory and optional subjects, in the light of the likely effects of automation on areas such as conveyancing, wills and probate, for example. It may also wish to consider whether the assessment regime can be orientated towards an authentic assessment, reflexive model to begin the process of reshaping the curriculum without the need for a radical change. There are new elements that could be introduced into the educational pathway such as entrepreneurialism and business skills. And some additional thought should be given to the teaching, learning and assessment of ethics and values, as well as soft skills within CILEx training too.

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